

Mubashar Hussain Sherazi
Elijah Dixon
Editors

The Objective Structured Clinical Examination Review

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 Springer

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To my affectionate and wonderful wife, Uzma, for her continued support throughout the writing of this book and within my whole life.

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Mubashar Hussain Sherazi

Preface

Statement of Purpose

The Objective Structured Clinical Examination Review consists of 16 chapters, and each chapter is a collection of important and common case scenarios for Objective Structured Clinical Examination (OSCE). The selection of case scenarios has been customized to make this book beneficial for a wide variety of audience preparing for OSCEs. Medical students can use this book as a study aid. This book will help candidates preparing for Medical Council of Canada Qualifying Examination II (MCCQE II), National Assessment Collaboration OSCE (NAC OSCE), United States Medical Licensing Examination Step 2 CS (USMLE Step 2 CS), Professional Linguistic Assessment Board (PLAB) Part 2, and the Australian Medical Council (AMC) Clinical Examination.

Over the years, I took a number of assessments and OSCEs. I attended many preparation courses and read a number of OSCE books. I also have over a decade of clinical experience. The idea behind this book was to combine the clinical knowledge with the clinical experience about the OSCE. My aim was to keep it concise and to the point. I have taken much care to keep the language very simple and easy to understand. You will feel that you are actually in the scenario and running it by yourself. Mnemonics and lengthy details have been avoided to make topics easy to go through. The history and physical examination patterns are explained in such a way that should be easy to memorize and follow. Photographs and tables are added for better understanding of various topics. In most of the stations, areas of difficulties and common possible errors have been mentioned. For many stations, it is important to rule out red flags and important differential diagnosis. Red flags have been enlisted wherever required. Differential diagnoses are given in the start of each station. Specific instructions are also added in specific situations. Ending the station with wrap up is one important part of each station. Wrapping up for most of the stations has been explained in detail, and patient information has also been added throughout the book.

Disclaimer

It is important to mention here that *The Objective Structured Clinical Examination Reviews* should not be used as a textbook. It is recommended to use a recommended text or reference books for basic knowledge and understanding of the general topics. *The Objective Structured Clinical Examination Reviews* has not been officially endorsed by any medical college or aforementioned licensing and examination bodies. This book contains a number of important and high-yield topics, but does not cover all the possible topics and scenarios for OSCE. Please follow your local and regional guidelines for emergency management plan and protocols. Checklists in the counseling stations and the clinical examination patterns are one possible way of going through these scenarios; one can customize these checklists accordingly to per-

sonal ease and comfort. The authors and contributors of this book have tried their best not to disclose or copy any actual scenario or actual case discussion from any of the actual examination. No name of any patient or doctor is thus used in this book in any scenario.

Your suggestions and feedback are welcome at sherazimh@gmail.com.

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Contents

1 Objective Structured Clinical Examination Introduction	1
Mubashar Hussain Sherazi	
2 The Nervous System	13
Asif Hashmi and Mubashar Hussain Sherazi	
3 Psychiatry	67
Mubashar Hussain Sherazi	
4 The Cardiovascular System	111
Mubashar Hussain Sherazi	
5 The Respiratory System	131
Mubashar Hussain Sherazi	
6 The Gastrointestinal System	177
Mubashar Hussain Sherazi	
7 Ethics	205
Mubashar Hussain Sherazi	
8 The Genitourinary System	219
Mubashar Hussain Sherazi	
9 General Surgery and Trauma	245
Mubashar Hussain Sherazi	
10 The Musculoskeletal System	271
Majid Sajjadi Saravi and Mubashar Hussain Sherazi	
11 Obstetrics and Gynecology	323
Mubashar Hussain Sherazi and Uzma Bukhari	
12 Pediatrics	355
Umair Khalid and Mubashar Hussain Sherazi	
13 The Endocrine System	395
Mubashar Hussain Sherazi	
14 Hematology	411
Mubashar Hussain Sherazi	
15 Skin	429
Mubashar Hussain Sherazi	
16 Geriatrics	443
Mubashar Hussain Sherazi	
Index	457

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Objective Structured Clinical Examination Introduction

1

Mubashar Hussain Sherazi

Introduction to the Objective Structured Clinical Examination

Since it was described and published in 1975 by Harden and his colleagues, the objective structured clinical examination (OSCE) has evolved into a modern testing tool for evaluation of the clinical skills of physicians and medical students [1].

The OSCE has been integrated into the licensing and evaluating examination systems of medical education and licensing authorities around the world.

In Canada, two important examples of the OSCE are the final licensing exam of the Medical Council of Canada Qualifying Examination Part II (MCCQE II) and National Assessment Collaboration OSCE (NAC OSCE), which has become a mandatory requirement for most of the provisional licensing colleges for international medical graduates (IMG) applying for residency training through the Canadian Residency Matching Service (CaRMS). Similar OSCE examinations are conducted by various colleges for international medical graduates for practice-ready assessments in Canada [2–4].

In the USA, the US Medical Licensing Examination Step 2 Clinical Skills (USMLE Step 2 CS) is one of the required licensing exams and is essentially an OSCE [5].

In the United Kingdom, the Professional and Linguistic Assessment Board (PLAB) Part II and Membership of Royal College of General Practitioners (MRCGP) clinical skill assessment also have a similar OSCE pattern [6, 7].

The Australian Medical Council Clinical Examination is an integrated multidisciplinary structured clinical assessment consisting of a 16-component multi-station assessment. It assesses clinical skills in medicine, surgery, obstetrics, gynecology, pediatrics, and psychiatry. It also assesses the

ability to communicate with patients, their families, and other health workers [8].

The OSCE is also widely used all over the world as an important part of clinical clerks/medical students' evaluations in medical schools.

The main advantage of the OSCE is its ability to assess candidates' multiple dimensions of clinical competences:

- History taking
- Physical examination
- Medical knowledge
- Interpersonal skills
- Communication skills
- Professionalism
- Data gathering/information collection
- Understanding about disease processes
- Evidence-based decision-making
- Primary care management/clinical management skills
- Patient-centered care
- Health promotion
- Disease prevention
- Safe and effective practice of medicine

The OSCE uses standardized patients. The examiner either observes in person or the scenarios are recorded for the examiners to later watch the interaction between the candidate and the standardized patients. The candidates will be assessed throughout the station from entering into the room till they finish the station and leave the room.

What to Expect in OSCE?

The OSCE consists of a circuit of a number of stations (10–14), each lasting 5–15 min. Please read and follow the guidelines for your particular OSCE. The candidates are required to rotate through each station. Each station starts with the station's information printed on a piece of paper (candidate's

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information) placed on the door outside of the respective station. Candidates are given a few minutes to read and prepare notes before entering each station. Candidates are expected to perform one of the following or in some stations more than one:

- Obtain a focused or detailed history.
- Focused or detailed physical examination.
- Assess and address the patient's issues.
- Answer specific questions related to the patient.
- Interpret X-rays, electrocardiograms (ECGs), blood gases, or the results of other investigations.
- Make a diagnosis.
- Write admission orders.
- These examinations include problems mostly in [2]:
 - Medicine
 - Pediatrics
 - Obstetrics and gynecology
 - Preventive medicine and community health
 - Psychiatry
 - Surgery
 - Musculoskeletal system

Each station has an examiner and a simulated patient trained for the particular scenario. The examiner assesses the candidate's skills on a standardized checklist provided by the examining body.

How to Prepare? The OSCE is best prepared by joining a study group or with at least 2–3 study partners. Study groups for the OSCE are invaluable. I remember, when I was preparing for an OSCE in Canada, we use to study twice a week for 4–5 h each day and then practice scenarios once a week. Proper feedback and criticisms are also crucial while practicing OSCE scenarios. Some people feel comfortable to do counseling and history taking on video calls, and they practice mostly on these. Each member can also contribute in making common presentations that they know well and then they can challenge the rest of the group with these. Then the group can also discuss and assess each other.

Make a Study Plan

It is important to make a study plan well ahead of the examination day. Some people prepare for about 6 months, 2–3 months of just individual studying and the rest practicing in a study group. It varies individually, depending on your clinical training, practice experience, clinical knowledge, and understanding of the particular OSCE.

Identifying the objectives that you think you need the most to study is vital. Focus on common and critical patient presentations. Making a list of the most important differential diagnoses, creating checklists, and asking the most rele-

vant questions in a limited time frame are crucial for time management. While practicing, if you think that you are not doing well on a certain topic, then simply spend more time on it and discuss it in your study group.

Develop Your Interview Skills

This is one of the most important components of any OSCE. Clinical knowledge, fluency and grasp of the English language, and practicing before the actual exam are key components of developing interview skills. In the OSCE there is a finite amount of information that one needs to know to get through the exam. It is all about prioritization and strategic thinking. So in any situation, you must remember what checklists or key questions are important and not to be missed.

Are There Books and Courses About the OSCE?

For many OSCE exams, there are not many recommended books or specific reference materials. You can still find recommendations about OSCE study guides in various online study groups and from doctors who have already taken these OSCEs. There are no approved preparatory courses. Some medical faculties offer programs. Some candidates find these courses very helpful, and some do not. In most of these courses, I think you will have an opportunity to become familiar with the OSCE pattern and format.

Day of Examination

Some general tips for your day of OSCE:

- Make sure you get enough sleep before the examination day and you are well rested.
- Examination anxiety is your biggest enemy, so try to remain cool and calm.
- Avoid preparing up to the last minute. I recommend you finish your study and practice about 24 h before the exam.
- Be confident and do your best.
- Do not use a sedative the night before.
- Set multiple alarms and ask someone to check on you to make sure that you wake up on time. Give yourself ample time to get ready for the examination. If your examination is in the morning, make sure you have a good breakfast. If your examination is in the afternoon, then have a good lunch but not too much. If you are in the habit of drinking coffee or tea, do have one as per your normal routine.
- Dress well, business formal dress code. I personally like a suit and tie with an appropriately matched shirt, belt, and shoes. The most important fact about clothing is to *always* try wearing your expected attire before examination day. Check for size, comfort, stains, or difficult to remove

wrinkles. Try not to wear expensive watches or jewelry. Many OSCEs instruct candidates not to wear any perfumes; make sure you follow the instructions. For female colleagues, try to avoid extensive makeup, high heels, sandals, facial piercing, or strange hairstyles.

What to Bring to the OSCE?

- A stethoscope (nonelectronic)
- A reflex hammer
- A plain white lab coat without a university or hospital crest (check size and fitting before the exam)

Registration and Orientation

Follow the examination instructions. Arrive on time and bring any necessary documentation such as a government-issued identification (ID) or admission card. Your personal belongings such as keys, papers, wallets, cell phones, as well as coats will be collected. So try to bring minimum stuff with you to the examination center. These items will be stored until after the examination.

Get your identification badge, stickers, and in most of the examinations a small notebook will be provided. You can write notes while taking the examination. Only one notebook will be provided, and no pages can be added. The notes in the notebook will not be scored. This notebook must be returned intact at sign-out. No pages or parts can be torn or ripped out.

Exam Security

Once the examination starts, candidates are not permitted to talk to other candidates. There should not be any access to any communication devices. Some OSCEs will not permit you to wear watches of any kind during the examination. You can time yourself with clocks placed in each room.

How to Begin Your OSCE Station?

Finally, you are in your OSCE exam. You are standing in front of the first station with your back toward the door with the first station stem pasted on it. You are hearing the instructions and countdown to start the first station.

This is the time to run a *quick checklist*:

- Take few deep breaths and make yourself relax.
- Is your exam *ID badge* attached well on your pocket?
- Is your *pencil* ready to write?
- Have you prepared a new sheet on *your notebook*?
- Do you have *stickers* ready for the station?
- Have you secured the rest of the stickers for the next stations in your lab coat?
- Is your *stethoscope* and *hammer* properly placed in your pockets?

The bell will ring, and you will be asked to turn to the door and then read the stem (Box 1.1). The exam will start. **READ THE INSTRUCTIONS CAREFULLY.**

Box 1.1 Candidate Information/Doorway Information

A 35-year-old female, Miss XYZ, presented in your clinic with low mood. Obtain a detailed history and address her concerns.

What to remember/write on your notebook from the stem on the door of station?

- Patient name and age
- Chief complaint
- Purpose of visit
- Setting (clinic or emergency room)
- Also if patient was brought by someone else
- What is the station asking for: history only or history and physical examination or history and counseling or physical examination only

I will break down the patient information like this (Box 1.2).

Box 1.2 Make a Plan in Your Mind

A **35-year-old female, Miss XYZ**, presented in your **clinic** with **low mood**. Obtain a **detailed history** and address her **concerns**.

How to Plan?

After reading the stem, ask yourself:

- Which system is involved?
- Formulate ~3 differential diagnosis.
- What are three to four important relevant questions that **MUST** be asked to rule out the differentials?
- Any mnemonics or words you want to go through during the station.
- Quickly review some important questions or sequence you want to use (Box 1.3).

Box 1.3 What to Write in Your Notebook

Miss. XYZ

Age: 35

History and concerns

Setting: clinic

Low Mood

Depression (mnemonic for screening or questions)

Abuse
Hypothyroid
Don't Forget
Safety check
Drug History
Contract to contact

Take a deep breath and tell yourself: "I am ready and I will do this well."

The bell will ring or you will be asked to move to your first station.

Starting the Interview:

Knock on the door. Go into the room with a smile and confident face.

In some of the OSCE, it is required by the candidates to give two name/exam registration number stickers/labels to the examiner before starting the interview. Greet the examiner and hand over the required stickers.

The next thing will be hand-wash or alcohol rub. It is very important for physical examination stations. If using a hand sanitizer, then try not to put too much on your hands. Try to rub it into the palms quickly. Make sure your hands are dry if a patient offers a handshake. If you forget to clean your hands at the start, but remember while starting a physical examination, then ask for sanitizer if you cannot find it or wash your hands.

Patient Interaction

Greet and introduce yourself and state your role/position in the patient's evaluation. Confirm the ID of the patient by asking for the patient's name and age. You can have a quick peek at your page and read the patient's name again before asking. Ask the patient how he or she wants to be addressed? As the history questions start, confirm the source and reliability of the historian.

Mention the purpose for the visit.

Explain to the patient whether you will be taking an interview or will be doing a physical examination or both.

Example Opening the Interview

There are many ways to open the discussion/interview. Here are a few examples for the opening lines. It can be modified according to the station requirements and for adequate time management.

History Station

"Good morning/good afternoon. I am Dr.... I am your attending physician for today.

Are you Mr./Mrs./Miss...? Are you... years old?"

Pattern 1:

In some stations, the stem information might not have a chief complaint, or sometimes there are more than one presenting complaints. If you are not sure how to start, in these situations, the best way to open up the conversation is:

"What brings you to the *hospital/clinic* today?" (It is very important to remember in which setting you are examining the patient.)

Or

"How can I help you today?"

Then allow the patient to talk and listen carefully. The patient will speak about the chief complaint and some vital information about the history of the present illness. The patient may tell about the purpose of the visit or any concern. During this time, one should formulate and rearrange the list of questions and differentials.

Before asking further questions about the details of the chief complaint, I like to ask the patient: "Is it alright if I ask you some questions about it? At the end we will discuss about the treatment plan and if you have any questions or concerns, please feel free to ask during the discussion."

Pattern 2:

If the chief complaint is obvious from the stem, then the usual start should be, for example:

History and Physical Examination Stations:

"Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs./Miss...? And you are...years old?

"I understand you are here because of ..."

"Is it alright if I ask you a few questions? I would also like to do a relevant physical examination of.... In the end, we will discuss about the management plan."

"During the history or examination, if you have any questions or you feel any discomfort, please let me know."

For examination stations, have a look around the room. What tools are available? If any tools are there, it is likely that the examiner wants you to use these.

History and Counseling Stations:

"Good morning/good afternoon, I am Dr.... I am your attending physician for today. Are you Mr./Mrs./Miss... ? And you are... years old? I understand you are here because of.... Is it alright if I ask you some questions about it? Then in the end, we will discuss about the management plans and will also discuss if you have any concerns. Do you have any questions?"

If a Patient Asks a Question or Expresses Some Concern Before the Interview Starts:

The interview should always start with an open-ended question. Sometimes the patient may ask a question or reveals

some concern in the start. In this situation, that concern or question should be addressed first before exploring the history of present illness.

Example:

Station: Patient with Fatigue. The patient may ask, “Doc, why I am so tired these days?” This question/concern must be addressed before asking any other question. One way of responding to this question is, “I understand you are here because of fatigue. As I am seeing you for the first time, let me ask you a few questions and let’s sort out why you have this fatigue and then we can deal with it accordingly.”

How to Build Rapport with the Patients?

Building a good patient rapport is one of the important steps that will determine the overall outcomes of your interaction with this patient.

Following are a few tips that can help you make a quick and better rapport with the patients.

Know Your Patient: The patient’s interview starts when you start the introduction, asking patient name, ID, and age. Then ask, “Mr./Miss... how would you like me to address you?” This one question can help during the rest of the interview in making the patient comfortable and relieving anxiety about seeing a new doctor.

Calmness: We must try our best to be in control of the communication, remain calm, and look competent and confident.

Empathy: We should be able to empathize with our patients. We must use sentences such as, “It must be hard for you” or “It must be a frightening experience!” These will make good bridges.

Communication is another integral component of a good doctor–patient relationship. Communication skills help us to understand a patient’s needs, concerns, and thoughts. You will be able to find hidden agendas. In almost all the OSCE stations, your communication skills will be assessed. But in some stations, communication skills will be the main skill that will be assessed by the examiner.

The key components of OSCE where communication skills are considered to be important are:

- Getting informed consent
- Decision-making stations
- Breaking bad news
- Dealing with anxious patients or relatives

- Communicating with family members and relatives
- Describing and explaining diagnosis, investigation, and treatment
- Giving advice on lifestyle, health promotion, or risk factors
- Communicating with other healthcare professionals
- Giving instructions on discharge

Communicate Well: Effective communication between a doctor and a patient is the keystone of establishing a trustful relationship. It is important to analyze if the patient is understanding the questions and giving relevant answers. Be a good listener. You must listen carefully while the patient is describing the concerns. You should assess and respond accordingly to verbal and nonverbal body language. Keep good eye contact, respond with appropriate facial expressions, and respond to the patient’s verbal and nonverbal cues during the interview.

Anticipate Their Concerns: Try to address the patient’s concerns. This will express that you care and you want to provide the best possible care to the patient.

Educate: A doctor should also be a scholar. As stated by the Royal College of Physicians and Surgeons of Canada, “As scholars, physicians demonstrate a lifelong commitment to excellence in practice through continuous learning and by teaching others” [9].

Patients want us to educate them regarding their disease or health issues, and they want to know about the treatment plans. It is important to counsel patient about their diagnoses and treatment plans. Besides having a discussion, we can offer reading material, websites, and community resources.

Follow-Up: To build a long-term relationship with the patient, it is essential to make an appropriate follow-up plan with the patient. It will show that you care.

How to Conduct a Good Interview?

A good interviewer should have the following approach:

- Be professional.
- Mature.
- Be positive.
- Be polite.
- Be understanding.
- Express or offer support.

- Show respect.
- Not being judgmental in approach.
- Patient-centered approach.
- Maintains and offers confidentiality.
- Not be assertive, dominating, or use sarcastic language.
- Maintain good communication skills.
- Ready to educate patient.
- Avoid medical jargon.
- Willingness to discuss patient concerns.
- Take care of patient comfort.
- Show empathy and support.
- Be a good listener and avoid unnecessary interruption.
- Controls temper in difficult situations.
- Respects and interacts positively with colleagues.

Details of History Taking

Quick Recap:

First step was to read and analyze the candidate information.

Second step was starting the interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner if required or show your ID badge.
- Now sit on the chair or stand on the right side of the patient and start the interview.

Third step:

Opening: “Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr.... And are you... years old?”

Fourth step: Start with the chief complaint and continue with the rest of the history:

- **Chief complaint:** It is the presenting complaint in the patient’s own words.
- **History of present illness:** If following pattern 1 (already mentioned), then the interview has already started. While listening carefully, the patient will give initial information. The patient will provide important information, and while listening you should tailor your next questions. Please do not interrupt the patient unless the patient starts talking about something that is not clearly related to the presenting or chief complaint.

If following pattern 2, then the first question should be asked regarding the chief complaint, and usually it is about its ONSET. The first three questions usually related to the chief

complaint are its onset, course, and duration. At times the patient may have given answers for these three questions in his/her initial statement. If not, then you can start with onset.

Onset:

- “How did it start?”
- “Did it start suddenly or gradually?”

Course:

- “Did it change since it started or has it stayed the same?”
- “Was it present all the time? Or does it come and go?”

Setting:

- “What were you doing when it started?”

Duration:

- “When did it start? How long have you been feeling sad/tired/fatigued/anxious?”

Character:

- “Can you please explain it more?”

Frequency:

- “How often does this happen?”

Timings:

- “Any particular timings?”

Events Associated:

- “Can you please tell me, is there any particular event that has triggered your symptoms?”

Relevant Associated Symptoms:

- “Did you notice... (name any other symptoms of the same systems or from other systems that may coexist)?”
- Can also ask here about fever, chills, or weight loss.

Relieving Factors:

- “Does anything relieve the symptoms?”

Precipitating Factors or Aggravating Factors:

- “Does anything aggravate the symptoms?”

Functional status or severity or impact on life activities?

Rule Out:

- Differentials

How to Interrupt the Patient if Going Off Track While Giving History:

“Excuse me, Mr./Mrs./Miss.... I understand that these are important issues, but I would like to ask some additional

questions of your current problem so we can come to a management plan.”

Review of Systems: It can be done at the end of the present illness questions:

- **Gastrointestinal tract:** Nausea, vomiting, diarrhea, constipation, change in bowel habits, acid reflux, appetite, blood in vomiting or bowel movements, and jaundice
- **Respiratory:** Cough, wheeze, sputum, hemoptysis, and chest pain
- **Genitourinary:** Hematuria, change in color of urine, dysuria, polyuria, change in frequency of urine, nocturia, and anuria
- **Cardiovascular:** Chest pain, palpitations, dyspnea, syncope, orthopnea, and peripheral edema
- **Neurology:** Problems with vision, headache, motor or sensory loss, loss of consciousness, and confusion

Constitutional Symptoms: Fatigue and malaise, night sweat, fever, and weight loss.

Risk Factors

Past Medical and Surgical History:

- “Any medical and surgical illnesses?”
- “Do you have any previous health issues?”
- “Do you have any health issues related to your lung, heart, or kidney?”
- “Previous blood transfusion?”
- “Have you had any previous hospitalization or previous surgery?”
- “Emergency admission history?”

Medication History: “Are you taking any medication prescribed, over the counter or herbal? If so, have there been any side effects?”

Allergic History: “Do you have any known allergies?”

Past Psychiatry History: Previous psychiatric illness, diagnosis, treatments, and hospitalizations.

Social History:

- “Do you smoke? Or does anyone else in your home or close at work smoke?”
- “Do you drink alcohol?”
- If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?”
- If yes, “Which ones? How long? When?” Specially ask about intravenous (IV) drug use.

Foreign Travel: “Any recent travel?”

Relationships: “Are you sexually active? Do you have sex with men, women, or both?”

Family History: “Now I am going to ask some questions about your family.”

- “How is your family like?”
- Relationship with the family members?
- Any mental illnesses present/past, alcohol, drugs, criminal, suicidal attempts?
- “Do you have family members or friends to discuss your problems?”

Personal History:

- “Please tell me about yourself.” (Can be asked in any sequence, marital status, occupation, and religion)
- “Do you have problems at work? How are you doing at work?”
- “Do you have any recent event in the family such as an accident or someone died?”

Self-Care and Living Condition: “What do you do for living? Working status and occupation? Educational status? Who lives with you?”

Support: “Do you have good support from your family and friends?”

Functional status or severity or impact on life activities.

If the patient is a child, add questions about **BINDES** (birth history, immunizations, nutrition, development, environment, and social) here:

Birth History:

Birth history includes prenatal, natal, and postnatal histories. You need to tailor the prenatal, natal, and postnatal questions according to context. If the birth history is not relevant to the presentation of the child, then one general question will be sufficient such as “Any issues with the pregnancy/birth of the child?”

• Prenatal:

- “Was it a planned pregnancy?”
- “Did you have any regular follow-up?”
- “Did you have any ultrasound scans? Was it normal or not?”
- “During your pregnancy did you have any fevers or skin rash?”
- “Any contact with sick person or cats?”
- “Any medication, smoking, drugs, or alcohol?”
- “Screened for human immunodeficiency virus (HIV), syphilis, group B strep (GBS), hepatitis B? Blood group?”

• Natal (Delivery):

- “Term baby or not?”

- “What was the route?” C-section (C/S), spontaneous vaginal delivery (SVD), or assisted vacuum delivery (AVD)
- “How long was the labor/delivery?” (18 h is normal for primi, 12 h for multipara)
- “Early gush of water?” (premature rupture of membranes)
- “Any need for augmentation/induction?”
- “What was the Apgar score?” (1 and 5 min)
- “Did the baby cry immediately?”
- “Did your baby need any special attention/admission to special care?”
- “Any bulging or bruising on baby’s body?”
- “When were you sent home?” (C/S 3 days, SVD 1 day).
- “After delivery did you have any fever, vaginal discharge, or on any medication?”
- “Were you told that your baby had any congenital deformity?”
- **Natal (Birth):**
 - Vaginal or CS
 - Spontaneous or assisted labor (i.e., forceps delivery)
 - Premature rupture of membranes (PROM) or fever
 - Baby: full term/preterm, weight at birth, Apgar score if known
 - Did the child need any resuscitation at birth?
- **Postnatal or Newborn Period:**
 - Mom: fever, bleeding, or any other complication
 - Baby: jaundice, screening tests, congenital anomalies, suckling, and weight gain

Immunization

If the parent states that the child is not immunized, you need to inquire for the reason. If the child is not vaccinated due to a reason that points toward neglect, then look for child abuse red flags. Inquire further about weight gain and developmental milestones. If it is due to religious beliefs, you do not have to inquire further. Otherwise, move on to nutrition.

Nutrition:

- Mom’s medications
- Complications during pregnancy such as diabetes, bleeding, or hypertension
- Multiple pregnancies
- Infections such as TORCH – Toxoplasmosis, Other (syphilis, varicella zoster, parvovirus B19), Rubella, Cytomegalovirus, Herpes
- Mom’s age
- Planned or unplanned pregnancy
- Weight:
 - What is the current weight
 - Birth weight
 - Maximum weight

- Is the child breast fed? Or bottle fed?
 - Frequency, amount, supplement, formula fortified, weaning
 - If formula, then ask about type/brand.
- Growth charts (height, weight, head circumference)
- Feeding:
 - Formula:
 - “When did you start the formula?”
 - “Was baby ever breast fed?” If yes, then ask, “Why stopped?”
 - “Did you consider breast feeding?”
 - “What type of formula do you use?”
 - “Has there been any change in the feeding? Did you add any solid food or supplements (any fortified serials or iron)?”
- If any diarrhea, when did it start (before the solid food or after)?

Development History:

- Gross motor, fine motor, vision, hearing/speech, and social
- Are they developing according to their milestones? For example:
 - Six months: head control, grasp a toy, generalized reactions, smiles, and babbles
 - Eighteen months: sitting without support; walking/running, good fine motor control (swapping objects/turning pages); 1–15 words and has self-awareness
 - Thirty months: jump, go up/down stairs without assistance, symbolic thought
- Are they growing along growth centiles?
- How do they compare to their siblings?
- Any comments from their teachers at school or daycare?

Environment:

- “With whom does the child live at home?”
- “Any other children?”
- “Relation between your child and others?”
- “Who spends most of the time with the child?”
- “Financially how do you support yourself?”
- “Do you live in your own house?”
- “Does anyone at home drink or use drugs?”
- Building – basement (mold)
- Old houses (lead poisoning)
- Children attending school:
 - School performance: comparing the grades between now and previous

If the patient is a teenager, then add these questions here:

Home:

- “How is your living like?”
- “Who lives with you?”

- “Are your parents married, divorced, or separated?”
- “How long you have been living in your current residence? What does your parent do for work?”

Education:

- “Which grade you are in?”
- “What school do you go to?”
- “How are your grades?”
- “Do you like going to school?”
- “Have you made any future plans in studies?”

Employment:

- “Are you currently working?”
- “What kind of work do you do?”
- “How many hours in a week?”
- “Future career aspirations?”

Activities:

- “Do you have friends?”
- “Do you have a best friend?”
- “What do you do outside of school?”
- “Any hobbies?”

Alcohol:

- “People your age sometimes have problems with excessive drinking. Do you ever have such problems?”
- “Do your friends bring alcohol to the parties you attend?”

Diet:

- “People your age sometimes they have concerns about their body weight, shape, and image? Do you ever have such concerns?”

Drugs:

- “People your age sometimes experiment with street drugs. Have you ever tried street drugs?”
- “Do your friends experiment with street drugs or bring any drugs to school or parties?”

Sexual Activity:

- “Are you in a relationship? Are you sexually active?”
- “Some people your age are uncertain about their sexual orientation. Do you have any concern about it?”
- “Do you know about sexual or physical abuse? Have you ever experienced or had any event that is concerning?”

Suicide:

- “Have you ever thought about harming or killing yourself or others?”
- “Any current plans?”
- “Any previous attempts?”

If the patient is more than 65 years old, add these questions here:

Activities of Daily Living (ADLs):

- **Walking:** Getting around the home or outside. Also labeled as ambulating.
- **Transferring:** Being able to move from one body position to another. This includes being able to move from a bed to a chair or into a wheelchair.
- **Dressing and grooming:** Selecting clothes, putting them on, and managing one’s personal appearance.
- **Feeding:** Being able to get food from a plate into one’s mouth.
- **Bathing:** Washing one’s face and body in the bath or shower.
- **Toileting:** Getting to and from the toilet, using it appropriately, and cleaning oneself.

Instrumental Activities of Daily Living (IADLs)

- **Finances:** Such as paying bills and managing financial assets.
- **Transportation:** Driving or by organizing other means of transport.
- **Shopping and meal preparation:** Getting a meal on the table. It includes shopping for clothing and other items required for daily life.
- **Housecleaning:** Cleaning kitchens after eating and keeping one’s living space clean and tidy. Keeping up with home maintenance.
- **Communication:** Using telephone and mail.
- **Medications:** Obtaining medications and taking them as required.
- Any problem with balance?
- Any difficulty in peeing/urination?
- Any issues with sleeping?
- Any change in vision/hearing?
- Any recent change in memory?

Wrap Up:

- Describe the diagnosis.
- Management plan.
- Laboratory tests.
- Possible medical treatment.
- Duration of treatment and side effects.
- Further information: websites/brochures/support groups or societies/toll-free numbers.
- Follow-up.
- Contract for safety.

Tips for a Good Physical Examination

The details of different physical examinations will be discussed later in different chapters. There will be at least one but most of the time two or up to three examination stations in the OSCE. You will be asked to actually examine a simu-

lated patient. Some patients may have positive signs, and it is very important to pick up these signs during the examination.

Here are few tips to improve your physical examination skills:

- Practice, practice, and practice before the actual examination.
- An important thing to practice is explaining and taking consent from a patient about a particular examination. You should be able to answer and describe: Who are you? What examination will you be doing? And why are you doing this examination?
- Proper draping and appropriate positioning.
- Taking care of the patient's comfort throughout the examination.
- Practice well all the major systems and joints (back, hip, knee, foot, shoulder, hand, elbow).
- There are great videos on physical examinations online; use these as guides and quick references. It is recommended to watch these videos multiple times; it will add to your memory and quick reviewing.
- Try to time yourself with a stopwatch and assess how much time you are requiring to complete an examination and how much time you will actually have in the real examination. Then try to practice in time mode and improve your timings for each examination.
- Organize yourself and opt for a systematic approach to save time, for example, in the general physical examination, always start from the hand, check the pulse and blood pressure; face; neck; chest; and so on.
- Do not carry out genital, breast, or rectal examinations. Even in the scenario, if you need to do a particular exam, just mention it and the examiner will give you the findings or will say it is normal.
- If an oral question is required, then it is better to ask the examiner instead of the patient.
- Recognize the manifestations of a disease and then apply your knowledge to look for specific signs of disease manifestations. For example, in acute appendicitis, feel for right iliac fossa tenderness and rebound tenderness.

Navigating Through the Stations During the Examination

In the orientation session, you will be told about navigating through the examination. Usually signs will be posted to help you navigate the exam. There are staff members who can

also show you which way will be your next station. Sometimes there will be a rest station. The most important thing not to do in the rest station will be thinking about the previous stations. Try to relax, drink some water, check your tie knot, check your labels, check your tools, and be ready for the next station.

If you finish the patient encounter early, you must wait quietly. If you remember something more that you would like to do, you may re-engage the patient at any time until the final signal/announcement – except in stations with oral questions.

A set amount of time is allowed for moving to the next station and for reading the posted instructions. During this time, remove the bar code identification label from the sheet, to have it ready to give to the examiner. At the sound of the signal, enter the room and proceed with the required task.

Document Writing

Candidate Information:

You have been working as a resident in general surgery. You have just attended a patient with acute diverticulitis, acute appendicitis, or acute cholecystitis. Please write admission notes. Or a patient presents with abdominal pain (RUQ, RLQ, or LLQ), please take a brief history and write admission notes.

The history should be very clear to direct you to a diagnosis, and the examiner may give you positive examination findings or an imaging report, for example, a computed tomography (CT) scan of the abdomen confirming a diagnosis.

Starting the Scenario:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner if required or show your ID badge.
- Sit on the chair or stand on the right side of the patient and start the interview.

Abdominal pain scenarios have been discussed in detail in [Chap. 9](#) on general surgery. Here we shall only focus on admission note or order writing [10].

You will be given a pencil or pen and a blank piece of paper on which you will write the admission note for one of the aforementioned scenarios (see [Table 1.1](#)).

Table 1.1 An example of how to write an admission note

<p>DATE:</p> <p>CHIEF COMPLAINT: Abdominal pain..... hours/days/months</p> <p>History of present illness:</p> <p>Site</p> <p>Onset</p> <p>Course</p> <p>Duration</p> <p>Character</p> <p>Radiation</p> <p>Alleviating factors</p> <p>Exacerbating factors</p> <p>Severity</p> <p>Similar pain before</p> <p>Nausea</p> <p>Vomiting</p> <p>Diarrhea</p> <p>Constipation</p> <p>Loss of appetite</p> <p>Black/bloody stools</p> <p>Sick contacts, Suspicious food consumed</p> <p>Fever/chills, SOB, Chest pain, Headache</p> <p>Dysuria</p> <p>Past medical history:</p> <p>Past surgical history:</p> <p>Medications:</p> <p>Allergy:</p> <p>Family history:</p> <p>Social history:</p> <p>PHYSICAL EXAMINATION:</p> <p>Vitals:</p> <p>General physical examination:</p> <p>HEENT:</p>	<p>Neck:</p> <p>Respiratory system:</p> <p>Cardiovascular:</p> <p>Abdomen:</p> <p>Neurology:</p> <p>Labs ordered:</p> <p>Imaging results/ordered:</p> <p>ASSESSMENT/IMPRESSION:</p> <ul style="list-style-type: none"> • Abdominal pain due to..... <p>PLAN:</p> <p>Admit to General Surgery under Dr.....</p> <ul style="list-style-type: none"> • NPO apart from meds • IV fluid: D5 0.5% NS at 125 ml/hr x 2 L • EKG • Urine C+S • Morphine 2 mg IV q 2-4 hr PRN pain • CT abdomen and pelvis with contrast • GI consult <p>Signature:</p> <p><i>Dr</i> <i>Time and date</i></p>
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Admission Orders: Acute Diverticulitis

Now let us write an admission orders for a patient with diverticulitis (Table 1.2).

How to Fail the OSCE?

There are more ways to fail than to pass the OSCE. Some are listed here:

- Poor performance through the station
- Poor organization
- Inadequate history taking – miss asking about important parts of history
- Inadequate knowledge
- Could not address patient concerns and problems
- Interrupting patient
- Arguing with the patient
- Giving patient misinformation
- Poor communication skills
- Inadequate physical examination
- Unprofessional behavior

Table 1.2 Admission orders for diverticulitis

Patient Name:	Date:
Age:	
Admit to: General Surgery	
Diagnosis: Acute diverticulitis	
Condition: Stable	
Vital signs: Stable	
Allergies:	
Diet: Nothing to eat and drink, beside oral medication	
Nursing: Daily weights and intake and output	
Activity: as tolerated	
Labs: CBC, Electrolyte, urea, creatinine, CRP in the morning.	
Imaging: CT abdomen and pelvis with contrast	
IV: NS 1L at 125 ml/h	
Medication: Metronidazole 500mg IV BID (check with your hospital guidelines)	
Ceftriaxone 1G IV daily	
Morphine 5 mg IV q 2-4 hr PRN pain	
Paracetamol 1000mg q 6 h prn for pain or fever	
Signed: dated and time	
Position and Name of doctor	

- Inability to counsel the patient properly

- Putting patient at harm or risk
- Wasted too much time on history and missed most of the physical examination
- Missing valuable information
- Poor professional judgment
- Looked nervous and rushed through

Best of luck for your OSCE.

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The Nervous System

2

Asif Hashmi and Mubashar Hussain Sherazi

History Overview: The Nervous System

In an objective structured clinical examination (OSCE), one can expect to have at least one station from the nervous system. Usually it is a history taking with physical examination station. One can also expect to be asked to perform a detailed examination only. Commonly asked tasks are cranial nerve examination, motor/sensory system examination, or cerebellar system examination. In these stations it is important to analyze the doorway information to customize the physical examination. It will be difficult to complete all the steps of a particular nervous system examination in a limited time frame. A lot of practice is required before the examination to complete these stations in the given time. For a history and physical examination station, only the most important and relevant questions should be asked, and sufficient time should be allocated to the physical examination and for a wrap-up in the end.

This chapter outlines common nervous system-related topics important for the OSCE. See Table 2.1 for an overview of the pattern of history taking required for nervous system stations.

The nervous system examination does need some gadgets such as a hammer, a measuring tape, cotton wool, a pin, and a tuning fork. Please check with your examination guidelines if these will be provided in the examination room, or you may need to bring these. If you will be bringing your own gadgets, then make sure to take these with you after finishing each examination.

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Common Nervous System Symptoms for the Objective Structured Clinical Examination

Common presenting symptoms are:

- Headache
- Seizure
- Tremor
- Vertigo
- Hearing loss
- Weakness or sensory/motor loss
- Confusion
- Delirium
- Depressed level of consciousness
- Falls
- Head injury

Detailed History: Nervous System

History is the most important component of the nervous system evaluation. In many neurologic patients with symptoms such as headache and seizures, the physical examination may be unremarkable, and the clinical assessment almost entirely depends upon the history.

A detailed nervous system history allows the physician to answer the following questions:

1. Where is the likely lesion in the nervous system?
2. What could be the possible nature of this lesion?
3. Can the patient's clinical condition be explained by a neurological lesion at a single location, or is there more than one lesion?
4. Is the patient's problem limited to neurology only or a systemic cause that needs to be elucidated?

Table 2.1 Quick review of history taking of the nervous system

Introduction
Confirm patient (ID) name and age
Chief complaint
In the patient's own words
History of present illness
Analysis of the chief complaint:
Onset – sudden or gradual
Nature of progression – slow, rapid, continuous, or intermittent
Duration
Associated factors
Symptoms related to the same system
Symptoms related to adjacent systems
Constitutional symptoms
Predisposing, aggravating, and relieving factors
Red flags/risk factors
Impact on body
Constitutional symptoms
Rule out differential diagnosis
Handedness
Review of systems
Cardiovascular
Respiratory
Gastrointestinal
Genitourinary
Past medical and surgical history
Medical illnesses
Any previous or recent surgeries
Hospitalization history or emergency admission history
Medication history
Current medications (prescribed, over the counter, and any herbals)
Allergic history/triggers
Family history
Family history of same symptoms
Family history of any long-term or specific medical illness
Any long-term diseases
Home situation – who do you live with?
Personal history
(Only if relevant to the stem)
Birth history
Early childhood to adolescence
Adulthood
Onset of the illness
Any diagnosis
Occupation history
How do you support yourself?
Social history
Smoking
Alcohol
Street drugs
Sexual history (M/F/both)
Educational
Vocational
If adult female:
Menstrual history (LMP)
Gynecology history
Obstetrics history

Table 2.1 (continued)

If teen:
Home
Education
Employment
Activities
Drugs
Sexual activity
If child:
Birth history
Immunization
Nutrition
Development
Wrap-up
Describe the diagnosis
Management plan
Possible medical treatment
Duration of treatment and side effects
Red flags
Laboratory tests
Further information websites/brochures/support groups or societies/toll free numbers
Follow-up

5. What physical signs should be looked for in a particular patient? A focused history will determine the appropriate nervous system examination of the relevant part of the nervous system.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your identification (ID).
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr....I am your attending physician for today. Are you Mr./Mrs....? And you are ... years old?”

Chief Complaint

Chief complaint or the reason the patient is visiting the clinic. “What brings you in today?”

History of Present Illness

Take the history from the patient. Information may be required from family members or other witnesses, if necessary.

Ask for handedness – right or left. Right-handed individuals have a left-dominant hemisphere, and most of the left-handed (over two-thirds) patients may also have a dominant hemisphere on the left side.

Discern the main complaint of the patient. A simple question “what brings you to my clinic today?” may prompt the patient to provide relevant information.

Listen carefully to the patient, and then ask pertinent questions to find the specific details of this “main” complaint.

1. If the main problem is progressive, e.g., motor weakness or sensory deficit:
 - Onset – sudden or gradual
 - Nature of progression – slow, rapid, continuous, intermittent
 - Evolution to and a period at maximum deficit
 - Continuing progression or recovery to present state
2. If the main problem is recurrent with discrete events, e.g., fits:
 - Time of first episode
 - Pattern of events over time; is there any clustering (cluster headache, trigeminal neuralgia)
 - Rate of recurrence – maximum number of attacks in a given time
 - Longest attack-free interval
 - Description of a typical attack
 - Relation to activity and posture
 - Condition between attacks
 - Date of last event
 - Factors precipitating, aggravating, or alleviating the episodes
3. If the main problem is intermittent and fluctuating, e.g., headache:
 - Establish that all events are more or less the same.
 - Frequency and distribution of attacks over time.
 - Details of individual events.
 - Factors precipitating, aggravating, or alleviating the episodes.
4. If the main problem is pain:
 - Intensity and severity of pain (on a scale of 10)
 - Quality of pain

If pain is present, then ask pain questions:

- Onset
- Course
- Duration
- Progression
- Quality of pain (burning, throbbing, dull)
- Radiation
- Severity (scale of 1–10)

- Timing (time of the day)
- Pain before
- Point of most painful spot
- Aggravating
- Alleviating
- Associated symptoms

Constitutional Symptoms: Fatigue and malaise, night sweats, fever, weight loss

Review of the Systems: Especially those that may be related to the main complaint

Past Medical History: “Have you had any previous health issues?”

Past Hospitalization and Surgical History: “Have you had any previous hospitalization or surgeries?”

Medication History: “Are you taking any medication prescribed, over the counter, or herbal? If so, have there been any side effects?” If the patient says no, continue to the next question.

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke? Or does anyone else in your home or close at work smoke?”
- “Do you drink alcohol?” If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs? If yes, which ones? How long? When?” Specially ask about intravenous (IV) drug use (red flag for back pain).

Family History: Marital status, number of children, any significant history in first-degree relatives

Relationships: “Are you sexually active? Do you have sex with men, women, or both?”

Self-Care and Living Condition: “What do you do for living? Working status and occupation? Educational status? Who lives with you?”

Support: “Do you have good support from your family and friends?”

Functional Status or severity or impact on life activities.

If teenager, then add these questions: Home, education, employment, activities, drugs, and sexual activity

If adult female, add these questions: Menstrual history (LMP), gynecology history, and obstetric history

If the patient is more than 65 years old, add these questions:

- “Any problem with balance?”
- “Any difficulty with peeing/urination?”
- “Any issues sleeping?”
- “Any change in vision/hearing?”
- “Any recent change in memory?”
- “Are you taking any regular medications? Do you have any prescribed medicine? Are you taking any over the counter medicine?”

Wrap-Up:

- Describe the diagnosis.
- Laboratory tests.
- Management plan.
- Duration of treatment and side effects.
- Red flags.
- Further information websites/brochures/support groups or societies.
- Follow-up.

Physical Examination: Upper Limbs

You have been asked to examine the upper limbs of a 32-year-old female.

Vital Signs: Heart rate (HR), 76/min, regular; blood pressure (BP), 120/65 mm Hg; temp, 36.5 °C; respiratory rate (RR), 14/min; O₂ saturation 99%.

No history is required for this station. Please do not perform a rectal, genitourinary, or breast examination.

Equipment Required:

- Hammer
- Cotton wool
- Paper pin
- Tuning fork 128 Hz

The upper limb examination is used to determine the skills of the candidates during assessment of the nervous system. Upper limbs may be involved in brain diseases involving pyramidal, extrapyramidal, and cerebellar systems or those affecting the spinal cord, its exiting roots, and peripheral nerves supplying the upper limbs. The deficit may be progressive in parkinsonism or intermittent in multiple sclerosis (MS). The neurological signs may involve a focal area such as in carpal tunnel syndrome or may be diffuse as in brachial monoparesis.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now stand on the right side of the patient and start the examination.

Opening:

“Good morning/good afternoon. I am Dr...I am your attending physician. Are you Miss...? And you are 32 years old?”

“Is it alright if I examine both of your arms, forearms, and hands? I will be doing some particular tests during which I will show you how to do some maneuvers. Please ask me if you do not understand how to do these during the examination. During the examination, if you feel uncomfortable at any time, please let me know.”

Vitals: Start by commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.) “Miss...vital signs are within the normal range.”

General Physical Examination

“I need to ask you a couple of questions as a part of my examination:”

- “What is the date today?”
- “Do you know where you are right now?”
- Comment: “Patient is oriented and alert.” Or “Patient is in distress!” Or “Patient is sitting comfortably and she is well oriented and alert.”
- Look for any abnormal findings in the hands, face (eyes, nose, lips, and mouth), and neck.

Exposure:

- Expose the patient’s upper body on both sides.
- Ask the patient if there is pain anywhere in the upper limbs.

Inspection:

- Look for any swelling, erythema, atrophy (arms and forearm muscles wasting), deformity (any limb deformity), skin changes/rash/scar marks, abnormal posturing, fasciculation, and tremors of resting hands or involuntary movements (Fig. 2.1).
- Observe for clues around the bed: walking aids or wheelchair.



Fig. 2.1 Begin inspection of upper body



Fig. 2.3 Assessing the elbow, wrist, and hand joints tone



Fig. 2.2 Assessing arm tone

Tone:

Muscle tone is the state of contraction of healthy muscles and can be estimated by moving the limbs passively. Ask the patient to keep the arms fully relaxed while checking the tone.

Hold the patient's wrist with one hand, support the upper arm with your other hand, and flex and extend the elbow joint. Holding the forearm with the left hand, flex and extend the patient's wrist, moving the wrist through its full range of motion (ROM). Hold the patient's hand as if you are shaking the hand, support the elbow at 90° flexion with your other hand, and repeatedly supinate and pronate the forearm.

Feel for increased tone – spasticity, rigidity, and cog-wheeling (Figs. 2.2 and 2.3).

Pronator Drift: Ask the patient to hold her arms out in full extension with her palms facing up and eyes closed. Observe the hands and arms for pronation, which indicates an upper motor neuron lesion (Fig. 2.4a, b).

Power:

Always stabilize the corresponding joints while testing power. Test one side at a time and compare like for like. Use your full strength to oppose the movement.

- Shoulder elevation – C4
- Shoulder abduction – C5
- Elbow flexion – C5, C6
- Elbow extension – C7
- Wrist extension – C6, C7
- Finger flexion – C8
- Finger abduction – T1

Grading Power:

- 5: Normal power
- 4: Able to move the joint against a combination of gravity and some resistance
- 3: Active movement against gravity
- 2: Able to move with gravity eliminated
- 1: Trace contraction
- 0: No contraction

Shoulders

• **Abduction (C5 – Deltoid):** Patient abducts the shoulders, raises the arm to horizontal, and is pushing it up against resistance. Ask the patient to keep her shoulders at this level and to not let you push them down (Fig. 2.5).

• **Adduction (C7/6 – Latissimus Dorsi, Teres Major, Sternal Head of Pectoralis Major):** With the upper arm horizontal, keep a hand below the arm just above the elbow to resist when the patient is pushing down. Ask the patient to push down with her arms and to not let you push her arms upward (Fig. 2.6).

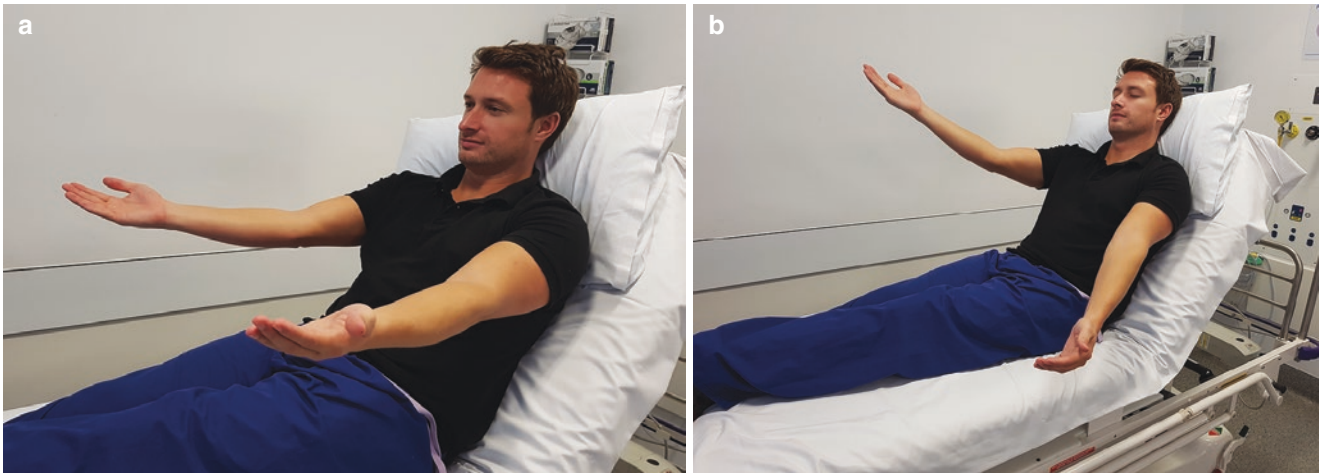


Fig. 2.4 (a, b) Assessing for pronator drift



Fig. 2.5 Assessing power of shoulders: abduction



Fig. 2.7 Assessing elbow flexion: biceps



Fig. 2.6 Assessing power of shoulders: adduction

Elbow

- **Flexion (C5/6 – Biceps):** After supinating the forearm, hold the forearm with your right hand just proximal to the wrist and support the elbow with your left hand. The patient tries to flex the arm at elbow against resistance. Tell the patient not to let you pull her arm away from herself (Fig. 2.7). Repeat on the other side.
- **Extension (C7 – Triceps):** The patient tries to extend the arm at elbow against resistance. Tell the patient to push her forearm away from her body (Fig. 2.8). Repeat it on the other side.
- **Supination (C6/7 – Supinator):** With the forearm extended at the elbow, have the patient try to supinate the forearm against resistance (the palm faces downward and the patient tries to make it face upward).



Fig. 2.8 Assessing elbow extension: triceps



Fig. 2.10 Wrist flexion

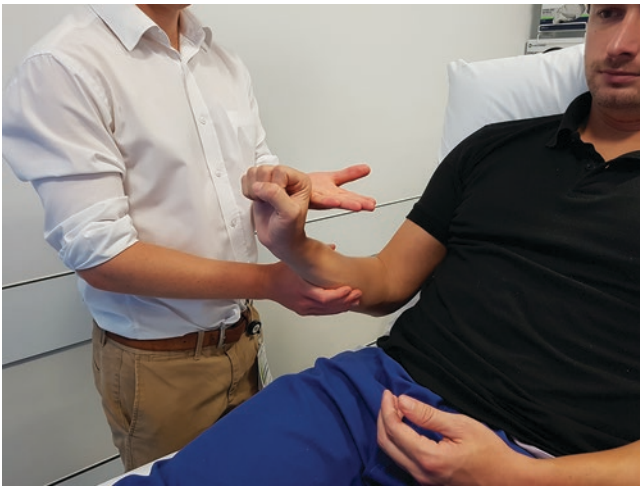


Fig. 2.9 Wrist extension



Fig. 2.11 Finger extension

Wrist

- **Extension (C6/7 – Extensor Carpi Radialis Longus, Extensor Carpi Ulnaris):** The patient holds the arm straight and is asked to make a fist. Ask the patient to cock her wrist back and not to let you push it down. Stabilize the wrist with one hand and push it down with your other hand (Fig. 2.9). Repeat this on the other side.
- **Flexion (C6/7 – Flexor Carpi Radialis):** Patient holds the arm straight and is asked to make a fist. Stabilizing the wrist with one hand, ask the patient to flex the hand at the wrist against resistance (Fig. 2.10). Tell her not to let you push her wrist up.

Fingers

- **Finger Extension (C7/8 – Extensor Digitorum):** The wrist and fingers are placed in a straight position and the patient maintains extension of the metacarpophalangeal joints against the downward force applied by the examiner's finger. Tell the patient to put her fingers out straight and not to let you push them down (Fig. 2.11).
- **Finger Flexion (C7 – Flexor Digitorum Superficialis and Profundus):** Flexion at proximal interphalangeal joints is executed by the flexor digitorum superficialis and at the distal interphalangeal joints by the flexor digitorum profundus. The patient is asked to bend her fingers and try to oppose extension (Fig. 2.12).
- **Abduction of Little Finger (C8/T1 – Abductor Digiti Minimi):** With the back of the hand and fingers resting upon a surface, the patient is asked to move the little finger away from other fingers against the resistance of the examiner. Tell the patient to move her little finger away from the other fingers and not to let you oppose it.
- **Abduction of Index Finger (C8/T1 – First Dorsal Interosseous):** With the palm of the hand and fingers



Fig. 2.12 Finger flexion



Fig. 2.14 Flexion of distal interphalangeal (DIP) joints



Fig. 2.13 Finger abduction

resting upon a surface, the patient is asked to move the index finger away from other fingers against resistance of examiner. Tell the patient to move her index finger away from the other fingers and not to let you oppose it (Fig. 2.13).



Fig. 2.15 Bicep reflex

- **Abduction of Thumb (C8/T1 – Abductor Pollicis Longus and Brevis):** For abduction, ask the patient to point her thumb to the ceiling at a right angle to the palm against resistance.
- **Flexion of Thumb (C8/T1 – Flexor Pollicis Brevis):** For flexion, ask the patient to move the thumb against resistance across the palm (Fig. 2.14).

Reflexes

Explain to the patient that you will strike the tendons with a soft hammer, which is not going to hurt the patient. Ask the patient to relax. Place a finger over the tendon being tested and strike it with the tendon hammer.

- **Biceps Reflex (C5/6):** Flex the elbow at a right angle, and rest the forearm in a semipronated position across the patient's chest. Place your index finger over the biceps



Fig. 2.16 Triceps reflex

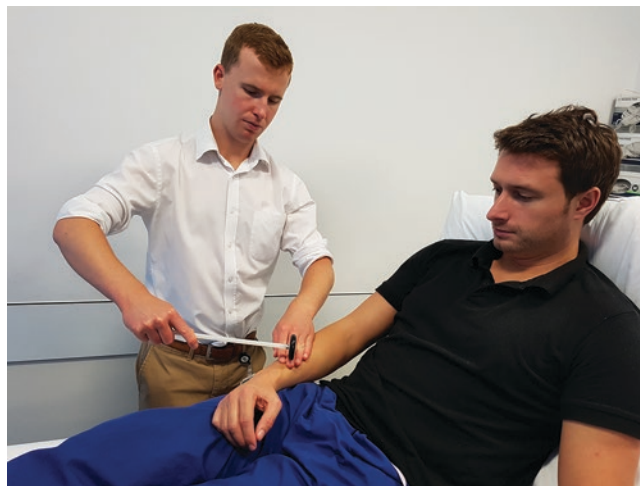


Fig. 2.17 Supinator reflex

tendon, and tap with a hammer in the antecubital fossa (Fig. 2.15). Observe the contraction of biceps muscles and compare on both sides.

- **Triceps Reflex (C7):** Flex the elbow at a right angle, and rest the forearm in a pronated position across the patient's chest. Strike the triceps tendon just above the olecranon (Fig. 2.16). Observe the contraction of the triceps muscles and compare on both sides.
- **Supinator Reflex (C5/6):** Flex the elbow a little and rest the forearm in a slightly pronated position. Tap your finger overlying the styloid process of the radius (Fig. 2.17). Observe the supination of the elbow and compare on both sides. A lesion at C5/6 level may abolish the biceps and supinator jerks with brisk flexion of fingers (*inversion of reflex*), which is indicative of hyper-excitability of the anterior horn cells below this level.

Sensation

- **Light Touch (Posterior Column) Sensation:**
 - Touch the patient's sternum with the cotton wool wisp to show how it feels.
 - Ask the patient to close her eyes and say "yes" every time she can feel the cotton wisp.
 - Using a wisp of cotton wool, gently touch the skin (do not stroke) of each of the dermatomes (Fig. 2.18) of the upper limbs (Fig. 2.19). Compare one side to the other by asking the patient if it feels the same on both sides.
- **Pinprick (Spinothalamic) Sensation:**
 - For pinprick, repeat the steps used for light touch, but this time using the sharp end of a pin (Fig. 2.20).
 - Ask the patient to close her eyes and say "sharp" every time they feel a sharp sensation or "blunt" if it feels blunt. If sensations are diminished peripherally, test

from a distal point and move proximally to identify "glove" sensory loss.

- **Vibration Sensation (Dorsal/Posterior Columns):**
 - Ask the patient to close her eyes. Tap a 128 Hz tuning fork and place its round base onto the patient's sternum to demonstrate what it feels like buzzing and when it stops.
 - Place it onto the bony interphalangeal joint of the thumb (Fig. 2.21). Ask the patient if she feels it buzzing. Then ask her to tell you when it stops buzzing and hold the prongs to stop vibration.
 - If the patient cannot feel the vibration, move proximally to the bony prominences of the wrist and olecranon until she feels it.
- **Position Sense (Dorsal/Posterior Columns):**
 - Hold the distal phalanx of the thumb by its sides using your index finger and thumb, and let the patient watch and recognize up and down movements when you move the thumb "upward" and "downward," respectively (Fig. 2.22a, b).
 - Ask patient to close her eyes and tell you if her thumb is being moved up or down. Move it three times, and go to a proximal joint (wrist and elbow) if patient cannot feel the movement.

Coordination

- **Finger-to-Nose Test:**
 - Ask the patient to touch her nose with the tip of her index finger, and then touch the tip of your finger (Fig. 2.23a, b). Position your finger so that the patient has to fully outstretch her arm to reach it. Ask her to continue to do this finger-to-nose motion as fast as she is able.
 - Repeat the test using the patient's other hand.

Fig. 2.18 Dermal segmentation (dermatomes). (Reprinted with permission from Keegan and Garrett [7])

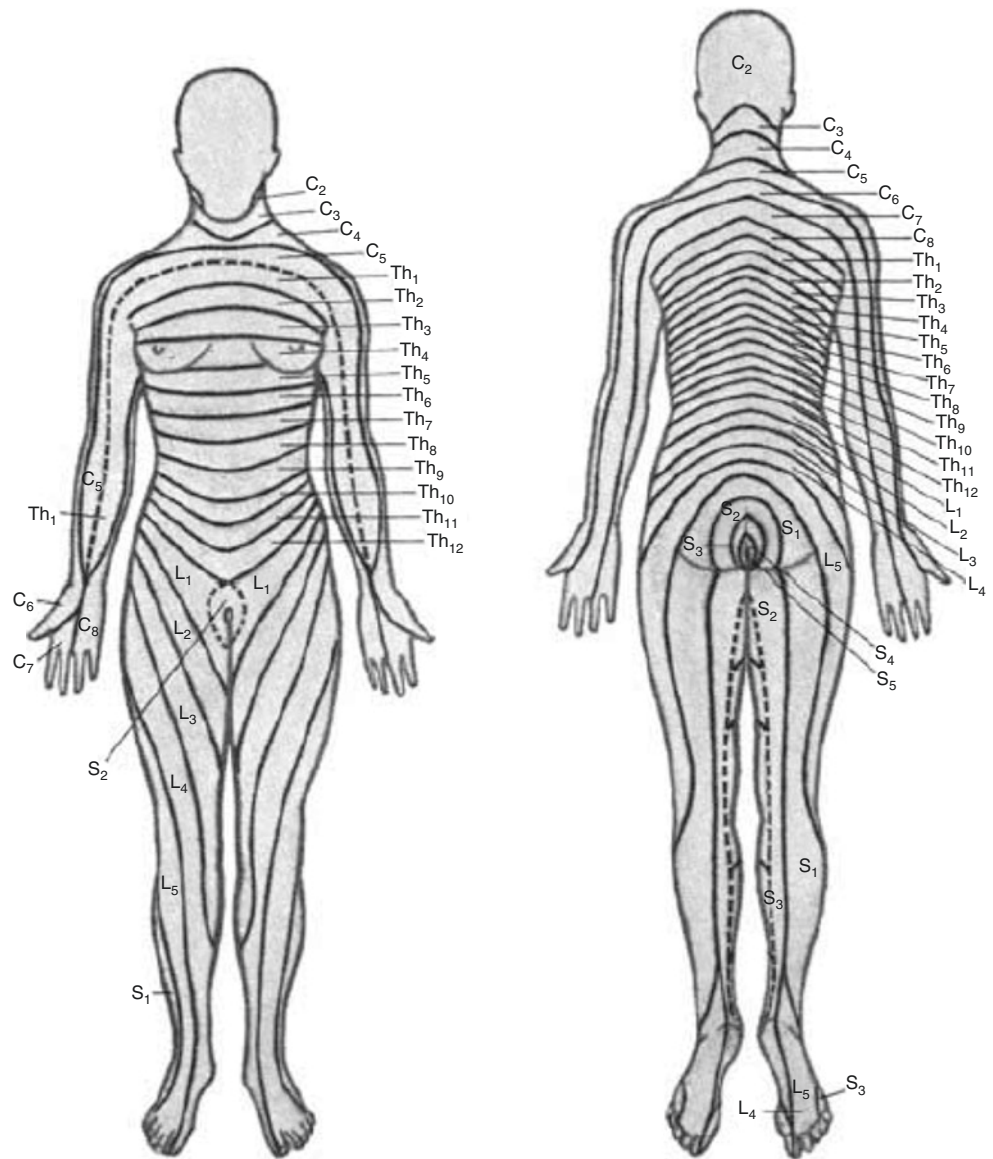


Fig. 2.19 Testing light touch sensation using a wisp of cotton



Fig. 2.20 Testing pinprick sensation



Fig. 2.21 Using a tuning fork to test a patient's vibration sensation

- An inability to perform this test accurately (past-pointing/dysmetria) may suggest cerebellar ataxia. Here, the movement error tends to occur at a right angle to the intended direction of movement.
- **Dysdiadochokinesia:**
 - Ask the patient to flex the elbow at a right angle and then alternately tap the palm of her other hand with supination and pronation of flexed forearm. Demonstrate the action to the patient and ask her to mimic this rapid alternating movement (Fig. 2.24a, b).
 - Encourage her to do this alternating movement as fast as she is able. Repeat the test using the patient's other hand. The rapidly alternating movements may become slow, irregular, and incomplete in cerebellar ataxia.



Fig. 2.22 Position sense. (a) Moving thumb upward. (b) Moving thumb downward



Fig. 2.23 (a) Finger-nose test step 1. (b) Step 2

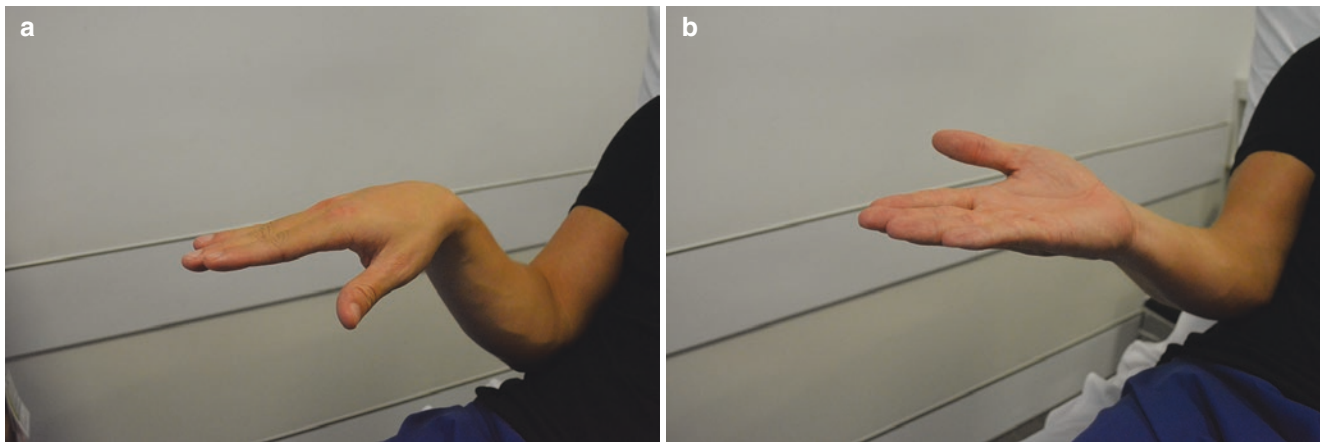


Fig. 2.24 (a, b) Dysdiadochokinesia test

Wrap-Up

- To complete the examination, suggest further assessments by examining the lower limbs and cranial nerves.
- Thank the patient and cover her.
- Wrap up your findings and ask the patient if she has any concerns.

Checklist: Physical Examination Upper Limb

See Table 2.2 for a checklist that can be used as a quick review before the examination.

Physical Examination: Lower Limbs

Candidate Information:

You have been asked to examine the lower limbs of a 32-year-old female.

Vital Signs: HR, 76/min, regular; BP, 120/65 mm Hg; temp, 36.5 °C; RR: 14/min, O₂ saturation 99%

No history is required for this station. Please do not perform a rectal, genitourinary, or breast examination.

Equipment Required:

- Hammer
- Cotton wool
- Paper pin
- Tuning fork 128 Hz

The lower limb examination is another area used to determine the skills of the candidates during assessment of the nervous system. Lower limbs are commonly involved in

lesions of the spinal cord, its exiting roots, and peripheral nerves supplying the legs and feet. The deficit may be progressive in parkinsonism or intermittent in multiple sclerosis. Lower limbs are also involved in diseases of pyramidal, extrapyramidal, and cerebellar systems. Careful assessment of gait may provide very useful information in neurological diseases.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now stand on the right side of the patient and start the examination.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician. Are you Miss...? And you are 32 years old?”

“Is it alright if I examine your thighs, legs, and feet (lower limbs)? I will be doing some particular tests during which I will show you how to do some maneuvers and ask you to duplicate them. Please ask me if you do not understand how to do these during the examination. During the examination, if you feel uncomfortable at any point, please let me know.”

Vitals:

Start with commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.)

“Miss...vital signs are within normal range.” Or comment if they are not.

Table 2.2 Checklist for upper limb physical examination

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Now sit on the chair, or stand on the right side of the patient and start the interview
Opening	Introduction, greet, explain, position, and exposure/drape
	Ask for vital signs – interpret the vital signs
Vitals	Start by commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O ₂ saturation)
	“Vital signs are within normal range.” Or comment if they are not
General physical examination (may skip these questions if it is a history and physical station)	Check for alertness and orientation
	Look for any abnormal finding in the hands, face (eyes, nose, lips, and mouth), and neck
	Exposure:
	Expose patient’s upper body on both sides
	Ask if the patient currently has pain anywhere in the upper limbs
	Inspection: Look for any: swelling, erythema, atrophy (arms and forearm muscles wasting), deformities (any limb deformity), skin changes/rash/scar marks, abnormal posturing, fasciculation, and tremors of resting hands or involuntary movements
	Palpation: Tone, pronator drift
	Power: Shoulders, elbow, wrist, fingers
	Reflexes: Biceps reflex, triceps reflex (C7), supinator reflex (C5/6)
	Sensation: Light touch (posterior column) sensation and pinprick (spinothalamic) sensation
	Vibration sensation (dorsal/posterior columns) and position sense (dorsal/posterior columns)
Coordination: finger-to-nose test and dysdiadochokinesia	
Wrap-up	To complete the examination, suggest further assessments by examining the lower limbs and cranial nerves
	Thank patient and cover the arms
	Wrap up your findings and ask the patient if she has any concerns

General Physical Examination:

“I need to ask you a couple of questions as a part of my examination.” (You may skip these questions if it is a history and physical station):

- “What is the date today?”
- “Do you know where are you now?”
- **Comment:** “Patient is oriented and alert.” “Patient is in distress!” Or “patient is sitting comfortably and she is well oriented and alert.”

**Fig. 2.25** Assessing patient’s walk

- Look for any abnormal findings in the hands, face (eyes, nose, lips, and mouth) and neck.

Exposure

- Expose the patient’s lower limbs to underwear (shorts are most appropriate).
- Ask the patient if she has any pain in the lower limbs.

Gait**Assess Patient Walking**

- Ask the patient to walk to the end of the room, turn slowly, and walk back (Fig. 2.25). Assess speed, distance between the legs (broad-based in ataxia), posture, and swinging of arms (stooping and loss of arm swinging in Parkinson’s disease) or hemiplegic gait.
- Ask the patient to walk in a straight line. Assess balance (swaying to any side).
- Ask the patient to walk heel-to-toe (tandem gait). This requires precision of equilibrium and assesses even minimal impairment of balance.

- Ask the patient to walk on heels (heel-walking) to assess the dorsiflexors of feet.
- Ask the patient to walk on toes (toe-walking) to assess the plantar flexors of feet.
- Ask the patient to stand with her feet together. Hold her hands, and ask her to sit down and stand up to assess strength of proximal lower limb muscles.

The Romberg's test is a test for proprioception, vestibular system, and visual inputs. Ask the patient to stand with her feet together and eyes closed. Observe the patient for a minimum of 30 seconds. Stand on the side of the patient during this test with an outstretched arm in front and another behind the patient to stop her falling over (Fig. 2.26). A positive test is indicated by loss of balance (swaying/falling over) suggesting sensory ataxia or vestibular deficit.

Inspection

- Ask the patient to lie comfortably on the bed.
- Look for any: swelling, erythema, atrophy (thighs and leg muscles wasting), deformity (any limb deformity), skin changes/rash/scar marks, abnormal posturing, fasciculation, or involuntary movements.
- Observe for clues around the bed such as walking aids or wheelchairs.

Tone

Muscle tone is the state of contraction of healthy muscles and can be estimated by moving the limbs passively. Ask the patient to keep the legs fully relaxed while checking the tone. Holding each knee, roll the patient's leg side to side, and watch the foot – it should flop independently of the leg (Fig. 2.27).

Hold the knee with hands under both sides of the knee and briskly lift leg off the bed at the knee joint (Fig. 2.28). Observe the heel, which should remain in contact with the bed in normal people.

Power

Always stabilize the corresponding joints while testing power. Test one side at a time and compare like for like. Use your full strength to oppose the movement.

- Great toe extension – L5
- Knee extension – L3 and L4
- Hip flexion – L2

Hip

- **Flexion (L1/2/3 – Iliopsoas):** Extend the knee, and push down with your hand on quadriceps above the knee, asking the patient to raise her leg off the bed and not to let you push it down (Fig. 2.29).



Fig. 2.26 The Romberg's test

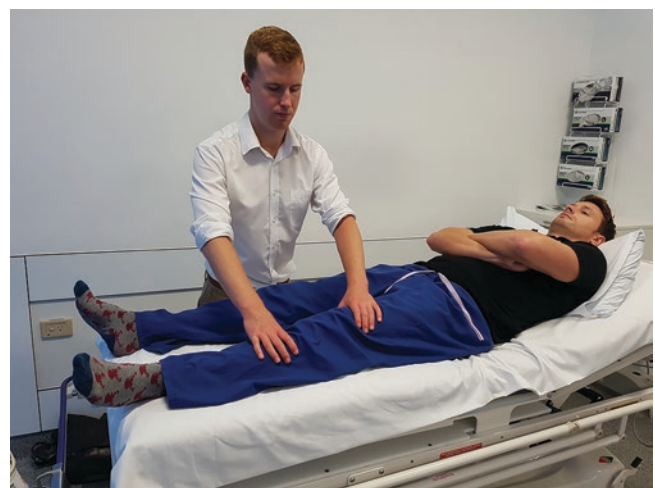


Fig. 2.27 Checking a patient's muscle tone by rolling a patient's leg side to side



Fig. 2.28 Checking a patient's muscle tone by lifting a patient's leg at the knee joint



Fig. 2.29 Hip flexion

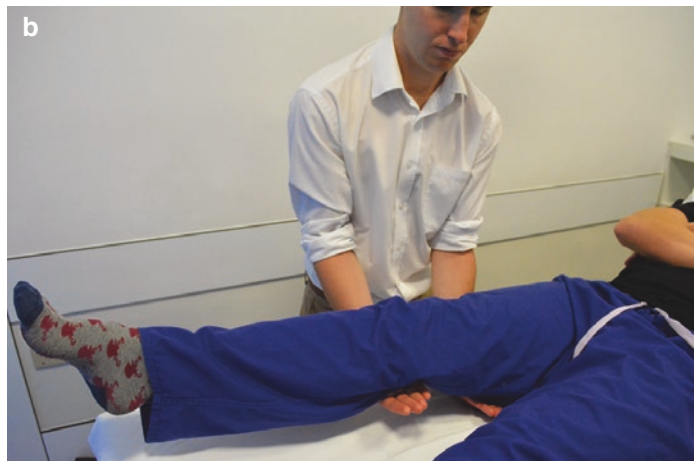
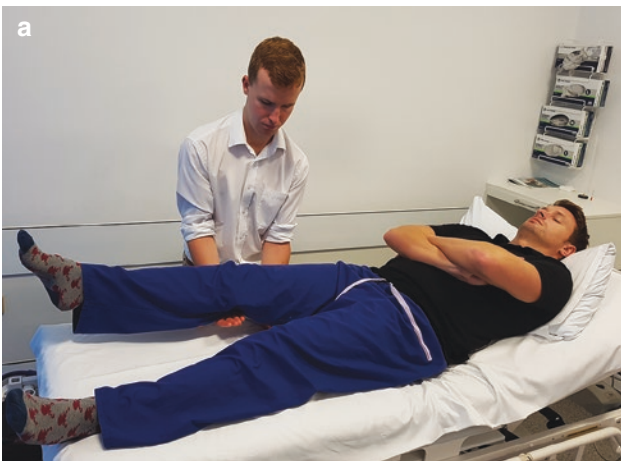


Fig. 2.30 (a, b) Hip extension

- **Extension (L4/5/S1 – Gluteus Maximus):** In a supine patient with knee extended, raise the thigh off the bed by placing a hand under the thigh and ask the patient to push her leg straight down and try to touch the bed. You can place the left hand on the side of hip to feel the contraction of the gluteus maximus (Fig. 2.30a, b).
- **Adduction (L2/3 – Adductor of Hip):** In a supine patient with knee extended, abduct the leg, hold the lower leg with your left hand, and feel the adductors in the upper thigh with your right hand, and ask the patient to bring her leg back to the midline (Fig. 2.31).
- **Abduction (L4/5 – Gluteus Medius, Gluteus Minimus, and Tensor Fasciae Latae):** In a supine patient with the knee extended, place the patient's legs together, hold the lower leg with your right hand, and support the opposite hip with your left hand. Ask the patient to separate the legs.

Knee

- **Extension (L3/4 – Quadriceps):** Bend the knee fully and flex the hip; supporting the knee with your left hand, press against the shin with your right hand, and ask the patient to attempt to straighten her leg (Fig. 2.32).
- **Flexion (L5/S1 – Hamstrings):** Bend the knee partially and hold the leg with your right hand while supporting the thigh with your left hand. Ask the patient to bend her knee against your force by attempting to touch her heel to her hip (Fig. 2.33).

Ankle

- **Dorsiflexion of Ankle (L4 – Tibialis Anterior):** Ask the patient to pull the top of her foot toward her head and to not let you push it back (Fig. 2.34).
- **Plantarflexion of Ankle (S1/2 – Gastrocnemius and Soleus):** Ask the patient to push her foot downward against your hand and to not let you push it up (Fig. 2.35).

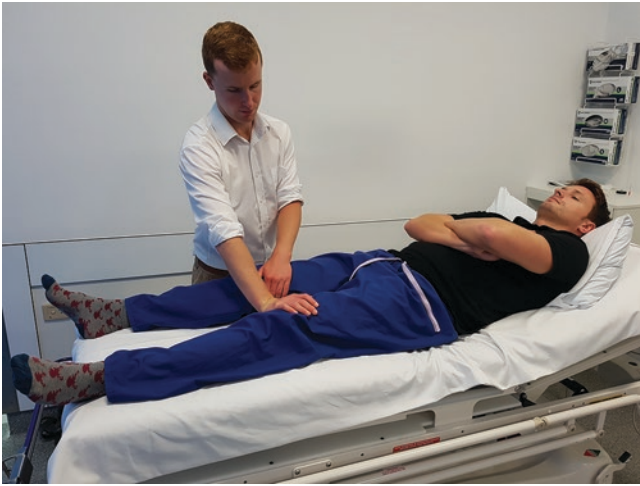


Fig. 2.31 Hip adduction



Fig. 2.34 Dorsiflexion of ankle



Fig. 2.32 Knee extension



Fig. 2.35 Plantar flexion of ankle



Fig. 2.33 Knee flexion

- **Inversion (L4/5 – Tibialis Posterior):** Ask the patient to push her foot inward against your hand.
- **Eversion (L5/S1 – Peroneus Longus and Brevis):** Ask the patient to push her foot out against your hand.

Big Toe

- **Extension (L5 – Extensor Hallucis Longus):** Flex the big toe, pressing against the nail of the big toe (distal phalanx) with your thumb (Fig. 2.36). Ask the patient to push her big toe upward and to not let you push it down.
- **Flexion (S1 – Flexor Hallucis Longus):** Pressing against the pulp of the big toe with two fingers, ask the patient to push her big toe downward and to not let you push it up (Fig. 2.37).



Fig. 2.36 Big toe extension



Fig. 2.37 Big toe flexion

Reflexes

Explain to the patient that you will strike the tendons with a soft hammer, which is not going to hurt the patient. Ask the patient to relax.

- **Knee Jerk (L3/4)** – Passively flex the knee in a supine patient, pass your left hand under the knee, and gently tap the patellar tendon an inch above the tibial tuberosity (Fig. 2.38). Observe the contraction of the quadriceps muscles and compare both sides.



Fig. 2.38 Knee jerk test



Fig. 2.39 Ankle jerk test

- **Ankle Jerk (L5/S1)** – In a supine patient, externally rotate the hip and flex the knee slightly. Dorsiflex and evert the foot with the palm of the left hand, and strike the posterior surface of Achilles tendon with the hammer in the right hand (Fig. 2.39). Observe the contraction of calf muscles and compare both sides.
- **Plantar Response (S1)** – After warning the patient, scratch the sole of the foot with a key or an orange stick. Start at the heel along the lateral edge to the ball of the big toe. Observe the big toe. A normal response causes drawing together of all flexed toes. In Babinski's extensor plantar response, extension of the big toe is followed by fanning of all other toes.
- **Ankle Clonus** – Position the patient's leg to flex the knee and ankle at a 90° angle. Hold the calf with your left hand and rapidly dorsiflex the forepart of the foot with your right hand (Fig. 2.40). Keep the foot in this position and observe for regular oscillation of dorsiflexion/plantarflexion of the ankle. Sustained clonus (>5) indicates an upper motor neuron lesion and is always associated with a brisk ankle jerk.



Fig. 2.40 Ankle clonus



Fig. 2.41 Testing light touch sensation of lower limbs using a wisp of cotton

Sensation

Sensory test with a piece of cotton on these spots:

- Medial side of thigh – L2
- Medial femoral condyle – L3
- Medial malleolus – L4
- Dorsal surface of third toe – L5
- Lateral surface of heel – S1

Light touch (posterior column) sensation:

- Touch the patient's sternum with the cotton wool wisp to show her how it feels.
- Ask the patient to close her eyes and say "yes" every time she feels it against her skin.
- Using a wisp of cotton wool, gently touch the skin (do not stroke) of each dermatome of the lower limbs (Fig. 2.41). Compare one side to the other by asking the patient if it feels the same on both sides.

Pinprick (spinothalamic) sensation:

- For pinprick, repeat the steps used for light touch, this time using the sharp end of a pin.
- Ask the patient to close her eyes and say "sharp" every time she feels a sharp sensation or "blunt" if she feels a blunt sensation (Fig. 2.42). For patients with paraparesis, start from the distal ends (feet) and move upward to localize the upper sensory level. If sensations are diminished peripherally, test from a distal point and move proximally to identify "stocking" sensory loss.

Vibration sensation (dorsal/posterior columns):

- Ask the patient to close her eyes. Tap a 128 Hz tuning fork and place its round base onto the patient's sternum to demonstrate how it feels when it is buzzing and when it stops.

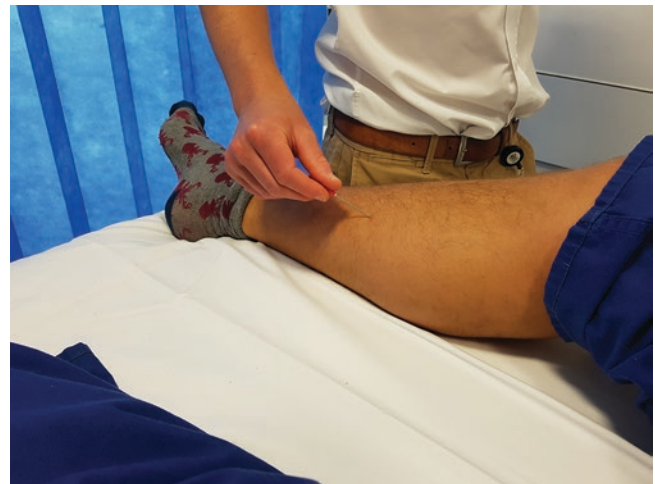


Fig. 2.42 Pinprick sensation of lower limbs

- Place it onto the bony interphalangeal joint of the big toe (Fig. 2.43). Ask the patient if she feels it buzzing. Then ask her to tell you when it stops buzzing and hold the prongs to stop vibration.
- If the patient cannot feel the vibration, move proximally to bony prominences of medial malleolus, tibial tuberosity, and anterior superior iliac spine until she feels it.

Position sense (dorsal/posterior columns):

- Hold the distal phalanx of the big toe by its sides using your index finger and thumb and let the patient watch and recognize up and down movements when you move the toe upward and downward, respectively (Fig. 2.44a, b).

- Ask patient to close her eyes and tell you if you are moving her toe up or down. Move it three times and go to a proximal joint (ankle and knee) if the patient cannot feel the movement.
- Thank the patient and tell her that she can now cover up.
- Wrap up your findings and ask the patient if she has any concerns.

Coordination

- **Heel-to-shin test** may only be done if gait cannot be tested.
- Ask the patient to lift her right leg up, place it on her left knee, and run her heel down the shin from the knee to ankle (Fig. 2.45a–c). Repeat it with other leg.
- An inability to perform this test may suggest cerebellar disorder, impaired position sense, or loss of motor strength.

Wrap-Up:

- To complete the examination, suggest further assessments by neurological examination of the upper limbs and cranial nerves.



Fig. 2.43 Using a tuning fork to test vibration sensation in the big toe

Checklist: Physical Examination Lower Limbs

See Table 2.3 for a checklist that can be used as a quick review before the exam.

Physical Examination: Cerebellar Syndromes

Candidate Information:

A 52-year-old female comes to your clinic with an unsteady gait, which she has experienced for the last 6 months.

Vital Signs: Temp, 36.5 °C; HR, 74; BP, 137/80; RR, 15

Please examine her gait and then perform any relevant neurological assessments to complete your examination.

Differential:

Immediately consider the differential of gait disorders that may be presented here.

- Hemiplegic gait
- Cerebellar ataxic gait
- Parkinsonian gait (shuffling festinant gait)
- High-stepping gait of peripheral neuropathy/sensory ataxia
- Waddling gait of proximal muscular weakness

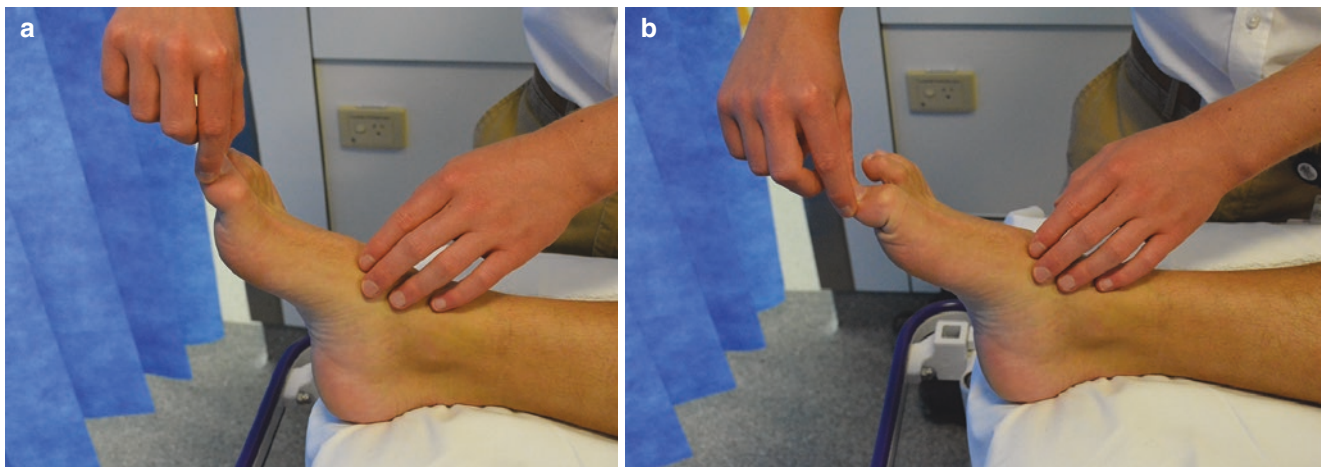


Fig. 2.44 Testing position sense. (a) Moving toe upward. (b) Moving toe downward

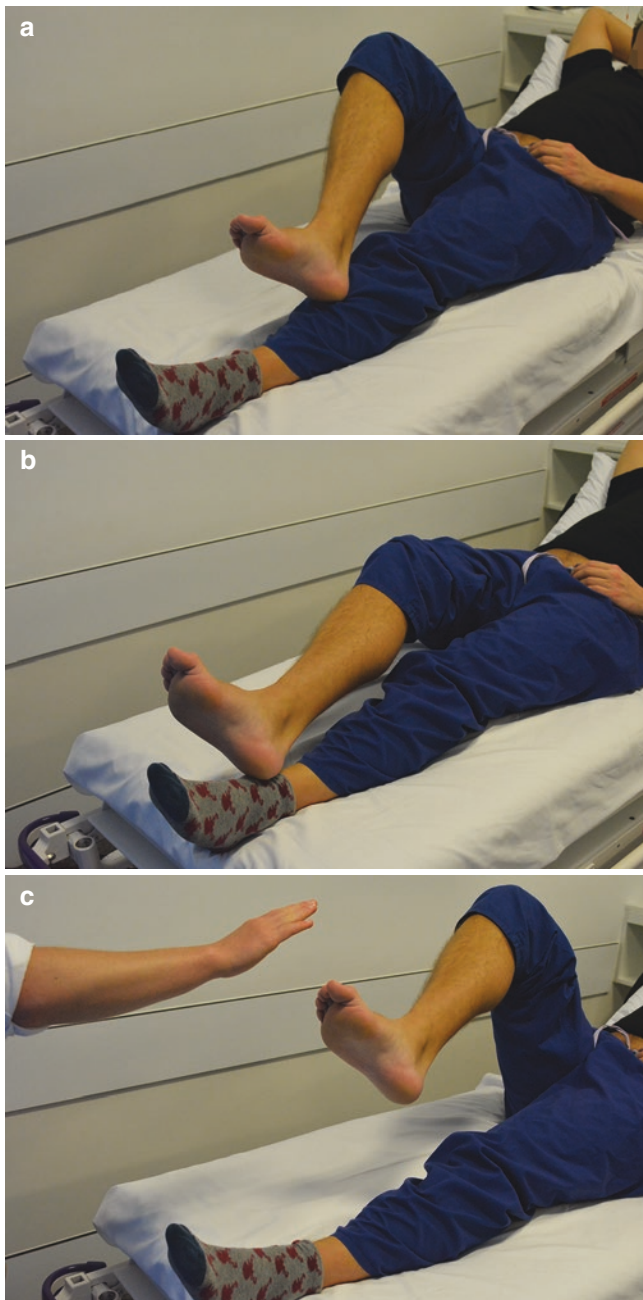


Fig. 2.45 (a–c) Heel-to-shin test

The aim of the examination is to identify and classify the gait first and then carry out appropriate relevant neurological examinations to make a clinical diagnosis.

Common Causes of a Unilateral Cerebellar Lesion:

- Cerebellar infarction
- Cerebellar hemorrhage

- Multiple sclerosis
- Tumors (primary or metastasis)
- Cerebellar arteriovenous malformation
- Cerebellar abscess

Causes of Bilateral Cerebellar Lesions:

- Multiple sclerosis damaging both cerebellar hemispheres
- Alcohol (Wernicke's encephalopathy or cerebellar degeneration)
- Infections (viral cerebellitis, human immunodeficiency virus [HIV], syphilis, tuberculosis)
- Autoimmune (Miller-Fisher syndrome, paraneoplastic cerebellar degeneration)
- Neurodegenerative disease (multiple system atrophy)
- Hereditary ataxias:
 - Spinocerebellar, Friedreich's ataxia-telangiectasia
 - Autosomal dominant cerebellar ataxia of late onset
- Drugs (phenytoin, lithium)
- Metabolic (vitamin B₁₂ deficiency)

Clinical Features of Friedreich's Ataxia:

- Onset in children or young adults (autosomal recessive)
- Impaired dorsal column sensations (joint position and vibration) in legs
- Extensor plantar responses with absent ankle jerks
- Optic atrophy
- Diabetes mellitus (DM)
- Cardiomyopathy
- Kyphoscoliosis

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now stand on the right side of the patient and start the examination.

Opening:

“Good morning/good afternoon. I am Dr...I am your attending physician. Are you Ms...? And are you 52 years old? I would like to perform some tests; I will ask you to do some maneuvers; if you do not understand or feel difficulty in doing any of these movements, please let me know.”

The basic aim is to establish and delineate the cerebellar features and to determine the presence of involvement of other systems in nervous system.

Table 2.3 Checklist for lower limb physical examination

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Now sit on the chair or stand on the right side of the patient and start the interview
Opening	Introduction, greet, explain, position, and exposure/drape
	Ask for vital signs – interpret the vital signs
Vitals	Start by commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O ₂ saturation) “Vital signs are within normal range.” Or comment if they are not
General physical examination (may skip these questions if it is a history and physical station)	Check that patient is alert and orientated
	Look for any abnormal finding in the hands, face (eyes, nose, lips, and mouth), and neck
	Exposure: expose the patient’s lower limbs to underwear (shorts are most appropriate)
	Ask the patient if there is any pain in the lower limbs
	Check gait
	Romberg’s test
	Inspection: look for any swelling, erythema, atrophy (arms and forearm muscles wasting), deformity (any limb deformity), skin changes/rash/scar marks, abnormal posturing, fasciculation, and tremors of resting hands or involuntary movements
	Palpation: tone
	Power: great toe, ankle, knee, and hip
	Reflexes: knee jerk, ankle jerk, plantar response, and ankle clonus
	Sensation: light touch sensation and pinprick sensation
	Vibration sensation and position sense
	Coordination: heel-to-shin test
Wrap-up	To complete the examination, suggest further assessments by examining the upper limbs and cranial nerves
	Thank patient and cover the legs. Ask the patient if they have any concerns
	Wrap up your findings to the examiner

Vitals:

Start with commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.)

“Miss...vital signs are within normal range.” Or comment if there are any abnormal findings.

Observe Walking and Standing

- **“Is it alright if I ask you to walk?”** Ask the patient to walk slowly to the end of the room, turn slowly, and walk back (Fig. 2.25).
- **Observe the following in the gait:**
 - How the patient **starts off:** Is she slow to start?
 - **Posture** of the patient during walking.
 - **Slow walking speed**, small **length of stride** (short paces), and broad **width of stance** (broad base): Patients with lesions of the vermis of cerebellum may have lurching gait.
 - Slow stepwise **turning** due to fear of falling.
 - Ask the patient to walk **heel-to-toe** (tandem gait) to assess balance. Stand beside the patient because patients with cerebellar deficit find it impossible to walk heel-to-toe.
- **Romberg’s test:** Ask the patient to stand with her feet together, initially with the eyes open and then with eyes closed. Stand on the side of the patient during this test with an outstretched arm in front and another behind the patient to stop her from falling over (Fig. 2.26). A positive test is indicated by loss of balance (swaying/falling over) suggesting sensory ataxia or vestibular deficit. Romberg’s test is negative in isolated cerebellar disorders.

Additional Examination

Position the patient on a chair approximately an arm’s length away. The patient shall be at your eye level. Observe the following from the head downward:

- **Square wave jerks** in the primary position of eyes. The patient is asked to fix her gaze at your finger held at the center of her vision. Square wave jerks may be visible when you observe the eyes in neutral position. The eyes drift off their target (in this case, the examiner’s finger) randomly, and a quick saccade pulls the eyes back to the neutral position.
- Ask the patient to follow your slowly moving finger horizontally and then vertically. The normal pursuit movements may be broken in to jerky advances (**saccadic**

pursuits) rather than smooth following of the finger. This happens because of insertion of saccades into pursuits.

- **Nystagmus:** Horizontal nystagmus tends to be more specific in cerebellar disease.
- **Cerebellar dysarthria:** Speech may have a “scanning” character and appears to be broken into syllables. Ask the patient to repeat after you “railway station.” This may appear as “ra—il—way ss—ta—tion.”
- **Rebound phenomenon:** Ask the patient to put her hands straight in front of her and to close her eyes. “I will tap on your arm; try to keep them in the same position.” Heavily tap the right forearm down and look for an upward drift of the arm after it is tapped down. Repeat it with the other arm.
- **Finger-to-nose test:** Ask the patient to touch her nose with the tip of her index finger and then touch the tip of your finger. Position your finger so that the patient has to fully outstretch her arm to reach it. Tell the patient to repeat this as fast as they are able (Fig. 2.23a, b). Ask the patient to perform the same movements with her eyes closed. Impaired position sense would make this more difficult for the patient. Repeat the test using the patient’s other hand. Assess the precision and depth of the movement. Past-pointing means that the patient’s finger overshoots or moves past the target: their nose as well as the examiner’s finger.
- **Intention tremors** are detected during movement. Observe the patient when she is performing the finger-nose test. The tremor gets worse when the patient is intending to approach the target (finger or nose) and tends to occur at a right angle to the intended direction of movement.
- **Dysidiadochokinesia:** Ask the patient to flex the elbow at a right angle, and then alternately tap the palm of her other hand with supination and pronation of flexed forearm. Demonstrate the action to the patient and ask her to mimic this rapid alternating movement. Tell her to repeat this movement as fast as possible (Fig. 2.24a, b). Repeat the test using the patient’s other hand. Patients with cerebellar deficit may be very slow and haphazard and unable to perform this rapidly alternating movement.
- **Hypotonia:** Check the tone in the upper limb. Cerebellar syndromes tend to cause hypotonia.
- **Pendular knee jerk:** Ask the patient to hang the legs from the edge of chair or bed. Tap the patellar tendon and observe the knee jerk (Fig. 2.46). The leg may move like a pendulum (three times or more).
- **Heel-shin test** is not required to assess coordination in lower limbs when her gait has been examined in detail (Fig. 2.45a–c).

Remember: Unilateral cerebellar lesions produce unilateral signs, whereas bilateral cerebellar involvement causes bilateral findings. Lesions of cerebellar vermis predominantly

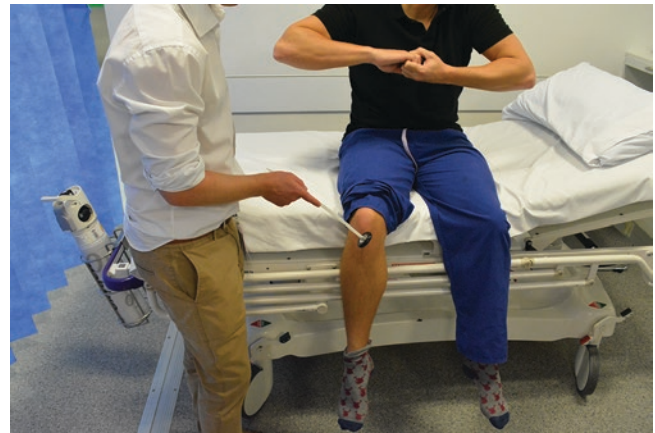


Fig. 2.46 Pendular knee jerk

affect gait and sitting balance, with relative sparing of eye movements and speech.

Wrap-Up:

- To complete the examination, suggest further assessments by neurological examination of cranial nerves and long tracts.
- Thank the patient and tell her that she can now cover up.
- Explain your findings to the examiner.

Question: Describe briefly the gait of your patient. (Questions may be asked by the patient or the examiner.)

Answer: “My patient **starts off** rather normally and has a normal **posture**, but she appears to be cautious during her walk due to **imbalance**. She tends to walk on a **broad base** with her feet wide apart. She takes considerable time in **turning** due to her small and careful steps as she sways to both sides. She finds it impossible to walk **heel-to-toe** (tandem gait) due to significant imbalance and tends to sway on both sides. Her **Romberg’s test** is negative.”

Question: How would you classify the gait of your patient?

Answer: “The gait of my patient appears to be ataxic and signifies an underlying cerebellar disorder.”

Question: What other neurologic findings were present in your patient to favor your diagnosis?

Answer: “The relevant neurologic examination in my patient revealed:

- Horizontal nystagmus in both eyes.
- Scanning speech or cerebellar dysarthria in which she breaks the syllables.

- Intention tremors and rebound effect in both arms.
- Past-pointing during finger-to-nose test.
- Dysidiadochokinesia – meaning she was very slow and haphazard when asked to perform rapidly alternating movements with both arms.
- “I could not elicit a pendular jerk although knee reflexes were preserved on either side.”

Question: What is your final clinical diagnosis?

Answer: “My patient appears to have a cerebellar disorder.”

Physical Examination: Cranial Nerves

Candidate Information:

Please perform examination of the motor cranial nerves (III, IV, VI, motor part of V, VII, X, and XI, XII) or examination of the cranial nerves for the eyes (II, III, IV, V, VI, and VII) in a 52-year-old female.

Generally, candidates are not asked to examine all cranial nerves in 10 min. The command may rather be more specific. Nevertheless, candidates must systematically practice and learn to examine all cranial nerves. Remember, you must finish your examination in given time. Ensure that relevant equipment is available with you before you start with your examination.

Equipment Required:

- Pen torch
- Snellen chart
- Ophthalmoscope
- Hammer
- Cotton wool
- Paper pin
- Tuning fork 512 Hz
- Mydriatic eye drops (not required for OSCE)

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now stand on the right side of the patient and start the examination.

Opening:

“Good morning/good afternoon. I am Dr....I am your attending physician. Are you Ms. ...? Are you 52 years old? I have been asked to examine your cranial nerve. I will be doing

some tests and will ask you to follow some maneuvers. Please let me know if you have any question or you feel uncomfortable.”

Vitals:

Start with commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.)

Comment on the vital signs findings: “Miss...vital signs are within normal range.”

Inspection:

- Position patient on the side of the bed or on a chair approximately an arm’s length away and at your own eye level.
- Look for facial asymmetry, specific facial appearances, drooping of eyes or squint, and abnormality of speech.
- **Observe for clues around the bed:** walking aids or wheelchair.

Olfactory (Cranial Nerve I: Special Sensory Nerve for Smell)

- Ask for any change in sense of smell.
- With eyes closed, ask patient to identify commonly used smells (e. g., coffee/clove/peppermint).
- Test each nostril separately.
- Occlude the other nostril by pressing with a finger.
- Avoid using irritants such as ammonia as they may also stimulate trigeminal nerve.
- CN I examination is usually not done in OSCE settings.

Optic (Cranial Nerve II: Special Sensory Nerve for Vision)

Test each eye separately for:

- Visual acuity.
- Color vision.
- Field of vision.
- Pupils are usually tested with CN-III. Optic is afferent for pupillary reflexes. When OSCE is limited to CN-II examination, pupils may be tested with optic nerve.
- Fundoscopy.

Visual Acuity

- Ask about the use of glasses. Make patient wear her glasses for distant vision.
- The patient should be positioned at 6 m from the Snellen chart. In a room smaller than 6 m, the patient can be asked to stand on the side of the chart 3 m away from a mirror.
- Ask the patient to cover one eye and read the smallest possible line of the chart.
- If the patient reads the 6/6 line, you would record vision as 6/6.
- Repeat above steps for the other eye.

Color Vision

Generally color vision is not assessed in OSCE settings.

Visual Fields

The visual field is the extent of the field of vision in each eye. It is limited by the margin of the orbit, nose, and cheek. The extent of the patient's visual field is compared in each eye separately with those of examiner's by a simple technique known as confrontation method:

- Position yourself facing the patient, approximately 2 to 3 feet away.
- Give very clear instructions to the patient for the test: "Cover your left eye with your left hand, but do not put your hand over the bridge of your nose. With your right eye, focus on my left eye and do not move your head or eyes during the test. I will wiggle my finger. You must tell me when you can first see my fingertip moving."
- Cover your right eye with your right hand, and focus with your left eye directly at the patient's right eye. Hold up your left hand, ensuring it is at equal distance between the patient's face and your own. Position the tip of your index finger at the outer border of one of the quadrants of your visual field, and then slowly bring your finger inward, toward the center of your visual field (see Fig. 2.47a, b), until you yourself first see the finger.
- Ask the patient to point out when she can see your finger.
- Perform this process for upper and lower quadrants in your left (patient's right) field of vision. Switch your hands while repeating the same process in your right (patient's left) field of vision.
- A visual field defect is suggested by inability of the patient to see your fingertip when you are able to see it.
- Test all four quadrants of the field of vision in each eye separately.

Fundoscopy

(Not required for OSCE)

- Darken the room and ask the patient to focus on a distant object. Use your right eye to examine the patient's right eye and left for the patient's left. Position yourself at about 18 in. away from the patient's eyes. Shine the light in the eye, and, through the fundoscope, observe for the red reflex. Gradually, move in closer and look into the eye with the fundoscope.
- Assess optic disc shape, color, margins, cupping, vascular impulse, and number of vessels on the disc surface. The easiest way to locate the disc is to find a vessel and follow it to the disc.
- Assess the retina for cotton wool spots, hemorrhages, and neovascularization.
- Ask the patient to look directly into the light and assess the macula.

Oculomotor (Cranial Nerve III), Trochlear (Cranial Nerve IV), and Abducent (Cranial Nerve VI)

- **CN-III:** Motor nerve for extraocular muscles (superior, medial, and inferior rectus, inferior oblique and levator palpebrae superioris) and visceral motor for pupillary constrictor and ciliary muscles.
- **CN-IV:** Motor nerve for superior oblique muscle. (Easy to remember SO4)
- **CN-VI:** Motor nerve for lateral rectus muscle. (Easy to remember LR6)

These nerves control ocular movements and are tested together. A lesion involving one or more of these three nerves may cause:

- Abnormalities of ocular movements
- Squint
- Diplopia
- Pupillary abnormalities

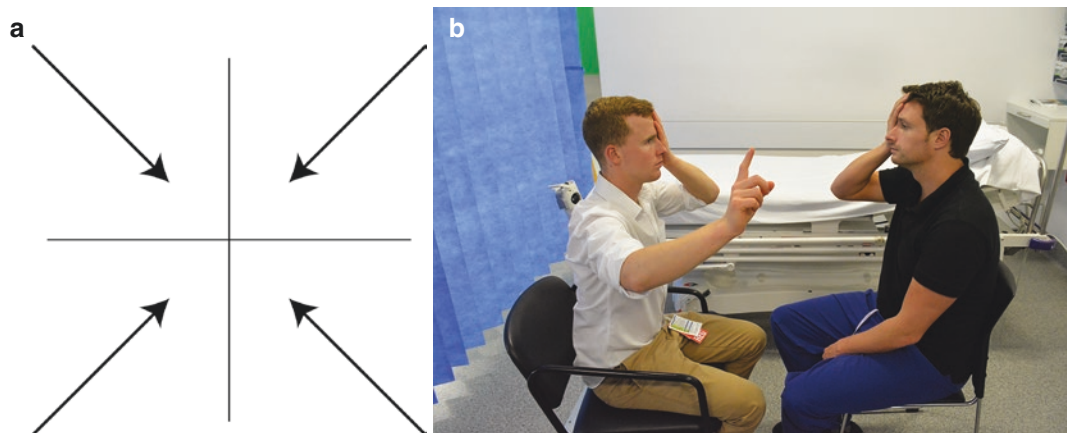


Fig. 2.47 Visual field test. (a) The four quadrants of the field of vision. (b) Assessing the visual fields

Testing Eye Movements

The eye movements are pursuits (slow, following movements), saccades (fast, jerky movements), and conjugate eye movements.

- **Pursuit movements** are slow movements that depend upon fovea and occipital cortex. The patient is asked to keep her head still and visually follow your finger as it moves horizontally and vertically slowly across the field of vision at about 2–3 feet distance (Fig. 2.48). Start your index finger from the midline and move through the various axes of eye movement. The purpose of making an “H” shape is elaboration of eye movements in primary and secondary functional position of extraocular muscles.
- Observe for restriction of vertical and horizontal eye movements, and note any nystagmus. Ask the patient to report any double vision.
- **Saccades** are rapid alternate gaze movements that depend upon frontal lobes and pontine gaze centers. The patient is asked to change the gaze between two objects held at least 30° apart. Hold your finger at a 30-degree distance from your nose, and ask the patient to switch her gaze between your nose and your finger.
- **Conjugate movements:** The two eyes normally move together in various directions to keep the visual axes on the target. The gaze movements depend upon brainstem integration of cranial nerve nuclei of all three cranial nerves. Conjugate movements are affected by upper motor neuron lesions. Internuclear ophthalmoplegia of conjugate lateral gaze occurs due to unilateral lesion of medial longitudinal fasciculus in midbrain or upper pons. On attempted lateral gaze, the adducting eyes show impaired deviation and abducting eyes show rhythmic nystagmus. The lesion is on the side of impaired adduction.

Testing Pupils

The afferent nerve for pupillary reflex is CN-II (optic), and the efferent is the CN-III (oculomotor) nerve.

Use a good light source in a dim room light to check the pupils. Ask the patient to look at a distance and examine each eye separately. Normal pupils are equal in size and round and

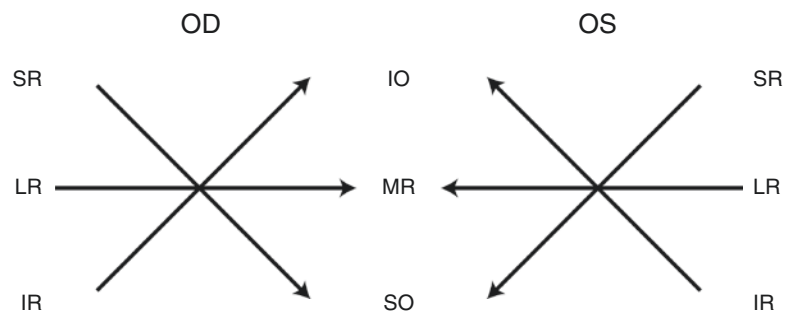
symmetrical in shape. If one pupil is larger than other, it may be difficult to decide which one is abnormal. Usually the pupil that is less mobile is the abnormal one.

- **Direct pupillary reflex:** Bring a bright light from behind or from side of the eye and shine into the pupil; observe constriction of that pupil. A normal pupil should contract almost immediately, and the removal of the light causes rapid dilatation to previous state. Lack of pupillary constriction or a sluggish response may suggest interference with reflex pathway. Repeat it on the other side.
- **Consensual pupillary reflex:** Shining a bright light into one eye causes constriction of pupils in both eyes. This happens because some of the optic nerve fibers decussate in optic chiasma. Shining light in one eye, therefore, activates brainstem oculomotor nuclei concerned with pupillary constriction bilaterally. A normal consensual response is indicated by constriction of the contralateral pupil. Lack of a normal consensual response may suggest damage to afferent pathways in optic nerves or to the Edinger-Westphal parasympathetic nucleus in the midbrain.
- **Accommodation reflex:** Hold a finger approximately 4 inches away from the nose of the patient. Ask the patient to look at a distance and then quickly focus at your finger. Observe for convergence of both eyes and constriction of pupils.

The complete **CN-III palsy** may be associated with the following findings:

- Ptosis.
- Divergent squint, due to unopposed action of lateral rectus muscle.
- Eye moves only laterally (lateral rectus) and a little downward (superior oblique).
- Dilated pupil with no response to light (pupillary-affecting) due to loss of function of pupillary constrictor fibers and unopposed over activity of sympathetic innervation. Compressive lesions of the third nerve such as an aneurysm of posterior communicating artery usually affect pupillary constricting fibers, which travel on the upper and outer surface of the nerve.

Fig. 2.48 Testing eye pursuit movements. OD oculus dexter (right eye), OS oculus sinister (left eye), SR superior rectus, LR lateral rectus, IR inferior rectus, IO inferior oblique, MR medial rectus, SO superior oblique



Third nerve palsy, however, may be incomplete or partial when the pupil on the affected side remains reactive to light (pupillary-sparing). This may happen with vascular lesions such as hypertension and diabetes, which tend to damage the interior of the nerve sparing the pupillary constricting fibers on its surface.

The **CN-IV palsy** may be associated with the following findings:

- Diplopia on looking downward and inward, as in walking down the stairs or reading
- Tilting of the head to side opposite of palsy to minimize diplopia

The **CN-VI palsy** may be associated with the following findings:

- Inability to abduct the eye on the affected side
- Diplopia on lateral gaze to the affected side

Trigeminal (Cranial Nerve V)

Mixed sensorimotor nerve for facial sensations and muscles of mastication

Sensory:

Assess light touch and pinprick sensation on three divisions of the trigeminal nerve.

Light Touch (Posterior Column) Sensation:

- Touch the patient's sternum with the cotton wool wisp to show how it feels.
- Ask the patient, "Close your eyes and say 'yes' every time you feel it."
- Using a wisp of cotton wool, gently touch the skin (do not stroke) of three divisions of the CN-V (Figs. 2.49 and 2.50):
 - For ophthalmic division (V1) – Forehead
 - For maxillary division (V2) – Cheek
 - For mandibular division (V3) – Jaw

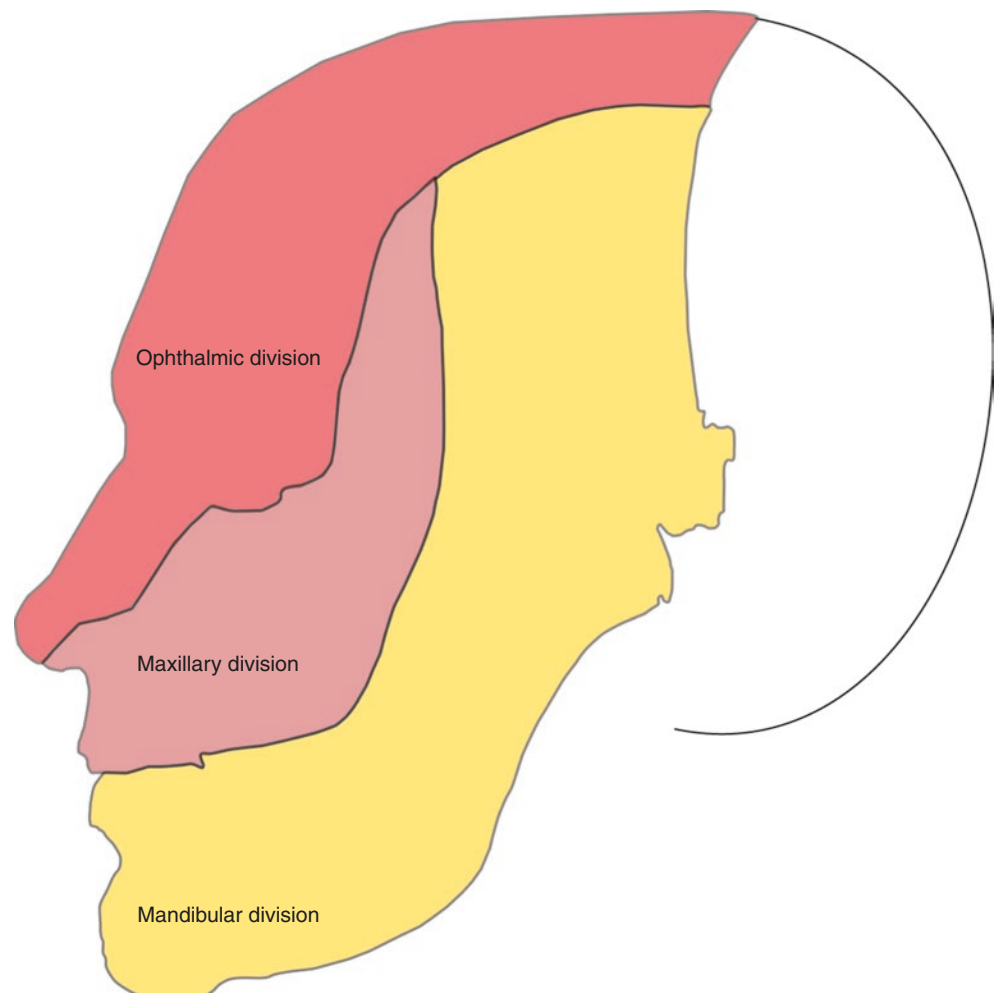


Fig. 2.49 Dermatomes of the trigeminal nerve: ophthalmic, maxillary, and mandibular divisions. (Adapted from https://en.wikipedia.org/wiki/Trigeminal_nerve#/media/File:Trig_innervation.svg under terms of Attribution 3.0 Unported (CC BY 3.0). <https://creativecommons.org/licenses/by/3.0/>)

- Compare one side to the other by asking the patient if it feels the same on both sides.

Pinprick (Spinothalamic) Sensation:

- For pinprick, repeat the steps used for light touch, but this time using the sharp end of a pin.
- Ask the patient “close your eyes and say ‘sharp’ every time you feel it sharp or ‘blunt’ if you feel it blunt.”

Corneal reflex is not done in the OSCE settings. Do mention about it. CN-V is afferent for cornea.

Motor:

Testing of motor functions involves assessment of muscle power of masseter, temporalis, and pterygoids and eliciting the jaw jerk. Ask the patient to clench her teeth, while you feel with your fingers the bulk of masseter and temporalis bilaterally (Fig. 2.51).

Ask the patient to open her mouth and note for any deviation. The *healthy pterygoids will push the jaw to the weaker side*. Repeat the test against resistance of your fingers under the jaw and note any deviation.

Jaw Jerk: Explain to the patient that you will strike the jaw with a hammer, which is not going to hurt the patient. Ask the patient to open her mouth slightly. Place your thumb horizontally across the chin, and, with four fingers, feel the masseter muscle. Ask the patient to close her eyes and gently tap your thumb with a hammer. Try to feel the contraction of masseter muscle. Jaw jerk is absent in most normal people. A brisk complete closure of the jaw due to contraction of masseter indicates an upper motor neuron lesion.

Facial (Cranial Nerve VII):

Motor nerve for muscles of the face, platysma, and stapedius; taste fibers from anterior two-thirds of tongue.



Fig. 2.50 Light touch sensation of the face using a wisp of cotton

- Inspect for facial asymmetry – eyebrow sagging, the absence of the nasolabial fold on the affected side, and deviation of the mouth to the non-affected or healthy side.
- Examine for facial weakness affecting one side of the face. To assess this, examine the movements of the forehead, eyes closure, and mouth (Fig. 2.52a–d).
- Ask the patient to raise eyebrows/frown and look for any asymmetry of the forehead.
- Ask the patient to close the eyes tightly; assess the ability of the patient to resist eye opening.
- Ask the patient to show the teeth – note for deviation of angle of mouth. In **seventh nerve palsy**, *the angle of mouth is pulled toward the healthy side*.
- Examine external auditory meatus for zoster vesicles or scabbing (Ramsay Hunt syndrome).
- Ask the patient for disturbed taste, as the facial nerve carries signals for taste from the anterior two-thirds of the tongue.
- Ask the patient for hyperacusis or reduced ability to tolerate ordinary levels of noise, as the facial nerve has a branch that supplies stapedius.
- Distinguish a lower motor neuron from an upper motor neuron facial palsy. In upper motor neuron lesion involving pyramidal tract, contralateral muscles moving the mouth are affected, whereas the muscles of the forehead and eye closure are spared. Lower motor neuron type facial weakness equally involves the facial muscles of the forehead and eye closure on affected sides.
- In **unilateral paralysis of CN-VII and CN-X**, *the healthy side will pull the weaker side*.
- In **unilateral paralysis of CN-V and CN-XII**, *the healthy side will push to the weaker side*.

Vestibulocochlear (Cranial Nerve VIII)

Special sensory nerve subserving hearing and equilibrium through its cochlear and vestibular components, respectively



Fig. 2.51 Testing motor functions of the face and jaw



Fig. 2.52 (a–d) Assessing facial weakness by examining movements of the forehead, eyes, and mouth

Auditory Testing

- Gross hearing testing with whispered or conversational sounds is very difficult to quantify and may be interpreted erroneously.
- Ask the patient if she can hear her telephone ring and has she noticed a change in her hearing recently?
- Assess each ear separately.
- Explain to the patient that she is required to repeat words or numbers that you will be saying in her ear. Stand to the side of the ear to be tested, and mask the ear not being tested by rubbing the tragus. Start with a whispered sound approximately at 3 inches and then at 6 inches from the ear. Ask the patient to repeat the number or word back to you. If there is no response, use a conversational sound at 2 feet.
- Test the other ear in the same way.
- **Rinne's test** compares hearing by air and bone conduction. Tap a 512 Hz tuning fork, and hold it in line with external auditory meatus (air conduction) (Fig. 2.53a), and then place its base onto the mastoid process (bone conduction) (Fig. 2.53b). Ask the patient if the sound is louder in front of the ear or behind the ear. Air conduction is better than bone conduction in normal persons and in mild sensorineural deafness (Rinne's positive). In conductive deafness, bone conduction is better than air conduction (Rinne's negative). Remember some caveats with Rinne's test:
 - Rinne's test becomes negative in conductive deafness only when the difference between air and bone conduction exceeds 40 db.
 - Rinne's test becomes false negative in severe unilateral sensorineural deafness (dead ear) when hearing is normal in the contralateral ear. In such cases, both air conduction and bone conduction are reduced equally in the diseased ear, but sounds are passed via bone conduction through the normal ear.
- **Weber's test:** Tap a 512 Hz tuning fork and place its base in the midline of the forehead (Fig. 2.54). Ask the patient if the vibrating sounds are heard in the midline or if these are lateralized to one ear. Interpret Weber's test as under:
 - Sound is heard in the midline equally well in both normal ears.

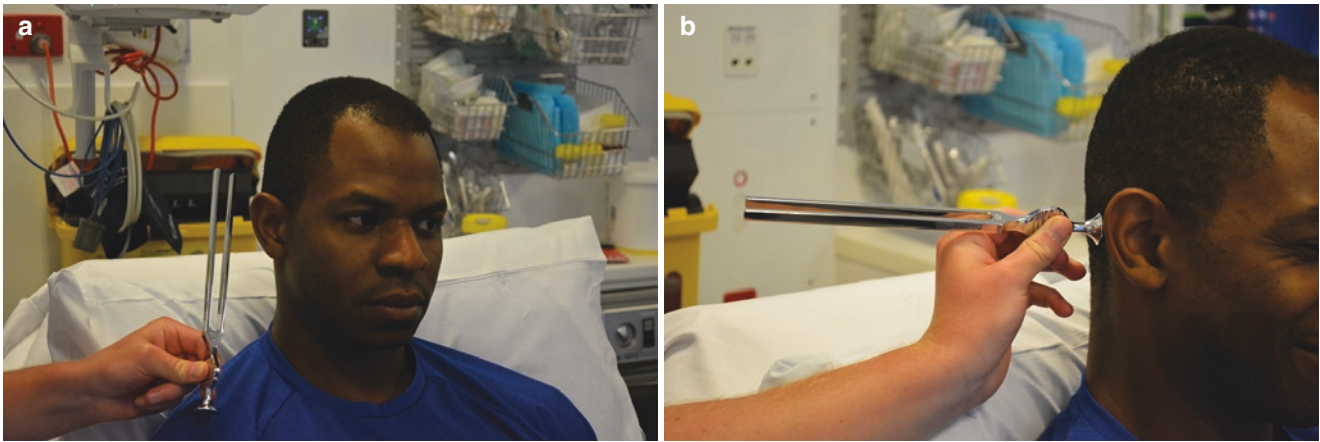


Fig. 2.53 Rinne's test. (a) Air conduction. (b) Bone conduction



Fig. 2.54 Weber's test for lateralization

- In conductive deafness in right ear, bone conduction will be better than air conduction (Rinne negative in right ear), and Weber's test will be lateralized to the right side through bone conduction.

- In mild sensorineural deafness in right ear, air conduction will be better than bone conduction (Rinne's test positive in right ear), and Weber's will be lateralized to the left side because it has better cochlear function than the right ear.
- In severe sensorineural deafness in the right ear (dead ear), both air conduction and bone conduction may be absent, but Rinne's test will be false negative in the right ear due to use of bone conduction in the normal left ear. Weber's test will be lateralized to viable left side.

Vestibular Testing

The vestibular system maintains the normal posture by working in conjunction with visual and proprioceptive inputs, which are integrated and modulated by cerebellar influences. Most specific tests for vestibular function are not done in OSCE settings except gait, Romberg's test, and eye movements. The candidate, however, may remember that patients with suspected vestibular dysfunction may undergo special vestibular assessment.

- **Testing of gait:** When asked to walk with eyes open, the patients with peripheral vestibular dysfunction tend to sway to the affected side.
- **Romberg's test:** The patient is asked to stand with the feet together, initially with eyes open and then with eyes closed. Patients with peripheral vestibular dysfunction tend to sway to the affected side, whereas those with lesions of the posterior column will fall when the eyes are closed.
- **Eye movements:** Observe the eyes in primary position of the gaze. Test for pursuits and saccades (see CN-III previously). The nystagmus of vestibular dysfunction has a slow labyrinthine component and a fast central corrective phase and is increased when the patient moves the eyes in the direction of the fast component.

- **Position testing (Hallpike's maneuver)**
- **Caloric test**
- **Fistula test**

Glossopharyngeal (Cranial Nerve IX)

Glossopharyngeal (CN-IX) is not tested in OSCE settings.

Vagus (Cranial Nerve X)

Motor nerve for muscles of palate, pharynx, and larynx. Damage to the vagus nerve is assessed through its palatine branches by assessment of the soft palate and uvula.

- Ask patient about regurgitation of fluids through the nose during swallowing.
- Ask patient to say "egg" and note for palatal dysarthria where it may sound "eng."
- In unilateral lesions, note any obvious deviation of the uvula. Ask patient to say "ah" and observe upward movements of both sides of palatal arches; note for any deviation. In **unilateral palatal palsy**, the uvula is pulled to the healthy side. In bilateral lesions, the palate remains motionless.
- Gag reflex is not done in OSCE settings. Do mention about it.

Accessory (Cranial Nerve XI)

Motor nerve to trapezius and sternocleidomastoid muscles.

- Ask patient to shrug shoulders and resist your pushing down (Fig. 2.55a).

- Ask patient to turn the head to one side. Now push the chin toward the midline and ask patient to resist you pushing it (Fig. 2.55b).

Hypoglossal (Cranial Nerve XII)

Motor nerve to tongue muscles.

- Ask patient to open the mouth, and inspect the tongue in the floor of the mouth for wasting and fasciculation at rest.
- Ask patient to protrude tongue, and note for any deviation (Fig. 2.56). In unilateral tongue paralysis, healthy muscles push the midline raphe to the weaker side (Fig. 2.57a, b).
- Place your finger on the patient's cheek, and ask the patient to push her tongue against your finger.

Wrap-Up:

- To complete the examination, suggest further assessments by examining the upper and lower limbs.
- Thank the patient.
- Explain your findings to the examiner.

History and Physical Examination: Stroke/ Transient Ischemic Attack

Candidate Information:

A 64-year-old male is brought by ambulance to the emergency department (ED) because he had a "spell."

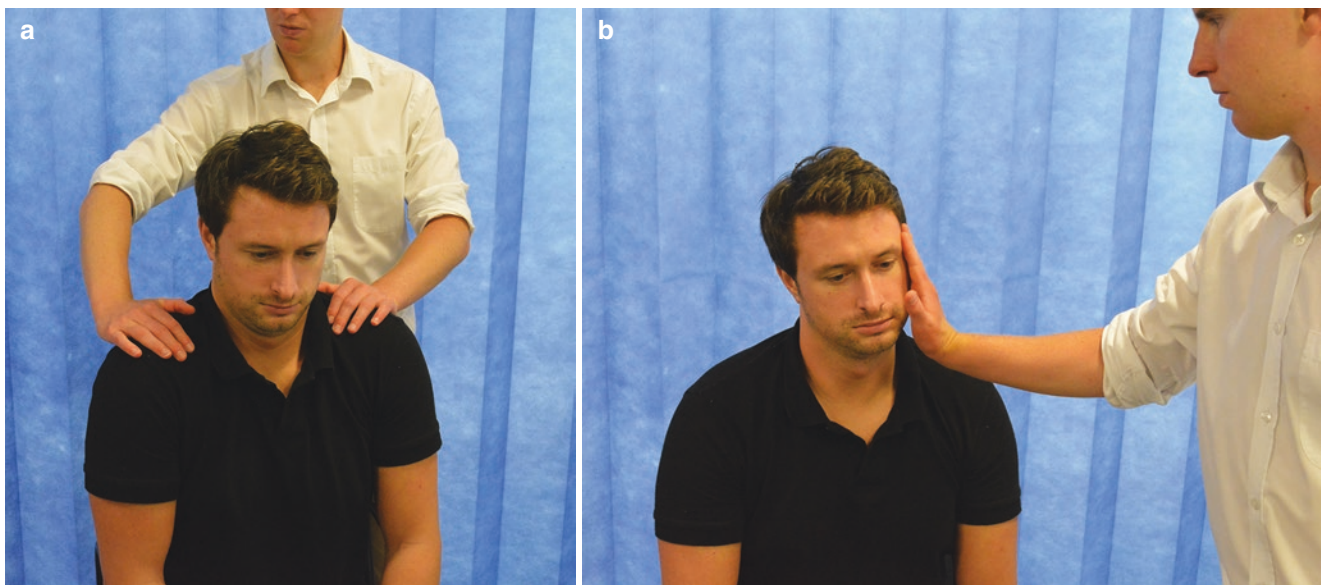


Fig. 2.55 Assessing motor nerve to trapezius and sternocleidomastoid muscles. (a) Patient shrugs shoulders while doctor pushes down. (b) Patient turns the head while doctor pushes against face

Vital Signs: HR, 89/min, regular; BP, 150/85 mm Hg; temp, 36.8 °C; RR, 17/min; O2 saturation, 99%

Take a focused history and perform a focused physical examination. Please do not perform rectal, genitourinary, or breast examination.



Fig. 2.56 Check tongue for any deviation

Differentials:

- Transient ischemic attack (TIA) versus stroke (thrombotic, embolic, lacunar, hemorrhagic)
- Space-occupying lesions
- Herpetic encephalitis
- Brain abscess
- Drug overdose
- Trauma
- Epilepsy
- Hepatic encephalopathy

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now stand on the right side of the patient and start the history.

Opening:

Good morning/good afternoon. I am Dr....I am your attending physician. Are you Mr...? And you are 64 years old?

Is it alright if I ask you a few questions about your recent 'spell'? I would also like to do a relevant physical examination. In the end we will discuss the plan. During the history or examination if you have any questions or if you feel any discomfort, please let me know. Is this alright?

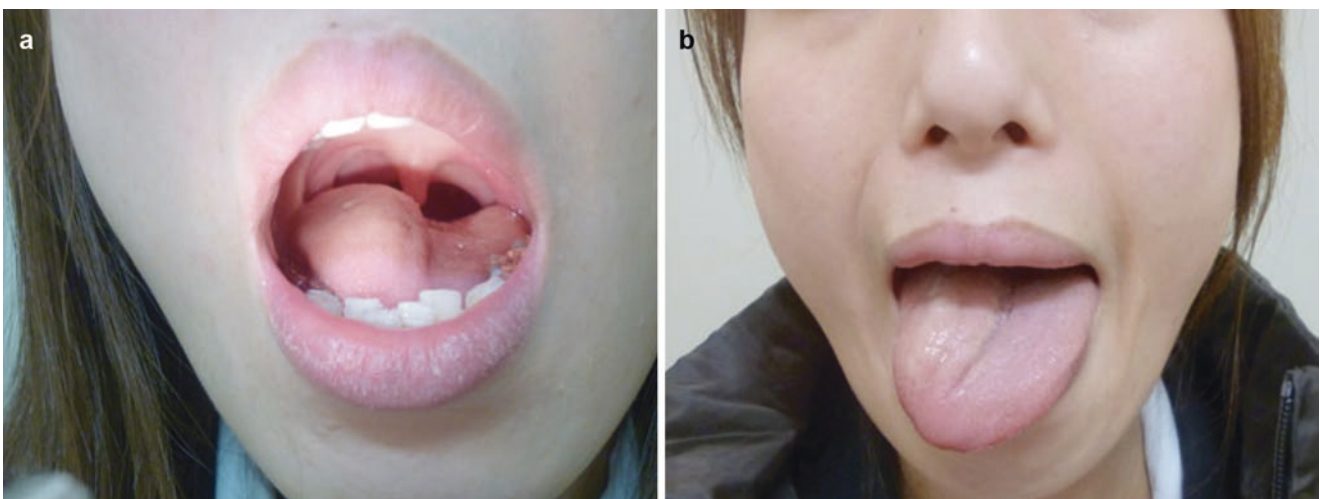


Fig. 2.57 Hypoglossal nerve palsy. (a) Right tongue mounding at rest. (b) Tongue deviation, the healthy left side pushing midline raphe to the right. (Reprinted with permission from Shikino et al. [8])

History of Present Illness:

- Onset: “Did the symptoms start suddenly or gradually?”
- Course: “Are the symptoms changing with time? Are these getting worse or getting better?”
- Duration: “How long?”
- Site: “Which side? Or both?”
 - Face
 - Arm
 - Leg
 - Whole one side
- Severity of symptoms: “How weak is it? Able to move at all? Or partially weak?”
- Handedness: “Are you right handed or left handed?”

Associated Symptoms:

- Numbness and tingling
- Slurred speech
- Dizziness
- Changes in vision: double vision, curtain drop (TIA), or light flashes (retinal detachment)
- Loss of consciousness
- Headache
- Fever
- Nausea or vomiting
- Sweating
- Skin changes (color, swelling, and warmth)
- Recent head or spine trauma

Risk Factors:

- Age (elderly)
- High blood pressure
- High cholesterol
- High blood sugar (Diabetes mellitus)
- Family history of heart attacks or stroke
- Atrial fibrillation
- Prior myocardial infarction (MI)
- Obesity
- Drug abuse
- Smoking
- Clotting disorder/hypercoagulable state
- Peripheral vascular disease
- Lifestyle (no exercise, fatty food)

Past Hospitalization and Surgical History: “Have you had any previous hospitalization or previous surgery?” History of stroke, TIA, heart attacks, chest pain, hypertension (HTN), DM, atrial fibrillation, neurological disease (seizures, migraine, MS, aneurysms)?

Medication History: “Are you taking any medication (ASA, clopidogrel, warfarin), prescribed, over the counter, or herbal and any side effects?” If patient says no, then continue to next question.

Allergic History: “Do you have any known allergies?”

Personal History:

- “Please tell me about yourself.” Can be asked in any sequence: marital status, occupation, religion, education, type of residence, living conditions.
- “Do you have problems at work? How are you doing at work?”
- “Have you had any recent event in the family such as an accident or someone died?”

Social History:

- “Do you smoke or does anyone else in your home or someone close at work smoke?”
- “Do you drink alcohol?” If yes then further ask: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes: “Which one? How long? When?” Specially ask about IV drug use (red flag for back pain).

Family History: Marital status, number of children, any significant history in first-degree relatives

Relationships: “Are you sexually active? Do you have sexual preferences? Man, woman, or both?”

Self-Care and Living Condition:

- “What do you do for a living?”
- “Working status and occupation?”
- “Educational status?”
- “Who lives with you?”

Support: “Do you have good family and friends support?”

Functional status or severity or impact on life activities?

Stroke-/TIA-Related Examination

Mention here: “I am going to perform a physical examination. Should we start?”

Vitals:

- Start with checking ABC (airway, breathing, circulation).
- Continue with the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.)
- Comment on the vital signs findings: Vital signs are normal or mention if any abnormal finding.
- (Look for hypertension)

General Appearance:

- Level of consciousness
- Distress or calm
- Brief mental status

Inspection: Face/eyes/limbs/gait

Cranial Nerve Examination: II/III/IV/V/VI/VII/VIII/X/XI

Muscle Tone: Upper and lower limbs

Muscle Power: Upper and lower limbs

Reflexes: Babinski's extensor

Sensory:

- Light touch and pinprick
- Two-point discrimination

Cerebellar Examination

Cardiovascular: Listen for the heart sounds (observe for murmur/heart failure/arrhythmia, carotid bruit)

Respiratory System: Listen for respiratory sounds.

Wrap-Up

Question: What is the next step in management?

Answer:

- Blood tests: Complete blood count (CBC), electrolytes, blood urea nitrogen (BUN), creatinine, electrocardiogram (ECG), computed tomography (CT) head (urgent).
- Further tests: Holter, 2D echo, carotid Doppler.
- Call medical unit/stroke team/neurology on call immediately after ordering CT head for further management.

Physical Examination: Unilateral Facial Weakness: Bell's Palsy

Candidate Information:

A 38-year-old female comes to your clinic with unilateral facial weakness for the past 2 days.

Vital Signs: Temp, 36.8 °C; HR, 84; BP, 120/68; RR, 12

Please perform appropriate neurological examination. No history is required for this station. Please do not perform a rectal, genitourinary, or breast examination.

Differential:

Immediately consider the differential of unilateral facial weakness. Unilateral facial weakness may be of a lower motor neuron type due to lesions of facial nucleus or infranuclear structures such as facial nerve or of upper motor neuron type due to involvement of supranuclear areas such as corticospinal tract.

The key aim of the examination is to confirm unilateral facial weakness, identify and classify the type of facial weakness (lower or upper motor neuron type), and then perform the relevant neurological examination to find the underlying cause. It is imperative for the examiner to verify that there is no evidence of neurological deficit of any associated cranial nerve or of long tracts, e.g., pyramidal tract.

The exact cause of Bell's palsy remains unknown, but possible etiologies include:

- Viral infection
- Diabetes mellitus
- Hypertension
- Ear disease – infection of the middle ear or cholesteatoma
- Parotid tumor
- Facial trauma to the temporal bone or stylomastoid foramen
- Rare causes include:
 - Lyme disease – tick bite in an endemic region plus rash, arthritis, or hearing loss.
 - HIV infection – this facial nerve palsy is 100 times more common in HIV-positive patients than in immunocompetent patients.
 - Syphilis.
 - Systemic lupus erythematosus.
 - Sjögren's syndrome – causing dry eyes and dry mouth.
 - Sarcoidosis – may cause bilateral facial nerve palsies.
 - Heerfordt's syndrome – a combination of facial nerve palsy, anterior uveitis, and enlargement of the parotid gland.
 - Melkersson-Rosenthal syndrome – granulomatous condition causing swelling of the face, oral mucosa, gums, and lips, which is associated with recurrent facial nerve palsy.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now stand on the right side of the patient and start the examination.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician. Are you Miss...? And you are 38 years old? Is it alright if I examine you for your facial weakness, and then we will discuss about the plan? During the examination if you feel any discomfort, please let me know.”

Vitals:

Start with commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.) “Miss...vital signs are within normal range.”

You should do a full neurological examination in all patients who complain of facial weakness. If the patient has any other neurological signs then Bell’s palsy is ruled out.

Inspection:

- **Pronator drift** has a high sensitivity for diagnosing stroke.
- **Inspect for facial asymmetry** – eyebrow sagging, the absence of the nasolabial fold on the affected side, and deviation of the mouth to the non-affected or healthy side.
- **Distinguish a lower motor neuron from an upper motor neuron facial palsy.** In upper motor neuron lesion involving pyramidal tract, contralateral muscles moving the mouth are affected, whereas muscles of the forehead and eye closure are spared. Lower motor neuron type facial weakness equally involves the facial muscles of the forehead and eye closure on affected sides.
- **Examine for facial weakness** affecting one side of the face. To assess this, examine the movements of the forehead, eyes closure, and mouth (Fig. 2.58).
- Ask the patient to raise her eyebrows/frown and look for any asymmetry of forehead.
- Ask the patient to close her eyes tightly; assess the ability of the patient to resist opening her eyes.

- Ask the patient to show her teeth – note for deviation of angle of mouth. In **seventh nerve palsy** angle of mouth is *pulled toward the healthy side*.
- **Look for a parotid mass.**

Localization for Cause of Bell’s Palsy

- Examine external auditory meatus and mouth for zoster vesicles or scabbing (Ramsay Hunt syndrome).
- Cranial nerve examination for cerebellopontine angle lesions.
- Examine for extraocular eye movements (**sixth nerve palsy** causing failure of abduction), **fifth cranial nerve** (loss of corneal reflex and impaired facial sensation), and **eighth cranial nerve** (ipsilateral hearing loss).

Localization for Site of Bell’s Palsy

- Asking the patient for disturbed taste as the facial nerve carries signals for taste from the anterior two-thirds of the tongue.
- Check for excessive tears on the affected side as the facial nerve carries fibers to the lacrimal glands.
- Ask the patient for hyperacusis or reduced ability to tolerate ordinary levels of noise as the facial nerve has a branch that supplies stapedius.

Wrap-Up:

- To complete the examination, suggest further assessments by neurological examination of cranial nerves and long tracts.
- Thank the patient and cover her.

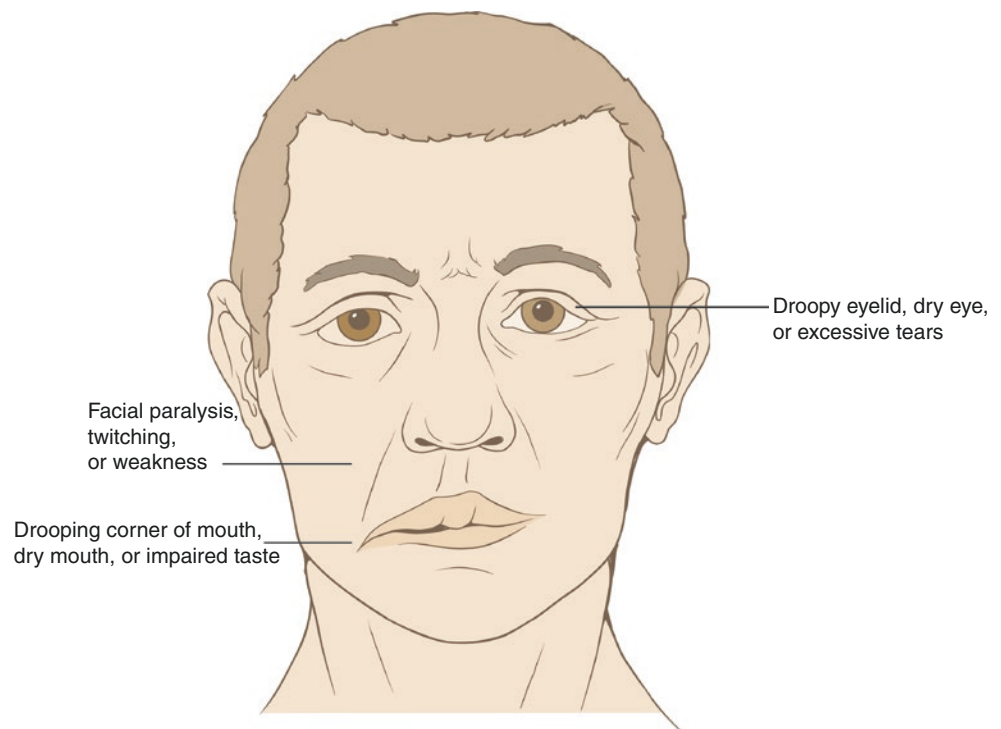


Fig. 2.58 Bell’s palsy. (Modified from original drawing by Patrick J. Lynch, medical illustrator. Under license of CC BY 2.5 (<https://creativecommons.org/licenses/by/2.5>). https://upload.wikimedia.org/wikipedia/commons/3/33/Bells_palsy_diagram.svg)

Question: What is your clinical diagnosis?

Answer: “My patient appears to have Bell’s palsy on the... side.”

Question: What is Bell’s palsy?

Answer: “It is a paralysis of one side of the face due to peripheral facial nerve dysfunction. It typically comes on over 12–36 h. Many patients experience pain around the ear, altered taste, or a feeling of facial numbness a day before developing the facial weakness.

“The weakness is initially progressive, reaching its maximum within 2–3 weeks. Most untreated patients recover over 3 months.”

Question: What neurologic findings are present in favor of your diagnosis?**Answer:**

- “Facial asymmetry with sagging of left eyebrow and flattened left nasolabial fold.”
- “On frowning, the left forehead has less wrinkling.”
- “The left eye is opened with minimal force as compared to the right when the patient attempts to resist opening of her eyes.”
- “The angle of the mouth is pulled to the right when the patient is asked to show her teeth.”
- “Fifth, sixth, and eighth cranial nerves are tested as normal. There is no pronator drift and I could not see any vesicle in the external ear.”

Question: When would you recommend a cranial imaging for a case of Bell’s palsy?**Answer:**

- Cranial imaging is generally reserved for patients in whom: The physical signs do not fully fit the picture for Bell’s palsy.
- The neurological deficit continues to progress beyond 3 weeks.
- There is no improvement at 3 months.

Question: How would you treat a case of Bell’s palsy?**Answer:**

Most of the patients with Bell’s palsy will recover without any drug treatment. Oral prednisolone, if given early within 72 h, results in better outcomes for patients. Prednisolone tablet is given for 10 days, 50 mg/day for 10 days or 60 mg for 5 days, followed by 10 mg daily reductions for a total course of 10 days.

Question: What is the role of antiviral agents?

Answer: Antiviral agents have been shown to be ineffective when used alone and offer no benefit when used in combination with prednisolone. However, they may be recommended where herpetic vesicles are seen (Ramsey Hunt syndrome).

Question: When should you refer the patient for eye care?

Answer: If the patient is unable to close the eye properly, she will need an urgent eye care referral. It is important to assess if the patient is able to close the eyes properly. The patient can use artificial tears, eye lubricants, and eye pads during the night and should wear glasses.

In severe cases patients may need surgery to protect the cornea, such as tarsorrhaphy, to narrow the distance between the eyelids. Alternatively, botulinum toxin can be injected into the upper eyelid to keep it closed.

Question: When should you refer a patient with Bell’s palsy to a neurologist?

Answer: Patients with Bell’s palsy are referred to a neurologist if the:

- Diagnosis is in doubt.
- Presentation is atypical.
- Symptoms slowly progress beyond 3 weeks.
- Patient does not recover function by 3 months.
- Patient has bilateral facial palsy.
- Patient is pregnant.

Question: What is the outcome of Bell’s palsy and what are the factors affecting such outcome?

Answer: The outcome is usually good with or without treatment. Approximately 70% of untreated patients will make a full, spontaneous recovery, and 85% of untreated patients will make a near normal recovery within 6 months. The chances of recovery appear to be the same with or without treatment.

Factors conferring a more favorable functional include children (<14 years), patients with post-auricular pain, patients having incomplete paralysis, and patients with normal taste, hearing, salivation, and lacrimation. Outcome may be less favorable in people with diabetes and in pregnant women.

Question: What is the role of physical therapy?

Answer: There is no evidence that physical therapy has any beneficial role in treatment of facial palsy.

History: Headache: Migraine

Candidate Information:

A 33-year-old female comes to your clinic with recurring headache.

Vital Signs: Temp, 36.7 °C; HR, 80; BP, 110/65; RR, 16

Please take a detailed history. No examination is required for this station.

Differential:

Immediately consider the common differential of headache that may be presented here. Remember, few patients with headache have clinical signs, and clinical assessment depends upon the history.

- Migraine.
- Tension headache.
- Temporal arteritis.
- Cluster headache.
- Subarachnoid hemorrhage/epidural hematoma.
- Brain tumor.
- Meningitis.
- Cerebral abscess.
- Please do not forget to rule out underlying *drug seeking behavior, spouse abuse, and depression* in patients presenting with vague headaches. It is important to identify the features in history that may fit into those of primary headaches. Symptoms suggestive of secondary headaches are carefully explored to rule out any sinister cause.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr...I am your attending physician. Are you Miss...? And you are 33 years old? Is it alright if I ask you few questions about your headache, and then we will discuss about the plan? During the history if you have any question or you feel any discomfort, please let me know.”

History of Present Illness:

- “Tell me about your headache. Is that right that you have been having recurring episodes of headache?”
- Onset: “How did it start? Sudden versus gradual?”

- Course: “Is it increasing or decreasing or is it the same?”
- Duration: “How long has it been going on?”
- “How long for each attack?”
- “How frequent?”
- Variation: “Did you notice any variation?”
 - “Is it the same throughout the day?”
 - “Does it awaken you at night?”
- Patterns of pain?
- Quality (throbbing, constricting, pressing/tightening, stabbing, burning, ice pick-like)
- Region: “Where is it exactly?” (unilateral, bilateral, occipital)
- “Is the part where it hurts tender (temporal arteritis), and do you feel a cord-like structure there?”
- Severity: “How will you mark your pain from 0–10? 10 being the worst and 0 as no pain.”
- Timings – Duration of untreated pain/relation with aura?
- “How old were you when your headache began? Age of onset?”
- “What is the pattern of the headache episodes since its beginning?”
- “How frequent is the pain?”
- “Has it happened before?”
- Radiation: “Front, side, back of head, or in the eyes, ears, or throat?”
- “Can you say it is the worst headache of your life?”
- Triggers (not when single episode)
- “How has it affected your daily life?”
- “How are you coping with it?”
- “What brings on the attack?”
 - Sleep deprivation or sleep excess (weekend migraine)
 - Travel
 - Extremes of weather
 - Bright lights
 - Loud noise
 - Strenuous exercise
 - Menstruation
 - Sexual activity
 - Strong emotions
 - Lack of food
 - Special food or drink

Referred Pain:

- Eyes: “Did you notice any redness or need eyeglasses?”
- Sinusitis: facial pain or recent flu symptoms
- Throat pain
- Dental pain
- Neck pain

Memory:

- “Did you notice any changes in your concentration?”
- “Did you recently tend to forget things?”

Alleviating Factors:

“Did you try any medication? What were the results?”

Aggravating Factors:

- Bring up with bright lights (migraine)
- Eating (jaw claudication)
- Alcohol (cluster headache)
- Lying down or bending forward or on coughing or lifting weight (increase intracranial pressure [ICP])
- Certain foods (migraine)
- Eye strain or poor vision (vision correction)
- Coughing or straining
- Physical activity (walking, climbing stairs)

Associated Symptoms:

“In addition to your headache did you notice any other symptoms?” (Try and go through constitutional symptoms first as you may forget them.)

- Nausea and/or vomiting
- Fever
- Neck pain
- Skin rash
- Ear infection
- Photophobia (an abnormal sensitivity to or intolerance of light)
- Phonophobia (a fear of sounds, noise, and one’s own voice)

Neurology Screen:

- Loss of consciousness
- Weakness/numbness in the limbs
- Difficulty in balance or repeated falls
- Difficulty finding words
- Vision changes: What type of problem?
- Hearing abnormalities
- Difficulty swallowing
- Changes in bowel/urine; loss of bladder control
- Any seizure
- Trigeminal autonomic features (lacrimation, nasal congestion, rhinorrhea, conjunctival injection, facial sweating, ptosis, miosis)

Screen for Mood Disorder:

“How is your mood nowadays?” If patient says good, then skip further psychiatric screening. Otherwise go through the mood screening.

Constitutional Symptoms:

Fever, night sweats, loss of weight, loss of appetite

Past Medical History: “How is your health otherwise? Do you have any previous health issues?”

Past Hospitalization and Surgical History: “Have you had any previous hospitalization or previous surgery?”

Medication History: “What relieving treatment have you used for your headache? Have you tried any long-term treatment for your headache? Are you taking any other medication, prescribed, over the counter, or herbal? Are you taking oral contraceptives?”

Allergic History: “Do you have any known allergies?”

Family History: “Does anyone in your family have similar symptoms or any ongoing health problem?”

Social History: “Do you smoke? Do you drink alcohol? Have you ever tried any recreational drugs?”

Relationships: “Are you sexually active? Do you have sexual preferences? Man, woman, or both? Number of partners.”

Self-Care and Living Condition

Functional status or severity or impact on life activities?

Wrap-Up

Question: What would you like to do next?

Answer: “I would like to do general physical and neurological examination. I would also like to order some tests.”

Question: Do you want to do any neuroimaging?

Answer: “The choice of doing neuroimaging would depend upon the findings of history and clinical examination. See below.”

Question: What acute treatment would you recommend to abort an attack?

Answer: “The acute attack of migraine can be aborted by use of appropriate doses of a nonsteroidal anti-inflammatory drug (NSAID) (aspirin or ibuprofen), or a triptan (sumatriptan or zolmitriptan or almotriptan, etc.).”

Question: Doctor, what is going on with me?

Answer: Explain about migraine. “Headache is the most common symptom seen in neurology practice. Lifetime prevalence of headache is up to 99%. Though often incapacitating, most headaches are not caused by potentially serious neurological illness. The most common primary headaches are migraine and tension-type headaches.”

“Migraine is the most common cause of disabling headache in the general population, particularly in women. It usually starts at puberty. A small percentage of patients have their pain preceded by an aura (migraine with aura), which is

mostly in the form of fully reversible visual symptoms including positive features (e.g., flickering lights, spots, or lines) and/or negative features (i.e., loss of vision or homonymous visual symptoms). Other patients may experience fully reversible unilateral sensory symptoms including positive features (i.e., pins and needles) and/or negative features (i.e., numbness) or fully reversible dysphasic speech disturbance (motor deficit is not a feature of migraine aura). At least one aura symptom develops gradually over >5 minutes and/or different aura symptoms occur in succession over >5 minutes; each symptom lasts >5 and <60 minutes.”

“The frequency of pain in migraine is extremely variable. An occasional attack in lifetime to recurrent and incapacitating three to four attacks a week. The pain is unilateral in more than 50% of patients but tends to switch sides in subsequent attacks.”

Question: When would you ask for neuroimaging?

Answer:

- Thunderclap headache
- Headache of increasing frequency or severity
- Persistent vomiting and increasing frequency or severity of headache on waking
- Headache triggered by coughing, straining, or postural changes
- History of seizures, confusion, or altered consciousness
- Any symptoms suggestive of focal neurological deficit
- Any focal neurological signs
- Papilledema

Question: How can you avoid or prevent another episode of headache?

Answer: “Some patients find it very helpful to avoid the triggers that precipitate the headaches. In other patients, who have frequent and severe attacks, daily medication to prevent further attacks may be started. These drugs are selected for individual patients and may include beta blockers (propranolol), antiepileptic drugs (topiramate or valproate), pizotifen, methysergide, and NSAIDs such as naproxen. Patients taking estrogen-containing oral contraceptives are advised to stop these preparations.”

Question: How would you reassure your patient?

Answer: “Headache is an extremely common symptom, and only a minority of the population does not have headaches. Although she has distressing and incapacitating symptoms, they have no potential harmful effects if neurological examination and relevant investigations are normal.”

“Minimal disruption of social life and employment by migraine is also reassuring.”

“Long-term prognosis and life expectancy in patients with migraine without aura are good.”

“The attacks are manageable using the most appropriate drugs available in the market.”

“Some treatments may be expensive, but the cost is still less than being absent from work or being substantially less effective even when present at work.”

Further Reading

Temporal arteritis (TA): Description of TA is very important. TA is seen in elderly. Unilateral lancinating pain with swelling and tenderness in the temporal area (when combing hair), jaw claudication, amaurosis fugax, or sudden blindness usually in one eye, with underlying symptoms (50%) of polymyalgia rheumatica (subacute onset <2 weeks of symmetrical aching, tenderness and morning stiffness in shoulder and proximal limb muscles +/- mild polyarthritis, tenosynovitis, carpal tunnel syndrome [10%], fatigue, fever, decrease in weight, anorexia and depression) should raise the suspicion of temporal arteritis. No weakness or atrophy. Increased CRP/ESR, CK normal. TA responds well to steroids. Prednisolone should be started immediately. The risk is irreversible bilateral vision loss, which can occur suddenly if not treated [1].”

History and Physical Examination: Meningitis

Candidate Information:

An 18-year-old female presents with fever, photophobia, and neck stiffness. Please manage the patient.

Vital Signs: HR, 110/min, regular; BP, 110/70 mm Hg; temp, 39.0 °C; RR, 19/min; O2 saturation, 99%

Take a brief history and perform a focused physical examination. Please do not perform rectal, genitourinary, or breast examination. Please address the patient’s concerns.

Differentials:

- Meningitis
- Acute encephalitis
- Intracranial abscess
- Brain tumors
- Subarachnoid hemorrhage

Meningitis:

- **Elderly and immunocompromised:** *Streptococcus pneumoniae*, *Listeria monocytogenes*, tuberculosis (TB), gram-negative organisms
- **Adults and older children:** *S. pneumoniae*, *Haemophilus influenzae* type b, *Neisseria meningitidis*, gram-negative bacilli, and *L. monocytogenes*
- **Younger than 4 years and unvaccinated:** *N. meningitidis*, *S. pneumoniae*
- **Infants and young children:** *H. influenzae* type b

- **Neonates:** group B streptococci, *L. monocytogenes*, *Escherichia coli*
- **Hospital-acquired and post-traumatic meningitis:** *Klebsiella pneumoniae*, *E. coli*, *Pseudomonas aeruginosa*, *Staphylococcus aureus*

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now stand or sit on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr...I am your attending physician. Are you Miss...? And you are 18 years old? I am going to ask you few questions, and then I will do physical examination. Should we start?”

History of Present Illness:

(Start with fever: onset, course, and duration)

- “When did your fever start?”
- “How did it start? Gradual or sudden?”
- “Is your fever getting better or worse?”
- “Did you check your fever with a thermometer? What was the temperature?”
- “Do you feel hot and cold/chills/rigors?”

Associated Symptoms:

- **Increased intracranial pressure:** Headache, confusion, visual changes (photophobia), irritability, nausea, vomiting, seizure
- **Meningeal:** Photophobia, neck stiffness, rigor, myalgia, diaphoresis

Risk Factors: Malnutrition, head injury, mastoiditis, otitis media, endocarditis, pneumonia, immunosuppression (AIDS, splenectomy)

Environmental Risk Factors: Daycare centers, household contact, nursing home, and travel to endemic regions. Contact with meningitis at work or school.

Precipitating or Aggravating Factors: “Is there anything that makes your symptoms better or worse?”

Review of Systems:

- “Any cough?”
- “Shortness of breath?”
- “Any hoarseness?”
- “Any problem with listening to sound/loud sound (phonophobia)?”

- “Any chest pain?”
- “Any rash?”
- “Any muscle aches?”
- “Any abdominal pain?”
- “Any nausea/vomiting?”
- “Any loss of appetite?”
- “Any change in bowel habits?”
- “Any change in urination?”
- “Have you had any fatigue?”
- “Have you had contact with any sick individuals recently?”
- “Any recent travel?”

Past Medical History: “How is your health otherwise? Do you have any previous health issues?”

Past Hospitalization and Surgical History: “Have you had any previous hospitalizations or any previous surgeries?”

Medication History: “Are you taking any prescribed medications? Any over the counter or herbal remedies?”

Allergic History: “Do you have any known allergies?”

Family History: “Is anyone in your family having similar symptoms or any ongoing health problems?”

Social History: “Do you smoke? Do you drink any alcohol? Have you ever tried any recreational drugs?”

Relationships: “Are you sexually active? Do you have sex with men, women, or both?”

Self-Care and Living Condition: “Where do you live?”

Functional Status: “How is this impacting you?”

Meningitis Examination:

“Now I will start the examination. Should we start?”
Start with reviewing the vital signs.

Vital Signs: HR, 125/min, regular; BP, 110/70 mm Hg; temp, 39.0 °C; RR, 19/min; O₂ saturation, 99%

Comment on the vital signs: there is tachycardia and high temperature of 39.

Then go through ABC (airway, breathing, circulation):

- Start with checking ABC
- Quick Glasgow Coma Scale evaluation.
- General appearance:
 - Level of consciousness
 - Distress or calm
 - Brief mental status

- Inspection: face, eyes, limbs, gait (papilledema)
- Meningeal: Stiff neck with passive movements (moving chin toward chest)
- Kernig's sign: Pain and resistance on passive knee extension when hip fully flexed (Fig. 2.59a, b).
- Brudzinski's sign: Abrupt neck flexion in the supine patient resulting in involuntary flexion of the hips and knees (Fig. 2.60a, b).
- Muscle tone: Upper and lower limbs
- Muscle Power: Upper and lower limbs
- Reflexes
- Babinski's extensor
- Sensory:
 - Light touch and pinprick
 - Two-point discrimination
- Cerebellar examination
- Cranial nerve examination: II, III, IV, V, VI, VII, XI
- Cardiovascular: Listen for the heart sounds (observe for murmur/heart failure/arrhythmia, carotid bruit)
- Respiratory system: Listen for respiratory sounds.

Wrap-Up:

- Comment on your findings.
- Thank the patient and tell the patient they can now cover up.
- Ask the patient if she has any questions.

Question: What is the next step in management?

Answer:

- Blood tests: CBC, electrolytes, BUN, CRP, creatinine, blood culture, PCR for *S. pneumoniae* or *N. meningitidis*; CT head is indicated to rule out alternative diagnosis in patients with altered consciousness or focal neurological signs.
- Arrange for lumbar puncture (mention that you will need to get an informed consent from the patient).

Question: What are the contraindications for lumbar puncture?

Answer:

- Focal infection at the site of puncture

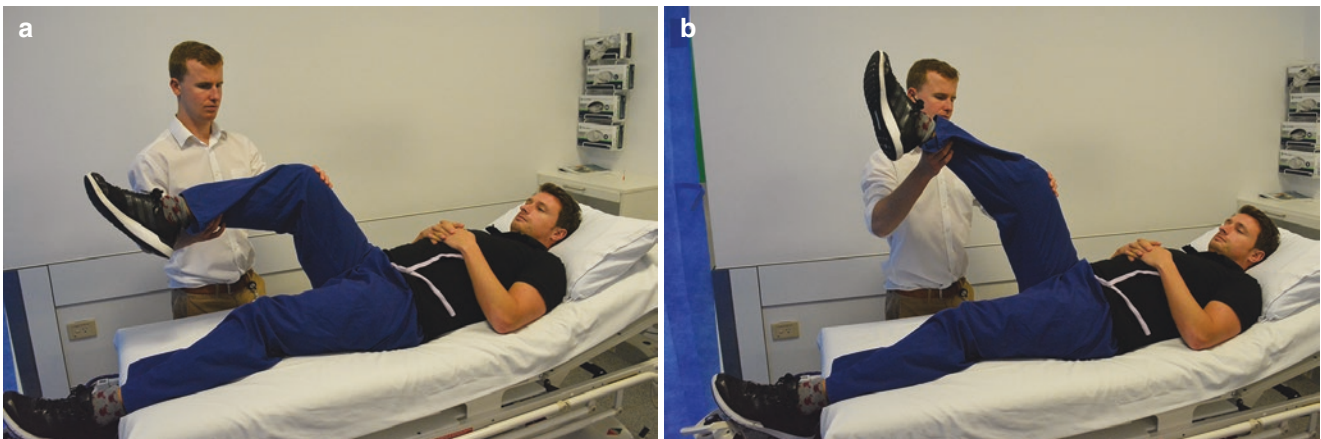


Fig. 2.59 (a, b) Kernig's sign

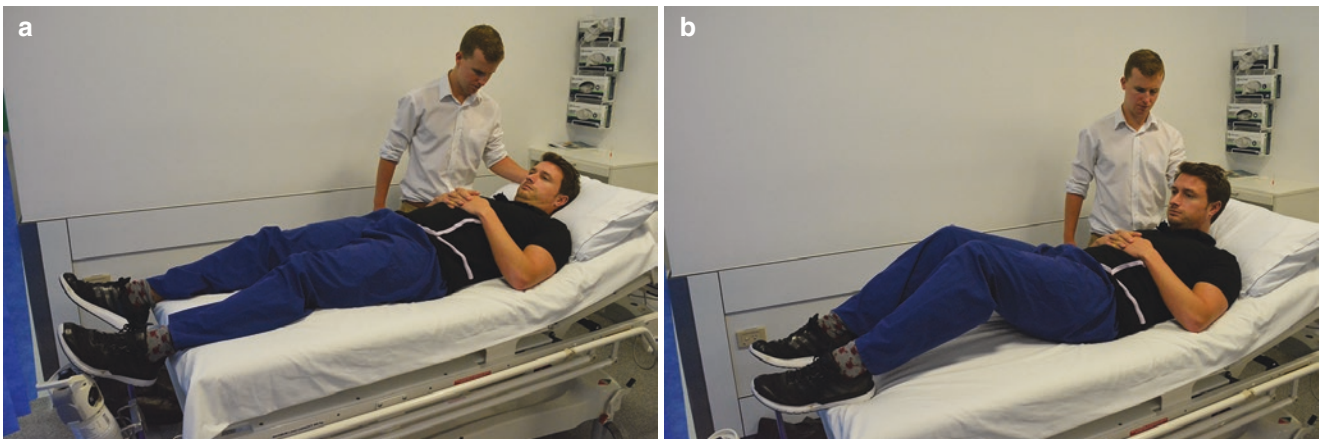


Fig. 2.60 (a, b) Brudzinkin's sign

- Bleeding tendency (systemic anticoagulation, thrombocytopenia)
- Clinical signs of raised intracranial pressure:
 - Altered level of consciousness
 - Focal neurology
 - Recent seizures
- Brain stem signs (pupillary changes/posturing/irregular respiration)
- Abnormal CT head (Arnold-Chiari malformation)
- Cardiopulmonary compromise: which may further deteriorate with positioning for lumbar puncture

Question: Bacterial meningitis is commonly caused by which bacteria?

Answer:

- *Haemophilus influenzae*, *Streptococcus pneumoniae*, *Neisseria meningitidis*, Group B streptococci, and *Listeria monocytogenes*.
- *S. pneumoniae* causes pneumococcal meningitis.
- *N. meningitidis*: usually local outbreaks among young adults. There is increased incidence in late winter or early spring. There are five subtypes that cause serious illness, which are A, B, C, Y, and W-135. Meningococcal meningitis is endemic in parts of Africa, India, and other developing nations. Periodic epidemics occur in sub-Saharan Africa as well as among religious pilgrims travelling to Saudi Arabia for the Hajj.

Question: What is going on with me? Can you please tell me more about meningitis?

Answer: Meningitis is an inflammation of the meninges, which are the coverings of the brain and the spinal cord. It can be caused by viruses, bacteria, parasites, and even by fungi. Viral meningitis is common. Management of viral meningitis is mainly supportive treatment. Antibiotics are not used for viral meningitis and most patients recover fully. Bacterial meningitis can be serious and can cause a number of complications. Patients with bacterial meningitis are promptly treated with antibiotics and supportive treatment.

Question: What are the symptoms?

Answer: Meningitis can make the patient very sick. The symptoms may develop over a short period of time in a day or two and then can rapidly become worse. Adults with meningitis may have high temperature, severe headache, neck pain/stiffness, sensitivity to bright lights (photophobia), confusion, alerted conscious level, aches, and pain in the body. There may be a rash of tiny, red purple spots or bruises

caused by bleeding under the skin and can occur anywhere on the body. This is a serious sign and indicates blood poisoning with meningococcal strain.

Question: Is there a vaccine?

Answer: A vaccine against four of the meningococcal serogroups (A, C, Y, W-135) is available. This vaccine is recommended by some groups for college students, particularly freshmen living in dorms or residence halls. The vaccine is safe and effective (85–90%). It can cause mild side effects such as redness and pain at the site of injection lasting up to 2 days. Immunity develops within 7–10 days and lasts up to 5 years.

History and Counseling: Seizures

Candidate Information:

A 28-year-old female reports to your clinic. She has been diagnosed with a seizure disorder and intends to seek advice concerning her seizures.

Please take a brief history and counsel the patient.

Differentials:

- **Adults:**
 - Trauma: Head injury, post brain injury seizure
 - Metabolic: Hypoglycemia, hyponatremia, hypoxia, hypocalcemia
 - Brain: Intracranial hemorrhage, tumor, TIA
 - Infections: Meningitis, encephalitis
 - Substance abuse: Drug withdrawal
 - Sleep disorders: Narcolepsy
 - Pseudo seizures
 - Syncope
 - Panic attacks
- **Children:**
 - Genetic and congenital abnormalities
 - Infections
 - Trauma
 - Metabolic

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now stand or sit on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr...I am your attending physician. Are you Miss...? And you are 28 years old? I understand you here because you were diagnosed to have seizures. I am going to ask you few questions. I will be happy to answer your questions and concerns.”

History of Present Illness:**(History about seizure)**

- Onset: “At what age did you have your first fit?” or “When did the seizure begin?”
- Duration: “How long does the seizure last?”
- Frequency: “How often? Have you had similar episodes before?”
- “Has there been any change in pattern recently?”
- “Do you think something is making these seizure worse?”
- Recurrence or provoked/unprovoked (triggered by nonadherence to anti-seizure medicines, sleep deprivation, stress, medicines interaction, alcohol/drug withdrawal, infection or any other illness)
- “Are these coming more frequently?”
- “When was the last fit?”
- Aura: “Did you notice any symptoms that may warn you of a seizure? Like numbness, paresthesia, strange taste, smell, flashing lights, rising abdominal sensation, dreamy state, deja vu or jamais vu, dizziness or fainting sensation?”
- “What did the episode look like/feel like?”
- “Did someone observe your fits?” (Need to take collateral history from bystanders.)
- Symptoms suggestive of generalized tonic-clonic seizures: Loss of consciousness, rigidity, crying out, cyanosis, cyanotic, head turning, eye deviation, staring or eye deviation, jerky movement, urine/fecal incontinence, salivation, lip smacking, chewing, picking up cloths, tongue bite.
- Events after episode: Confusion, somnolence, paralysis, trouble with speech, amnesia, tiredness, muscle ache, headache and a desire to sleep.

Rule Out Differentials:

- Vasovagal syncope: Light-headedness, diaphoresis, visual changes (blurred vision), and nausea.
- Infections:
 - Any cough?
 - Shortness of breath?
 - Any chest pain?
 - Any headache?
 - Any rash?
 - Any muscle aches? Neck pain?
 - Any abdominal pain?
 - Any nausea/vomiting?

- Any contact with sick individuals recently?
- Any recent travel?
- Cardiac:
 - Palpitation
 - Chest pain
 - Shortness of breath
- History of head injury

Past Medical History: “How is your health otherwise? Do you have any previous health issues?”

Birth trauma, epilepsy, seizure disorder, head injury, stroke, central nervous system (CNS) infection

Past Hospitalization and Surgical History: “Have you had any previous hospitalizations or any previous surgeries?”

Medication History: “Are you taking any prescribed medications? Any over the counter or herbal remedies? Anti-seizure medicines?” If yes, then ask about adherence and plasma levels. If non complaint then should ask: “How frequent?”

Allergic History: “Do you have any known allergies?”

Family History: “Does anyone in your family have a seizure disorder? Or any other ongoing health problems?”

Social History: “Do you smoke? Do you drink any alcohol? Have you ever tried any recreational drugs? Drug withdrawals?”

Relationships: “Are you sexually active? Do you have sex with men, women, or both?”

Functional Status: “How is this impacting you?”

Wrap-Up:

If patient was diagnosed with generalized tonic-clonic epilepsy, ask if patient wants to know about it. If the diagnosis has not been established yet, then the next step will be to perform a complete neurological examination followed by ordering tests. These should include routine blood test (full blood count, electrolytes, liver and kidney function tests, blood glucose), pregnancy tests in young females, and ECG. A CT scan of head is indicated if there are features suggesting altered consciousness, focal neurological signs, history of brain injury, known HIV status, suspected intracranial infection, and bleeding disorders. An electroencephalogram (EEG) can be planned according to the history clues.

Question: I have just been diagnosed as having epilepsy. I want to know what can I do and cannot do?

Answer: “People with seizures should try to lead as normal a life as possible. There are, however, some safety precautions that should be taken to avoid injury. These include avoiding potentially dangerous activities, e.g., swimming unaccompanied, working at rooftops and unguarded heights, and working near heavy machinery or fire. There is also a restriction on driving for patients with uncontrolled seizures.”

Question: When can I start driving? (Last seizure 4 months back)

Answer: “You are currently not allowed to drive with your last seizure only 4 months ago (please check with your regional guidelines). When you are seizure free for 1 year you may apply for reinstatement of your license. A medical review committee may be asked to look at your case and make an assessment based on your circumstances.”

Question: Can I use oral contraceptives?

Answer: “Some of the antiepileptic drugs (AEDs) such as phenobarbitone, phenytoin, carbamazepine, oxcarbazepine, and topiramate accelerate the liver metabolism of combined oral contraceptives (COCs) and progesterone-only contraceptives and reduce their efficacy. Lamotrigine is not an enzyme-inducing agent but also interacts with COCs. The blood concentration of lamotrigine is lowered by the estrogen component of COCs. This may be clinically relevant if seizure frequency is increased after initiation of COCs. In this case, the dose of lamotrigine may have to be increased on initiation of COCs and reduced on withdrawal.

There is, however, no restriction on use of non-hormonal contraception in women with epilepsy.”

Question: Is it safe to get pregnant and have children?

Answer: “Epileptic women usually have normal pregnancies, though their relative risks are perhaps double than those for the non-epileptic population. Yes, it is safe to be pregnant with seizures. You must discuss this issue with your neurologist and obstetrician before you plan to get pregnant. The levels of lamotrigine can sometimes fall in pregnancy by 50%, particularly in the second and third trimesters. The dose of lamotrigine needs careful

adjustment and monitoring of drug levels can be useful. There is no conclusive evidence of an increase in obstetric risk in epilepsy.”

Question: Risk to fetus?

Answer: “Well-controlled seizures with no falls in pregnancy offer no risk to the fetus.

Although AEDs, especially valproate, have been linked to congenital abnormalities in the fetus, the risk with monotherapy with lamotrigine is almost the same as for women with epilepsy taking no AEDs. You should start taking folic acid tablets, 5 mg daily, from at least 3 months prior to conception.”

Question: What are the chances of my children having the same disease?

Answer: “In general, seizure frequency in children of epileptic women is about four times the general population’s risk of seizure regardless of the seizure type of mother. The risk is higher with inherited forms of epilepsy, in mothers who have had seizures at a relatively younger age, and presence of EEG abnormalities in child at risk.”

“Genetic counseling may be helpful in the precise quantification of risk.”

Question: What are the employments that I should avoid with epilepsy?

Answer: “There are no restrictions for people with seizures to work at most places, but epileptics are not hired as pilots or underwater divers. They must avoid working at heights or with dangerous machinery.”

“Oversedation due to AEDs is rarely a problem, but it may affect a patient’s ability to work.”

Question: Can I plan for a holiday to the Far East?

Answer: “People with seizures are encouraged to live a normal life. Long-distance travel with time zone changes may cause sleep deprivation. Benzodiazepines may help. Excess alcohol and lack of sleep may provoke seizure in some epileptics. You should carry enough amounts of AEDs when travelling.

Table 2.4 Comparison between symptoms of syncope and seizure

	Syncope	Seizure
Aura	Light-headedness or dizziness	Specific aura
Duration	Brief	Brief or can be prolonged
Time	Daytime	Any time
Position	Upright	Any position
Injury	Rare	Frequent
Autonomic features	Present	Uncommon
Postictal	Rare	Postictal confusion
Urinary incontinence	Rare	Variably present

Table 2.5 Comparison between seizure and pseudoseizure

	Seizure	Pseudoseizure
Age	Any	Less common in elderly
Duration	Brief	May be prolonged; sometimes for long time, with intermittent relaxation
Isolation	Alone or in presence of others	Rare alone
Trigger	Uncommon	Emotional, Forced eye closure, Pelvic thrust, Side-to-side head movement, Crying
Symptoms	Stereotypic	
	Synchronous	
	Face involved	
	Rigidity, clonic jerking	
Injury	Frequent	Rare
Timing	Any	Never during sleep
Urinary incontinence	May be present	Rare

Further Reading: See Table 2.4 for comparison between symptoms of syncope and seizure and Table 2.5 for comparison between seizure and pseudoseizure.

History and Examination: Dizziness: Benign Paroxysmal Positional Vertigo

Candidate Information:

A 54-year-old woman presents to your clinic complaining of dizziness.

Vital Signs: Temp, 36.6 °C; HR, 89; BP, 140/79; RR: 15

Please take a focused history and perform the relevant examination.

Differential:

Immediately consider the common differential of vertigo that may be presented here. Remember, history plays a key role in the diagnosis because many patients with vertigo may

have no apparent clinical signs. A careful history from the patient and any witnesses is essential, as the history alone may provide the diagnosis or at least guide to the appropriate examination or test.

- Benign paroxysmal positional vertigo (BPPV)
- Acute vestibular neuronitis
- Ménière's disease
- Vestibular migraine
- Stroke
- Multiple sclerosis
- Intracranial neoplasms

The aim of the history taking from a patient with recurring vertigo is to identify the features in the history that may fit into those of peripheral vestibular lesions. Symptoms suggestive of brainstem lesion are carefully explored to rule out any potentially serious cause.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now stand or sit on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician. Are you Miss...? And you are 64 years old? Is it alright if I ask you a few questions about your dizziness, and then we will discuss about the plan? During the history if you have any question or you feel any discomfort please let me know.”

History of Present Illness:

The potential diagnoses vary widely and include neurological, cardiovascular, metabolic, vestibular, and psychological conditions.

1. When a patient complains of dizziness, it is important to clarify this symptom first. Determine that the patient's symptoms are those of vertigo.
2. Determine whether the patient has a **peripheral or central** cause of vertigo. Carefully ask for associated symptoms.

- Vertigo versus another type of dizziness:
 - Vertigo: Ask open questions, such as “Tell me what it feels like?” Do you feel anything moving around you?” Most patients will often make a gesture of rotating a finger around their head or indicate a revolving

spinning motion with their hand. Avoid asking a leading question using the word “spinning.”

- Light-headedness: Ask “Did you feel faint or is there a feeling of black out?”
- Disequilibrium: Ask “Do you feel unsteady on your feet or off balance?”
- Timing and onset: “When did the symptoms start?”
- Time course: “Is it worsening, resolving, or fluctuating?”
- Persistence: “Is it constant or occurring in episodes?”
- Duration of symptoms: “How long do the symptoms last?” Be careful in differentiating the duration of vertigo, feeling of off balance, and feeling of being unwell.
- “Vertigo is spontaneous or provoked?” Provoking factors may include standing or exercise, suggesting postural hypotension or changing position in bed or tilting the head back or bending forward, suggesting BPPV.
- Condition between episodes: “Do the symptoms go away completely between episodes?”
- History of ear symptoms (tinnitus, hearing loss, pain, discharge), neurological symptoms, or visual symptoms.
- Associated **symptoms**
 - Nausea and vomiting or motion sickness
 - Neurologic symptoms such as loss of consciousness or altered level of consciousness, motor weakness, speech disturbance, headache
 - Symptoms suggestive of auras of complex partial seizures such as strange taste, feeling odd or déjà vu, automatisms including lip smacking, chewing, or picking on objects
 - Cardiac symptoms such as palpitations
 - Abnormal movements like limb jerking or tongue biting
 - Headache
 - Psychiatric symptoms such as mood disturbance or anxiety symptoms

Past History: “How is your health otherwise? Have you had any similar symptoms previously? Is there a past history of ear disease?” Ask for other risk factors for inner ear disease, such as head injury.

Past Hospitalization and Surgical History: “Have you had any previous hospitalization or previous surgery?”

Medication History: “Are you taking any other medication, prescribed and over the counter or herbal?” Consider ototoxic medication or antihypertensive drugs (any recent changes in dosing).

Family History: “Has anyone in your family had similar symptoms or any ongoing health problems?”

Personal/Social History: “Do you smoke? Do you drink alcohol? Have you ever tried any recreational drugs?”

Examination:

“Now, I am going to perform a physical examination.” Have the patient seated on a chair in front of you. Look for:

- **Pulse rate and rhythm, heart sounds:** Assess for cardiac causes.
- **Postural blood pressure:** A drop in systolic blood pressure of ≥ 20 mm Hg or diastolic blood pressure of ≥ 10 mm Hg within 3 minutes of standing suggests orthostatic hypotension.
- **Ears:** Otoscopy of both ears, tuning fork tests of hearing (see CN-VIII).
- **Eye movements:** Observe the eyes in primary position of the gaze. Test for pursuit, saccades, and nystagmus, spontaneous and gaze evoked (see CN-III). The nystagmus of vestibular dysfunction has a slow labyrinthine component and a fast central corrective phase and is increased when the patient moves the eyes in the direction of the fast component.
- **Neurological examination:** Pronator drift has a high sensitivity for diagnosing stroke. Patients with a suspected TIA should have an ABCD² score done to assist in stratifying the risk of subsequent stroke. Examine cranial nerves and look for cerebellar signs.
- **Inspect for facial asymmetry:** Eyebrow sagging, absence of the nasolabial fold on the affected side, and deviation of the mouth to the non-affected or healthy side (see CN-VII).
- **Gait:** When asked to walk with eyes open, patients with peripheral vestibular dysfunction tend to sway to the affected side.
- **Romberg’s test:** The patient is asked to stand with the feet together, initially with eyes open and then with eyes closed. Patients with peripheral vestibular dysfunction tend to sway to the affected side.
- **Vestibulo-ocular reflex tests** are performed in specialist neurotology clinics.
- Mention about **position testing** by Dix-Hallpike maneuver and caloric test. Maneuvers that evoked nystagmus, such as the Dix-Hallpike maneuver, are helpful for diagnosing benign paroxysmal positional vertigo.

Wrap-Up:

- Thank the patient.
- Wash hands.
- Suggest further assessments by examining relevant cranial nerves and hearing testing.

Question: When would you ask for neuroimaging in a case of vertigo?

Answer: Neuroimaging is usually requested in patients of vertigo with:

- Focal neurologic signs and symptoms
- Risk factors for cerebrovascular disease
- Progressive unilateral hearing loss
- Suspected developmental defects such as Arnold-Chiari

Magnetic resonance imaging is more appropriate than computed tomography for diagnosing vertigo because of its superiority in visualizing the posterior cranial fossa.

Question: When would you refer a patient with dizziness urgently?

Answer: All patients with red flags warrant urgent referral for assessment and management.

- Focal neurological symptoms or signs
- Patients with suspected TIA or minor stroke (ABCD² score ≥ 4)
- Unilateral, sudden hearing loss
- New headache
- Normal vestibulo-ocular reflex (VOR) as assessed by the head impulse test (which would imply that the vertigo does not originate in the peripheral vestibular system)
- Cardiac symptoms and signs such as irregular heart rate, associated chest pain or breathlessness, and electrocardiogram (ECG) abnormalities

Question: What are peripheral vestibular causes of vertigo?

Answer:

- Benign paroxysmal positional vertigo (BPPV)
- Acute vestibular neuronitis
- Ménière's disease
- Otosclerosis
- Cholesteotoma

Question: What are central causes of vertigo?

Answer:

- Cerebellopontine angle lesions
- Vestibular migraine
- Transient ischemic attack or stroke
- Multiple sclerosis

Question: What is going on (vertigo) with me?

Answer: "Vertigo in a majority of patients is caused by vestibular dysfunction. The symptoms of these common causes of vertigo tend to be self-limiting because either the pathology resolves or the patient develops compensatory mechanisms. These patients are usually completely well between attacks. Few patients with potentially serious non-

vestibular causes can present with vertigo or similar symptoms. A thorough and focused history and appropriate physical examination is required to exclude these less common conditions."

Benign Paroxysmal Positional Vertigo: "BPPV is a recurrent, transient (lasting for 30 seconds to a minute), positional vertigo, which is specifically induced with head movements. The whole episode is self-limiting that lasts for a few weeks."

"The underlying pathophysiology is otoconial debris collecting in one of the semicircular canals, usually posterior, and stimulating the canal when head movements are directed along the same plane as the canal."

BPPV can be diagnosed with the Dix-Hallpike maneuver (a positional maneuver in which the patient's head is turned sideways and then the patient is tipped backward such that the head overhangs the edge of the couch). The nystagmus has a latency period of a few seconds before it comes on; it is rotatory and directed toward the ground. It fatigues down and upon repeating the Dix-Hallpike maneuver; it is much less severe.

Vestibular Neuronitis: "Vestibular neuronitis is a spontaneously occurring single attack of sudden, severe and continuous vertigo, nausea and/or vomiting, and imbalance. The vertigo and nausea typically lasts for about a week, during which the vertigo is constant, even when the head is held completely still. Patients exhibit spontaneous nystagmus when instructed to look forward. The nystagmus of vestibular neuronitis is mostly horizontal, with some rotatory (torsional) component, and is unidirectional. Patients with vestibular neuronitis can remain upright using 'furniture walking.'"

Ménière's Disease: "Ménière's disease presents as recurrent episodes of vertigo associated with hearing loss and tinnitus. The attacks occur spontaneously and are sustained for hours, associated with a sensation of fullness in the ear. There may be severe nausea and vomiting. During a vertigo attack, the patient is completely incapacitated."

A definite diagnosis of Ménière's disease depends upon all three of the following criteria:

1. At least two spontaneous episodes of rotational vertigo lasting at least 20 min.
2. Audiometric confirmation of a sensorineural hearing loss.
3. Tinnitus and/or a perception of aural fullness.

Although these criteria exclude most other vestibular conditions, they cannot exclude non-vestibular diseases such as the presence of acoustic neuroma.

Stroke and Transient Ischemic Attacks (TIA): “Cerebrovascular events can affect the brainstem resulting in vestibular symptoms due to involvement of the vestibular nuclei. Vertigo is of sudden onset and may be sustained for hours. The presence of focal neurological symptoms and signs help in localization.”

Brainstem Tumors: “The possibility of a brainstem tumor such as cerebellopontine angle lesion must be considered in patients who present with persistent vertigo, asymmetrical cochlear symptoms – such as hearing loss and/or tinnitus in one ear only – and involvement of multiple cranial nerves in that area; e.g., trigeminal and facial nerve.”

Cerebellar Syndromes: “Patients with a cerebellar stroke have persistent vertigo and nausea. They are unable to stand. A downbeat nystagmus in a patient with vertigo may suggest pathology at the cranio-cervical junction.”

Management: Unresponsive Patient

Candidate Information:

A 42-year-old female was found unresponsive in the hospital parking lot. She has been brought to the emergency room. Please manage the patient.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now stand on the right side of the patient and start the examination.

Opening:

“The primary goal of examination of an unresponsive patient is to determine the cause of unresponsiveness (coma) and take immediate remedial measures to save the life and stabilize the patient.” (Please read and follow the Basic Life Support, Advanced Cardiac Life Support, and Advanced Trauma Life Support protocols [2–6]).

Triage Immediately:

Once you enter the room, call the patient’s name and gently shake her shoulder or hand. Apply painful stimuli to supraorbital or sternal area.

Say that the patient is unresponsive to verbal and painful stimuli.

Shout for help!

Mention to the Examiner: I will start with the primary survey (ABCDE).

Call the patient by name or check:

- **Airway**
 - Is the airway patent?
 - Open mouth to inspect tongue and teeth.
 - Clear mouth, if required.
 - Give oxygen through a face mask.
 - Protect airway.
 - Check for trachea (mid line).
 - Comment on airway.
- **Breathing**
 - Is the patient breathing?
 - Check respiratory rate. Observe for abnormal respiratory pattern such as Cheyne-Stokes, acidotic breathing.
 - Pulse oximetry to keep SaO₂ >95%.
 - Inspect the chest for asymmetry.
 - Auscultate the chest.
 - Rule out pneumothorax.
- **Circulation**
 - Check pulse, BP, temperature, and random capillary glucose.
 - Cardiac monitoring/12-lead ECG.
 - Pass two large-bore cannulas (G14/G16), one on each arm.
 - Draw blood for Lab – CBC, electrolytes (Na, K, Ca, Mg), coagulation screening, urea and creatinine, liver function tests (LFTs), glucose, thyroid profile, blood culture (if indicated).
 - Toxicology screen and alcohol level.
 - Group and Rh.
- **Drugs** – Use the following as indicated:
 - Thiamine 100 mg IV
 - Dextrose water 50 mL of 50% IV
 - Naloxone 0.4–2 mg IV
- **Disability and Neurological Status** – Rapid neurological assessment should be done next:
 - During the primary survey a basic neurological assessment is made, known by the mnemonic **AVPU**
 - Alert
 - Verbal stimuli response
 - Painful stimuli response
 - Unresponsive
 - Or by using **GCS** (Table 2.6)
 - **Pupils:** size, symmetry and reaction.
 - Any lateralizing signs.
- **E: Exposure/Environmental Control** – Clothes may need to be cut off for proper exposure, but one needs to keep in mind the prevention of hypothermia. After a quick examination cover up the patient, and prevent heat loss with warming devices, such as warmed blankets.

Table 2.6 Glasgow coma score

Eye opening (E)	Verbal response (V)	Motor response (M)
Spontaneous	4 Oriented	5 Obeys verbal command
To verbal command	3 Disoriented and converses	4 Localizes painful stimuli
To pain	2 Inappropriate words	3 Withdraws from pain stimuli
No eye opening	1 Incomprehensible sounds	2 Abnormal flexion (decorticate) to painful stimuli
	No verbal response	1 Abnormal extension (decerebrate) to painful stimuli
		No motor response
		Total

Secondary Survey:

(When the patient is hemodynamically stable)

- **History:**
 - **Allergy:** “Do you have any known allergies?”
 - **Medication:** “Do you take any regular or prescribed medications?”
 - **Previous medical history:** “Do you have any known medical conditions?”
 - **Last meal:** “When was the last time you ate or drank something?”
 - **Event history:** “What happened?”
 - Try to get as much details as possible about how they feel.
 - Ask questions about pain. Can they feel any pain? If yes, then explore pain.
- **Head-to-toe examination:**
 - **Check for vital signs again.**
 - **Bleeding:** Check the body from head-to-toe for any signs of bleeding.
 - **Abnormal smells:** Acetone (ketosis), alcohol, or ammonia (uremia)
 - **Head and neck:** Is there any bleeding, swelling, or dent in the scalp or on the face?
 - **Eyes (Pupils):** Normal pupillary size, shape, and light reflexes indicate a functioning brainstem and point to a metabolic cause of coma, a bilateral hemispherical lesion, or unilateral hemispherical lesion with secondary pressure on midbrain. Pupils become pinpoint with heavy doses of opioids and are widely dilated with atropine poisoning.
 - **Nose:** Is there any blood or clear fluid coming from the nostrils?
 - **Mouth:** Look for mouth injuries or burns in their mouth, loose dentures, and any foreign bodies.
 - **Ear:** Observe for an appropriate response when talking to patient. Do an ear examination. Is there any blood or clear fluid coming from either ear?

Table 2.7 Common medical conditions that require urgent intervention

Status epilepticus	EEG	Antiepileptics
Raised intracranial pressure	CT brain	Treat
Acute stroke	CT brain	Thrombolytics
Hypertensive encephalopathy	CT brain	Antihypertensives
Myocardial infarction	ECG and troponins	Thrombolytics
Meningitis/encephalitis	CSF and blood cultures	Antibiotics

EEG electroencephalogram, *CT* computed tomography, *ECG* electrocardiography, *CSF* cerebrospinal fluid

- **Skin:** Note the color, marks, turgor, rash, and temperature of their skin.
- **Neck:** Feel for trachea, neck, and cervical spine tenderness.
 - **Signs of meningeal irritation** are elicited in meningitis and subarachnoid hemorrhage.
 - **Chest:** Observe the chest for rise and fall. Feel the rib cage to check for any deformity or sensitivity.
 - **Collar bone, arms, and fingers:** Feel all the way along the collar bones to the fingers for any swelling, sensitivity, or deformity. Check that the patient can move elbows, wrists, and fingers. Look for any needle marks on the forearms.
 - **Spine:** Log roll needs minimum of four people to complete it, one stabilizing the neck, two log rolling, and one palpating the spine. Palpate the entirety of the spine. Look at the back of the chest and back for any injuries. Also do a rectal exam.
 - **Abdomen:** Gently feel the abdomen to check for any signs of internal bleeding.
 - **Hips and pelvis:** Feel both hips and the pelvis for signs of a fracture. Check clothing for any signs of incontinence, which may suggest a bladder injury.
 - **Legs:** Check the legs for any bleeding, swelling, deformity, or soreness. Ask the patient to raise one leg and then the other and to move the ankles and knees.
 - **Toes:** Check the movements and feeling in the toes. Compare both feet and note the color of the skin.
- Additional investigations with secondary survey:
 - CT scans.
 - Ultrasound.
 - Contrast X-rays.
 - Angiography.
 - See Table 2.7 for some medical conditions requiring urgent intervention.

Wrap-Up:

- Thank the patient and ask the patient to cover up.
- Wrap up your findings with the examiner or the patient.

History and Physical Examination: Parkinson's Disease

Candidate Information:

A 62-year-old female comes to your clinic with an unsteady gait and tremors.

Vital Signs: Temp, 36.5 °C; HR, 74; BP, 137/8; RR, 15

Please take a brief history and perform the relevant physical examination.

Differential:

- Parkinson's disease
- Essential tremors
- Physiological tremors
- Midbrain lesion (stroke, trauma)
- Drug-induced tremors (B-agonist, nicotine, tricyclic antidepressants, lithium)
- Psychogenic

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now stand or sit on the right side of the patient and start the interview.

Opening:

"Good morning/good afternoon. I am Dr...I am your attending physician for today. Are you...? And you are 62 years old? You are here because you have an unsteady gait and tremors. I am going to ask you some questions and then I will do the relevant examination. Should we start?"

History of Present Illness:

- **Tremors:**
 - "When did it start?"
 - "Is it getting worse or better?"
 - "Do you notice these while resting or while doing something?"
 - "Anything that makes it better?"
 - "Anything that makes it worse?"

Associated Symptoms:

- Falls
- Drooling
- Changes in voice/slurred speech
- Changes in hand writing (patient may show a page with very small hand writing)
- Weakness, tingling, numbness

- Previous or recent depression
- Difficulty in concentration
- Memory loss
- Dizziness
- Changes in vision: double vision, curtain drop (TIA), or light flashes (retinal detachment)
- Loss of consciousness
- Headache
- Fever
- Nausea or vomiting
- Sweating
- Skin changes (color, swelling, and warmth)
- Recent head or spine trauma

Past Hospitalization and Surgical History: "Have you had any previous hospitalization or previous surgery?" History of stroke, TIA, heart attacks, chest pain, HTN, DM, atrial fibrillation, neurological disease (seizures, migraine, MS, aneurysms).

Medication History: "Are you taking any medication, prescribed, over the counter, or herbal and any side effects?" If patient says no, then continue to next question.

Allergic History: "Do you have any known allergies?"

Personal History: "Please tell me about yourself." (Can be asked in any sequence: marital status, occupation, religion, education, type of residence, living conditions.) "Do you have problems at work? How are you doing at work?" "Have you had any recent event in your family such as an accident or someone died?"

Social History:

- "Do you smoke or does anyone else in your home or close at work smoke?"
- "Do you drink alcohol?" If yes, then ask further questions: "How much? Daily? How long?"
- "Have you ever tried any recreational drugs?" If yes, "Which one? How long? When?" Specially ask about IV drug use.

Family History: Marital status, number of children, any significant history in first-degree relatives

Relationships: "Are you sexually active?"

Self-Care and Living Condition: "What do you do for living? Working status and occupation? Educational status? Who lives with you?"

Support: "Do you have good family and friends support?"

Functional status or severity or impact on life activities?

Activities of Daily Living (ADLs)

- Walking: Getting around the home or outside. Also labeled as ambulating.
- Transferring: Being able to move from one body position to another. This includes being able to move from a bed to a chair or into a wheelchair.
- Dressing and grooming: Selecting clothes, putting them on, and managing one's personal appearance.
- Feeding: Being able to get food from a plate into one's mouth.
- Bathing: Washing one's face and body in the bath or shower.
- Toileting: Getting to and from the toilet, using it appropriately, and cleaning oneself.

Instrumental Activities of Daily Living (IADLs)

- Finances: Such as paying bills and managing financial assets.
- Transportation: Driving or by organizing other means of transport.
- Shopping and meal preparation: Getting a meal on the table. It includes shopping for clothing and other items required for daily life.
- Housecleaning: Cleaning kitchens after eating, keeping one's living space clean and tidy. Keeping up with home maintenance.
- Communication: Using telephone and mail.
- Medications: Obtaining medications and taking them as required.

Physical Examination:

Mention here: "I will perform the clinical examination. Should we start?"

Vitals:

Start with the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.) Comment on the vital signs findings: "Vital signs are normal" or mention if any abnormal finding. Mention postural hypotension.

General Appearance:

- Level of consciousness
- Distress or calm
- Just mention Mini-Mental State Examination (MMSE)

Speech: Mention patient speech is monotonous/soft voice/faint voice/slow/hypophonia.

Inspection:

- Face: Mask-like face (expressionless face), the absence of blinking, seborrhea, open mouth, drooling (look for

patient having a tissue paper in her hand), head or chin tremors.

- Tremors: Pill rolling, resting (4–6 hz) asymmetric/symmetric.
- Glabellar tap: Tell the patient that you will be tapping her forehead. Ensure the fingers are out of visual field to avoid blinking due to visual threat. Percuss the forehead between eyes from above with index finger (Fig. 2.61). The test is positive if there will be persistence of blinking past five to ten taps.
- **Gait:** Get up and do test: Ask the patient to stand up with arms crossed, walk about 10 feet and back in 30 seconds (Fig. 2.62). Observe for difficulty in rising from chair and type of gait.
 - Shuffling gait: Short stride and barely raises feet
 - Simian posture: Stooped with loss of arm swing
 - Festination: Difficulty initiating then hurries
 - Freezing while turning will turn the whole body
 - Poor balance
 - Difficulty in turning and stopping
- **Muscle tone:** Upper and lower limbs (rigidity – cog wheel, lead-pipe rigidity)
- **Muscle Power:** Upper and lower limbs
- **Limbs:** Micrographia (small hand writing), bradykinesia (slowness in movements), postural instability, stooped posture
- **Reflexes**
- **Sensory:**
 - Light touch and pinprick (normal)
 - Two-point discrimination

Cerebellar Examination (Coordination)**Wrap-Up:**

Wrap up your findings and ask the patient if they have any concerns.



Fig. 2.61 Glabellar tap

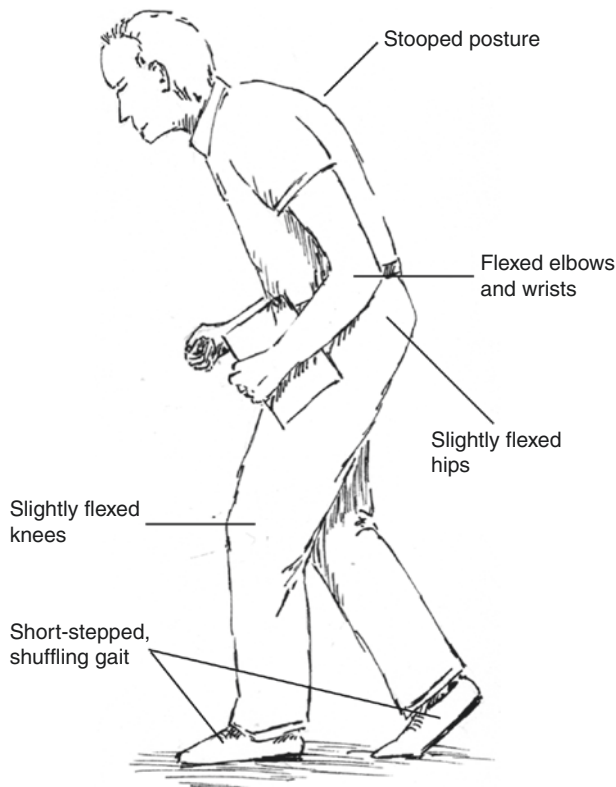


Fig. 2.62 Gait problems in Parkinson's disease. (Modified with permission, Phillips [9])

History: Frequent Falls

A 71-year-old male came to your outpatient clinic with a history of frequent falls. Please take a detailed history. No examination is required for this station. (Please also see a similar topic "Fall" in Chapter 16 Geriatrics).

Differentials:

- **Fall secondary to medical conditions:**
 - Low blood pressure/orthostatic hypotension
 - Poly-pharmacy
 - Hypovolemia
 - Poor intake
 - Vomiting/diarrhea
 - Recent bleeding
 - Cardiovascular disease
 - Poor diabetic control/hypoglycemia
 - Psychological conditions (depression)
 - Dementia or delirium
 - Stroke
 - Parkinson's disease
 - Epilepsy
 - Vision problems (impaired vision/cataract)
 - Arthritis
 - Foot disorders

- Balance disorders
- Impaired lower limb strength
- **Social conditions:**
 - Elder abuse
- **Environmental factors:**
 - Poor lighting
 - Slippery surfaces (wet floors, wet toilets, slippery shower/bath area)
 - Loose objects on floor
 - Poorly fitting footwear
 - Loose rugs and mats
 - Uneven floors or paving
 - No handrails on stairs

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now stand or sit on the right side of the patient and start the interview.

Opening:

"Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Mr...? And you are 71 years old? You are here because you recently have frequent falls. Please tell me more about it."

(Show empathy throughout the interview and offer help).

History of Present Illness:

- "How long has it been going on?"
- "When was the last time you had a fall?"
- Location: "Where? Where did it usually happen? Home/ outside?"
- Setting: "What are you usually doing when it happens?"
- Syncope: "Were you standing from lying position? Walking?"
- Timing: "When did you fall first time? How many times a day? Did you fall at night time?"
- "Did anybody witness your fall?" If he says yes, then just mention that you need to take a collateral history later.
- "What happened afterward? Did you lose consciousness?"
- "Did you hurt yourself? Any previous fall injuries?"

Try to find out a cause (usually there will be one or two):

- **Environmental:**
 - Lighting
 - Shoes
 - Floors
 - Loose rugs
 - Stairs

- **Physical causes:**
 - Vision problems (important).
 - Hearing loss.
 - Dizziness or vertigo.
 - Heart racing.
 - TIA (weakness of side of body).
 - Orthostatic hypotension: medication, anemia (blood loss/melena).
 - Thyroid screening.
 - Arthritis.
 - Light headed.
 - What brings it on?

Past Hospitalization and Surgical History: “Have you had any previous hospitalization or previous surgery?” History of stroke, TIA, heart attacks, chest pain, HTN, DM, atrial fibrillation, neurological disease (seizures, head trauma, migraine, MS, aneurysms), depression, gastrointestinal bleeding, dementia.

Medication History: “Are you taking any medication, prescribed, over the counter, or herbal and any side effects?” If patient says no, then continue to the next question.

- Antihypertensives, diuretics – Ask for any recent changes in the doses.
- Polypharmacy – Ask if the patient has a list of his medications. He may hand over a list. Read it carefully before commenting on the medications.

Allergic History: “Do you have any known allergies?”

Personal History: “Please tell me about yourself.” (Can be asked in any sequence: marital status, occupation, religion, education, type of residence, living conditions.)

Social History: “Do you smoke? Do you drink alcohol?”

Self-Care and Living Condition: “What do you do for living? Working status and occupation? Educational status? Who lives with you? Do you have good family and friends support?”

Functional status or severity or impact on life activities?

Activities of Daily Living (ADLs)

- Walking: Getting around the home or outside. Also labeled as ambulating.
- Transferring: Being able to move from one body position to another. This includes being able to move from a bed to a chair or into a wheelchair.
- Dressing and grooming: Selecting clothes, putting them on and managing one’s personal appearance.
- Feeding: Being able to get food from a plate into one’s mouth.

- Bathing: Washing one’s face and body in the bath or shower.
- Toileting: Getting to and from the toilet, using it appropriately, and cleaning oneself.

Instrumental Activities of Daily Living (IADLs)

- Finances: Like paying bills and managing financial assets.
- Transportation: Driving or by organizing other means of transport.
- Shopping and meal preparation: Getting a meal on the table. It includes shopping for clothing and other items required for daily life.
- Housecleaning: Cleaning kitchens after eating, keeping one’s living space clean and tidy. Keeping up with home maintenance.
- Communication: Using telephone and mail.
- Medications: Obtaining medications and taking them as required.

Wrap-Up:

Wrap up your findings and ask the patient if they have any concerns.

Question: What will you do next?

Answer: “I would like to do a detailed physical examination.”

Question: What will you observe in physical examination?

Answer: “I shall observe for:

- Postural changes in vital signs.
- Check for visual problems.
- Presence of arrhythmias.
- Listen for carotid bruits.
- Check for lower extremity strength and joint function.
- Check for gait and balance abnormalities.
- A neurologic evaluation looking for focal deficits.
- Assessment of lower extremity peripheral nerves, proprioception, and vibration sense.
- Tests for cerebellar functions.
- Get up and go test: Observe patient for unsteadiness as the patient gets up from a chair without using the arms, walks 10 feet, turns around, walks back, and resumes a seated position. Time of the process, which should take less than 16 seconds, enhances the sensitivity of this test. Patient difficulties performing this test indicate an increased risk for falling and the need for further comprehensive evaluation.”

Question: What tests will you order?

Answer: “Complete blood count, electrolytes, BUN, creatinine, glucose, thyroid function, and vitamin B₁₂ levels. Syncope evaluation, a possible consult to a cardiologist. ECG and an electrocardiography (Holter monitor). Brain imaging if history suggest a cerebral cause. Physio review.”

Question: What will you do next?**Answer:**

- Fall risk counseling
- Adjusting medications
- Safety-related skills
- Environmental hazard reduction: Home safety assessment and modifications
- Exercise and physical training: Improve balance and progressive muscle strengthening
- A walking plan: appropriate use of assistive devices by an occupational therapist

Checklist: Alcohol Intoxication Physical Examination**Candidate Information:**

You are working in an emergency room. A 46-year-old male was found in an altered conscious state outside a bar. He was being brought in by an ambulance. He smells of alcohol. Please perform a relevant examination. See Table 2.8 for a checklist that can be used as a quick review before the exam.

Table 2.8 Checklist for alcohol intoxication physical examination

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Now sit on the chair or stand on the right side of the patient and start the interview
Opening	Introduction, greet, explain, position, and expose/drape
	Ask for vital signs – interpret the vital signs
	The primary goal of examination of an unresponsive/altered conscious state patient is to determine the cause of unresponsiveness and take immediate measures to save the life and stabilize the patient (Please read and follow basic life support, advanced cardiac life support and advanced trauma life support protocols)
Triage immediately	Once you enter the room, call patient name, and gently shake the shoulder or hand. Check for response, and immediately tell the examiner about your findings
Shout for help!	(A nurse may be there in this station)
Mention to the examiner	“I will start the primary survey (ABCD)”
Primary survey (airway, breathing, circulation, drugs)	Call the patient by name or check:
	Airway
	Is the airway patent?
	Open mouth to inspect tongue and teeth
	Clear mouth with a finger, if required
	Give oxygen through a face mask
	Protect airway
	Check for trachea (midline)
	Comment on airway
	Breathing
	Is the patient breathing?
	Check respiratory rate. Observe for abnormal respiratory pattern such as Cheyne-Stokes, acidotic breathing,
	Pulse oximetry to keep SaO ₂ >95%
	Inspect the chest for asymmetry
	Auscultate the chest
	Rule out pneumothorax
	Circulation
	Check pulse, BP, temperature, and random capillary glucose
	Cardiac monitoring/12-lead ECG
	Pass 2 large-bore cannula (G14/G16), one on each arm
	Draw blood for Lab – CBC, electrolytes (Na, K, Ca, Mg), PT/aPTT, urea and creatinine, LFTs, glucose, thyroid profile, blood culture (if indicated)
	Toxicology screen and alcohol level
	Group and Rh
	Drugs – use the following as indicated:
	Thiamine 100 mg IV
	Dextrose water 50 mL of 50% IV
	Naloxone 0.4–2 mg IV
Mention that you want to get a set of vitals and attach monitors for continuous monitoring. (Look for tachycardia and high temperature)	

(continued)

Table 2.8 (continued)

Secondary survey (when the patient is hemodynamically stable)	Take history from the person who brought the patient. Ask specifically about diseases of the liver, kidney, diabetic on insulin, epilepsy, illicit drug use, psychiatric history or drugs, previous suicide attempt, previous surgeries
	Ask if last meal known, allergies (medic alert band), events leading to presentation
	Check for alert and orientation (time and place), drowsiness, confusion, dysarthria
	Check memory for amnesia
	Ask for any visual or auditory hallucinations
	Head and neck examination: Jaundice, parotid gland enlargement, temporal muscle wasting
	Observe for nutritional status of the patient
	Hands: clubbing, palmer erythema, dupuytren contracture, Terry's nails
	Cranial nerve examination: check for diplopia and nystagmus
	Cerebellar examination: tremors
	Gait: Walk, ataxia, imbalance
	Inform patient that you want to examine the abdomen:
	Chest: gynecomastia, spider angiomas, armpit hair loss
	Abdomen: caput medusae, bulging flanks, abdominal mass or hernias
	Auscultation: liver bruit and spleen bruit
	Percussion: liver span (decreases in cirrhosis), ascites (fluid thrill and shifting dullness)
	Back: sacral edema
Legs: edema	
Genitourinary: testicular atrophy	
Wrap-up	Thank the patient and describe your findings to the examiner

ABCD airway, breathing, circulation, drugs

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Psychiatry

3

Mubashar Hussain Sherazi

History Overview: Psychiatry

In most of the objective structured clinical examinations (OSCE), one can expect to have at least two psychiatric stations. Many candidates considered these to be the most challenging ones. Usually these are history taking and discussing a management plan with the patient or the examiner. See Table 3.1 for an overview of the pattern of history taking required for psychiatry stations.

Sometimes in these stations, you may be asked to counsel the patient regarding the expected diagnosis. Psychiatric stations are also challenging in a way that a large number of questions need to be asked in a limited time frame. The purpose of psychiatric history is to identify patient physical and psychosocial problems and to rule out the common differential diagnosis. At the end, you wrap up with a treatment plan. It is equally important to extract vital information about the patient and patient's family, including mental illnesses, smoking/drugs/alcohol use, sexual activity, child/spouse abuse, and living circumstances.

This chapter will outline common psychiatry topics important for OSCE. It is extremely important to read the key points in *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)* criteria for these topics so you can familiarize the key aspects of each scenario. Another important part of the psychiatric stations is to memorize common medications used in different psychiatric disorders, which are often asked in post-encounter questions. Patients may ask about the side effects and duration of treatment. Depression and panic attacks are the most commonly asked scenarios in most of the OSCE.

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Detailed History: Psychiatry

A number of readings of the important psychiatric topics are required to memorize and make good concepts on how to smoothly go through the history part of these stations. Practicing with keeping a time check will also help in mastering these stations to be completed within a time limit.

Please remember/write the patient's name and age from doorway information. The settings in which you are seeing a patient are also important. Either the patient is presenting in the emergency room or at an outpatient clinic. Another important clue to look for in the doorway information is the patient's current emotional status. This will determine how to approach the patient, how to start the interview, and how to establish a quick rapport.

Support: It is extremely important to express support to the patient by showing your interest and concerns as a physician for the patient. "It must be a scary experience for you."

Empathy: Assist the patient to feel like he is well understood and communicate back by nod, gesture, or a comment, "I can see you are worried about yourself."

Validation: Make the patient realize that you are giving credence and value to the patient's feelings, such as by saying, "Many people of your age may have the same feelings, who are in similar circumstances as you are now."

In some scenarios, it will be difficult to get the patient's attention in the conversation. Look for the patient's nonverbal cues; observe for poor eye contact—seen in cases of depression. The patient may appear sad, avoid eye contact by staring at the walls or the roof, lack response, have slow monotonous or explosive pressured speech, and wander around in the room and be restless or irritable.

Table 3.1 Quick review of psychiatric history

Psychiatric history
Introduction
Confirm patient identification (ID): name and age
Chief complaint
In patient's own words
History of present illness
Analysis of chief complaint:
Onset—sudden or gradual
Course
Duration
Associated factors
Symptoms related to the same system
Symptoms related to adjacent systems
Constitutional symptoms
Predisposing, aggravating, and relieving factors
Red flags/risk factors
Rule out differential diagnosis
Past psych history
Diagnosis
Treatments
Psych admissions
Psych visits
Drugs
Family history and family psychiatric history
Home situation
Family history of medical illness and psychiatric illness
Family history of suicide, alcohol or substance abuse
Divorce or domestic issues
Social history
Smoking
Alcohol
Street drugs
Sexual history
Educational
Vocational
Psychiatric symptom screen
1. Mood:
Depression
Mood, interest, sleeplessness, guilt, energy, concentration, appetite, psychomotor retardation, and suicide ideas (at least one of depressed mood or anhedonia)
Manic
Grandiosity, impulsivity, sleep, pressured speech (talkative), increased activity/pleasurable activities, flight of ideas/racing of thoughts, distractibility
Bipolar disorder
Bipolar I: One manic or mixed episode
Bipolar II: at least 1 major depressive episode (MDE) and at least 1 hypomanic episode
2. Anxiety disorder:
Panic disorder
Sweating, trembling, palpitation, chest pain, dizziness, depersonalization, nausea, chills, tingling, shortness of breath, choking, fear of dying, fear of losing control, and fear of going crazy with or without agoraphobia
Generalized anxiety disorder

Table 3.1 (continued)

(3 out of 6 symptoms, and duration for 6 months)
Poor concentration or difficulty in concentrating
Easily become fatigued
Sleep problems
Restlessness or keyed up
Irritable
Muscle tension
Phobic disorder
Specific phobia
Social phobia
Obsessive compulsive disorder
Obsessions and compulsions
Post-traumatic stress disorder (1 month)
Traumatic event
Re-experience the event
Avoidance of stimuli associated with the trauma
Unable to function
More than a month
Arousal increased
Personal history
Birth history
Early childhood to adolescence
Adulthood
Onset of illness
Any diagnosis
Eating disorders
If patient is <i>teen</i> , then add:
Home
Education
Employment
Activities
Drugs
Sexual activity
Wrap-up
Describe the diagnosis
Management plan
Possible medical treatment
Duration of treatment and side effects
Red flags
Laboratory tests
Further information Websites/brochures/support groups or societies/toll-free numbers
Follow-up
Mental status examination
Appearance
Speech
Emotions (mood, affect, and appropriate)
Perceptions (delusions, illusions, and hallucinations)
Thought (process and content)
Insight
Judgment
Cognition
3. Psychosis:
Delusions
Hallucinations

Table 3.1 (continued)

4. Organic:
Illness
Drugs or alcohol-related
Dementia
Safety check
Suicide/homicide
Thoughts of hurting yourself or others
Any plan, previous attempt, note, or associated symptoms that needed medical attention and hospital admission
Substance abuse
Legal issues
Self-care
Review of systems
Common symptom review:
Gastrointestinal (GI)
Respiratory
Genitourinary (GU)
Cardiovascular
Neurology
Past medical and surgical history
Medical illnesses, any previous or recent surgery
Hospitalization history or emergency admission history
Medications history
Current medications (prescribed, over the counter, and any herbal)
Allergic history/triggers
Mini-mental status examination (MMSE)
1. Orientation:
Time (5): year, season, month, date, and day
Place (5): place, floor/which block, city/town, province, and country
2. Registration (3): three names. Repeat names afterward? Table, pen, and honesty
3. Attention (5): spelling backward "WORLD."
4. Recall (3): recall those three? Table, pen and honesty
5. Language (5)
(2)Two things: name them? "Pen" and "wrist watch"
(1) Can you repeat the sentence? " <i>Today is very cold</i> "
(1) Obey written command: " <i>Close your eyes</i> "
(1)Write a sentence? It should have one noun
6. Executive task (3)
Follow this command: "Take the paper in your right hand, fold it into half and put it on the floor" (1 score each)
7. Construction (1): I am giving you this piece of paper with a diagram. Can you please draw a similar one?

Make sure to comment and let the examiner know you have picked up the cues: "You look very low/sad/ upset, is there something bothering you?" "Do you want to discuss/talk about something bothering you?" Or "You look very restless/energetic. I just notice you are moving around a lot, can you please sit down here so we can talk?"

Starting the Interview:

- Knock on the door.
- Enter the station.

- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your identification (ID).
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

The interview should start like other cases with the opening remarks: "Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you ... years old?"

Chief Complaint:

Many times the patient with underlying depression may present with a somatic chief complaint. It is important to explore with opening questions and then customize the history by completing the psychiatric symptom screen questions. But if the chief complaint is psychiatric, such as low mood, then it needs to be explored in detail.

You will be marked for starting with an open-ended question. I usually like to begin as a traditional way, "What brings you in today?" Get the chief complaint and give the patient what to expect next: "Is it alright if I ask you some questions about it? At the end we will discuss about the management plan or if you have any concerns?"

During the conversation, facilitate the patient in elaborating an answer by adding a comment such as "What happened next?" Sometimes you need to encourage the patient to expand his answer by repeating or rephrasing some of the patient's reply like "You said you hear voices. Will you tell me more about it?" At times a direct question is required to get a yes or no answer.

Onset:

- "How did it start?"
- "Did it start suddenly or gradually?"

Course:

- "Did it change since it started or stay the same?"
- "Was it present all the time? Or it comes and goes?"

Setting: "What were you doing when it started?"

Duration: "When did it start? How long have you been feeling sad/tired/fatigued/anxious?"

Timings: "Any particular timing?"

Events Associated: "Can you please tell me is there any particular event that has triggered your symptoms?"

Stress: "Any recent stress at home or work?"

Relevant Associated Symptoms: “Did you notice... (name any other symptom that may coexist)?”

Relieving Factors: “Does anything relieve the symptoms?”

Precipitating Factors or Aggravating Factors: “Does anything aggravate the symptoms?”

Functional status or severity or impact on life activities?

Rule Out: Differentials

Psychiatric Symptoms Screening

Mood

Depression: For depression symptoms screening, you should minimum ask the first two questions for mood and interest screen. If present then continue with the rest of the depression screening questions, and if negative then move to mania. (Five out of the nine symptoms including mood and interest):

1. **Low mood:** “How is your mood nowadays? Have you been feeling low/sad/down or depressed these days?”
 - **Course:**
 - “Did you constantly feel low/down?” (Dysthymia)
 - “Or were there times when you felt better?” (Depressive episode)
 - **Duration:**
 - “How long have you been feeling low/down? More than 2 weeks?” (Depressive episode)
 - “Did you feel low before? When was that?” (Major depressive disorder)
 - “How long have you been having such episodes?” (<2 years)
 - **Associated Symptoms:**
 - “How were you feeling before?”
 - “Did anything particular happen that changed your mood?”
 - “Is there any stress in your life?”
 - “Were you taking any medications that you stopped recently?”
2. **Loss of Interest:** “What kind of activities do you do for pleasure? Do you still enjoy them? Or do you enjoy social activities and relationships? Have you lost interest in doing activities that were enjoyable to you?” In depression, involvement in usual activities and motivation will be decreased.
3. **Sleep:** “How is your sleep? Do you think you are recently sleeping more (atypical) than your usual sleep or less than usual (depression)? How was your sleep before? Do you

have problems with going to sleep or maintaining sleep? Do you wake up at early morning and then find it difficult to go back to sleep?”

4. **Guilty:** “Do you feel guilty/worthless/hopeless/helpless about something?” Patient will feel self-blame.
5. **Decreased Energy:** “How is your energy level? Do you feel lack of energy? Do you feel tired?” Loss of vigor.
6. **Inability to Concentrate:** “Do you have difficulty in concentrating? Do you have cognitive problems like difficulty in focusing, making decisions, and paying attention? Did you notice any change in your memory?”
7. **Loss of Appetite:** “Has your appetite changed recently? Did you notice any change in your weight lately? Did you notice that your weight has increased or decreased?” Atypical depression—weight may increase.
8. **Psychomotor Retardation:** “Do you have hopelessness? Do you feel slowed down? Does it take you longer to get dressed?”
9. **Suicide Ideas:** “Do you have recurrent thoughts of self-harm or harming others? Did you think about death or suicide?”
 - “Did you make any attempt to hurt yourself? What did you do? When was that? Why did you do that? What was the outcome?”
 - “Do you have any active plan now? What you are planning?”
10. **Bereavement:** (May ask with depression screening if doorway information gives a clue) Many people feel sad if someone close by passed away. “Has anyone close to you passed away during the last 2 months?”

Mania

“Have you recently feeling high/elevated/high in energy? Or have people around you noted that you have a persistently elevated mood?” If yes, then explore through mania screen in detail.

Onset: “When did it start?”

Course: “Are you constantly feeling high (probably mania) or were there periods that you felt down/low (seen in bipolar type II)?”

Duration: “How long has this been going on? Less or more than 1 week?” (Manic episode)

“Has it happened before?” If yes, may be bipolar I disorder otherwise a manic episode.

“For how long have you been having these kinds of episodes?” If patient does have repetitive episodes, then it is more likely (chronic) less than 2 years.

Associated Events: “How were your feelings before?”

“Did anything specifically happen that might have changed your mood?”

“Is there any stress in your life?”

“Were you taking any medications that you stopped recently?”

Mania Screening:

1. **Grandiosity:** “Do you feel that you are on a special mission or you are a special person?” or “Do you think you have special powers that others don’t?” or “Do you feel you are a very important person with special talents, power, mission, or role?”
2. **Sleep:** “How is your sleep? Do you feel you can get by through the day with less sleep than usual? Are you sleeping fewer hours than usual?”
3. **Talkative:** “Do people say that you are more talkative than usual or feel pressured to keep talking? Or did you notice that you may be talking fast or you may need to talk faster? Or do you think you have become more talkative nowadays?”
4. **Activities:** “Do people say that you are involved in increased activities or you have increased appetite or very high energy? Do you feel you have increased energy?”
5. **Impulsivity:** “Did you recently make any big shopping, purchases, investments, or decisions? Are you spending more than before? Substance abuse or alcohol-related problems?”
6. **Flight of Ideas:** “Are thoughts racing in your mind? Do people say you jump from topic to topic?”
7. **Distractibility:** “Do you think that you get distracted or go off track easily? Or do you get distracted easily?”
8. **Organic Causes:** Systemic lupus erythematosus (SLE), trauma, endocrine, acquired immune deficiency syndrome (AIDS), multiple sclerosis (MS).

Bipolar Disorder:

- **Bipolar I:** Includes episodes of both mania and major depression.
- **Bipolar II:** Includes episodes of both hypomania and major depression.

Anxiety

Panic Disorder: Do you become very anxious or do you experience intense fear in certain specific circumstances?

“Do you have fear for closed spaces or crowded areas?” If patient says yes, then ask the following questions (agoraphobia may or may not be present):

- Sweating
- Shaking/trembling
- Dizziness
- Depersonalization
- Nausea
- Chest pain
- Palpitation or increase heart rate. If yes, then tap on the chair or table to confirm if regular or irregular.
- Tingling sensations/chills
- Short of breath
- Choking
- Fear of death
- Fear of losing control

Generalized Anxiety Disorder

(Three out of six symptoms, and should be present for 6 months) “Do you think you have excessive worries about a lot of things? What kind of things? How long? Can you control them or ignore them at times?”

Screening:

- Poor concentration or difficulty in concentrating
- Easily become fatigued
- Sleep problems
- Restlessness or keyed up
- Irritable
- Muscle tension

Phobic Disorder

Specific phobia: “Are you worried about something particular? Or have fears about something particular? Spiders, heights, snakes?”

Social phobia.

Obsessive Compulsive Disorder

Obsessions and compulsions. “Are you bothered about persistent thoughts that cannot get out of your mind? Do you ever repeat certain activities over and over again even though you do not want to? What are those thoughts? What do you do about it?” Like checking locks, washing hands.

Post-traumatic Stress Disorder (1 month duration)

Traumatic Event: “Have you been recently experienced, exposed, witnessed an event that involved death or serious injury?” (Patient may have already told about it) (emotional or physical?)

“Do you feel intense fear or helplessness since?”

Re-experience: Do you repeatedly re-experience that event in the form of recurrent or repeated thoughts? Do you have recurrent distressing recollection of the same event in your thoughts, perceptions, or images? Do you have recurrent dreams about the same event? Do you feel that the same event is reoccurring?

Avoidance: “Are you trying to avoid thoughts or feelings related to that event? Do you avoid stimuli associated with the trauma? Are you trying to avoid people, places, or activities related to that event? Do you have decreased interest since that event?”

Unable to Function: “Do you have markedly decreased interest? Do you avoid participating in routine activities? Do you feel detached?”

Arousal: Do you think you have become very irritable and have outburst of anger? Do you have difficulties in concentrating?

Psychosis

Hallucinations: “Do you see, hear, or smell things that others cannot? How long it is going on? When, how many times did you see/hear/smell them? What do you see/hear/smell and how? Do these command you to do anything or convey you some special messages? Do you feel as if something is crawling or creeping on your skin?”

Delusions: “Do you have any fixed, firm, untrue beliefs? Do you have certain belief about yourself or about other which others find those odd?”

Grandiose: “Do you feel that you have special assignments/tasks/powers? Do you feel that you are super talented or have a mission?”

Erotomaniac: “Do you feel that you are being loved by a person who is a celebrity or of a higher status?”

Persecutory: “Do you feel someone is following you?”

Control: “Do you feel that someone is controlling you?”

Reference: “Do you feel things happening around you have some reference with you?”

Paranoid: “Do you feel that TV is sending messages?”

“Do you think that people can steal your thoughts?”

“Do you think that people are reading your mind?”

“Do you feel someone is putting thoughts in your mind?”

Jealousy: “Do you feel that your partner is unfaithful?”

Religious: “Do you have a special religious mission or mandate?”

Somatic: “Do you feel you have a general medical condition?”

Mind Reading: “Do you feel someone is reading your mind?”

Negative Symptoms: Flat affect, alogia (inability to speak), avolition (ability to initiate).

Disorganized Speech

Organic

Medical Illnesses

Alcohol: “Do you drink alcohol? How much in 1 week/day?”

Drug Use: “Do you take any street drugs? In the past?”

Medicines: What medicines are you taking nowadays? Do you have a list? Any side effects?

What do you think, what might be causing your symptoms?”

Safety Check (very important):

- “Have you ever tried to hurt yourself or others?”
- “Have you ever tried to kill yourself or others?”
- Suicide questions: “Have you made any plan to hurt yourself?” Do you have a history of suicide attempts? When, how, and what were the triggers? Left a death note? Talk to someone?”
- Home conditions and self-care
- Legal problems
- Certifiable: Need for admission in hospital

Show Empathy

If the patient reveals any ongoing issues or problems in life, you must show empathy such as “You have been in a difficult situation.” “It must be difficult for you.”

Review of Symptoms: Can be done at the end of present illness questions

Common symptom review:

- Gastrointestinal
- Respiratory
- Cardiovascular
- Neurology
- Genitourinary

Constitutional Symptoms: (If time permits and ruling out the differentials is essential.) Fatigue and malaise, night sweats, fever, and weight loss.

Past Medical History

- “Do you have any previous health issues?”
- “Do you have any health issues related to your lung, heart, or kidney?”
- It is important to ask: “Are you currently seeing any other doctors? What was the diagnosis? Did you undergo any investigations or tests? Did you get any treatment or are getting any treatment? What was the outcome?”
- “Are you taking any medication? Which medication? What is the dose? For how long have you been taking these? Did you notice any benefit? Did you notice any side effects?”

Past Hospitalization and Surgical History: “Do you have any previous hospitalization or previous surgery?”

Medication History: “Are you taking any medication, prescribed, over the counter, or herbal and any side effects?” If patient says no, then continue to the next question.

Allergic History: “Do you have any known allergies?”

Personal History: “Please tell me about yourself.” Can be asked in any sequence: marital status, occupation, religion, education, type of residence, living conditions. “Do you have problems at work?” “How are you doing at work?” “Have you had any recent event in the family such as an accident or someone died?”

Social History: “Do you smoke or anyone else in your home or close at work smoke?” “Do you drink alcohol?” If yes, then ask further question: “How much? Daily? How long?”

“Have you ever tried any recreational drugs?” If answer will be yes: then further ask “Which one? How long? When?” Specially ask about intravenous (IV) drug use (red flag for back pain).

Family History: Marital status, number of children, and any significant history in first-degree relatives.

Relationships: “Are you sexually active? Do you have sexual preferences? Man/woman or both?”

Self-Care and Living Condition: “What do you do for living? Working status and occupation? Educational status? Who lives with you?”

Support: “Do you have good family and friends support?”
Functional status or severity or impact on life activities?

Developmental History:

- “Where were you born and raised?”
- “Are you aware of any problems when your mother was pregnant with you?”
- “Did you have any developmental milestones problems such as speaking or walking?”
- “Any problems in school? How was your childhood? Did you have friends and you get along with them well?” School performances, peer relationships.
- “Physical or sexual abuse?” “Stealing or fire setting?”
- “How much did you study?” “What do you do for a living?”
- “Are you in relationship now?” “Do you have kids?”

If Teenager, Then Add These Questions: Home, education, employment, activities, drugs, and sexual activity

If Adult Female, Add These Questions: Menstrual history (LMP), gynecology history, and obstetric history.

If patient is more than 65 years old, add these questions here:

- “Any problem with balance?”
- “Any difficulty in peeing/urination?”
- “Any issues with sleeping?”
- “Any change in vision/hearing?”
- “Any recent change in memory?”
- “Any regular medication? Prescribed or over the counter?”

Wrap-Up:

- Describe the diagnosis
- Management plan
- Laboratory tests
- Possible medical treatment
- Duration of treatment and side effects
- Check for safety and discuss about it
- Further information: Websites, brochures, support groups or societies, toll-free numbers
- Follow-up

History and Counseling: Depression

Candidate Information:

A 47-year-old male presented with low mood. Please take a history and discuss a management plan with the patient.

or

A 47-year-old male presented with recent loss of interest in activities he used to enjoy. He has lost 5 lb of weight. He has difficulty in sleeping and he feels tired. Please take a history and discuss a management plan with the patient.

Vital Signs: Heart rate (HR), 82/min, regular; blood pressure (BP): 130/75 mmHg; temp, 37.2 °C; respiratory rate (RR), 17/min

No examination required for this encounter.

Differentials:

- Depression
- Domestic abuse
- Organic: hypothyroid, anemia, cancers (pancreas), multiple sclerosis

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub
- Greet the examiner and the patient.

- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Mr...? Are you 47 years old? How can I help you today? "What brings you in the clinic today?"

Body Language and Clues:

Then let the patient talk and listen carefully.

The patient may talk about the chief complaint (low mood, home problems, or some other related issues). Patient may tell about the purpose of visit or any specific concern. It is extremely important in psychiatry stations to look for body language and clues. In this depression station, one must observe if the patient is looking sad or low and avoiding eye contact or during the conversation starts crying. If patient looks sad, worried, anxious, and low mood, one must reflect it by saying: "You look very anxious/sad/worried, is there something you may want to discuss or tell me?"

Sometimes the patient may start crying during the initial conversation. Look for a box of napkins/tissue paper and offer it to the patient. Ask the patient if he or she wants to continue and wants a break or offer a glass of water. After a few seconds' pause, start with the chief complaint.

History of Present Illness:

- **Onset:** "How did it start?"
- **Course:** "Are you feeling low/depressed? Did you constantly feel low/down?" (Dysthymia) or "Are there are times when you felt better?" (Depressive episode)
- **Duration:** "How long you been felling low/down?" "More than 2 weeks?" (Depressive episode)
- "Did you feel low before? When was that?" (Major depressive disorder)
- "How long have you been having such episodes?" (<2 years)
- **Frequency:** "How often does this happen?"
- **Events associated:** "Can you please tell me is there any particular event that has triggered your symptoms? Were you taking any medications that you stopped recently?"
- **Stress:** "Any recent stress at home or work?"
- **Relieving factors:** "Does anything relieve the symptoms?"
- **Precipitating factors or aggravating factors:** "Does anything aggravate the symptoms?"
- **Functional status** or severity or impact on life activities?

Psychiatric Symptoms Screening:

Depression Screening: (Five out of nine symptoms, including mood and interest and for 2-week period).

1. **Low Mood:** "How is your mood nowadays? Have you been feeling low/sad/down or depressed these days?"
2. **Loss of Interest:** "What kind of activities you do for pleasure? Do you still enjoy them?" Or "Do you enjoy social activities and relationships? Have you lost interest in doing activities that were enjoyable to you?" Involvement in usual activities and motivation are decreased.
3. **Sleep:** "How is your sleep? Do you think you are recently sleeping more (atypical) than your usual sleep or less than usual (depression)?"
"Do you have problems with going to sleep or maintaining sleep? Do you wake up in the early morning and then find difficult to go back to sleep?"
"Do you feel you are sleeping for a longer duration than before?"
4. **Guilty:** "Do you feel guilty/worthless/hopeless/helpless about something?" Patient will feel self-blame.
5. **Decreased Energy:** "How is your energy level? Do you feel lack of energy? Do you feel tired?" Loss of vigor.
6. **Inability to Concentrate:** "Do you have difficulty in concentrating? Cognitive problems like difficulty in focusing, making decisions, and paying attention? Did you notice any change in your memory?"
7. **Loss of Appetite:** "Has your appetite changed recently? Did you notice any change in your weight lately? Did you notice that your weight has increased or decreased?" Atypical depression—weight may increase.
8. **Psychomotor Retardation:** "Do you have hopelessness? Do you feel slowed down? Does it take you longer to get dressed?"
9. **Suicide Ideas:** "Do you have recurrent thoughts of self-harm or harming others? Have you thought about death or suicide? Did you make any attempt to hurt yourself?"
"What did you do? When was that? Why did you do that? What was the outcome?"
"Do you have any active plan now? What you are planning?"
10. **Bereavement:** (May ask with depression screening if doorway information gives a clue.) "Many people feel sad if someone close by passed away. Has anyone close to you passed away during the last 2 months?"

Screen for Anxiety: Just one question

Screen for Mania: Just one or two questions

Screen for Psychosis: Just one question about delusions and one for hallucinations

Screen for Organic Causes: Illnesses, drugs, or alcohol use related

Rule Out Domestic Abuse: (It can also present as headache, abdominal pain, insomnia, vaginal bleeding, and fatigue. Details under domestic abuse.)

Past Medical History:

“Do you have any previous health issues?”

“Do you have any health issues related to your lung, heart, or kidney?”

It is important to ask:

- “Are you currently seeing any other doctors?”
- “What was the diagnosis?”
- “Did you undergo any investigations or tests?”
- “Did you get any treatment or are getting any treatment?”
- “What was the outcome?”

Past Hospitalization and Surgical History: “Have you had any previous hospitalization or previous surgery?”

Medication History: “Are you taking any medication, prescribed, over the counter, or herbal and any side effects? Are you taking any medication? Which medication? What is the dose? For how long have you been taking these? Did you notice any benefit? Did you notice any side effects?”

If patient says no to the first question about medication, then continue to the next question.

Allergic History: “Do you have any known allergies?”

Social History: “Do you smoke or does anyone else in your home or close at work smoke? Do you drink alcohol?”

If yes, then ask further questions: “How much? Daily? How long? Have you ever tried any recreational drugs? If yes which one? How long? When?” Specially ask about IV drug use (red flag for back pain).

Family History: Marital status, number of children, any significant history in first-degree relatives.

Relationships: “Are you sexually active? Do you have sexual preferences? Man/woman or both?”

Self-Care and Living Condition: “What do you do for living? Working status and occupation? Educational status? Who lives with you?”

Support: “Do you have good family and friends support?”

Functional status or severity or impact on life activities?

Wrap-Up:

“I will need to do a detailed physical examination and will need to run some tests.”

Question: What investigations would you like to order? (Questions may be asked by the patient or the examiner.)

Answer: Complete blood count (CBC), electrolytes, blood glucose, urea, creatinine, liver panel, thyroid-stimulating hormone (TSH), lipid profile, and 12-lead electrocardiogram (ECG).

Question: What is going on with me?

Answer: “With our conversation today, I have come to the point that you may be suffering from depression. It is a common mental illness. The good thing about it is it is treatable. Do you want to know more about it?”

Question: What is your management plan?

Answer: “It is treated with talk therapy and medicines.”

- “**Talk therapy** will help in improving the thoughts and feelings.”
- **The medicines:** Selective serotonin reuptake inhibitor (SSRI). (There is no need to mention the name unless the patient specifically asks.) “The medication for depression usually works slowly and takes 2–3 weeks to start showing signs of improvements. Common side effects are dry mouth, constipation, and sedation. These side effects are usually transient and improve with time. You should take the medicine for about 6 months once symptoms have improved.”
- **Contract:** “There is one important fact that once you will start taking the medicines, your energy levels will improve before your mood. This is a critical time for some patients when one may think about hurting oneself. If you have thoughts of hurting yourself, I would like you to promise me that you will seek help as soon as possible. You should talk to your family member/friend. Or you should come to a hospital or to a clinic.”
- **Follow-up:** “I would like to see you in 1 week’s time. Do you have any questions?”

Further Note on Various Presentations of Depression:

A patient with depression may present with different chief complaints. Some examples are as follows:

- The patient may want to discuss some **personal concerns or the patient may want to talk to the doctor in private.** In these particular stations, if the patient wants to meet the physician in private, the patient may ask for confidentiality and privacy first. This should be addressed first. Regarding confidentiality and privacy, one must assure the patient that the discussion and his/her visit will remain confidential.
- **Headache:** If a patient is presenting with headache, we are expected to go through the chief complaint of headache

first and important differentials need to be ruled out such as migraine, infection, subdural hematoma, subarachnoid hemorrhage, referred pain, and temporal arteritis—discussed in neurology. As the interview will go on, the diagnosis will turn toward depression. Drug seeker and domestic abuse also may present with headache.

- **Sleep Problems and Fatigue/Tiredness:** The patient will tell about sleep concerns and tiredness.

Starting with Sleep Problems:

- “Can you please tell me what are your sleep problems?”
- “What are your usual hours of sleep? When do you go to bed? How much time do you require to get to sleep? Do you feel difficulty in falling sleep?”
- “How many hours? How about before?”
- “Do you feel refreshed in the morning?”
- “Did you recently change your bed or home or bedroom?”
- “Do you drink before going to sleep?”
- “Do you eat before sleeping?”
- “How much is your coffee intake every day?”
- “Do you read or watch TV before sleeping?”
- “Do you have difficulty in maintaining sleep? If you wake up, then can you fall asleep again?”
- “Do you sleep alone? Does he/she notice you snoring?”
- “Does your sleep partner snore? Do you have dreams/nightmares?”
- “Any recent event that you recall again and again?”

Tiredness Questions:

- “How did your tiredness start?”
- “Is it progressing with time or is it the same?”
- “How long you have been feeling tired?”
- “What do you mean by tired?”
- “Are you able to function?”
- “Is there any specific time when you are tired? More like early in the morning or late in the afternoon?”
- “Do you think it is related to your sleep problem?”
- Questions to rule out differentials such as diabetes mellitus (DM) and hypothyroid.

Diabetes: Eating more, drinking more, peeing more, blurred vision, weakness, weight loss, cardiac disease, and impotence.

Hypothyroid: Feeling of cold, weight gain, dry skin.

Constitutional Symptoms: Rigors, chills, fever, weight loss, and night sweats.

In all these scenarios after completing the history of present illness, the rest of the interview should continue with the past history and so on.

A patient with suicidal ideation and especially with an active plan to harm themselves or others needs to be retained in the hospital with or without their will. An urgent psychiatric or mental health evaluation should be done.

Checklist: Depression

See Table 3.2 for a checklist that can be used as a quick review before the exam.

Table 3.2 Depression examination checklist

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
Opening	Now sit on the chair or stand on the right side of the patient and start the interview
	Introduction, greet, explain, position, and exposure/drape
	Make good patient rapport
Chief complaint	Start with an open-ended question
	Onset, course, and duration
	Analyze briefly the somatic complaint
	Ask about precipitating factors—any current stress or precipitating events
	Continue with question regarding presenting complaints
Psychiatric symptoms screening	Pick up patient body language and clues and reflected in interview—low mood, poor eye contact
	<i>Screen for depression:</i> mood, sleep, interest, energy, guilt, concentration, appetite, psychomotor changes, and suicidal ideation
	<i>Screen for anxiety</i>
	<i>Screen for mania</i>
	<i>Screen for psychosis:</i> delusions and hallucination
	<i>Screen for organic cause:</i> illnesses, medications, alcohol, and drugs
Safety check	Self-harm or homicidal ideation or plan
	Self-care
	Questions to rule out differentials
Past medical history	
Past psychiatric history	
Medication history	Medications and any side effects
Family history and family psychiatric history (depression)	
Social history	Smoking, alcohol, drugs, sexual history
Personal history	Living condition and relationships
Work conditions and financial status	
Support	Family and friends
Wrap-up	Describe the diagnosis
	Management plan
	Duration of treatment and side effects
	Laboratory tests
	Ask if any questions or concerns
	Make a contract
	Follow-up appointment

History: Mania

Candidate Information:

A 24-year-old male brought by his mother to the emergency department. He has a known bipolar disorder. His mother has concerns about him that he is hyperactive and has had bizarre behavior for 1 week. Please talk to the patient.

or

A 24-year-old male brought by his mother to the clinic. She thinks that he is not himself. Please interview him.

Differentials:

- Substance-induced
- Bipolar disorder
- Acute psychosis
- Cyclothymia
- Schizophrenia
- Schizoaffective disorder

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Mr...? And you are 24 years old? How can I help you today?”

Body Language and Clues:

Look for body language and clues: restless, agitated, very active, moving around in the room, talking very fast, posture and gestures, and racing thoughts. If he looks very agitated or active during the interview, you must reflect it by saying: “You look very anxious/restless, is there something you may want to discuss or tell me?” Patient may tell that his mother was concerned about him that he was very active and just spent a few thousand dollars on shopping recently.

Then continue your questions with: “Should we discuss about it more?”

Chief Complaint:

- “What do you mean by very active?”
- “How did it start?”

- “Have you ever had such a mood before?”
- “Since how long has it been going on?”
- “What did you buy? How much did you spend in the last week?”

Duration:

- “How long it is going on?”
- “What are friends or family members saying about you?”
- “How long you have not taken your medicines?”

Psychiatric Symptoms Screening:

Screen for Mood Disorder

- “How is your mood nowadays?” (high, perfect, or energetic)
- “How long does your mood last like this?”
- “Is your mood always like this?”
- “Is it sometimes low? When was the last time you felt low?”
- “How often does your mood change/alternate between high and low?”
- “At any time were you feeling very high for more than a week?”
- “Was there any particular incident or event since you started feeling like this?”
- “Do you have any recent stress in life?”

Mania Screening:

- **Grandiosity:** “Do you feel that you are on a special mission or you are a special person?” or “Do you think you have special powers other don’t?” or “Do you feel you are a very important person with special talents, power, mission, or role?”
- **Sleep:** “How is your sleep? Do you feel you can get by through the day with less sleep than usual? Are you sleeping fewer hours than usual?”
- **Talkative:** “Do people say that you are more talkative than usual or feel pressured to keep talking?” or “Did you notice that you may be talking fast or you may need to talk faster?” or “Do you think you have become more talkative nowadays?”
- **Activities:** “Do people say that you are involved in increased activities or you have increased appetite or very high energy? Do you feel you have increased energy?”
- **Impulsivity:** “Did you recently make any big shopping, purchases, investments, or decisions?” “Are you spending more than before?” “Substance abuse or alcohol-related problems?”

- **Flight of Ideas:** “Are thoughts racing in your mind? Do people say you jump from topic to topic?”
- **Distractibility:** “Do you think that you get distracted or go off track easily?” or
“Do you get distracted easily?”

Screen for Anxiety: “Do you think you have excessive worries about a lot of things?”

Screen for Psychosis: “Do you see, hear, or smell things that others cannot?”

Screen for Organic: Medical illness; alcohol, drugs, and medication related

Safety Check:

- Self-harm or homicidal ideation or plan
- Self-care

Past Medical History: How is your health otherwise? Do you have any medical problems? Then ask about hyperthyroidism, Cushing disease, and multiple sclerosis.

Past Psychiatry History: Ask about past psychiatric problems. What was the diagnosis? What treatments given? Any hospital or mental health unit admissions? Whom is the patient having follow-ups? Any previous history of similar episodes?

Medication History: “Are you taking any medication for bipolar disorder? What medication do you take? How long have you been missing your medication?” You should ask specifically about lithium. If the patient was taking it before, then ask if he was suffering from any side effects because he stopped taking it.

Allergies: “Do you have any known allergies?”

Family History and Family Psychiatric History: Ask about mania in particular.

Social History: Ask about history of smoking, alcohol, drugs, and sexual history.

Living Condition and Relationships Work Conditions and Financial Status

Support: Family and friends

Wrap-Up:

Question: What is going on with me?

Answer: “You know you have bipolar disorder. Bipolar is a lifelong illness and presented in episodic deterioration. Judgment is often impaired in acute manic episode. You

stopped taking your medications a few days back, which may be the reason for your current condition.”

Question: What you want to do next?

Answer: “I would like to run some tests, which will include thyroid, kidney test, and lithium levels in your blood. I would like to recommend you start back on your medication. A key feature of bipolar disorder is often recurrent non-adherence to medication. I would like to recommend that you should get **talk therapy**, which can help you to improve your insight and coping with mania. It will also help you in your decision-making and will promote a strong therapeutic alliance and medication adherence.”

“We can also look into **family counseling**, which can help your family to have a better understanding about mania and bipolar disorder.”

“Sometimes we also have to hospitalize patients to control manic episode symptoms.”

Contract: “Before I send you home today, I would like to tell you one important fact that once you start back on your medication, your mood will come down to a normal level. Sometimes patients feel like they are going into dysphoria or feelings of low mood. During that phase some patients may think to stop the medicines again and some may want to hurt themselves or others. Can you promise me if you have such feelings, you will seek help immediately?”

Ask if the patient has any questions or concerns.

Follow-Up Appointment: “I would like to see you in 2 weeks.”

Checklist: Mania

See Table 3.3 for a checklist that can be used as a quick review before the exam.

History and Counseling: Bipolar Disorder

Candidate Information:

A 28-year-old male with known bipolar disorder is taking lithium and wants to discontinue it. Please take a history and counsel the patient.

Vital Signs: HR, 91/min, regular; BP, 130/78 mmHg; temp, 37 °C; RR, 16/minute

O₂ sat 99%

No physical examination required.

Differentials:

- Bipolar disorder
- Acute psychosis

Table 3.3 Mania checklist

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Sit on the chair or stand on the right side of the patient and start the interview
Opening	Introduction, greet, explain, position, and exposure/drape
	Make good patient rapport
	Start with an open-ended question
Chief complaint	Onset, course, and duration
	Analyze briefly the somatic complaint
	Continue with question regarding presenting complaints
Pick up patient body language and clues	Elevated, irritable mood
	Continue with question regarding presenting complaints
	Any current stress or precipitating events
<i>Screen for mood disorder</i>	
<i>Screen for anxiety</i>	
<i>Mania screening</i>	Grandiosity
	Impulsivity
	Decreased need for sleep
	Pressured speech (talkative)
	Increased activity/pleasurable activities
	Flight of ideas
	Distractibility
<i>Screen for psychosis</i>	
<i>Screen for organic</i>	
Safety check	Self-harm or homicidal ideation or plan
	Self-care
	Questions to rule out differentials
Past medical history	
Past psychiatric history	
Medication history	Lithium and side effects
Family history and family psychiatric history (mania)	
Social history	Smoking, alcohol, drugs, sexual history
Living condition and relationships	
Work conditions and financial status	
Support	Family and friends
Wrap-up	Describe the diagnosis
	Management plan
	Possible medical treatment
	Duration of treatment and some side effects of lithium (mention only three to four)
	Laboratory tests
	Ask if any questions or concerns
	Follow-up appointment

- Substance-induced
- Cyclothymia
- Schizophrenia

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr....? Are you 28 years old? How can I help you today?”

The patient may explain he has had bipolar disorder for many years. For the last few weeks, he is noticing that his hands are very shaky and his handwriting has become distorted. He had his last follow-up with the psychiatrist a few months back and the next one is due in 3 months. The patient may show that he has tremors.

It will be a good point to show patient support and empathy: “I’m glad you’re here today to talk about it. It must be difficult for you to cope with these shaky hands. I am here to help you in this regard. Should we discuss about it? I will go through your history and then we will discuss a plan.”

Chief Complaint: (Tremors and Lithium)

- “How did your tremors start? Gradual or sudden onset?”
- “How long has it been going on?”
- “How much lithium do you take? Is it measured on a regular basis? What were the last levels?”
- “Do you take any other medications?”
- “Did you start any other medication? Or increase in dose?”
- “How do you feel about taking lithium?”
- “Do you miss your work/school/meals?”
- “Are you under regular follow-up?”
- “When was the last time you saw your doctor?”
- “Any side effects?”
- “Are you recently drinking more or peeing more?”
- “Did you get any urine analysis?”
- “Have you had thyroid tests done? When was the last time it was measured?”
- “Do you feel cold? Any change in body weight?”
- “Any shakiness, falls, or difficulty in balance?”
- “Any nausea, vomiting, or abdominal pain?”
- “Have you discontinued lithium in the past few years?”

Psychiatric Symptoms Screening:***Screen for Mood Disorder***

- “How is your mood nowadays?” (high, perfect, or energetic)
- “How long has your mood been like this?”
- “Is your mood always like this?”
- “Is it sometimes low? When was the last time you felt low?”
- “How often does your mood change/alternate between high and low?”
- “Has there been any time feeling very high for more than a week?”
- “Was there any particular incident or event since you started feeling like this?”
- “Do you have any recent stress in life?”

Mania:

- **Grandiosity:** “Do you feel that you are on a special mission or you are a special person?” or “Do you think you have special powers other don’t?” or “Do you feel you are a very important person with special talents, power, mission, or role?”
- **Sleep:** “How is your sleep? Do you feel you can get by through the day with less sleep than usual? Are you sleeping fewer hours than usual?”
- **Talkative:** “Do people say that you are more talkative than usual or feel pressured to keep talking? Or did you notice that you may be talking fast or you may need to talk faster? Or do you think you have become more talkative nowadays?”
- **Activities:** “Do people say that you are involved in increased activities or you have increased appetite or very high energy? Do you feel you have increased energy?”
- **Impulsivity:** “Did you recently make any big shopping, purchases, investments, or decisions?”
- Are you spending more than before? Substance abuse or alcohol-related problems?”
- **Flight of Ideas:** “Are thoughts racing in your mind? Do people say you jump from topic to topic?”
- **Distractibility:** “Do you think that you get distracted or go off track easily?” or “Do you get distracted easily?”

Screen for Anxiety

Screen for Psychosis

Screen for Organic: Medical illness; alcohol, drugs, and medication related

Safety Check:

- Self-harm or homicidal ideation or plan
- Self-care

Past Medical History: Any other health issues?

Past Psychiatry History: Diagnosis, treatments, admissions, follow-ups, previous similar episodes.

Medication History: Important in this station. Should ask about lithium side effects. The most common ones if not asked in the history of present illness: diabetes insipidus, tremors, and signs of hypothyroidism.

Allergies: “Do you have any allergies?”

Family History and Family Psychiatric History (Mania)

Social History: Smoking, alcohol, drugs, sexual history

Living Condition and Relationships

Work Conditions and Financial Status

Support: Family and friends

Wrap-Up:

Describing the Diagnosis: “You know you have bipolar disorder. What is your understanding about it?”

“Bipolar is a lifelong illness. Patients with bipolar disorder may fluctuate between mania or depression. Mania affects mood, in which people feel elevated. In depression people feel low and lose their interest.”

Question: What is your management plan?

Answer: “The treatment for mania is lifelong. It is similar to diabetes, in which we can control the symptoms, but not cure it. I would like to run some tests, which will include thyroid, kidney test, and lithium levels in your blood.”

“Regarding the tremors in your hand, once we will get your lithium levels, we can discuss about it further. We may have to change the dose and then will see how it will work. Elimination of dietary caffeine may also help. We have another option of adding another medication (B-blocker) that may improve the tremors. If it will not help, then we can switch from lithium to another medication. If you choose to discontinue medical treatment, your chances to relapse will be very high. Sometimes we also have to hospitalize the patients to control manic episode symptoms.”

Contract: “Before I send you home today, you should promise me if you go into feelings of low mood or you start spending more or sleeping less or want to hurt yourself or others, you should seek help immediately.”

Ask if any questions or concerns

Follow-Up Appointment: “I would like to see you in 2 weeks.”

History and Counseling: Anxiety

Candidate Information:

A 39-year-old female comes with concerns that she is very anxious and worries about everything. Please take a history and discuss the treatment.

Differentials:

- Generalized anxiety disorder
- Panic disorder
- Agoraphobia
- Obsessive compulsion disorder (OCD)
- Post-traumatic stress disorder (PTSD)
- Adjustment disorder
- Anxiety secondary to other conditions such as myocardial infarction (MI), hyperthyroid, pheochromocytoma, pulmonary embolism, alcohol withdrawal, drug intoxication, seizures
- Drug seeking

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Miss/Mrs...? Are you 39 years old?”

“What brings you in today?” Patient may express that she is very anxious recently. It is important to start exploring about it. “I will like to ask you few questions about it. Should we start? What do you mean by anxious?”

Body Language and Clues:

Look for body language and clues: restless, agitated, posture, and gestures. If she does look very agitated or active during the interview, you must reflect it by saying: “You look very anxious/restless, is there something you may want to discuss or tell me?”

Chief Complaint:

- “When did your problem with anxiety start?”
- “How did it start?”
- “Did it start suddenly or gradually?”
- “Was there any particular event or incident when it started?”
- “Did you notice if it is progressing with time or is it the same?”

- “Are you worried or anxious all the time?”
- “How often does this happen?”
- “How severe is your anxiety?”
- “Did you have similar problems before in your life?” If yes, “How did you cope with those?”
- “Any recent stress at home or work?”
- “Impact on life activities?”
- “Are you worried about your health or your family?”

Anxiety Screening: (Panic disorder, generalized anxiety disorder, phobic disorder, OCD, PTSD—all should be covered.)

- “Are you the kind of a person who worries a lot?” (Excessive fear)
- “Do you ever have sudden onset of intense anxiety?”
- “Do you have any special fear? High altitude, closed spaces, talking in public, pets, spiders?”
- “Have you ever encountered a situation in which your personal or mental safety and well-being were in danger? Do you have flashbacks or nightmares?”
- “Do you become very anxious or do you experience intense fear in certain specific circumstances?”
- “Do you have fear for closed spaces or crowded areas?” If patient says yes, then ask the following questions:
 - “Do you think you have excessive worries about a lot of things? What kind of things? How long?” “Can you control them or ignore them at times?”
 - “Are you bothered about persistent thoughts that cannot get out of your mind?”
 - “Do you ever repeat certain activities over and over again even though you do not want to? What are those thoughts? What do you do about it?” Like checking locks, washing hands.
 - “Have you ever experienced or seen any major accident/trauma?” (emotional or physical)
 - “Do you re-experience the event?”
 - “Do you avoid stimuli associated with the trauma?”

Screen for Depression: Just one or two questions (if not asked before)

Screen for Mania: Just one or two questions

Screen for Psychosis: Just one question about delusions and one for hallucinations

Screen for Organic Causes: Illnesses, drugs, or alcohol use related

Safety Check:

- Self-harm or homicidal ideation or plan
- Self-care

Past Medical History: Any other health issues? Hyperthyroidism, pheochromocytoma? Drug intoxication?

Past Psychiatry History: Diagnosis, treatments, admissions, follow-ups, previous similar episodes, and previous suicidal attempts

Medication History: Medications and any side effects

Allergies: “Do you have any allergies?”

Family History and Family Psychiatric History
(Mania)

Social History: Smoking, alcohol, drugs, sexual history

Living Condition and Relationships
Work Conditions and Financial Status

Support: Family and friends

Wrap-Up:

Describing the Diagnosis: The diagnosis will be one of the following:

- Panic disorder
- Generalized anxiety disorder
- Phobic disorder
- Obsessive compulsive disorder
- Post-traumatic stress disorder

Question: What is your management plan?

Answer: Will need to do a physical examination and neurological examination

Question: Laboratory tests?

Answer: CBC, electrolytes, thyroid function test, BUN, creatinine, cortisol (only if required and routine tests are normal), urinalysis, urine for drug screen. ECG or an X-ray chest according to history clues

Treatment Plan:

- Psychotherapy, behavior therapy
- Medicines: antidepressant and benzodiazepines (for short-term use only)

Ask if any questions or concerns.

Follow-Up:

In 2 weeks, once lab results are back.

History and Counseling: Obsessive Compulsive Disorder

Candidate Information:

An 18-year-old female is visiting with her mother. Mom says she has fears of bugs and germs. She wears gloves and repeatedly washes her hands to kill all the germs and she cannot help it. Please take history and address her concerns.

Differentials:

- Obsessive compulsive disorder
- Brief psychotic disorder
- Schizophrenia
- Bipolar disorder
- Related to a medical disorder
- Schizoaffective disorder
- Substance abuse or withdrawal
- Brain tumor

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Miss...? Are you 18 years old?”

“I understand your mother brought you here today. She has some concerns about your fears about bugs and germs. Is it alright if we discuss about it today?”

Body Language and Clues:

Look for body language and clues: restless, agitated, very active, looking around, and avoiding eye contact. May be wearing a pair of gloves. If she looks very agitated or restless during the interview, you must reflect it by saying: “You look very anxious/restless. Is there something you may want to discuss or tell me?”

Chief Complaint:

- “What are your fears about bugs and germs?”
- “What do you mean by germs and bugs infestation?”
- “How did it start?”
- “When did you first start noticing these bugs and germs?”
- “How do you know that there are germs and bugs everywhere?”

- “Do you have recurrent and persistent thoughts about cleanliness?”
- “How do you manage to see them?”
- “How do you avoid them?”
- “Was there any specific place where you feel it is infected or is it everywhere?”
- “What do you think is going on? What do you think about the origin of these thoughts?”
- “Do you think these ideas are from your own thoughts or coming from the outside world?”
- “How you are coping with these thoughts?”
- “How long have you been wearing these gloves?”
- “Have you done anything to clean these places?”
- “Did you injure your hands by repeated washing?”
- “Any triggering condition?”
- “How much time have you spent engaging in these repetitive activities?”
- “Do these symptoms affect your daily activities?”
- “Do you think that these recurrent thoughts about bugs and germs and cleanliness are inappropriate? Are you bothered about these?”
- “Do you feel that in spite of the fact that the thoughts of these germs or bugs make no sense but you are still repeating these actions again and again?”
- “Do you feel that you are not able to take them out of your mind?”
- “Have you ever tried anything to deal with this?”

Other Obsessions:

- “Do you have concerns with order or cleanliness?”
- “Are you worried about tasks being done poorly?”
- “Do you check drawers or locks repeatedly?”
- “Do you have excessive religious or moral doubts such as praying?”

Mood Screening: “How is your mood these days? Low or high?”

Anxiety Screening (Should cover panic disorder, generalized anxiety disorder, phobic disorder, and PTSD):

- “Are you kind of a person who worries a lot?” (Excessive fear)
- “Do you ever have sudden onset of intense anxiety?”
- “Any special fear?” High altitude, closed spaces, talking in public, pets, spiders?
- “Have you ever encountered a situation in which your personal or mental safety well-being were in danger? Do you think those situations were related to these flashbacks or nightmares?”
- “Have you ever experienced or seen any major accident/trauma?” (emotional or physical)
- “Do you re-experience the event?”
- “Do you avoid stimuli associated with the trauma?”

Psychotic Screen: “Do you see or hear things other people do not?”

Screen for Organic Causes: Illnesses, drugs, or alcohol use related

Safety Check:

- Self-harm or homicidal ideation or plan
- Self-care

Past Medical History: Any other health issues? Hyperthyroidism, pheochromocytoma? Drug intoxication?

Past Psychiatry History: Diagnosis, treatments, admissions, follow-ups, previous similar episodes, and previous suicidal attempts

Medication History: Medications and any side effects

Allergies: “Do you have any allergies?”

Family History and Family Psychiatric History (Mania)

Social History: Smoking, alcohol, drugs, sexual history.

Living Condition and Relationships

Work Conditions and Financial Status

Support: Family and friends

Wrap-Up:

Describing the Diagnosis: “Based on what we have just discussed, your symptoms are likely a medical condition that we call obsessive compulsive disorder. It is a condition in which people have unwanted thoughts. They repeat certain acts again and again. Most of the people know that these acts are made up by their own minds and make no sense. They also cause distress and may disturb their daily routine activities, but they cannot stop themselves from doing it.”

Question: How to prevent it?

Answer:

- Talk therapy
- Relaxation therapy (box breathing, meditation, muscle relaxation)
- Desensitization
- Flooding
- Thought stopping
- Lifestyle modifications (caffeine and alcohol)
- Sleep hygiene

Question: What investigations will you order?

Answer: CBC, electrolytes, urea, creatinine, TSH, urine drugs/toxic screen, ECG, X-ray chest, neurological examination

Medical Treatment:

- Clomipramine
- Benzodiazepine—short-term, low-dose, regular
- SSRI/serotonin-norepinephrine reuptake inhibitors (SNRI) (paroxetine)
- Antipsychotics: risperidone, haloperidol

Contract: “Sometimes people under such circumstances may feel very low and may think to hurt themselves or others. I would like you to promise me if you have such feelings, you should immediately seek help.”

“Do you have any question?”

Follow-Up: “I would like to see you in 2 weeks.”

History and Counseling: Panic Disorder**Candidate Information:**

A 21-year-old male comes to your clinic with recurrent attacks of palpitation, shortness of breath, and fear of dying. Please interview him. He wants to know if he has a heart problem.

or

Station: A 21-year-old male comes to your clinic with dizziness. Please take a history and address the patient’s concerns.

Differentials:

- Panic disorder (with or without agoraphobia)
- Bipolar disorder
- Brief psychotic disorder
- Thyrotoxicosis
- Organic disease: anemia, heart or lung diseases
- Schizophrenia
- Schizoaffective disorder
- Substance abuse

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Mr...? And you are 21 years old?”

“I understand you are here because you are experiencing attacks of palpitation and shortness of breath. Is it alright if I ask you some questions about it? Then we will discuss about the plan?”

Do you have any question?”

Chief Complaint:

- “How did it start? Gradually or suddenly?”
- “When did you start noticing it?” or “When was the first time you had such an attack?”
- “Did anything happen around the same day?”
- “Can you please describe one attack?”
- “How many attacks?”
- “How long does one attack continue?”
- “Did you pass out?”
- “What were you doing?”
- “When did you have the last attack?”
- “How did it end?”

Panic Attack Screening Questions: More than 4 out of 13 (abrupt onset and reach to peak within 10 min)

- Sweating
- Shaking/trembling
- Dizziness
- Depersonalization: “Do you feel that you are out of yourself?”
- Derealization: “Do you feel that things around you are not real?”
- Nausea
- Chest pain
- Palpitation or increase heart rate
- Tingling sensations/chills
- Shortness of breath
- Choking
- Fear of death
- Fear of losing control

Screening for Panic Attacks with Agoraphobia:

“Do you become anxious being at certain places from where escape will be difficult or help may not be available in case if you have a panic attack? Like traveling in a train, being in a crowd?”

Associated Symptoms:

- “What do you think triggers these attacks?” (Activity, stress, coffee, drugs, or situation)
- “Do you try to avoid such circumstances?”

- “Do you fear having another attack?”
- “How it is affecting you and how are you coping with it?”
- “Do you avoid going out?”

Mood Screening: “How is your mood these days? Low or high?”

Anxiety Question:

- “Are you the kind of a person who worries a lot?” (Excessive fear)
- “Are you under stress in your life? How can you cope with this?”
- “Any special fear?”

Psychotic Screen: “Do you see or hear things other people do not?”

Rule Out Differentials: Coronary artery disease, arrhythmia, pulmonary embolism, hypoglycemia.

Thyroid: tremors, heat intolerance, diarrhea, weight loss in spite of good appetite
Pheochromocytoma

Safety Check:

- Self-harm or homicidal ideation or plan
- Self-care

Past Medical History: “Have you ever been screened for diabetes, thyroid disease? Do you have any medical illness? Any history of anemia, arrhythmia?”

Past Psychiatry History: Diagnosis, treatments, admissions, follow-ups, previous suicidal attempts

Allergies: “Do you have any known allergies?”

Social History: Smoke, alcohol, drugs like cocaine, amphetamine.

Any financial problems or support at home and at work.

Family History: Family history of mental illnesses, heart disease, and thyroid problems

Living Condition and Relationships.

Wrap-Up:

Describing the Diagnosis: “Based on what we have just discussed, your symptoms are likely caused by a medical condition that we call panic disorder and the episodes of your

symptoms are called panic attacks. I would like to do a thorough physical examination. Then we will run some lab tests, heart tracing, and urine test just to make sure you do not have any other medical condition.”

Question: Doc, can you please tell me more about panic attacks?

Answer: “Panic attacks are a kind of severe anxiety. It happens suddenly in attacks and usually it is related to stress. Anxiety can be just a normal alarming system, which may alert you to a danger. In such circumstances our heart beats very fast, hands becomes shaky and sweaty, and mind starts racing. In panic attack and anxiety, our body alarm system is triggered even in the absence of any actual external trigger. Once activated it will lead to increase in heart rate and rise in blood pressure. This may repeat again and again and may cause severe limitation.”

Question: How to prevent it?

Answer:

- Talk therapy (cognitive behavior therapy)
- Relaxation therapy (box breathing, meditation, muscle relaxation)
- Desensitization
- Supportive psychotherapy
- Lifestyle modifications (caffeine and alcohol)
- Sleep hygiene

Question: What investigations are required?

Answer: CBC, electrolytes, urea, creatinine, TSH, urine toxic screen, ECG, X-ray chest, neurological examination

Question: Is there a medical treatment?

Answer:

- Antianxiety: lorazepam
- SSRI: paroxetine
- Side effects: gastrointestinal (GI) disturbance, headache, sexual dysfunction—this improves with time

Contract: “Before I send you home today, I would like to tell you one important fact that some people with panic disorder may feel very low and sometimes may think to hurt themselves or others. Can you promise me if you have such feelings, you should seek help immediately?”

“I will also give you some reading material and some online information.”

“Do you have any question?”

Follow-Up:

I would like to see you in 2 weeks.

History and Counseling: Generalized Anxiety Disorder
Candidate Information:

A 34-year-old female presents with excessive anxiety and worries occurring for at least 6 months about a number of occasions. Please talk to the patient.

Differentials:

- General anxiety disorder
- Panic disorder (with or without agoraphobia)
- Generalized anxiety disorder
- Panic disorder
- Post-traumatic stress disorder (PTSD)
- Adjustment disorder
- Thyrotoxicosis
- Organic disease: anemia, heart or lung diseases
- Anxiety secondary to other conditions such as hyperthyroidism, pheochromocytoma, pulmonary embolism, alcohol withdrawal, drug intoxication
- Drug seeking

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Miss/Mrs...? Are you 34 years old?”

“How can I help you today?”

Chief Complaint:

Start with her anxiety and worries:

- “How did it start?”
- “Did it start suddenly or gradually?”
- “How long has it been going on?”
- “Was there any particular event or incident when it started?”
- “Did you notice if it is progressing with time or it is the same?”
- “Are you worried or anxious all the time?”

- “Are you kind of a person who worries a lot?” (Excessive fear)
- “How often does this happen?”
- “How severe is your anxiety?”
- “Did you have similar problems before in your life?” If yes, “How did you cope with those?”
- “Any recent stress at home or work?”
- “Impact on life activities?”
- “Are you worried about your health or your family?”

Generalized Anxiety Disorder Screening (Anxiety and Worry for 6 months = 3 or > out of 6):

- Muscle tension
- Fatigability/low energy
- Difficulty in concentrating/blank mind
- Irritability
- Sleep disturbance
- Restless/feeling on the edge

Anxiety Screening (Ask About Panic Disorder, Phobic Disorder, OCD, and PTSD):

- “Do you ever have sudden onset of intense anxiety?”
- “Any special fear?” High altitude, closed spaces, talking in public?
- “Do you have fear for closed spaces or crowded areas?”
- “Are you bothered about persistent thoughts that you cannot get out of your mind?”
- “Do you ever repeat certain activities over and over again even though you do not want to?”
- “What are those thoughts?”
- “What do you do about it? Like checking locks, washing hands?”
- “Have you ever experienced or seen any major accident/trauma?” (emotional or physical)
- “Do you re-experience the event?”
- “Do you avoid stimuli associated with the trauma?”

Screen for Depression: Just one or two questions (only if have not asked before)

Screen for Mania: Just one or two questions

Screen for Psychosis: Just one question about delusions and one for hallucinations

Screen for Organic Causes: Illnesses, drugs, or alcohol use related

Safety Check:

- Self-harm or homicidal ideation or plan
- Self-care

Past Medical History: Any other health issues? Hyperthyroidism, pheochromocytoma? Drug intoxication?

Past Psychiatry History: Diagnosis, treatments, admissions, follow-ups, previous similar episodes, and previous suicidal attempts.

Medication History: Medications and any side effects

Allergies: “Do you have any allergies?”

Family History and Family Psychiatric History

Social History: Smoking, alcohol, drugs, sexual history

Living Condition and Relationships Work Conditions and Financial Status

Support: Family and friends

Wrap-Up:

Describing the Diagnosis: “Based on our current discussion today, it looks like you have a condition known as generalized anxiety disorder (GAD).”

“Do you want to know more about it? It is a condition in which people experience excessive anxiety and worries about routine daily life events, and there is no obvious reason for that. People with GAD will expect disasters and failures in everything they do. They always keep **worrying** about their health, wealth, family, or work. The anxieties and worries are often out of proportion for the situations. It can last for as long as 6 months. These people remain in a constant state of worry and fear. It may thus disturb their daily life functions.”

Question: What is your management plan?

Answer: “Fortunately it is treatable. The part of the treatment is talk therapy, psychotherapy, mindfulness relaxation techniques, and medicines. Avoidance of alcohol and caffeine.

Improve sleep hygiene.”

Medicine: SSRI or benzodiazepam (prescribed only short-term), TCA, and B-blockers.

Question: What laboratory tests?

Answer: CBC, electrolytes, thyroid function test, urinalysis, urine for drug screen, and ECG.

Ask if any questions or concerns.

Follow-Up: In around 2 weeks, once lab results are back.

History and Counseling: Post-traumatic Stress Disorder

Candidate Information:

A 41-year-old male presents with disturbed sleep for few months. Please take a history and discuss a management plan.

Differentials:

- Post-traumatic stress disorder
- General anxiety disorder
- Substance abuse
- Depression
- Panic disorder (with or without agoraphobia)
- Thyrotoxicosis
- Organic disease: anemia, heart or lung diseases

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Are you 41 years old?”

“I understand you are here because of your sleep problems. Is it alright to discuss about it?”

“Do you have any question?”

Chief Complaint:

Starting with sleep problems:

- “Can you please tell me what are your sleep problems?”
- “How did it start?” (Patient may tell about a roadside accident or some other traumatic event he witnessed/he was involved in, and since then he has been experiencing this sleep disturbance. If this is the case, then detailed screening for the sleep differentials will not be required instead continue with the mood screening and post-traumatic stress disorder questions). Do not forget to show empathy.
- “What are your usual hours of sleep?”
- “Do you feel difficulty in falling sleep?”
- “Do you feel refreshed at the morning?”
- “How much is your coffee intake every day?”
- “Do you have difficulty in maintaining sleep? If you wake up, then can you fall sleep again?”
- “Do you sleep alone? Does he/she notice you snoring?”
- “Do you have dreams, nightmares?”

Mood Screening: “How is your mood these days? Low or high?”

Post-traumatic Stress Disorder Screening:

- **Traumatic Event:** “Have you been recently experienced, exposed, witnessed an event that involved death or serious injury?” (Patient may have already told about it.)
- “Do you feel intense fear or helplessness since?”
- **Re-experience:** “Do you repeatedly re-experience that event in the form of recurrent or repeated thoughts? Do you have recurrent distressing recollection of the same event in your thoughts, perceptions, or images?”
- “Do you have recurrent dreams about the same event?”
- “Do you feel that the same event is reoccurring?”
- **Avoidance:** “Are you trying to avoid thoughts or feelings related to that event?”
- “Do you avoid stimuli associated with the trauma?”
- “Are you trying to avoid people, places, or activities related to that event?”
- “Do you have decreased interest since that event?”
- **Unable to Function:** “Do you have markedly decreased interest? Do you avoid participating in routine activities? Do you feel detached?”
- **Arousal:** (Sleep disturbance already asked.)
- “Do you think you have become very irritable and have outbursts of anger?”
- “Do you have difficulties in concentrating?”

Anxiety Screening:

(Ask about panic disorder, phobic disorder, OCD)

- “Do you ever have sudden onset of intense anxiety?”
- “Any special fear?”
- “Do you have fear for closed spaces or crowded areas?”
- “Are you bothered about persistent thoughts that you cannot get out of your mind?”
- “Do you ever repeat certain activities over and over again even though you do not want to?”

Psychotic Screen: “Do you see or hear things other people do not?”

Screen for Organic Causes: Illnesses, drugs, or alcohol use related.

Safety Check:

- Self-harm or homicidal ideation or plan
- Self-care

Past Medical History: Any other health issues?

Past Psychiatry History: Diagnosis, treatments, admissions, follow-ups, previous similar episodes, and previous suicidal attempts

Medication History: Medications and any side effects

Allergies: “Do you have any allergies?”

Family History and Family Psychiatric History

Social History: Smoking, alcohol, drugs, sexual history

Living Condition and Relationships

Work Conditions and Financial Status

Support: Family and friends

Wrap-Up:

Describe the Diagnosis: “Based on what we have just discussed, your symptoms are likely a condition that we call as post-traumatic stress disorder or also known as PTSD.”

“**Do you know what is PTSD?** It is kind of an anxiety disorder. It may develop after experiencing or witnessing a traumatic event. In your case, it was the car accident you witnessed. Following the event, the person with PTSD may present with symptoms such as repetitive and upsetting memories and distressing night and day dreams also known as flashbacks. The patient may try to stay away from any reminders of the event and will not be able to recall details of the event. Sometimes we also see negative emotions such as sadness and sleep difficulties. These combined symptoms must persist for more than a month following the event to meet criteria for PTSD.”

Question: What is your management plan?

Answer: Fortunately it is a treatable condition. I will tell you some tips that can help you overcome this problem and you may require some medicines.”

- Talk therapy (cognitive behavior therapy)
- Relaxation therapy (box breathing, meditation, muscle relaxation)
- Supportive psychotherapy
- Lifestyle modifications (caffeine and alcohol) and improving sleep hygiene
- Eye movement desensitization and reprocessing (EMDR)

Question: What investigations will you order?

Answer: CBC, TSH, urine toxic screen, ECG

Medical Treatment:

- SSRI: paroxetine 10 mg OD x 4 weeks
- Side effects: GI disturbance, headache, sexual dysfunction, this improves with time.
- Benzodiazepam: for short-term use
- Antipsychotics

Contract:

“Before I send you home today, I would like to tell you one important fact that some people with post-traumatic stress disorder may feel very low and sometimes may think to hurt themselves or others. Can you please promise me if you have such feelings, you should immediately seek help?”

“Do you have any question?”

Follow-Up:

“I would like to see you in 2 weeks.”

History and Counseling: Conversion Disorder**Candidate Information:**

A 35-year-old female presents in your clinic with poor vision in one eye. Previously seen by an ophthalmologist and a neurologist, she was found to have normal eyes. Please take a history and address her concerns.

Differentials:

- Transient ischemic attack
- Multiple sclerosis
- Glaucoma
- Depression
- Conversion disorder
- Spouse abuse
- Drug seeker

Less likely to be an eye problem, still you need to ask few questions to rule out differentials related to eye problems. You must try to find out a stressor or any recent triggering event!

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Miss...? And you are 35 years

old? I understand you are here because of your eye problem; is it alright if I ask you some questions about it? Then we can discuss about the plan. Do you have any concern?”

Chief Complaint:

Start with eye symptoms:

- “When did your eye problem start?”
- “Can you please describe to me, what do you mean by poor vision?”
- “Is it in one eye or both eyes?”
- “Is it getting better or worse?”
- “Is it present all the time or have some specific timings?”
- Associated symptoms: eye pain, watering, redness, headache, nausea, dizziness
- “Anything that improves the vision?”
- “Anything that worsens the vision?”
- “Did you see a doctor? What did he say?”
- “Were you being prescribed any medication?”
- “Any similar problems (as in conversion disorder) like paralysis of one hand or you were not able to talk?”

In this particular station, the above history will all be negative. She had a normal examination a few days back. The history may prevail that there may be stress in her life, she may be depressed, or she might be thinking that her husband was cheating on her.

The station should continue with the mood screen.

*Mood Screen***Depression:**

- Low mood: “How is your mood nowadays?”
- Loss of Interest: “What kind of activities do you do for pleasure? Do you still enjoy them?” or “Do you enjoy social activities and relationships?”
- Lack of sleep: “Do you have problems with going to sleep or maintaining sleep? Do you wake up early morning and then find it difficult to go back to sleep?”
- Guilt: “Do you feel guilty?”
- Decreased Energy: “Do you feel lack of energy?”
- Inability to Concentrate: “Do you have difficulty in concentrating?”
- “Did you notice any change in your weight lately?”
- Loss of Appetite: “Has your appetite changed recently?”
- Psychomotor Retardation: “Do you have hopelessness?”

Anxiety Screening:

- “Are you kind of a person who worries a lot?” (Excessive fear)
- “Do you ever have sudden onset of intense anxiety?”
- “Any special fear?”
- “Do you have fear for closed spaces or crowded areas?”

- “Are you bothered about persistent thoughts that you cannot get out of your mind?”
- “Do you ever repeat certain activities over and over again even though you do not want to?”

Psychotic Screen: “Do you see or hear things other people do not?”

Screen for Organic Causes: Illnesses, drugs, or alcohol use related

Problems with Relationships: Important for this station. Usually some relationship problem with partner or spouse.

Safety Check:

- Self-harm or homicidal ideation or plan
- Self-care

Past Medical History: Any other health issues?

Past Psychiatry History: Diagnosis, treatments, admissions, follow-ups, previous similar episodes, and previous suicidal attempts

Medication History: Medications and any side effects

Allergies: “Do you have any allergies?”

Family History and Family Psychiatric History

Social History: Smoking, alcohol, drugs, sexual history

**Living Condition and Relationships
Work Conditions and Financial Status**

Support: Family and friends

Wrap-Up:

Describe the Diagnosis and Management Plan: *It should have two important parts: normalizing her problem and validating her feelings.*

“Mrs.... I know you are worried about your eye problem and you have visited many physicians. I understand the fact that you have been seen by an eye doctor and a neurologist. They have declared that you don’t have an eye problem now, but it does not mean that there may be a medical issue that may become apparent later. So, I would like to recommend to you that it is very important to stick to one doctor. If you will do so, then your doctor can follow you and your health problems. If some new symptoms or health issue appears, then he can arrange further work-up or referrals.

“Some people who are under stress and are anxious or people facing marital infidelity sometimes automatically activate a defense mechanism that gives them time to adjust.

This whole response is not under their control. This reaction will also help them to seek support from people around. This is a normal reaction for them. These people can present with many different symptoms such as visual problems, numbness of arms or legs, or an inability to speak or listen.”

Management Plan:

- Addressing the anxiety and stress.
- “Do you need a social worker to help?”
- Talk therapy.
- If marital infidelity: “I would like to see your husband. We can have another discussion if you like with him alone or you together, whichever you prefer. We can arrange a marital therapist who can help you.”

Medical Treatment: “I can give you some medicine (Benzodiazepam) for anxiety for short-term use if you want. No further investigations are required at this time.”

Follow-Up: “I would like you to have brief frequent visits so we can discuss about your progress or your concerns. I will see you in 2 weeks from now.”

History and Counseling: Somatization Disorder

Candidate Information:

A 33-year-old female presents in your clinic asking for a computed tomography (CT) scan for her muscle pain. She has a history of recurring pain at various parts of the body. Her pains have been investigated by many physicians. She was found to have normal labs results. Please take a history and talk to her.

Differentials:

- Somatization disorder
- Conversion disorder
- Depression
- Anxiety
- Hypochondriasis
- Fibromyalgia
- Chronic fatigue syndrome
- Factitious disorder/malingering
- Spouse abuse
- Drug seeker

Less likely to be a somatic problem. The first few questions should be asked regarding the pain and then should proceed to psychiatric evaluation questions.

Starting the Interview:

- Knock on the door.
- Enter the station.

- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Miss...? And you are 33 years old?”

Chief Complaint:

“I understand you are here because of a pain problem. Is it alright if I ask you some questions about it? Then we can discuss about the plan. Do you have any concern?” (It is extremely important in this station to take a relevant history linked with somatization disorder such as anxiety, depression, unnecessary medicines, or surgeries.)

History of Present Illness:

While going through the history of present illness, you should try to cover most of the somatization disorder screen.

Recurring, multiple, clinically significant physical complaints resulting in seeking treatment.

Four pain symptoms related to four different sites or functions:

- **Two GI symptoms:** Other than pain
- **One sexual symptom:** Other than pain
- **One pseudo-neurology problem:** Other than pain

Pain questions:

- “How did it start?”
- “Where is the pain? First site or multiple sites?” (typical in somatization disorder)
- “Since it started, does your pain remain all the time or comes and goes?”
- “When did it start?”
- “Is your pain progressing or getting better with time?”
- “How does it feel like?” (“What kind of pain?”)
- “What is the intensity of the pain? On a scale of 1–10.”
- “What brings it on?”
- “Does your pain occur at a certain time? At rest, awake you from sleep, or certain activity?”
- “Any radiation?”
- “Anything that relieves it or aggravates it?”
- “Is it affecting your life or daily routine?”

*Mood Screen***Depression:**

- **Low mood:** “How is your mood nowadays?”

- **Loss of Interest:** “What kind of activities you do for pleasure? Do you still enjoy them?” or “Do you enjoy social activities and relationships?”
- **Lack of sleep:** “Do you have problems with going to sleep or maintaining sleep? Do you wake up early morning and then find it difficult to go back to sleep?”
- **Guilt:** “Do you feel guilty?”
- **Decreased Energy:** “Do you feel lack of energy?”
- **Inability to Concentrate:** “Do you have difficulty in concentrating?”
- **Weight:** “Did you notice any change in your weight lately?”
- **Loss of Appetite:** “Has your appetite changed recently?”
- **Psychomotor Retardation:** “Do you have hopelessness?”

Anxiety Screening:

- “Are you kind of a person who worries a lot?” (Excessive fear)
- “Do you ever have sudden onset of intense anxiety?”
- “Any special fear?”

Psychotic Screen: Do you see or hear things other people do not?

Screen for Organic Causes: Illnesses, drugs, or alcohol use related

Problems with Relationships: Important for this station

Safety Check:

- Self-harm or homicidal ideation or plan
- Self-care

Past Medical History: “Any other health issues?” Ask if previous surgery (patient with somatization disorder usually has multiple surgeries)

Past Psychiatry History: Diagnosis, treatments, admissions, follow-ups, previous similar episodes, and previous suicidal attempts

Medication History: Patient may be on high doses of pain medications. Ask for common side effects.

Allergies: “Do you have any known allergies?”

Family History and Family Psychiatric History

Social History: Smoking, alcohol, drugs, sexual history

Living Condition and Relationships**Work Conditions and Financial Status**

Support: Family and friends

Wrap-Up:

Describing the Diagnosis:

“I understand that you are here to get CT scan for your muscle pains. Based on our discussion today, first thing, I want to assure you that you don’t have a serious underlying problem. I think the best explanation of your symptoms is a medical condition known as somatization disorder.”

Question: “What do you know about it?”

Answer: “In somatization disorder, patients have recurring and multiple physical complaints resulting in frequent visits to physicians, seeking treatment. The onset is usually before age 30. The symptoms can be mild to severe. In some patients it can cause significant function impairment. The exact etiology is often not known, but stress definitely plays a role in most of the patients. I can give you some more information in the forms of literature and Websites to read about it.”

Marital infidelity can lead to somatization disorder. If there is marital infidelity involved, then add: “I would like to see your husband. We can have another discussion if you like with him alone or you together, whichever you prefer. We can arrange a marital therapist who can help you.”

Medical Treatment:

I can give you some medicine (benzodiazepam) for anxiety for short-term use if you want.

No further **investigations** (CT scan) are required at this time.”

Counseling: “I would like to refer you to a psychiatrist for counseling. He will also help you deal with the stress.”

“We can arrange a **family meeting**.”

“Do you need a **social worker** to help?”

Follow-Up: (Close follow-ups) “I would like you to have brief frequent visits, so we can discuss about your progress or your concerns. I will see you in 2 weeks from now.”

History and Counseling: Psychosis/ Schizophrenia

Candidate Information:

A 37-year-old male comes to the emergency department. He believes that the police are chasing him. Take history and address his concerns.

Differentials:

- Brief psychotic disorder
- Persecutory delusions
- Schizophrenia
- Bipolar disorder

- Associated with medical disorder
- Substance abuse or withdrawal
- Brain tumor, head trauma

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Are you 37 years old? How can I help you today?”

Body Language and Clues:

In psychosis scenarios, sometimes the first interaction with a patient may surprise the candidate. You must be prepared and should be ready to customize your history accordingly. Look for body language and clues: poor hygiene, restless, irritable, tense, moving around in the room, suspicious looking, posture, and gestures. You must reflect with your questions that you have picked up the clues.

May ask you to show your ID then may ask you if you work for police. Show him the ID and then reassure him you are a physician.

If he looks very agitated or active during the interview, you must reflect it by saying: “You look very anxious. Is something bothering you or you want to discuss with me?”

If the patient is talking to himself, ask him: “Who are you talking to?”

If the patient is moving around the room, then you may say: “I understand you’re here because you are worried that the police are chasing you. I am here to help you, can you please sit down? So we can have a talk about it.”

Patient may show concerns about his safety. Reassure him that he is safe.

During the interview, if the patient stands up again, then reassure him again and request that he sit down.

Patient may want to leave during the interview, then tell him that you will call security and will certify him to be admitted in hospital without his will.

History of Present Illness:

- “Why are the local police chasing you?”
- “Is anyone else other than the police chasing you?”
- “How did it start?”
- “How long have they been chasing you?”
- “Is it affecting you?”
- “How are you protecting yourself?”

- “Have you discussed it with anyone else?”
- “Does any certain environment provoke your symptoms?”

Mood Screening: “How is your mood these days? Low or high?”

Anxiety Screening: “Are you the kind of a person who worries a lot?” (Excessive fear)

Psychosis Screening:

Hallucinations:

- “Do you see, hear, or smell things that others cannot?”
- “Do you sense things that are not actually there?”
- “How long has it been going on?”
- “When, how many times did you see/hear/smell them?”
- “What do you see/hear/smell and how?”
- “Do you recognize these?”
- “Do these command you to do anything or convey to you some special messages?”
- “Do they talk to you or ask you to do something?”
- “Do you feel as if something is crawling or creeping on your skin? How do you feel about these?”

Delusions:

- “Do you have any fixed, firm, untrue beliefs?”
- “Do you have certain beliefs about yourself or about others that others find odd?”
- **Grandiose:** “Do you feel that you have special assignments/tasks/powers? Do you feel that you are super talented or have a mission?”
- **Erotomaniac:** “Do you feel that you are being loved by a person who is a celebrity or of a higher status?”
- **Persecutory:** “Do you feel someone is following you?”
- **Control:** “Do you feel that someone is controlling you?”
Reference: “Do you feel things happening around you have some reference with you?”
- **Paranoid:** “Do you feel that the TV is sending messages?”
- “Do you think that people can steal your thoughts?”
- “Do you think that people are reading your mind?”
- “Do you feel someone is putting thoughts in your mind?”
- **Jealousy:** “Do you feel that your partner is unfaithful?”
- **Religious:** “Do you have a special religious mission or mandate?”
- **Somatic:** “Do you feel you have a general medical condition?”
- **Mind reading:** “Do you feel someone is reading your mind?”

Disorganized Behavior: Excitement, negativism, stupor, agitation

Disorganized Speech: Frequent derailment or incoherence

Negative Symptoms:

- **Affect Flattening:** Inappropriate emotions
- **Anhedonia:** Loss of interest
- **Alogia:** Inability to speak
- **Avolition:** Loss of motivation or drive
- **Attention deficit:** Lack of concentration

Screen for Organic Causes: Illnesses, drugs (important in this station), or alcohol use related.

Past Medical History: Any previous health issues?

Past Psychiatric History: Depression, previous treatments.

Medication History: Medications and any side effects

Family History and Family Psychiatric History (Schizophrenia)

Social History: Smoking, alcohol, drugs (cocaine), sexual history

Self-Care, Living Condition, and Relationships
Work Conditions and Financial Status

Support: Family and friends

Wrap-Up:

Question: (From patient) “Am I crazy?”

Answer: “There is no medical condition called ‘crazy.’ Sometimes people find it difficult to handle their thoughts and behavior and this is called **schizophrenia**.”

Question: “Do you know about it?”

Answer: “Schizophrenia is a long-term mental illness. It is a mental disorder that impairs the way you perceive reality. It could be very disabling. People may have faulty perceptions and emotions so they may present with inappropriate actions and feelings. They may also withdraw themselves from reality. They may live in fantasies and may have delusions.”

Management Plan:

“I need to examine you and will send some blood tests. I will request a psychiatrist to come and assess you. We may need to admit you today. I would also do a detailed physical examination and will run some tests. I can call your family or friend if you want. I can also call the social worker if you need any help.”

Medical Treatment:

- **Risperidone** to reduce the symptoms. Side effects: drowsiness, weight gain, increased blood glucose or
- **Haloperidol:** Side effects: sedation, extrapyramidal symptoms, tardive dyskinesia, weight gain, diabetes, elevated prolactin.

If the patient wants to leave, tell him, “I need to keep you in the hospital.” If he refuses, then tell him that you will call security and will admit him against his will (fill the appropriate forms).

“Any questions or concerns?”

Investigations: CBC, toxicology screen, ECG, septic work-up, CT/MRI brain.

Further Reading:

Psychosis scenarios can present in different ways:

A 43-year-old male is brought by his friend to the emergency department. The patient was found locked in his house and did not want to come out of his house. He believes that his surroundings are infected with **germs and bugs**. Talk to him and get a detailed history.

In this particular case, the history can be started with some questions about germs and bugs:

- “What do you mean by germs and bugs infestation?”
- “When did you first start feeling about these bugs and germs?”
- “How long has it been going on?”
- “How do you know that there are germs and bugs everywhere?”
- “How do you manage to see them?”
- “How do you avoid them?”
- “Is there any specific place where you feel it is infected or is it everywhere?”
- “What do you think is going on?”
- “How are you coping with these?”
- “Have you done anything to clean these places?”
- “Do you think these germs are only in your home or are outside your home too?”
- “Any triggering condition?”
- “Is it affecting you?”
- “How are you protecting yourself?”
- “Have you discussed it with anyone else?”
- “Any recent stress in your life?”
- “Does any certain environment provoke your symptoms?”

It should be followed with questions regarding hallucinations and delusions as mentioned in the previous case. Then complete the rest of the history. The examiner may ask for the diagnosis, which will be **paranoid schizophrenia**.

Here is another example:

A 53-year-old male comes to the clinic; he feels that the local **police are chasing** him. Take his history and address his concerns.

The differential diagnosis will be:

- Brief psychotic disorder
- Persecutory delusions

- Bipolar disorder
- Associated with medical disorder
- Substance abuse or withdrawal
- Brain tumor
- Head trauma

If the patient is moving around the room, then you may say: “I understand you’re here because you have worries that the police are chasing you. I am here to help you, please sit down.” Make sure he sits in front of you. If the patient asks if he is safe here, reassure him that he is safe. During the interview, if the patient stands up again, then reassure him again and request he sit down. If the patient wants to leave during the interview, then tell him that you will call security and will certify him to be in hospital against his will.

Once the patient settles down, then start with the **chief complaint**:

- “Why are the local police chasing you?”
- “Is anybody else than the police chasing you?”
- “How did it start?”
- “How long have they been chasing you?”
- “Is it affecting you?”
- “How are you protecting yourself?”
- “Have you discussed it with anyone else?”

The rest of the history will be the same as the previous cases. One important question not be missed in this station is about use of drugs such as marijuana, cocaine, and amphetamine.

In a similar case scenario, a patient may show a picture of something or may show a metal rod and may tell you that someone has planted this to **spread radiation** in the area. You must address this concern and may reply: “It may be like a radiation for you, but not for me.” Then explain what the picture or object actually is. The patient may present with a weird sensation in his hand, or a patient asks to arrange for a DNA test for his kid.

Checklist: Psychosis/Schizophrenia

See Table 3.4 for a checklist that can be used as a quick review before the exam.

History and Counseling: Eating Disorder

Candidate Information:

A 16-year-old female brought by her mother to your clinic with falling weight for 5 months. Please take history and do relevant physical examination.

Table 3.4 Psychosis/schizophrenia checklist

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Sit on the chair or stand on the right side of the patient and start the interview
Opening	Introduction, greet, explain, position, and exposure/drape
	Make good patient rapport
	Start with an open-ended question
Chief complaint	Pick up patient body language and clues and reflect in interview
	Talking to himself, avoiding eye contact, asking for your identity check, looking toward walls or ceiling
	Be empathetic and supportive
History of present illness	Analyze the symptoms: onset, course, content, duration, and any action
	Any current stress or precipitating events
<i>Screen about hallucination and its content</i>	Grandiosity, somatic, persecutory, reference, thought, control, and religious
<i>Screen for delusions</i>	Bizarre: thought, reference, control, religious Non-bizarre: persecutory, grandiosity, somatic
<i>Screen for depression</i>	
<i>Screen for anxiety</i>	
<i>Screen for organic causes</i>	Medical illness causing psychosis
Safety check	Self-care
Past medical history	
Past psychiatric history	
Medication history	Medications and any side effects
Family history and family psychiatric history (schizophrenia)	
Social history	Smoking, alcohol, drugs, sexual history
Personal history	Living condition and relationships
Work conditions and financial status	
Support	Family and friends
Wrap-up	Describe the diagnosis
	Management plan
	Admission, laboratory tests, psychiatry consult, and medical treatment
	You must read about common medicines used in treatment of psychosis such as haloperidol and clozapine
	Ask if any questions or concerns

Differentials:

- Anorexia nervosa
- Bulimia nervosa
- Pregnancy
- Chronic disease
- Thyroid
- Diabetes mellitus

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Miss...? Are you 16 years old? How can I help you today?”

The patient may explain that her mom is worried about her weight. “Is it alright if I ask you a few questions about your weight loss and then I would like to do a physical examination? If you have any concern please let me know.”

History of Present Illness:

- “How did you notice any change in your weight?”
- “How did it start? Gradually or suddenly?”
- “Are you feeling low/depressed since it started?”
- “Can you please tell me is there any particular event that has triggered your symptoms?”
- “Any recent stress at home or work?”
- “Do you have concerns about your body image?”
- “Have you ever weighed less than what you should?”
- “What is your current weight?”
- “How tall are you?”
- “What was your previous highest weight?”
- “What was your previous lowest weight?”
- “Since how long have you been losing weight?”
- “Are you afraid of gaining weight?”
- “What is your perception about your body image and how you look?”
- “Do you see the mirror every day?”
- “Do you think you look fat while others say you are not?”
- “Did you ever do binge eating? How much did you eat?”
- “Did you feel that you lost control of yourself?”
- “Did you ever induce vomiting after an episode of binge eating?”
- “Have you ever used laxatives, enemas, or water pills to reduce weight?”

“I would like to ask few questions about your **diet**”:

- “What is your dietary history?”
- “How many meals do you eat per day?”
- “Do you take sneaks?”
- “Do you calculate calories of what you eat?”
- “Do you like to eat alone?”
- “Do you exercise? How many hours in day/week?”

Differentials:

- “Do you feel dizzy?”
- “Any pallor?”
- “Any fever?”
- “Any night sweats?”
- “Are you losing your hair?”
- “Does your heart race? Palpitations?”
- “Do you have any oral/genital ulcers?”
- “Any change in bowel routine? Constipation?”
- “Any problem with cold weather?”

Psychiatric Symptoms Screening:

Depression Screening: (5/9 and 2-week period):

- **Low Mood:**
- “How is your mood nowadays? Have you been feeling low/sad/down or depressed these days? Is your mood always low or it alternates?”
- “How were you feeling before this?”
- **Loss of Interest:** “What kind of activities do you do for pleasure? Do you still enjoy them?” or “Do you enjoy social activities and relationships you used to enjoy?”
- If first two questions are negative, then jump to mania questions. Otherwise, complete the depression screening.
- **Lack of Sleep:** “How is your sleep?”
- **Guilt:** “Do you feel guilty/hopeless/worthless?”
- **Decreased Energy:** “Do you feel lack of energy? Do you feel tired?”
- **Inability to Concentrate:** “Do you have difficulty in concentrating?”
- **Loss of Appetite:** “Has your appetite changed recently?”
- **Psychomotor Retardation:** “Do you think that you have slowed down your usual pace?”
- **Suicide Ideas:** (very important in this station) “Do you have any plan to hurt yourself or others? Any previous attempt? Recurrent thoughts? Left a note?”

Mania Screening: “Any periods of time feeling high?”

Anxiety Screening: “Are you kind of a person who worries a lot?” (Excessive fear)

Psychosis Screening: “Do you see, hear, or smell things that others cannot?”

Screen for Organic Causes: Illnesses, drugs, or alcohol use related

Menstrual History:

- “When was your last menstrual period?”
- “Are these regular? How many days for one cycle? How many days? How heavy?”

Teenager Screening:

- **Home:** “How is your living like? Who lives with you? Are your parents married, divorced, or separated? How long you have been living in your current residence? What does your parent do for work?”
- **Education:** “Which grade you are in? What school do you go to? How are your grades? Do you like going to school? Have you made any future plans in studies?”
- **Employment**
- **Activities:** “Do you have friends? Do you have a best friend? What do you do outside of school? Any hobbies?”
- **Alcohol:** “People your age sometimes have problems with excessive drinking. Do you ever have such problems? Do your friends bring alcohol to the parties you attend?”
- **Diet:** “People your age, sometimes they have concerns about their body weight, shape, and image. Do you ever have such concerns?”
- **Drugs:** “People your age sometimes experiment with street drugs. Have you ever tried street drugs? Do your friends experiment with street drugs or your friends bring any drugs to school or parties?”
- **Sexual Activity:** “Are you in a relationship? Are you sexually active? Some people in your age group are uncertain about their sexual orientation. Do you have any concern about it? Do you know about sexual or physical abuse? Have you ever experienced or had any event that is concerning?”
- **Past Medical History:** Any previous health issues?
- **Past Psychiatric History:** Depression, previous treatments. Any criminal history?
- **Medication History:** Use of laxatives or diuretics and any side effects
- **Family History and Family Psychiatric History:** Family history of eating disorders
- **Social History:** Smoking, alcohol, drugs
- **Self-Care, Living Condition, and Relationships**
- **Work Conditions and Financial Status**
- **Support:** Family and friends

Physical Examination:

- **General:**
- Vitals (Low HR, low BP, orthostatic changes, low temp)

- Height and weight
- **Head:** Pallor, sunken eyes, parotid enlargement
- **Mouth:** Perioral skin irritation, oral mucosa for ulcers, dental caries, loss of dental enamel
- **Neck exam:** Thyroid
- **Skin:** Dry skin, yellow skin, lanugo hair, hair thinning, and hair loss
- **Hands:** Redness knuckles, scars and calluses on the dorsum of the hand, pitting of nail beds
- **Legs:** Bruising, muscle wasting, pedal edema
- **Gait**
- **Systems:** Cardiovascular (arrhythmia), chest exam, abdominal exam
- **CNS:** Exam for cerebellum and the cranial nerves

Wrap-Up:

Describe the Diagnosis:

“We need to run some tests.” CBC, Electrolytes, Mg, Ca, PO₄, blood glucose, urea and creatinine, liver panel, TSH, lipid profile, 12-lead ECG

“Based on this conversation, I have come to the conclusion that you may be suffering from **anorexia nervosa**. Do you know what anorexia nervosa is? Anorexia nervosa is a serious and potentially life-threatening eating disorder. Some people develop a wrong image about their body weight and intense fear of gaining body weight. It guides them to go for a strict diet. It restricts their appetite and sometimes a complete aversion to eating. A person will be unable to maintain a normal and healthy weight; they lose a considerable amount of weight. So no matter how thin and skinny they become, it would not be enough for them.”

Management Plan:

“Fortunately it is a treatable disease. We may need to involve a dietitian, gynecologist, and a psychiatrist. A dietitian can help you to figure out a diet plan, appropriate food, and daily caloric requirements. We need to monitor the gradual increase in your weight, which should be around 1–2 lbs per week. A gynecologist can help to treat menses disturbances. A psychiatrist for exploring the etiology, talk therapy, family therapy, and psychotherapy. Do you think you need extra help? We can arrange a supporting group or a social worker visit.”

“Sometimes we may have to admit the patients with this condition, especially if their weight is lower than 65% of standard body weight, there are electrolyte abnormalities, and to monitor the complications and re-feeding syndrome.”

“**Talk therapy** will help in improving the thoughts and feelings.”

“**The medicines** for depression usually work slowly and take 2–3 weeks to start showing signs of improvements. Common side effects are dry mouth, constipation, and sedation. These side effects are usually transient and improve with time. You should take the medicine for about 6 months once symptoms have improved.”

Contract:

“People with anorexia nervosa sometimes feel very low and may think about hurting themselves or others. If you have such thoughts, I would like you to promise me that you will seek immediate help. You should talk to a family member or a friend. You can also go to a hospital or to a clinic.”

Follow-Up: Follow up once lab results are back.

Drug Seeker

Candidate Information:

A 33-year-old male presented in your clinic asking to renew his Tylenol #3 prescription for his headache. Talk to him.

Differentials:

- Headache (migraine, infection, subdural hematoma, subarachnoid hemorrhage, referred pain, and temporal arteritis discussed in neurology cases)
- Depression
- Hypothyroidism

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Mr...? Are you 33 years old?”

Chief Complaint:

- “I understand you are here because of headache.”
- “Is it alright if I ask you some questions about it?”
- “Then we will discuss about the plan?”

History of Present Illness:

- **Start with headache:**
 - **Onset:** “How did your headache start?”
 - “Did it start suddenly or gradually? Unilateral or bilateral?”
 - **Course:** “Did it change since it started or stay the same?”
 - “Was it present all the time? Or it comes and goes?”
 - **Duration:** “When did it start?”
 - **Character:** “Can you please explain it more? What kind of pain it is? Band around the head? Pressing, around the eyes or nose?”

- **Frequency:** “How often does this happen?”
- **Then Pain Question:** Progression, quality of pain, radiation, severity, and timing? Red eye/lacrimation/photophobia/phonophobia?
- **Events Associated:** “Can you please tell me is there any particular event that has triggered your symptoms? History of head injury?”
- **Associated Symptoms:** Nausea/vomiting, neck pain/stiffness, weakness/numbness of limbs.
- **Stress:** “Any recent stress at home or work?”
- **Relieving Factors:** “Does anything relieve your headache? Acetaminophen, ibuprofen, rest?”
- **Precipitating Factors or Aggravating Factors:** “Does anything aggravate your headache? Alcohol, smoke, smell, light, fatigue? Worst at night?”
- **Functional status** or severity or impact on life activities?

Questions Regarding Tylenol #3:

- “How long have you been taking it?”
- “Who prescribed it to you?”
- “Who renewed it and when?”
- “Did you bring a bottle?”
- “How many tablets do you use every day?”
- “How many tablets were you using before?”
- “How long did you increase the dose?”
- “When you take it, how do you feel?”
- “Do you have any nausea, vomiting, shaking, heart racing?”
- “Do you fill it from one pharmacy or different pharmacies?”
- “Will it be alright if I contact your pharmacy or your family physician?”

Psychiatric Symptoms Screening:

“I am going to ask you some screening questions now.”

Depression Screening:

- **Mood:** “How is your mood nowadays?”
- **Loss of Interest:** “What kind of activities you do for pleasure?”
- “Do you still enjoy them?”
- **Lack of Sleep:** “How is your sleep?”
- “Do you have problems with going to sleep or maintaining sleep?”
- **Guilt:** “Do you feel guilty/hopeless/worthless?”
- **Decreased Energy:** “Do you feel lack of energy?”
- “Do you feel tired?”
- **Inability to Concentrate:** “Do you have difficulty in concentrating?”
- **Loss of Appetite:** “Has your appetite changed recently?”
- **Psychomotor Retardation:** “Do you think that you have slowed down in your usual pace?”
- **Suicide Ideas:** “Do you have any plan to hurt yourself or others? Any previous attempt? Recurrent thoughts? Left a note?”

Mania Screening: “Any periods of high mood?”

Anxiety Screening: “Are you the kind of person who worries a lot?” (Excessive fear)

Psychosis Screening: “Do you see, hear, or smell things that others cannot?”

“Do you sense things that are not actually there?”

Screen for Organic Causes: Illnesses, drugs, or alcohol use related

Past Medical History: “Any previous health issues?”

Past Psychiatric History: Depression, previous treatments.

Medication History: Medications (other than Tylenol #3) and any side effects

Family History and Family Psychiatric History (depression)

Social History: Smoking, alcohol, drugs (ask about street drugs), sexual history

Self-Care, Living Condition, and Relationships
Work Conditions and Financial Status

Support: Family and friends

Wrap-Up:

Describe the Diagnosis:

“I understand you came to renew your prescription for Tylenol #3. I just want to know what is your understanding of Tylenol #3?”

“**Tylenol #3** contains two medicines: One is **Tylenol**, which is used usually for pain and fever. It is quite safe and effective medicine. It can be used for longer periods of time. But in higher doses, it can affect your liver and kidneys. The other one is **codeine**. It is a narcotic. Narcotics are similar to morphine. It is a good pain killer. It is usually prescribed for short-term use, because long-term usage is associated with tolerance.”

“Do you know what is **tolerance**? A patient needs to keep increasing the dose of a certain medicine to get the same effect. That’s why these medicines are also known as **habit-forming drugs**.”

“Besides tolerance, people taking codeine for longer period of time, if they try to stop it, suddenly they develop **withdrawal symptoms**, which may be sweats, shaking, running nose, heart racing, nausea, vomiting, agitation, tearing, muscle aches, drowsiness.”

Management Plan:

“So, I think instead of renewing it, we should stop it and change it to another medication, which will be a nonnarcotic for your pain. I would like to do a physical examination and would like to run some tests. There are resources available who can help you. If you would like to talk to a social worker, I can arrange that for you.”

Follow-Up:

“It will take few days when the new medicine will kick in. I can see you in 2 weeks, if you want to have an early follow-up.”

“Do you have any question?”

History and Counseling: Suicide**Candidate Information:**

A 22-year-old comes to your clinic. He recently attempted suicide. Please take a detailed history and make a management plan for him.

Patient with suicidal ideation or after a failed suicidal attempt may voluntarily present in emergency department or may be brought by a close friend or family friend. The same patient may be brought by police and may be under orders to be restrained in the emergency department against patient's will. In these circumstances, if patient wants to go home, you must counsel the patient that you will not let him/her go. You will assess the patient first. Patient needs to be assessed by mental health/psychiatric unit and may need to be admitted for further assessment and treatment. If patient will threaten to leave anyways, then tell that you are calling the security or peace officer to hold patient in.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning /good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? And you are 22 years old? What brings you to the clinic today?”

Body Language and Clues:

Then let the patient talk and listen carefully.

The patient will talk about the events and his circumstances leading him to the decision of attempting suicide. In this particular station, it is very important to show empa-

thy and support. The patient may look sad or low and may avoid eye contact. If so then one should offer support and help. You must encourage the patient by saying it is a good thing he did come to the clinic to seek help. You are here to help him.

Suicide History:

- “What happened?”
- “When did it happen?”
- “Did you have thoughts of hurting yourself?”
- “How long have you been thinking about suicide?”
- “When did you plan it? What was the method?”
- “How long you have been planning on it? How often do you have these thoughts?”
- “How severe are your thoughts? Do these suicidal thoughts affect your activities of daily life? Have you ever been hospitalized?”
- “What made you decide to act on today's event? Any recent event or stressor precipitated in these thoughts?” Or may ask, “What made you want to kill yourself?”
- “Did you leave a note?”
- “Did you make a will?”
- “Did you tell someone?”
- “Did you give away your belongings?”
- “Did you select a date or specific time? Any particular place?”
- “Did you buy a weapon? How did you get the gun/pills?”
- “Did you try stopping these thoughts? Did you seek help?”
- “Is there anything that has held you from executing the suicide plan? Family, friends, religion?”
- “Did it happen before? When?”
- “Do you still have a plan to kill yourself? What are your plans?”
- “Any time lag between the suicide attempt and arrival in emergency?”
- “What do you feel to survive from the attempt you made?”

Assessment:

Modified “SAD PERSONS” scale score of greater or equal to 6 shows need for emergency psych consult (Table 3.5).

Psychiatric Symptoms Screening**Depression Screening:**

- **Low mood:** “How is your mood nowadays? Have you been feeling low/sad/down or depressed these days? Is your mood always low or does it alternate?”
- “How were you feeling before this?”
- “How long have you been feeling like this?”

Table 3.5 Modified SAD PERSONS scale

	Points
Sex male	1
Age <19 or >45	1
Depression	2
Previous attempt	1
Alcohol	1
Rational thinking loss	2
Separated	1
Organized plan	2
No support	1
Stated future intent	2
Total points:	

Score of ≥ 6 shows need for emergency psychiatric consult

- **Loss of Interest:** “What kind of activities do you do for pleasure? Do you still enjoy them? Or do you enjoy social activities and relationships, you used to enjoy?”
- **Lack of Sleep:** “How is your sleep? Do you have problems with going to sleep or maintaining sleep? Do you wake up early in the morning and then find difficult to go back to sleep? Do you feel you are sleeping for longer duration than before?”
- **Guilt:** “Do you feel guilty/hopeless/worthless?”
- **Decreased Energy:** “Do you feel lack of energy? Do you feel tired?”
- **Inability to Concentrate:** “Do you have difficulty in concentrating?”
- **Loss of Appetite:** “Has your appetite changed recently?”
- **Psychomotor Retardation:** “Do you think that you have slowed down in your usual pace?”
- **Suicide Ideas:** (Very important in this station) “Do you have any plan to hurt yourself or others? Any previous attempt? Recurrent thoughts? Left a note?”

Screen for Anxiety: Just one question

Screen for Mania: Just one or two questions

Screen for Psychosis: Just one question about delusions and one for hallucinations

Screen for Organic Causes: Illnesses, drugs, or alcohol use related

Past Medical History: Any previous health issues?

Past Psychiatric History: Diagnosis, treatments, admissions, follow-ups, previous suicidal attempts

Medication History: Antidepressant, anxiolytics, antipsychotics or any other medications and any side effects

Family History and Family Psychiatric History

Social History: Smoking, alcohol, drugs, sexual history

Self-Care, Living Condition, and Relationships Work Conditions and Financial Status

Support: Family and friends

Wrap-Up:

Management Plan:

The wrap-up for the suicide station varies according to the clues gathered in the history.

If the patient is still suicidal, still has an active plan or access to weapons or other lethal means, and has a known or suspected psychiatric disorder, then he needs admission and a psychiatric consultation as soon as possible with or without the patient’s will.

If the patient does not show any active plan and has no access to weapons or other lethal means and if he is ready to get further help, then offer him support and provide information about the community resources. Offer a family meeting or a social worker support. Discuss about the survival skills.

Contract:

Very important for this station.

“In life, sometimes the circumstances can make people feel hopeless. In such circumstances people may feel very helpless and may think about hurting themselves or others. I would like you to promise me that you will immediately seek help if you have such thoughts again. You should talk to a family member or a friend or you should come to a hospital or to a clinic.”

Follow-Up:

“We will arrange a psychiatric consultation for you and my clinic will call you about the appointment.”

History: Dementia

Candidate Information:

A 75-year-old female is brought by her son because of increasing forgetfulness for 1 month. Take a history and discuss a management plan.

Vital Signs: HR, 78/min, regular; BP, 140/80 mmHg; temp, 36.8; RR, 17/min; O₂ saturation, 98%

No examination required for this station.

Differentials:

Long list of differentials. Some common ones are:

- Alzheimer’s, Parkinsonism, and multi-infarct dementia
- Depression, pseudodementia

- Thyroid, DM
- Tumors, head trauma
- B12 or thiamine deficiency

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mrs....? You are 75 years old? How can I help you today?”

History of Present Illness:

- “How did you notice that you are forgetting things?”
- “When did it start?”
- “Did it gradually or suddenly onset?” (sudden delirium, chronic Alzheimer’s, or vascular)
- “Is it progressing with time or fluctuating or getting better?”
- “Is this your first time to have it?”
- “What forgetful problem do you have? Names, things, events, dates, maps?”
- “Is it recent or remote memory?”
- “Do you have difficulties in speaking or understanding words?”
- “Do you find problems doing purposeful movements, such as using objects?”
- “How is your sleep?” (fragmented)
- “Can you plan an event?”
- “How is your ability to make judgments?”

Screening for Activities of Daily Living:

- “Can you dress yourself?”
- “Can you eat by yourself?”
- “Can you ambulate?”
- “Do you have any difficulty in using the toilet?”
- “Are you able to maintain hygiene yourself?”

Screening for Instrumental Activities of Daily Living:

- “Can you do shopping by yourself?”
- “Can you do housekeeping by yourself?”
- “Are you able to run your bank account?”
- “Can you prepare food independently?”
- “Can you move around the town or use transportation independently?”
- “How is this affecting your life?”

Differentials:

- “Any recent increase in thirst, eating, or frequent urination?”
- “Do you drink alcohol?”
- “Any problem with cold weather?”
- “Any change in bowel movements?”
- “Did you lose or gain weight recently?”
- “How is your appetite?”
- “Did you notice any fever?”
- “Do you have night sweating? Night fever?”
- “Are you on any special diet?”
- “Have you recently noticed any change in the color of your skin? Any pallor?”
- “Have you noticed heart racing?”
- “Do you have any weakness?”
- “Fatigue? Tingling numbness?”
- “Did you have any trauma to your head?”
- “How is your pee? Any burning while peeing?”
- “Have you had any problem in your vision, hearing, or your balance?”

“I am going to ask you some screening questions about your mood.”

Mood Screening: “How is your mood these days?”

Anxiety Screening: Are you the kind of person who worries a lot?” (Excessive fear)

Psychosis Screening: “Do you see, hear, or smell things that others cannot?”

“Do you sense things that are not actually there?”

Screen for Organic Causes: Illnesses, drugs, or alcohol use related.

Past Medical History: “Have you ever sought any medical advice before?”

“When was the last time you went for a general checkup? How was it?”

“Any previous health issues? DM, hypertension, thyroid problems, TIA, stroke?”

Past Psychiatric History: Depression

Medication History: Medications list and any side effects

Family History and Family Psychiatric History: Dementia

Social History: Smoking, alcohol, drugs, sexual history

**Self-Care, Living Condition, and Relationships
Work Conditions and Financial Status**

Support: Family and friends

Wrap-Up:

Management Plan:

“I would like to do a thorough clinical, neurological, and mental status examination.”

Blood Work: CBC, electrolytes, blood glucose, urea, creatinine, liver panel, TSH, 12 leads ECG and CT/MRI of brain

Describe the Diagnosis:

“Based on this history of progressive forgetfulness, I think you have (name the dementia type).” Here we will talk about Alzheimer’s dementia.

“**Have you heard about it?** Dementia is a chronic and progressive condition of our brain. Our brain is like a computer. It consists of cells that keep memory about our life. In some people with age, these cells start to lose their ability to function well. So we wouldn’t be able to recollect or recall the memories related to our life. It may also affect language, recognition, abstract thinking, and planning. Unfortunately it is an irreversible disease. But there are some medicines to slow down the process. I need to send you to a neurologist.”

“**Do you need any kind of assistance?** I can arrange a social worker, home care if you want. You can contact support group, adult day care facilities, and respite programs.”

Medication:

“There is a medication called Aricept (start 5 mg then 10 mg/day) to decrease the progress of the disease. SSRI for depression. The side effects are GI upset, nausea/vomiting, weight changes, and sexual.”

“Your living environment should have things to help in orientation such as clocks and calendars.”

“It is better to write an advance directive (power of attorney/living will). No driving for now and I will also recommend a medical alert bracelet.”

Checklist: Dementia

See Table 3.6 for a checklist that can be used as a quick review before the exam.

History and Counseling: Delirium

Candidate Information:

You are on a ward call. The nurse just called you to attend a 54-year-old male who had a laparotomy 2 days earlier for perforated appendicitis. He has been found in his room with very aggressive behavior. He is yelling at everyone and has pulled his IV lines and blood pressure cuff. Your colleague is attending the patient now. The patient’s son is in the family

Table 3.6 Dementia checklist

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
Opening	Sit on the chair or stand on the right side of the patient and start the interview
	Introduction, greet, explain, position, and exposure/drape
	Make good patient rapport
Chief complaint	Start with an open-ended question
	Onset, course, content, and duration
Psychiatric symptoms screening	Questions to rule out common differentials such as Alzheimer’s, Parkinsonism, and multi-infarct dementia, thyroid, DM, tumors, head trauma, B12 or thiamine deficiency
	<i>Screen for depression</i>
	<i>Screen for anxiety</i>
	<i>Screen about delusions and hallucination</i>
	<i>Screen for organic cause</i>
Safety check	Illnesses, medications, alcohol, drugs
	Self-harm or homicidal ideation or plan
	Self-care
Past medical history	
Past psychiatric history	
Medication history	Medications and any side effects
Family history and family psychiatric history (dementia)	
Social history	Smoking, alcohol, drugs, sexual history
Personal history	Living condition and relationships
Work conditions and financial status	
Support	Family and friends
Wrap-up	Describe the diagnosis
	Management plan:
	Told about laboratory tests and imaging
	Ask if any questions or concerns
	Follow-up appointment

room. Please take a relevant history and address his concern about his dad.

Differentials:

Long list of differential, most important ones for this particular station are:

- **Infections:** Sepsis, UTI, pneumonia
- **Withdrawal:** Medicines, alcohol, or drugs
- **Endocrine:** Thyroid, DM
- **Deficiencies:** B12 or thiamine deficiency

- **Trauma:** Head injury, pulmonary embolism, postoperative
- **Metabolic:** Hyponatremia, dehydration, acidosis, or alkalosis

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am doctor on duty doctor. Are you Mr....? You are the son of Mr....?”

Chief Complaint:

“My colleague, Dr...., is attending your dad now. To have a better understanding of the situation, is it alright if I ask you few questions about your dad’s health?”

History of Present Illness:

- “What happened?”
- “Was he becoming aggressive or angry?”
- “How did it start?”
- “Was it gradually or suddenly onset?”
- “When did it start?”
- “Did it progress, fluctuate, or get better with time?”
- “Is this his first time being like this?”
- “Did you notice that your dad is seeing things or hearing voices that do not exist?”
- “Did you notice that he was complaining about insects crawling on him?”
- “How was he on day 1 and 2 after the surgery?”
- “Was he talking well and recognizing everyone?”
- “Did he sleep last night or during the day?”
- “Does he have any recent or remote memory loss?”
- “Does he have any difficulties in speaking or understanding words?”
- “How is his ability to make judgments?”

“I want to ask some screening questions.”

Differentials:

- **Infections:** “Any difficulties in peeing? Any burning while peeing?”
- “Any abdominal pain? Wound pain?”
- “Calf pain or swelling?”
- “Did you notice any fever?”
- “Any night sweating? Night fever?”
- “Any headache, nausea, vomiting or diarrhea, skin rash, red eyes?”

- “Any shortness of breath, cough?”
- **DM:** “Any recent increase in thirst, eating, or frequent urination?”
- **Thyroid:** “Any problem with cold weather?”
- “Any change in bowel movements?”
- “Did he lose or gain weight recently?”
- “How was his appetite?”
- **Alcohol:** “Does he drink alcohol?”
- **Deficiency:** “Is he on any special diet?”
- “Has he had any problem in his vision, hearing, or balance?”
- **Anemia:** “Have you recently noticed any change in the color of his skin—any pallor?”
- **Trauma:** “Did he have any trauma to his head?”
- “Recent surgery?”

“I am going to ask you some questions about his mood.”

Mood Screening: “How is his mood these days?”

Anxiety Screening: “Is he the kind of person who worries a lot?” (Excessive fear)

Psychosis Screening: “Does he see, hear, or smell things that others cannot?”

“Does he sense things that are not actually there?”

Screen for Organic Causes: Illnesses, drugs, or alcohol use related

Screening of Activities of Daily Living:

- “Can he dress himself?”
- “Can he eat by himself?”
- “Can he ambulate?”
- “Does he have any difficulty in using the toilet?”
- “Was he able to maintain hygiene himself?”

Screening for Instrumental Activities of Daily Living:

- “Can he do shopping by himself?”
- “Can he do housekeeping by himself?”
- “Is he able to run his bank account?”
- “Can he prepare food independently?”
- “Can he move around the town or use transportation independently?”

Past Medical History: “Has he ever sought any medical advice before?”

“When was the last time he went for a general checkup? How was it?”

“Any previous health issues? DM, hypertension, thyroid problems, TIA, stroke?”

Past Psychiatric History: Depression

Medication History: Medications list and any side effects

Family History and Family Psychiatric History

Social History: Smoking, alcohol, drugs, sexual history

Self-Care, Living Condition, and Relationships Work Conditions and Financial Status

Support: Family and friends

Wrap-Up:

Describe the Diagnosis:

“Based on our discussion today, it looks like your dad is suffering from a medical condition called delirium. It is a common medical problem that is characterized by changes in the mental function of a patient. Its onset is often sudden. It is usually reversible and fluctuating with impairment of level of consciousness. Patients are found to be confused and aggressive or agitated. Sometimes, a patient may present to be drowsy, withdrawn, sleepy, or very quiet. They are not oriented with time and place. They may see things that are not there. They may lose control of their bladders or bowels. They usually have changes in their sleeping patterns. Some staying awake at night and some being drowsy during the day. It can be a serious manifestation of an underlying condition. Older patients are seen more commonly.”

Question: Who is at risk of developing delirium?

Answer:

Patients who:

- Have depression
- Are very sick
- Are taking many medicines
- Have recent surgery
- Are known to have dementia
- Are 70 years old or more

Question: What causes delirium?

Answer: In older people some common causes of delirium:

- Withdrawal from medication or alcohol
- Infection
- Multiple physical illnesses
- Dehydration
- Severe pain
- Heavy alcohol consumption

Question: How long does delirium last?

Answer: “It usually only lasts for a few days but may persist for longer periods for weeks or even months. If delirium will not resolve quickly, it can lead to serious problems such as pressure sores, recurrent falls, and eventually longer periods of stay in hospital or in the worst case even death.”

Management Plan:

“Delirium is usually related to an underlying cause that can be medical illness. We can go now and discuss with my colleague who is attending your dad. We need to do a detailed neurological and mental status examination. I would also like to run some tests.”

Blood Work: CBC, electrolytes, blood glucose, urea, creatinine, TSH, lipid profile, and 12-lead ECG

“We will treat him according to the underlying cause of delirium. It will also reduce the risk of complications.”

Follow-Up:

“We can have another meeting, once I finish managing him.”

The Mental Status Examination (MSE)

Candidate Information:

You have been asked to perform a mental status examination on a 72-year-old female.

Vital Signs: HR, 81/min, regular; BP, 150/85 mmHg; temp, 36.5; RR, 17/min; O₂ saturation, 98%

No history or physical examination is required for this station.

The mental status examination describes the physician’s impression of the patient’s current mental, cognitive, perceptual, emotional, and judgmental status. It starts once you enter the room, greet the patient, and start introducing yourself to the patient. Mental status examination consists of mostly observational findings and it may vary with time. Broadly, the examination can be divided into seven parts, which can be memorized with the mnemonic ASEPTIC:

1. Appearance
2. Speech
3. Emotional expression (affect and mood)
4. Perception
5. Thought (process and content)
6. Insight and judgment
7. Cognition

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician. Are you ...? Are you 72 years old? I have been asked to complete ‘the Mental Status Examination’ on you. I shall be asking you few questions. Is it alright if I ask you some questions about it? At the end, I will address if you have any concerns.”

1. Appearance (observational findings):

- **Appearance:** Observe the appearance of the patient, body habitat, hygiene, makeup, jewelry, dressing, physical characteristics, body habitus, posture, grooming, facial expressions.
- **Behavior:** Look for patient body language. Observe if the patient is attentive, agitated, or has psychomotor retardation. Observe if the patient responds to some visual or auditory hallucinations. Any abnormal movements such as tremors.
- **Eye Contact:** Poor, good, or avoidance
- **Dress:** Watch for cleanliness of the dress and whether matching with the weather. Wearing coat and sweater in summer!
- **Cooperative:** Cooperative, hostile, apathetic, open
- **Face Expressions:** No abnormal movements, tics or twitches, expressionless

2. Speech (observational findings while patient talking):

Note how the patient is responding to the questions. Observe while asking the first few questions:

- **Voice:** Clear, slurred, mute
- **Volume:** Low or soft, normal, loud or high, mumbling, whispering
- **Rate/Speed/Tone:** Slow, pressured, rapid
- **Rhythm:** Monotonous, dramatic, staccato, accent, spontaneous

3. Emotional expression (affect and mood):

- **Mood:** Patient subjective expression (in patient’s own words). Sad, depressed, angry, happy, guilty, irritable, calm, fearful, frightened, suspicious.

- **Affect:** It is physician’s observation of the patient’s mood. Look for the following:

- **Appropriateness** to thought content
- **Quality:** Depressed, anxious, elevated
- **Range:** Full, flat, blunted, restricted
- **Stability:** Fixed or labile

4. Perception:

- **Hallucination:** Sensory perception in the absence of external stimuli that should be similar to the true perception. It can be visual, gustatory, olfactory, tactile.
- **Illusion:** Misperception of real external stimuli.
- **Derealization:** Subjective feeling of the outer environment or the world as unreal.

5. Thought:

- **Process:** It is also assessed with the content of the patient’s speech. Observe if thought process is normal, logical/illogical, appropriate, fragmented. How is the stream: circumstantiality, tangentiality, loosening, flight of ideas, or word salad.
- **Content:** It is assessed with the content of his or her speech. Should observe if there are any delusions, obsessions, phobias, thoughts of homicide, or suicide.
- **Obsession:** Recurrent or persistent thoughts, impulses, or images that cannot be stopped that are intrusive or inappropriate.
- **Suicidal or homicidal ideation:**
 - **Low:** No formulated plan.
 - **Intermediate:** Well-formulated plan but no active intent.
 - **High:** Persistent ideations and profound hopelessness, well-formulated plan—active intent, believes suicide or homicide is only helpful option available.

6. Insight and judgment:

- Patient’s inability to understand, such as awareness regarding their illness: “What is going on?”
- Note if the patient has some insight, no insight, or appropriate insight into the problem.
- Judgment is assessed by directly asking the patient some questions, such as “How will you respond if you see a car accident?” Listen to the patient’s response and then analyze the response as good, fair, or poor judgment.

7. Cognition:

- **Alertness** or level of consciousness.
- **Orientation:** Time, place, and person.

- **Memory:** Recent, immediate, and remote.
- **Attention and Concentration:** Intact or impaired.
- **Global Evaluation of Intellect:** \$10 is more than \$5.

Summarize Findings:

At the end, the examiner will ask to summarize your findings. **Here are few examples of how to summarize the mental status examination:**

1. Normal Patient:

The patient is well dressed, well groomed, and wearing clean clothes, appropriate for the weather. His appearance matches his chronological age. He has good eye contact and he is cooperative. He has no psychomotor retardation. His speech is of normal volume, tone, fluent, not slurred, and not pressured. His mood is “normal” and his thoughts are well organized. He does not have any delusions or hallucinations. He does not have suicidal ideation or homicidal thoughts. He has good judgment and his insight is intact. He is alert and well oriented.

2. Depression Patient:

- **Appearance:** The patient looks overweight, female, dressed in a black shirt and black pants. Her hair is nicely groomed. She has good hygiene.
- **Behavior:** She has poor eye contact, cooperative and psychomotor retardation.
- **Speech:** Low rate and low volume.
- **Affect:** Tearful but appropriate.
- **Mood:** “Depressed.”
- **Perception:** No visual or auditory hallucination.
- **Thought (process):** Linear, no flight of ideas.
- **Thought (content):** Suicidal but no active plan. Not homicidal.
- **Insight:** Poor.
- **Judgment:** Fair.
- **Cognition:** Grossly intact.

3. Patient with Mania:

- **Appearance:** The patient looks restless and hyperactive. He is dressed in a colorful shirt and red pants. His hair is nicely groomed. He has good hygiene.
- **Behavior:** He is hostile and uncooperative.
- **Speech:** High rate and increased volume.
- **Affect:** Euphoric and irritable.
- **Mood:** “Excellent.”
- **Perception:** No visual or auditory hallucination.
- **Thought (process):** Flight of ideas, pressured.

- **Thought (content):** Grandiose delusions, feelings of having special power. No suicidal or homicidal ideas.
- **Insight:** Impaired.
- **Judgment:** Impaired.
- **Cognition:** Grossly intact.

The Mini-mental Status Examination (MMSE) (Folstein)

You have been asked to perform a mini-mental status examination on a 72-year-old female.

Vital Signs: HR, 81/min, regular; BP, 150/85 mmHg; temp, 36.5; RR, 17/min; O₂ saturation, 98%

No history is required for this station and please do not perform rectal, genitourinary, or breast examinations.

For mini-mental status, it is very important to memorize the key questions and to practice it before the real examination. It is very easy to forget one or more of the questions, and then the whole trail of questions will be disturbed in the examination. I used to practice this by writing

O10 R3 A5 R3 L9 in my blank paper and then start the questions.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician. Are you ...? Are you 72 years old? I have been asked to complete ‘the mini-mental status examination’ on you. I shall be asking you a few questions and also will ask you to perform some actions. I will mark you for every step we will complete. Once we finish, I will calculate your total score and we will discuss the results of this assessment.”

Orientation (Total Score 10):

- **Time (5 Score):** One point for each of:
 - **Year:** What year is this?
 - **Season:** What season are we in nowadays?

- **Month:** What month is this?
- **Date:** What is the date today?
- **Day:** What is the day of the week today?
- Score: __ /5

Place (5 Score): One point for each of:

- **Country:** What country we are in?
- **Province/state:** What is our province/state name?
- **City:** What city are we in?
- **Street address or town or hospital name:** What is your home street address or town? Which hospital you are in right now?
- **House number or floor number:** What is house/floor number?
- Score: __ /5

Write your score on the paper or let the examiner know:
Orientation is .../10.

Registration (Total Score 3):

Immediate recall: 1 point for repeating each. Pick three words such as honesty, apple, and black. Ask the patient to repeat after you: honesty, apple, black.
Score: __ /3

Write your score on the paper or let the examiner know:
Registration is .../3

Attention and Calculation (Total Score 5):

1 point for backward spelling each of the letters of the word “WORLD” or ask the patient to count backward, subtracting 7 each time starting from 100. Stop after five times.
100, 93, 86, 79, 72, 65
Score: __ /5

Write your score on the paper or let the examiner know:
Attention and calculation is .../5

Recall (Total Score 3):

Ask the patient to recall the names of the three objects that you asked her/him to repeat above and score 1 for each correct name.
Honesty, apple, black

Score: __ /3

Write your score on the paper or let the examiner know:
Recall is .../3

Language (Total Score 9):

Naming: Point to two objects, such as watch and pen/pencil, and ask the patient to name them. Score 1 for each correct name.

Score: __ /2

Repetition: Ask the patient to repeat, “No ifs, ands, or buts.” Allow only one trial.

Score: __ /1

Three-stage command: Ask the patient to “Take a paper in your right hand, fold it in half, and put it on the floor.” Score 1 for each part correctly performed.

Score: __ /3

Reading: Write a phrase on a piece of paper such as “close your eyes.” Ask the patient to read it and do what it says. Score 1 if eyes are closed.

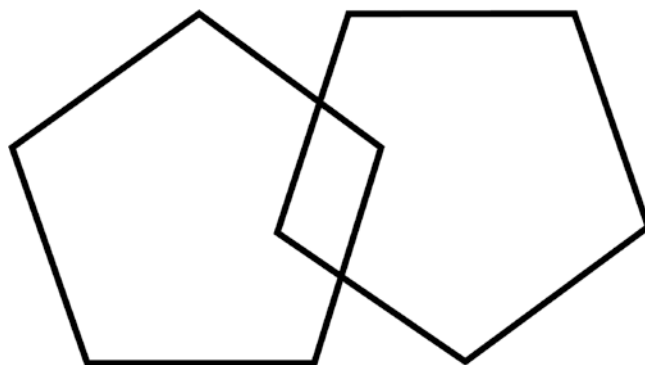
Score: __ /1

Writing: Ask the patient to make up a sentence about anything, but it should have a noun and a verb. Do not dictate a sentence and it must make sense. Correct spelling and punctuation are not necessary.

Score: __ /1

Test of spatial ability (copying): Ask the patient to copy the figure exactly. All 10 angles and intersections must be present to score 1.

Score: __ /1



Write your score on the paper or let the examiner know:
Language score is .../9

At the end, calculate your score and let the examiner know. **The mini-mental status is .../30.**

A total of score 24 or more is considered to be normal.

Checklist: Management of a Violent Patient

See Table 3.7 for a checklist that can be used as a quick review before the exam.

Table 3.7 Violent patient checklist

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
Opening	Make sure of your safety and your staff (make sure you have an easy access to an exit door)
	Introduction and greet
	Try to establish a quick rapport
	Behave calmly. Try not to overreact
	Look for patient's body language and clues
	Consider cultural and language barriers
	Address the patient's anger
	Allow patient to vent verbally
	Ask direct questions to investigate the cause of patient's concerns:
	"Why are you so aggressive or angry? What is bothering you?"
	"What is going on with you?"
	"Is there anything you want to share with me?"
	Show him empathy
	Try to understand what he wants to communicate
	Clarify information if required
	Do not blame anyone to support the patient's ideas
	Redirect questions that challenge hospital policy or staff qualifications to the issues at hand
Say you are there to help. Be supportive	
Once the patient settles, then he will start giving the answers. Go through the history as mentioned in the previous cases	
Chief complaint	Onset, course, and duration
Psychiatric symptoms screening	
<i>Screen for depression, anxiety, mania, psychosis</i>	
<i>Screen for organic cause</i>	Illnesses, medications, alcohol, drugs
Safety check	Self-harm or homicidal ideation or plan Self-care
Past medical history	
Past psychiatric history	
Medication history	Medications and any side effects

Table 3.7 (continued)

Family history and family psychiatric history	
Social history	Smoking, alcohol, drugs, sexual history
Personal history	Living condition and relationships
Work conditions and financial status	
Support	Family and friends
Physical examination	Respect patient's personal space (stand off to the side of the patient at least a meter away)
	Ensure patient's privacy
	Vital signs
	Any signs of needles (IV drug abuse) or trauma
	Signs of trauma
	Patient may agree: Perform a quick general physical activity, listen to chest, listen to heart sounds, observe and palpate abdomen. Tell the patient or examiner that you would like to draw a blood sample for routine blood tests, liver and kidney function, toxicology, drug levels, alcohol level
	If patient becomes violent: tell him that you will call security and will order for physical restraint. Need to admit against will, and will fill required forms

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The Cardiovascular System

4

Mubashar Hussain Sherazi

Common Cardiovascular Symptoms for the Objective Structured Clinical Examination

For the cardiovascular system, common presenting symptoms are [1]:

- Chest pain
- Shortness of breath (on rest, on exertion, when supine)
- Palpitation
- Light-headedness
- Fatigue
- Exercise intolerance
- Blue lips/fingers
- Cough
- Sputum
- Coughing up blood (hemoptysis)
- Wheezing

History Overview: The Cardiovascular System

In the objective structured clinical examinations (OSCE), you are likely to get at least one station related to the cardiovascular system. Chest pain is the commonest and most important station. I must say, you should master all the possible chest pain cases and should practice very well cardiac and non-cardiac chest pain cases with or without cardiovascular examination and management. This chapter outlines a few important cardiovascular cases.

See Table 4.1 for a quick overview of the cardiovascular system history.

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Physical Examination: The Cardiovascular System

Candidate Information

A 35-year-old male presented with chest pain for 3 days.

Vital Signs Heart rate (HR), 71/min, regular; blood pressure (BP), 130/70 mm Hg; temp, 36.8 °C; respiratory rate (RR), 16/min; O₂ saturation, 98%

Please perform a detailed cardiovascular system examination. Please do not perform rectal, genitourinary, or breast examination. No history is required for this station.

Starting the Physical Examination

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your identification (ID).
- Now stand on the right side of the patient and start the examination.

Opening

“Good morning/good afternoon. I am Dr... I am your attending physician. Are you Mr...? And you are 35 years old? Is it alright if I examine your (heart) cardiovascular system and a general examination associated with it? During the examination, if you feel uncomfortable, please let me know. Would you like a chaperone present in the room?”

Vitals

Start with commenting on the vitals given at the door. (They should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.) Comment on the vital signs findings, “vital signs are normal,” or mention any abnormal finding, such as “he has fever/tachycardia/tachypnea.”

Table 4.1 Quick overview of the cardiovascular system history

Introduction
Name and age
Chief complaint
In patient's own words
History of present illness
Analysis of chief complaint:
Chest pain is the most common presentation
Onset
Course
Duration
If pain:
Nature
Intensity (1–10)
Location
Progression
Frequency
Quality
Radiation
Severity (1–10)
Timing
Contributing factors
Aggravating/alleviating factors
Related symptoms
Associated symptoms: nausea, vomiting, diaphoresis, shortness of breath, light-headedness, palpitation, fatigue, cough, exercise intolerance, leg pain
Predisposing factors
Aggravating and relieving factors
Red flags/risk factors
Rule out differential diagnosis
Review of systems:
Gastrointestinal tract
Respiratory
Neurology
Risk factors for atherosclerotic heart disease
Smoking
Hypertension
Hyperlipidemia
Family history of heart disease
Lifestyle (active vs. sedentary)
Constitutional symptoms
Anorexia, chills, night sweats, fever, lumps/bumps, and weight loss
Past medical history and surgical history
Medical illnesses
Any previous or recent medical issues
History of previous surgery/operation
Hospitalization history or emergency admission history
Medication history – current medications (prescribed, over the counter, and any herbal)
Allergic history/triggers – any known allergies
Family history
Family history of any long-term or specific medical illness
Home situation
Occupation history
What do you do for a living?

Table 4.1 (continued)

Social history
Smoking
Alcohol
Street drugs
Sexual history
If adult female:
Menstrual history (LMP)
Gynecology history
Obstetric history
If teen:
Home
Education
Employment
Activities
Drugs
Sexual activity
Wrap-up
Describe the diagnosis
Management plan
Possible medical treatment
Duration of treatment and side effects
Laboratory tests
Further information websites/brochures/support groups or societies/toll-free numbers
Follow-up

Mention that you will measure his blood pressure on *both arms* while he is lying down, then sitting or standing after 2 min, in order to observe for any orthostatic changes.

Mention that you will measure his blood pressure in *both legs* as well, by using a thigh cuff around the thigh and listening to the popliteal artery.

Mention that you are looking for postural hypotension and significant upper/lower extremities difference.

Systolic BP decreases >15 mm Hg and diastolic BP decreases >0–10 mm Hg and/or heart rate increases more than 20 indicate orthostatic hypotension. It is seen in volume depletion and autonomic dysfunction [2].

General Physical Examination

“I need to ask you a couple of questions as a part of my examination.” (You may skip these questions if it is a history and physical station to save some time):

- “What is the date today?”
- “Do you know where you are now?”
- Comment: “Patient is oriented and alert,” “patient is in distress!”, or “patient is sitting comfortably and he is well oriented and alert.”

“I need to expose you from the neck down to the waist, is that alright?” If you think the patient is having difficulty taking off his/her shirt and requires help, then offer to help;

otherwise, let him do it. Drape the patient appropriately if required.

Observe for posture, distress, sweating, skin color, difficulty in speaking, attached oxygen mask, any medications in patient's hand or at bed side, or attached intravenous (IV) lines (Fig. 4.1).

Hands

"Now I would like to examine your hands."

Observe for color, palmar erythema, peripheral cyanosis (blue fingers, toes), nicotine stain, clubbing, muscle wasting (thenar), contractures (Dupuytren's), Janeway lesions (if with fever), splinter hemorrhages (look all fingers and nail beds), and Osler nodes (Fig. 4.2a–c).

Capillary Refill

"I am going to squeeze your thumb/index finger." Press on the nail bed and release while looking on your watch: < 3 s (Fig. 4.3). Inform the examiner that the capillary refill is normal and less than 3 s.

Face

- Color of face, plethora, central cyanosis, cushingoid/moon face, mitral face (red cheeks in mitral stenosis).
- Sinuses: Check for tenderness of maxillary and frontal sinuses.
- Nose: Flare or perforated septum.
- Lips: Pursed lips.
- Mouth: Moist tongue, ulcers, thrush, or central cyanosis (blue lips and buccal mucosa: $SO_2 < 80\%$).
- Have the patient speak a sentence for hoarseness.
- Eyes:
 - Ptosis (Horner syndrome).
 - Pallor.
 - Jaundice.
 - Xanthelasma: yellow lipid deposition on upper and lower eyelids.



Fig. 4.1 Observing the patient

- Senile arcus: yellow lipid deposition in cornea at its margins with conjunctiva.
- Conjunctival hemorrhages.
- Fundoscopy: Just mention, "I will look for copper wires, soft/hard exudates, Roth spots, erythematous lumps, and emboli in the retinal arteries."

Neck

"I am going to feel your neck now."

- Trachea: Position (central or mid line) and mobility.

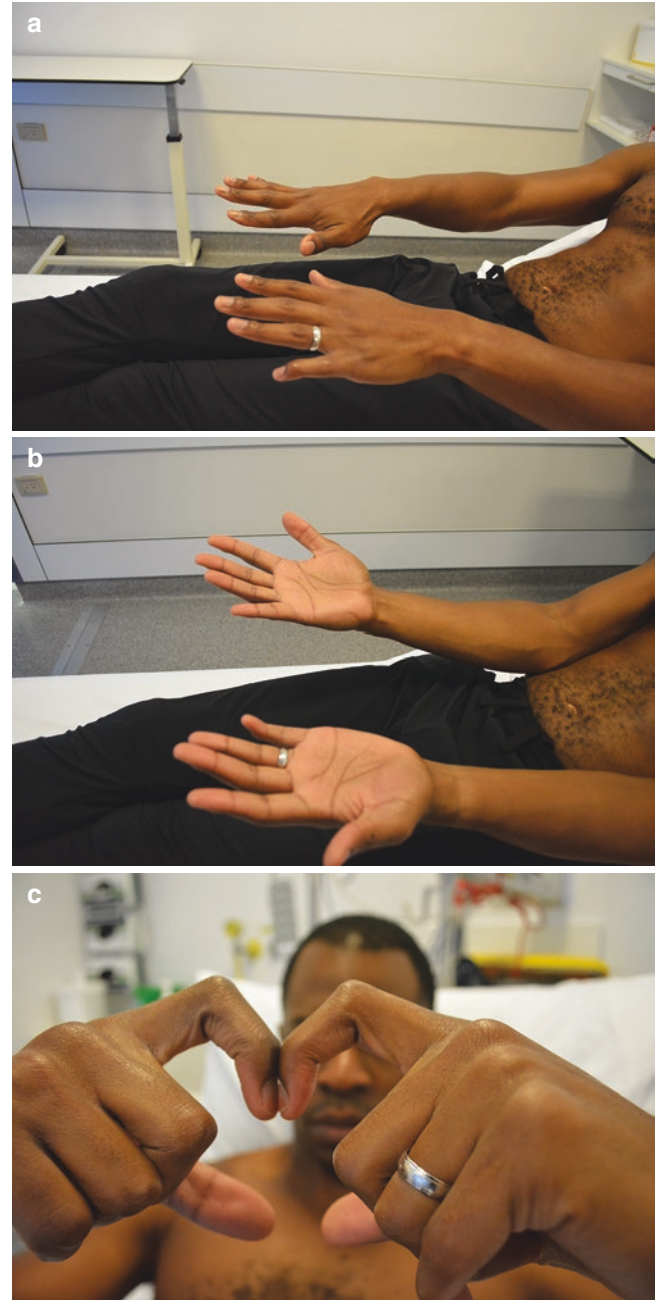


Fig. 4.2 (a, b) Hand observation. (c) Check for clubbing of fingers

- Tracheal deviation will be away from the contralateral pneumothorax or effusion.
- Fixed trachea: Mediastinal tumor and tuberculosis.

Jugular Vein Distention (JVD) or Jugular Venous Pressure (JVP)

Jugular venous pressure (JVP) is a direct assessment of central venous pressure (right atrial pressure). Position the

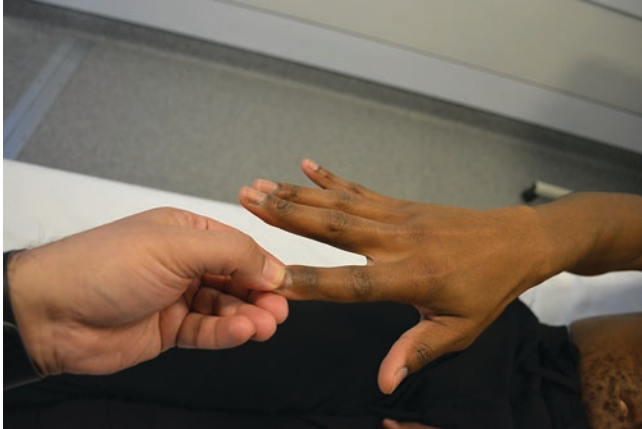


Fig. 4.3 Checking capillary refill

patient at 30° and ask the patient to turn his head slightly to the left. Then adjust the elevation up to 45° until pulsations are seen:

- Look between the two heads of the sternocleidomastoid muscle (at the sternal head of the clavicle) for pulsations. If it will be difficult to observe, then try shining a light tangentially across the right side of the neck and look for shadows of pulsations. Determine JVP by measuring the vertical distance from the sternal angle to a horizontal line from the top of the jugular pulsations.
- Note the **waveform**: Normally double waveform.
- Observe **Kussmaul sign**: Only if JVP is high. It is checked by asking patient to take a deep breath in and observe for change in JVP.
- **Hepatojugular reflex**: check only if the JVP is high. For further assessment of a high JVP and to find out if the high JVP is due to right ventricle dysfunction and not due to superior vena cava obstruction, ask the patient to breathe quietly from his mouth and push moderate pressure (25–30 mm Hg) over the liver at the right upper quadrant (RUQ) with your hand and keep it for about 10 s. A sustained elevation of the JVP height for >4 cm for 10 s is abnormal.



Fig. 4.4 (a–c) Chest wall palpation

Chest

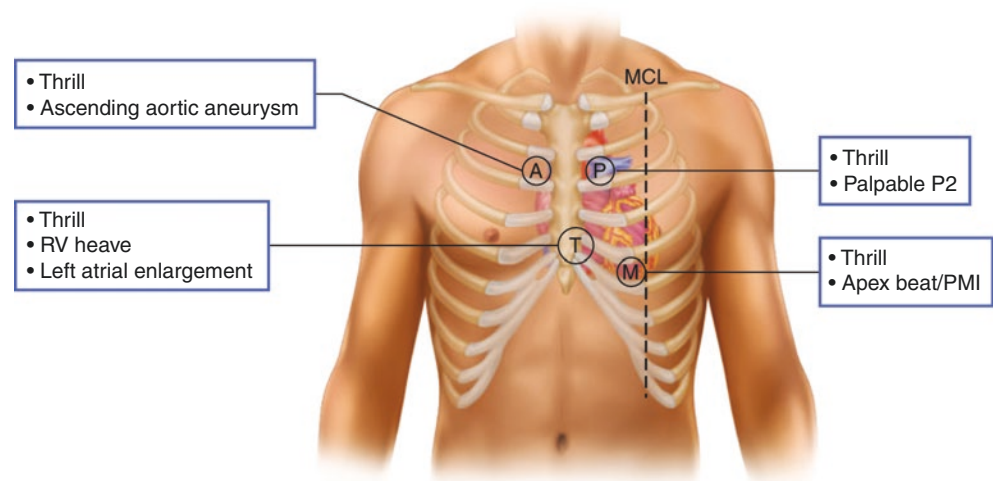
Inspection:

- **Inspect chest.** Comment on:
 - Contour: symmetrical or not symmetrical (normally AP diameter < lateral diameter)
 - Shape: normal or barrel/funnel/pigeon chest (kyphosis or scoliosis)
 - Skin: no surgical scars or dilated veins
- **Observe for abnormal pulsations:**
 - Look at the apex, right and left second intercostal space, right and left lower sternal border.
 - Observe for intercostal retraction.
 - Note for precordial pulsation.
 - Observe for epigastric pulsations.
- **Palpation:**
 - Warm up your hands.
 - **Feel the chest wall.**
 - **Note any area of tenderness** by compressing the chest from side to side and front to back for tenderness (Fig. 4.4a–c). Ask the patient to lie down supine.



Fig. 4.5 Palpating for heart sounds

Fig. 4.6 The aortic, pulmonary, mitral, and tricuspid areas should all be palpated as different pathologies can be felt at each location. *MCL* midclavicular line, *A* aortic, *P* pulmonary, *M* mitral, *T* tricuspid. (Reprinted with permission from Kusko and Maselli [11])



- **Palpable heart sounds** (Figs. 4.5 and 4.6):
 - Aortic valve area: (abnormal findings) systolic impulse noted in systemic hypertension and dilated aortic aneurysm.
 - Pulmonary valve area: (abnormal findings) systolic impulse noted in pulmonary hypertension
 - Tricuspid valve area: (abnormal findings) Thrill or heave noted in right ventricle enlargement
 - Mitral valve area: (abnormal findings) Thrill or heave noted in left ventricle enlargement
- **Heaves:** Use your finger pads.
 - Feel for lifts in **left parasternal area:** use your finger pads. Seen in right ventricle hypertrophy, severe left ventricular hypertrophy.
 - **Thrills:** Palpable murmur of loud intensity >3/6 – use the heel of your hand.
 - Look for **implanted pacemakers/defibrillators** – usually inferior to the left clavicle.
- Palpate the **apex beat** in supine or better felt in the left lateral position.
 - In the left 5th intercostal space mid clavicular line.
 - Displaced inferior or laterally in cardiomyopathy.
- **Percussion:** Not done for cardiovascular system examination.
 - Increased cardiac dullness: Pericardial effusion
 - Decreased cardiac dullness: chronic obstructive pulmonary disease (COPD)
- **Auscultation:** Warm up the stethoscope (by rubbing with your palm). “I am going to listen to your heart now.”
 - Please listen over five areas starting from the right 2nd intercostal space, left 2nd intercostal space, right lower sternal border, left lower sternal border, and then the apex (Fig. 4.7 and Table 4.2).
 - Listen in the following positions:
 - **Supine:** Focus on identifying S1 and S2 first and then listen between systolic and diastole (Fig. 4.8).

Fig. 4.7 Schematic of the five discrete areas for cardiac auscultation: (1) aortic valve at the second left intercostal space, (2) pulmonic valve at the second right intercostal space, (3) both semilunar valves at the third left intercostal space, (4) tricuspid valve at the fourth left intercostal space, and (5) mitral valve at the heart's apex. (Reprinted with permission from Kusko and Maselli [11])

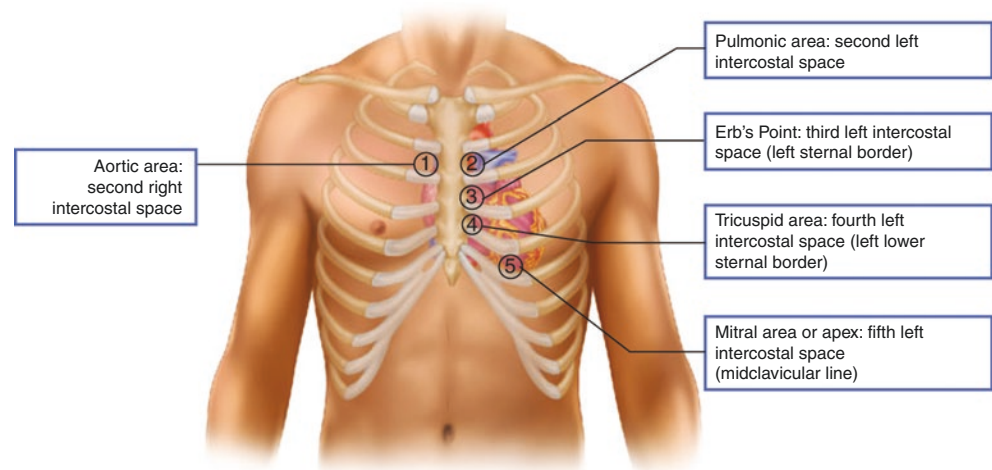


Table 4.2 Heart sounds

Heart sound	Description	What the sound represents
S ₁	First sound – sounds like “lub”	Mitral M ₁ and tricuspid T ₁ valves closing
S ₂	Second sound – sounds like “dub”	Aortic A ₂ and pulmonary P ₂ valves closing
OS	Opening snap	Stenotic mitral valve opening
S ₃	Third sound – present in some normal individuals, particularly children	Diastolic filling gallop or V or protodiastolic gallop
S ₄	Fourth sound – usually abnormal	Atrial contraction creating an atrial or presystolic gallop



Fig. 4.8 Heart sound auscultation

- **Upright** (using diaphragm of stethoscope): Listen to the above five areas (Fig. 4.9).
- **Sitting upright, leaning forward, and holding exhalation:** Increases aortic stenosis, aortic regurgitation, and pericardial rub.
- **Left lateral decubitus: Ask patient to turn half-way away from your side.** (Now switch to bell side of stethoscope.) Listen over the apex (Fig. 4.10). Listen for S₃, S₄, and mitral stenosis.
- **Murmurs:** If present, describe:
 - Timing: systolic, diastolic, or continuous
 - Shape: crescendo, decrescendo, crescendo-decrescendo, or plateau
 - Location: of maximum intensity
 - Radiation: axilla, back, or to the neck
 - Quality: blowing, harsh, rumbling, musical, machinery, scratchy
 - Duration
 - Intensity: out of 6 (not an indication of clinical severity)
- Pitch: high, medium, or low
- Relationship to respiration
- **Peripheral bruit:**
 - Listen for carotid bruit (Fig. 4.11).
 - Listen for the abdominal aorta.
 - Auscultate for renal bruit: 5 cm above the umbilicus and 5 cm to either side from the mid line.
 - Auscultate on iliac arteries. Below the umbilicus on both sides.
 - Just mention that you would auscultate the femoral arteries.
- **Listen to the lungs:** Ask the patient to sit up, listen to the anterior lung then posterior and lastly the bases for crackles.
- **Peripheral edema:**
 - While the patient is sitting and you are listening to the back of the chest, check for sacral edema.
 - Sacral edema: Press against sacrum (Fig. 4.12).
 - Ankle edema: Press against the tibia bilaterally (Fig. 4.13).



Fig. 4.9 Heart sound auscultation



Fig. 4.12 Check for sacral edema



Fig. 4.10 Auscultation of left lateral decubitus



Fig. 4.13 Check for ankle edema



Fig. 4.11 Listening for carotid bruit

- **Peripheral pulses:** Feel for various pulses and comment on:
 - Rate
 - Rhythm

- Contour
- Amplitude (volume)
- Symmetry
- **Radial pulse:** Check both at the same time and count for 30 s (Figs. 4.14 and 4.15).
- **Carotid pulse:** Inform the patient that you will be feeling the pulse in the neck (Fig. 4.16).
- **Femoral artery pulse:**
 - Just mention that you would feel both at the same time.
 - Also check for radio-femoral delay: One side only.
- **Popliteal artery pulse:**
 - Just mention.
 - Check pulse behind the knee; use both your hands' fingers under the knee at the same time holding the leg with the thumbs at the sides while lifting the knee 10–20°.
- **Posterior tibial artery:**
 - Just mention.
 - Palpate behind and slightly below the medial malleolus. Both legs at the same time with both your hand fingers.



Fig. 4.14 Check radial pulse



Fig. 4.16 Checking the carotid pulse



Fig. 4.15 Comparing both radial arteries at the same time

- **Dorsalis pedis artery:**
 - Palpate the dorsum of the foot at the lateral to the extensor tendon of the big toe. Both legs at the same time with both your hands' fingers.

Wrap-Up

- Thank the patient and ask the patient to dress.
- Ask the patient if he has any question or has any concern.
- Wrap up your findings with the examiner or the patient.

History and Management: Acute Chest Pain

Candidate Information

A 45-year-old male is brought in by ambulance to the emergency department, with left-sided chest pain for about 1 h.

Manage this case. There is a nurse in the room to assist you.

Differentials

Cardiovascular system:

- Acute coronary syndromes
- Aortic dissection
- Myocarditis
- Pericarditis
- Stable and unstable angina
- Aortic stenosis

Gastrointestinal system:

- Biliary colic
- Gastroesophageal reflux
- Esophageal spasm
- Peptic ulcer disease
- Hiatus hernia
- Acute cholecystitis
- Boerhaave's syndrome (perforated esophagus)

Respiratory system:

- Pneumonia
- Pulmonary embolism
- Pulmonary infarction
- Pleurisy
- Pleural effusion
- Tension pneumothorax
- Rib fractures
- Bronchiectasis
- Tuberculosis
- Empyema
- Subphrenic abscess

Musculoskeletal pain:

- Chest wall pain
- Costochondritis

- Thoracic radiculopathy
- Texidor's twinge (precordial catch syndrome)

Psychiatric:

- Anxiety
- Panic attack
- Somatization
- Cocaine ingestion (important for OSCE)
- Sympathomimetic ingestion

Trauma:

- Rib fractures

Skin related:

- Shingles

Starting the Station

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner, the nurse, and the patient.
- Give stickers to the examiner (if required) or show your ID badge.
- Now stand on the right side of the patient and start.

Opening

Triage immediately. Call the patient's name and check the response and immediately tell the examiner about your findings. If patient is conscious and stable, then introduce yourself to the patient: "Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Mr...? And you are 45 years old?"

Ask the nurse for vital signs – interpret the vital signs:

- Temp: 37.5 °C
- HR: 78
- Blood pressure: 130/75
- RR: 17

Mention to Examiner: "I Will Start by Assessing the Airway, Breathing and Circulation (ABCD)"

- **Airway:**
 - Is the airway patent?
 - Comment on airway.
 - If patient talking well, then mention that airway is patent.
- **Breathing:**
 - Is the patient breathing?
 - Check respiratory rate.

- Pulse oximetry.
- If oxygen saturation is low, then consider delivering high-flow oxygen 15 L/min via reservoir mask and titrate to achieve oxygen saturation (S_pO_2) 94–98%.
- Listen to the chest and heart.

- **Circulation:**

- Check pulse, BP.
- Ask the nurse to please pass a large-bore cannula (G14/G16).
- Ask the nurse to get you a 12-lead electrocardiograph (ECG).

Usually in an OSCE, patient is stable enough to go ahead with the history.

History of Present Illness

Start with chest pain questions.

- **Pain questions:**

- Onset: "When did the pain start?"
- Course: "How did it start (suddenly or gradually)?"
- Duration: "How long do you have this pain?"
- Location: "Where does the pain start?" Then clarify the area.
- Character: "What is the nature of the pain?"
- "Did the paramedics give you a tablet to be kept under your tongue?"
- Progression: "Is the pain progressing?"
- Radiation of pain: "Left shoulder, left arm, left side of jaw, or neck?"
- Severity: "From 0 to 10, 10 being the worst pain and 0 as no pain, how is your pain now?"
- Aggravating: "Anything that increases the pain? Exercise/exertion? Movements? Deep inspiration? Lying down? Eating?"
- Alleviating: "Anything that relieves the pain? Rest? Glyceryl trinitrate? Antacid? Sitting forward?"

- **Associated symptoms:** Nausea, vomiting, sweating,

- shortness of breath, dizziness, heart racing
- Have you been under stress recently?
- Cough with blood stained sputum.

- **Gastroenterology:**

- Acidic/metallic taste in the mouth
- Heart burn
- Difficulty in swallowing
- Known stomach ulcer problem

- **Musculoskeletal:**

- "Have you had any trauma to the chest?"

- “Were you recently pulling and pushing heavy weights?”
- “Are there any blisters on chest?”
- **Respiratory system:**
 - “Did you have any flu recently?”
 - “Cough with phlegm?”

Risk Factors

“I need to ask you more question for additional information that could be related to your pain right now.”

Ask about (explore each only if it is present otherwise move on):

- High blood pressure.
- Diabetes mellitus.
- High cholesterol.
- Cigarette smoking.
- Alcohol.
- Recreational drugs.
- Ask specifically about taking cocaine.
- Obesity.
- Physical inactivity.
- Family history of premature cardiovascular disease (men < 55 years and for females less than 65).
- Stress (at work, at home, relationship).

Past Medical History Any previous health issues? Previous coronary artery disease (CAD), COPD, and previous hospital admissions?

Medication History Blood pressure medication, aspirin, blood thinners, nitroglycerine? Any other medication? OTC medications? Herbal remedies?

Allergic History “Do you have any known allergies?”

Family History Hypertension, diabetes, heart attacks, stroke?

Social History Smoking, alcohol, drugs (ask only if missed in risk factors), sexual history

Now Back to Management (Check and Follow Your Regional and Hospital Guidelines) You may need to read an ECG (Fig. 4.17a, b). (If the ECG will be normal, then mention that you will wait for troponin results.)

Read the ECG carefully and then mention your findings to the examiner: Anterolateral myocardial infarction (MI).

Initiate and follow the regional non-ST-elevation myocardial infarction (NSTEMI) or ST-elevation myocardial infarction (STEMI) pathway:

- Ask nurse to put continuous cardiac monitoring.
- Ask nurse to please give sublingual nitroglycerin (check for allergies and contraindications).
- If the patient is in severe pain, ask the nurse to please bring 5–10 mg of morphine, and inform the patient that you have ordered some pain medication.
- Ask the nurse to please draw blood samples for full blood count, troponin, electrolytes, urea, creatinine, liver function (you can send blood in C part of initial assessment ABCD).
- Order a portable X-ray of the chest. Chest radiography may help to identify the etiology of symptoms of chest pain syndrome.
- Inform the patient about the diagnosis that he is having a heart attack and you need to consult a cardiologist immediately. (The goal for thrombolytic treatment is a door-to-needle time of 30 min or less. The goal for primary percutaneous coronary intervention [PCI] is a door-to-dilatation time of 90 min or less.)
- Order fluids and inotropes if the patient is in hypotensive.

Mention that you will complete your examination now:

- Patients with STEMI or persistent symptoms of a cardiac origin should be evaluated for emergent mechanical reperfusion or fibrinolytic therapy.
- If there is still time left, then continue with asking about contraindications for the use of thrombolytic agents.
- Order aspirin and clopidogrel (loading dose – check allergies and any particular contraindication and order with cardiology consultation).
- Order heparin (80 units/kg bolus, 18 units/kg/h infusion) or enoxaparin (1 mg/kg q12 h subcutaneously) with the consultation of cardiology.
- Ask the patient if he wants to inform someone: friend or family member.
- Tell him that he will be admitted to the cardiology unit.
- Thank the examiner, nurse, and patient.

History and Physical Examination: Palpitation

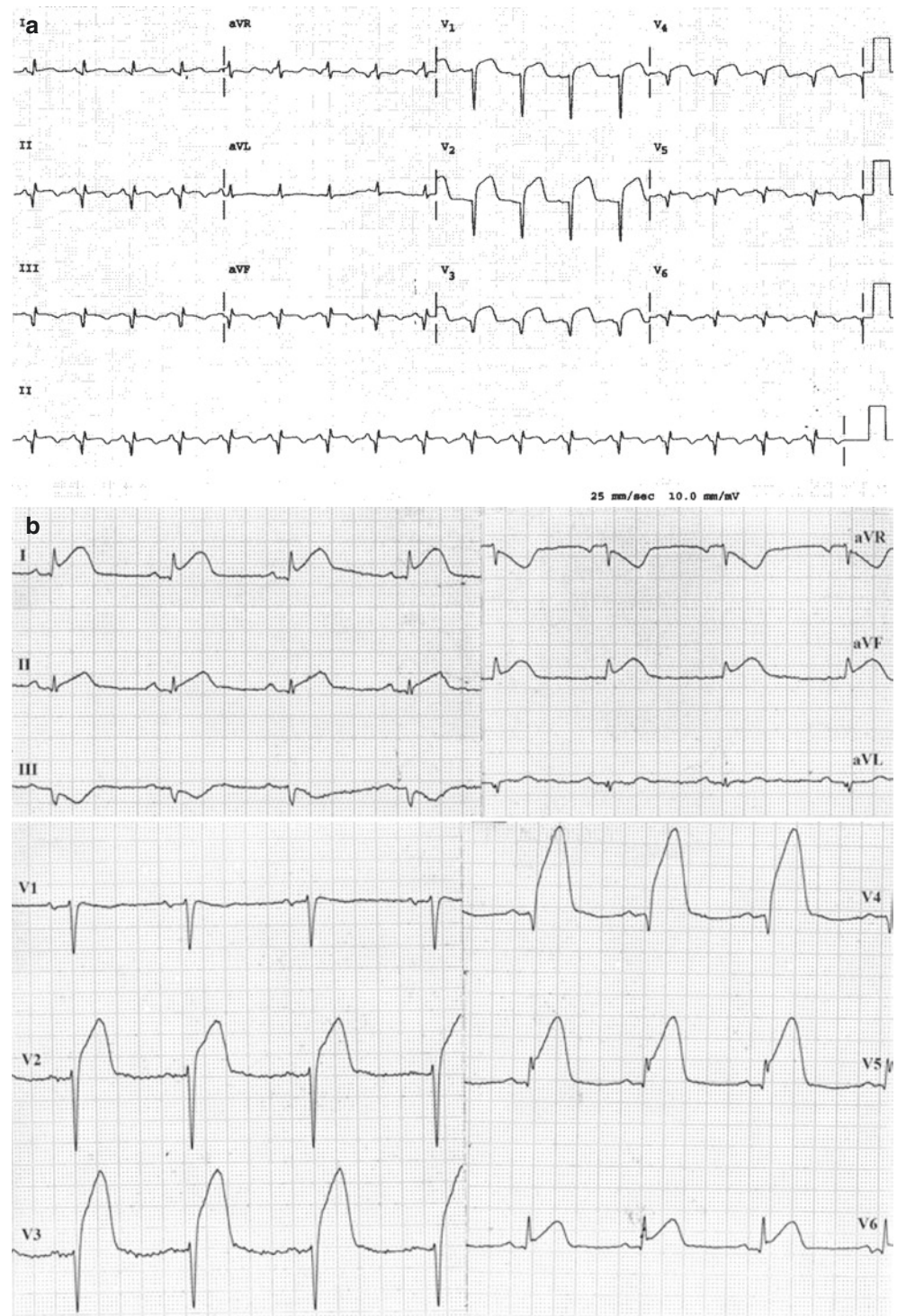
Candidate Information

A 34-year-female presents with heart racing for 5 weeks. Please take a focused history and perform a relevant physical examination.

Differentials

- **Cardiac:** Sinus tachycardia, supraventricular tachycardia, rapid atrial fibrillation, or ventricular tachycardia
- **Congenital:** Wolff-Parkinson-White (WPW) syndrome

Fig. 4.17 (a) Acute anterolateral infarction; inferior infarct age indeterminate. (Reprinted with permission from Khan and Marriott.[12]. (b) Acute anterior MI caused by ostial occlusion of the LAD. Anterolateral ST-segment elevation. Reprinted with permission from Romanò [13])



- **Metabolic:** Fever, anemia, hypo-/hyperthyroidism, acromegaly, hypokalemia, or hypomagnesemia
- **Hyperthyroidism:** Graves' disease, subacute thyroiditis, Hashimoto's thyroiditis, toxic multinodular goiter, or toxic adenoma
- **Psychiatric:** Sympathomimetic withdrawals, anxiety disorder, or panic attack (time duration)
- **Neoplastic:** Pheochromocytoma
- **Medication:** Antidepressants, antiemetics, antidysrhythmics causing long QT

Starting the Interview

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening

“Good morning/good afternoon, I am Dr... I am your attending physician for today. Are you Miss...? Are you 34 years old?”

Chief Complaint

“Can you please tell me what is going on?” The patient will tell you about her symptoms.

History of Presenting Illness

- “How long has it been going on?”
- “How has this problem come about? (suddenly versus gradual)”
- “Is this the first time or has it happened before?”
- “When did you first notice these symptoms?”
- “What was the duration of the attack?”
- “How long does each episode last?”
- “Are these progressing?”
- “How often do you notice these symptoms? (intermittent vs. constant)”
- Ask the patient to tap with their fingers the heartbeat (regular or irregular).
- “Do you miss a beat?”
- “Do you feel your heart is racing?”
- “Do you feel that your heart is slowing down?”
- “On a scale of 1–10, how has it affected the quality of your life?”
- “Does it occur even at night?”
- “Which symptoms getting worse?”
- “What makes it worse? (Coffee, recreational drugs, stress, smoke, chocolate, or alcohol)”
- “Anything that makes it better? (Valsalva maneuver, medication, or carotid massage)”
- “How was your health prior to the palpitations?”

Associated Symptoms

- **Cardiovascular and respiratory system:** Chest pain, shortness of breath, orthopnea, dizziness, sweating, swelling of feet, and cough.
- **Nervous system:** Weakness, paralysis, vision loss, difficulty in finding words or loss of sensation.
- **Thyroid related:** History of thyroid problem? Hypothyroid/hyperthyroid.

- “Have you noticed any swelling in the neck?” (goiter).
- Weight loss? How much? Over what duration of time?
- “Do your clothes still fit you?”
- “How is your appetite?” (usually good or even increased).
- Heat intolerance? How severe?
- Accelerated heart rate or palpitations?
- “Do you feel irritable?”
- Muscle weakness and trembling?
- “Did you notice that your hands shake or do you have tremors in your hands?”
- “Have you noticed any change in bowel habits? Diarrhea?”
- Sweating?
- Nervousness, agitation, and anxiety?
- Changes in menstruation, including scantier flow and increased cycle length?
- Last menstrual period?
- “Do you have any swelling in your legs?” (pretibial myxedema).
- Itching?
- “Did you notice any change in your eyes? Bulging?”
- “Did you notice any change in your vision? Double vision? Staring gaze?”
- **Pheochromocytoma:** Repeated headaches, high blood pressure, heavy sweating, rapid heartbeat (tachycardia), tremors, pallor, and shortness of breath [3].
- **Constitutional Symptoms:** Fever, chills, night sweats, anorexia.

Past Medical History “Do you have any previous health issues? Heart disease, thyroid disease, rheumatic fever?”

Hospitalization History or Emergency Admission

History “Do you have any previous hospitalization or previous surgery?”

Medication History

- Current medications?
- Cold medication, asthma medication, anti-angina, antihypertensive, diuretics, anti-arrhythmic?
- Prescribed, over the counter, and any herbal?

Allergic History “Do you have any known allergies?”

Family History “Does anyone in your family have similar symptoms or similar health problem?”

Social History

- “Do you smoke? Do you drink alcohol?” If yes, then further ask, “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?”

Relationships “Are you sexually active? Do you have sexual preferences? Men/women or both?”

Self-Care and Living Condition “What do you do for a living? Who lives with you?”

Support “Do you have good family and friends support?”

Impact on Life/Disability and Adaptation

- Effects on life.
- “Any effect on your daily activity?”

Physical Examination

“Now, I will start the examination.”

- Comment on the vital sign findings: check for presence of tachycardia, heart rhythm, and respiratory rate. Atrial fibrillation? Fever?
- Check level of consciousness, alertness, and orientation.

General Physical Examination

- Now start with observation and evaluating body habitus and nervousness/anxiousness. Further observe for anxious facial expressions.
- Skin: Look for color, texture, and moisture.
- Hands: Feel the hands for any sweating.
- Look for tremors.

Cardiovascular Examination

- Palpate peripheral pulses.
- Note: pulse volume, contour, and rhythm.
- Auscultate.

Respiratory System

- Inspection: Check chest expansion and percussion.
- Auscultate: Breath sounds and adventitious sounds.

Neurology Examination

- Note for tremors.
- Motor power.
- Muscle tone (proximal myopathy).
- Sensations.
- Reflexes (hyperreflexia may be present).

Thank the patient and ask the patient to cover up.
Wrap up your findings with the examiner or the patient.

History and Physical Examination: Heart Failure

Candidate Information

A 74-year-old male presents to the emergency department with worsening shortness of breath and swelling in the legs. He is known to have heart failure. Please take a detailed history and perform the relevant physical examination.

Differentials [4]

- Cardiovascular
 - Congestive heart failure (CHF)
 - Acute coronary syndrome
 - Acute valve dysfunction
 - Aortic dissection
 - Endocarditis
 - Hypertensive emergency
 - Pericardial tamponade
- Pulmonary
 - Pneumonia
 - COPD
 - Pulmonary embolism
 - Pneumothorax
 - Emphysema
 - Massive atelectasis
 - Large pleural effusion
 - Interstitial pulmonary fibrosis
- Volume overload
 - Renal failure
 - Cirrhosis
 - Posttransfusion
- Sepsis

Causes of Congestive Heart Failure Decompensation [5]

- Acute coronary syndrome
- Acute valve dysfunction
- Arrhythmias
- Uncontrolled hypertension
- Fluid overload
- Inappropriate medications (e.g., negative inotropes)
- Medication noncompliance
- Anemia
- Dietary noncompliance
- Infection
- Thyrotoxicosis
- Alcohol withdrawal

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Triage Immediately Call patient name and check patient’s response and immediately tell the examiner about your findings. If patient is conscious and stable, then introduce yourself to the patient: “Good morning/good afternoon. I am

Dr... I am your attending physician for today. Are you Mr...? And you are 74 years old?"

Ask for a set of vital signs (usually given outside on the doorway information) – interpret the vital signs:

- Temp: 37.5 °C
- HR: 72
- Blood pressure: 155/75
- RR: 17

Mention to Examiner: “I Will Start Assessing the Airway, Breathing and Circulation (ABCD)”

- **Airway**
 - Is the airway patent?
 - Comment on the airway.
 - If the patient is talking well, then mention that airway is patent.
- **Breathing**
 - Is the patient breathing?
 - Check respiratory rate.
 - Pulse oximetry.
 - Deliver high-flow oxygen 15 L/min via reservoir mask and titrate to achieve oxygen saturations (S_pO_2) 94–98%.
 - Listen to the chest and heart.
- **Circulation**
 - Check pulse and BP.
 - Ask the nurse to please pass a large-bore cannula.
 - Ask the nurse to get you a 12-lead ECG.

Mention that “my patient is stable enough to go ahead with the history.”

History of Present Illness

Start with shortness of breath. Ask, “I understand you are here for shortness of breath, how are you doing now?” Is the patient able to speak? If the patient is speaking and does not show any signs of restlessness or shortness of breath, then continue with the history.

“Are you comfortable sitting? I want to ask you some questions about your shortness of breath? Should we start?”

- “What do you mean by shortness of breath?” Difficulty in breathing, not enough air, chest pain, chest tightness?
- “When did it start?”
- “How did it start? Was it a sudden onset or gradual?”
- “Does it come and go or is it progressive?”
- How long has it been going on?

If acute onset

- “Can you please tell me what happened?”

- “What were you doing at that time?”
- “Were you doing any physical exertion or lying or sitting?”
- “How severe is your shortness of breath now on a scale of 1 to 10, with 1 being mild and 10 being the worst?”
- “Has it got worse recently?”
- “Have your legs ever been swollen?”
- “What did you do once you became short of breath?”
- “Was there any wheezing?”
- “Did you notice any chest tightness?”
- “Any sweating? Did you turn blue? Did you notice your heart racing? Does it get better or worse? Were you able to talk? Did you pass out/lose consciousness?”
- “Did you notice any frothy sputum?”
- “Did you have to go to the ER?”
- “Were you intubated or put on a breathing machine? Did they give you any medicine? What medicines? Did they give you any discharge medication?”

If gradual onset

- “In which setting does it come on: minimal activity, walking (how far), running (for how long), taking stairs (how many flights), cold, stress, at rest, lying flat?”
- “Does it cause you to wake up at night?”
- “Has it been getting worse recently?”
- “How many times in a day or in a week does this occur?”
- “Are you already taking medications such as a puffer or any other medication for your shortness of breath?” (If patient’s history suggests asthma or any other differential, then continue with the specific history instead of shortness of breath.)

Cough

If shortness of breath with cough:

- “When did your cough start?”
- “Did it start gradually or suddenly?”
- “Is it continuous or does it come and go?”
- “Is the cough present all the time or at any specific time (day/night)?”
- “Does your cough present with any certain position?” (Lying down?).
- “Is it accompanied by phlegm?”
 - If phlegm present then (consistency, odor, color, amount, blood)
- “What increases or decreases this cough?”

Associated symptoms

- “Do you have pain anywhere in the body? Joint pain? Pain in your legs?”
- “Any recent travel?”
- “Any fever? Chills? Night sweats?”
- “Any weight loss?”
- “Any loss of appetite?”

- “Any swelling in your ankles?”
- “How is this affecting your daily activity?”

Precipitating or Aggravating Factors

“I will ask you some questions that will guide me to why you have shortness of breath.” (Choose questions according to the history.)

- “Do you suffer from heartburn or gastroesophageal reflux disease (GERD)?”
- “Have you recently experienced (up to 10 weeks) any flu-like symptoms or chest infection?”
- “Does the shortness of breath come on with exercise?”
- “Any recent stress or emotional triggers?”
- “Any exposure to cold air, odor, dust, smoke, or pollen?”
- “Do you, or anyone around you, smoke?”
- “Have there been any recent changes in your home environment? Paints, carpets, linens, pillows, blankets, curtains, pets, plants, or renovations?”
- “Do you have any mold in your home or workplace?”
- “Do you have any exposure to chemicals at your work site?”

Relieving Factors “Does anything relieve your symptoms?”

Constitutional Symptoms Fever, chills, night sweats, anorexia

Risk Factors for Cardiovascular Disease

“I need to ask you more questions for additional information that could be related to your symptoms.” Ask about (explore each only if it is present otherwise move on):

- High blood pressure?
- Diabetes mellitus?
- High cholesterol?
- Cigarette smoking?
- Alcohol?
- Obesity?
- Physical inactivity?
- Family history of premature cardiovascular disease (men <55 years and for females less than 65). This patient is 74 years old, so this question may be skipped.

Past Medical History

- “Do you have any previous health issues?”
- “History of ischemic heart disease, valvular disease, peripheral vascular disease, stroke or malignancy?” [6].

Medication History

- Current medications?
- Cold medication, asthma medication, anti-angina, antihypertensive, diuretics, anti-arrhythmic?

- Prescribed, over the counter, and any herbal?

Hospitalization History “Do you have any previous hospitalization or previous surgery?”

Allergic History “Do you have any known allergies?”

Family History “Does anyone in your family have similar symptoms or similar health problems?”

Social History

- “Do you smoke? Do you drink alcohol?” If yes, then ask further questions, on “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?”

Relationships “Are you sexually active? Do you have sexual preferences? Men, women, or both?”

Self-Care and Living Condition “What do you do for a living? Who lives with you?”

Support “Do you have good family and friends support?”

Impact on Life/Disability and Adaptation

- Effects on life?
- “Any effect on your daily activity?”

Physical Examination

“Now, I will start the examination.”

- Comment on the vital sign findings.
- Check level of consciousness, alertness, and orientation.

General Physical Examination

- Evaluate body habitus, observe for signs of respiratory distress or apparent cachexia.
- Skin: Look for color, texture, and moisture. Note any sweating, cyanosis, or pallor.
- Mouth: Central cyanosis.
- Trachea: Position.
- Hands: Feel the hands for any sweating. Check capillary refill. Is there any clubbing?

Cardiovascular Examination

- Palpate peripheral pulses.
- Note: pulse volume, contour, and rhythm.
- Pulses may be decreased or pulsus alternans may be present.
- JVP and hepatojugular reflux (increased venous pressure in CHF).
- Apex beat may be displaced in left ventricular hypertrophy. Palpate for thrills and heave.
- Auscultate (S3 or a murmur).

Respiratory System

- Inspection: Check chest expansion and percussion.
- Assess tactile fremitus.
- Decreased tactile fremitus and flat percussion indicates pleural effusion.
- Auscultate: Breath sounds and adventitious sounds.
- Inspiratory crackles heard in pulmonary edema or expiratory wheezes (cardiac asthma).

Abdomen

- Inspect for ascites.
- Percuss for shifting dullness and fluid thrill.
- Assess liver span.
- Palpate liver and spleen.
- Palpate pitting edema over tibia and presacral area.

Wrap-Up

Thank the patient and ask the patient to cover up.

Wrap up your findings with the examiner or the patient.

Question “What is heart failure?”

Answer “Heart failure is a condition in which the heart is unable to generate a cardiac output sufficient to meet the demands of the body without increasing diastolic pressure. It can result from any cardiac disease that compromises ventricular systolic or diastolic function or both. The term “congestive heart failure” is reserved for patients with breathlessness and abnormal sodium and water retention resulting in edema.

Heart failure comprises a wide range of clinical scenarios, from patients with normal left ventricular ejection fraction (LVEF) >50% to those with reduced myocardial contractility (LVEF<40%) [7].

Question “What investigations will you order?”

Answer

- CBC (rule out anemia)
- Urea, creatinine, and electrolytes
- B-type natriuretic peptide (BNP)
- ECG
- X-ray chest:
 - Kerley B lines (thick and horizontal engorged lymphatic vessels)
 - Interstitial edema
 - Pulmonary venous congestion
 - Pleural effusion
 - Alveolar edema/infiltrates
 - Cardiomegaly
- Troponin/CK
- Ultrasound

- Formal transthoracic echocardiogram
- Standard exercise stress testing

History and Physical Examination: Hypertension – A Routine Checkup

Candidate Information

A 55-year-old male with known hypertension presented to your GP clinic for a routine checkup. Please take a history and perform the relevant physical examination.

Starting the Interview

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Are you 55 years old?”

Chief Complaint

“I understand that you are here for a routine checkup. I will ask you a few questions about your blood pressure and general health and then I will do a physical examination. If you have any questions or concerns, please do ask me.”

- “How are you doing today?”
- “How long have you been diagnosed with hypertension for?”
- “How was it diagnosed?”
- “What treatment you are on?”
- “Are you taking medication regularly?”
- “Have you had any recent change in your health?”
- “Usual level of blood pressure? Any sudden change in the severity of hypertension?”
- “Who does the follow-ups?”
- “When was the last time you had a checkup?”
- “When was the last time you had your blood tests done?”

Ask about associated symptoms:

- Headache
- Visual changes
- Chest pain
- Pallor
- Sweating

- Palpitations
- Tremor
- Decreased level of consciousness
- Fainting
- Shortness of breath
- Stroke (weakness/numbness)
- Vision changes
- Peripheral vascular disease
- Leg pain
- Kidney disease

Symptoms of secondary hypertension

- **Pheochromocytoma:** “Do you have episodes of palpitations, headache, and/or sweating?”
- **Hyper- and hypothyroidism:** Feeling hot and/or feel excessive cold? Tremors?
- **Cushing’s syndrome:** Bruising of skin, moon/cushinoid face, and weight gain.
- **Renal** symptoms or a past history of renal disease.

Risk factors

- Diabetes mellitus
- High cholesterol
- Cigarette smoking
- Alcohol
- Recreational drugs
- Obesity
- Physical inactivity
- Family history of premature cardiovascular disease (men <55 years and for females less than 65)
- Stress (at work, at home, relationship)

Past Medical History

“Do you have any previous health issues?”

- Eye problems
- Ischemic heart disease
- Nephropathy: microalbuminuria, renal failure
- Hospitalization history or emergency admission history

Medication History

- Current medications?
- History of antihypertensive drug use, effectiveness, side effects, and intolerance
- Prescribed, over the counter, and any herbal?
- NSAIDs, cyclooxygenase inhibitors, steroids, or sympathomimetics?

Hospitalization History “Have you had any previous hospitalization or previous surgery?”

Allergic History “Do you have any known allergies?”

Family History Diabetes? Vascular disease? Lipid disorders, obesity, hypertension, endocrine disorder?

Social History

- “Do you smoke?”
- “Do you drink alcohol?”
- If yes, then ask further questions on: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?”

Self-Care and Living Condition “What do you do for a living? Who lives with you?”

Support “Do you have good family and friend support?”

Impact on Life/Disability and Adaptation

- Effects on life.
- “Any effect on your daily activity?”

General Physical Examination

“Now, I will start the examination.”

- Comment on the vital signs.
- Ask for patient height and weight with a body mass index (BMI).
- Check level of consciousness, alertness, and orientation.
- General appearance.
- Head and neck exam:
 - Oral: Hygiene, thrush, and caries
 - Nose
 - Mouth and throat
 - Thyroid assessment
 - Cervical lymph nodes
 - Mention that you will perform a fundoscopic examination of eyes

Cardiovascular Examination

- JVP.
- Palpate peripheral pulses.
- Note: pulse volume, contour, and rhythm.
- Auscultate for bruits.
- Inspect and palpate the apex beat.
- Palpate for thrills and heaves.
- Auscultate for S3 and murmurs.
- Examine for arterial insufficiency in lower limbs.
- Pedal edema.

Respiratory System

- Inspection: Check chest expansion and percussion.
- Auscultate: Breathing sounds and adventitious sounds.

Abdominal Examination

- Inspection and palpation (pulsatile mass).

Neurology Examination

- Mental status
- Motor power
- Sensations (proprioception, vibration, light touch)
- Reflexes

Wrap-Up

- Thank the patient and ask the patient to dress.
- Ask the patient if he has any questions or any concerns.
- Sum up your findings with the examiner or the patient.

Question “What tests will you order?”

Answer

- Full blood count
- HbA1c
- Fasting lipid profile
- Urea and creatinine
- Electrolyte
- Estimated glomerular filtration rate (eGFR)
- Urine dip
- ECG
- Fundoscopy
- Ophthalmologist referral for eye exam (check your regional guidelines)

Question “How will you counsel patient about hypertension?”

Answer “Blood is the pressure that blood exerts outward on the walls of the arteries as it flows through these arteries. This pressure is the measure of how much blood the heart pumps out and the resistance of artery walls to the blood. In routine the amount of blood that enters and flows through the arteries results in normal blood pressure. When there is increased resistance in the blood arteries’ vessel walls, the heart has to work harder to pump blood through these arteries. Hypertension is high blood pressure that persists over time.”

Question “Please tell me, what are the blood pressure values?”

Answer “If you look at the blood pressure values, it has two numbers: one higher and one lower number. These two numbers indicate the two phases of the heartbeat. The systolic or the higher number represents the blood pressure when the heart is contracting and the diastolic reading represents the blood pressure when the heart relaxes. Normal blood pressure is usually less than 120 mm Hg systolic and less than 80 mm Hg diastolic which is noted as 120/80. A person has hypertension if his or her blood pressure is consistently 130 over 80 mm Hg or higher” (see Table 4.3) [8].

Table 4.3 Blood pressure ranges from normal to crisis levels (Adapted from the American Heart Association guidelines [8])

Blood pressure	Systolic (mm Hg)	Diastolic (mm Hg)
Normal	<120	<80
Elevated	120–129	<80
Hypertension Stage 1	130–139	Or 80–89
Hypertension Stage 2	≥140	Or ≥90
Hypertension crisis	>180	>120

Question “What are various conditions that hypertension may contribute to?”

Answer Hypertension can lead to various conditions, including:

- Coronary heart disease
- Angina pectoris
- Heart attack/myocardial infarction
- Congestive heart failure
- Cardiomyopathy
- Stroke
- Kidney failure
- Blurred vision and blindness

Question “What are various risk factors that influence the development of hypertension?”

Answer Several risk factors influence the development of hypertension, including [9]:

- Heredity/genetic.
- Age: The risk of developing hypertension increases after age 35 (65% of people older than 60 have hypertension).
- Gender: Until age 55, men are more likely to develop hypertension than women. Women become more likely to develop hypertension with age.
- Race: African Americans are more likely to develop hypertension than Caucasians.
- Medications.
- Smoking.
- Alcohol.
- Sedentary lifestyle.
- Obesity.

Question “What are the treatment options?”

Answer “Primary hypertension can be controlled but cannot be cured. Secondary hypertension can be cured by treating the particular cause. There are many factors, like diet and exercise habits, that can affect your blood pressure. First-line recommendations toward treating high blood pressure will be making lifestyle changes [9]. These include:

- Eating a low-sodium diet
- Losing weight
- Exercising

- Quitting smoking
- Limited use of alcohol”

Patient will be followed up and if lifestyle modifications do not control hypertension alone then, doctors can add medications. These medications are called antihypertensives and include [9]:

- Angiotensin drugs
- Beta-blockers
- Diuretics
- Calcium channel blockers
- Direct-acting vasodilators (relax blood vessel walls)
- Centrally acting agents (affect brain chemistry)
- Peripherally acting agents (act on the nerves that regulate blood pressure)

Checklist Physical Examination: Volume Status Examination

You are working as a resident in the orthopedic department. You have been called to attend a 72-year-old male who had hip replacement about 3 days back. He has not been passing urine for 3 h. Please do a volume status examination (Tables 4.4 and 4.5) [10].

Table 4.4 Checklist for a volume status examination

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Now sit on the chair or stand on the right side of the patient and start the interview
Opening	Introduction, greet, explain, position, and exposure/drape
	Ask for vital signs – interpret the vital signs
Blood pressure (BP) examination	Ask for BP and mention that BP should be done twice while lying and sitting
	First check while patient is supine
	Wait about 2 min and ask patient to sit up with legs dependent or standing position
	Observe for change in blood pressure
	Check heart rate while patient sitting and then while sitting up or standing
	Observe the change
	Systolic BP decreases >15 mm Hg and diastolic BP decrease >0–10 mm Hg and/or heart rate increases more than 20 indicate orthostatic hypotension. It is seen in volume depletion and autonomic dysfunction [10]
General physical examination	Check for alertness and orientation
	Look for any abnormal findings in:
	Eyes: pallor
	Mouth: open and look for dehydration. Flip tongue for central cyanosis
	Palms: pallor in creases, cold, clammy, dry
Fingers: capillary refill – should be less than 2 s	

Jugular venous pressure (JVP)	Properly position the patient with the head side of the bed up at a 30° angle and the patient’s head turned left
	Use tangential lighting
	Read the JVP on the right side of the patient
	Distinguish between the carotid and JVP (see Table 4.5)
	Make determination of JVP height above sternal angle
	Comment on wave form (a wave, x wave, and Y descent)
	Explain the normal JVP 3–4 cm above sternal angle
Abdomen	Observe for Kussmaul sign : It is a paradoxical increase in the JVP on inspiration. It occurs because the heart is unable to accommodate the increase in the venous return that accompanies the inspiration fall in intrathoracic pressure. It is seen in right-sided heart failure, constrictive pericarditis, restrictive cardiomyopathy
	Perform abdominojugular reflux : it is considered to be abnormal if there will be rise in JVP >4 cm after applying abdominal pressure for a minimum of 15–30 s
Cardiac examination	Feel percussion at suprapubic to see if the bladder is full
	Ask if the patient has a Foley’s catheter. Mention that you want to make sure that there is no problem with the catheter, such as kinking or blockage. If there is any concern, ask for a bedside bladder scan
Respiratory examination	Auscultate for heart – listen for S3 and S4 sounds
	Auscultate lungs for crackles
Edema examination	Ask for input and output chart and patient weight charts
	Check for dependent pitting edema (ankle and sacrum)
Wrap-up	Check for ascites (fluid thrill and shifting dullness)
	Thank the patient and summarize your findings to the examiner

Table 4.5 Differences between the carotid and jugular venous pressure (JVP) wave forms

Carotid waveform	JVP wave form
Palpable	Not palpable
Single wave	Multiple wave
Vigorous quality	Soft and undulating
Not affected by pressure	Obliterated by applying pressure
Height not affected by inspiration	Height changes with inspiration
Height not affected by Valsalva	Height changes with Valsalva
Height not affected by sitting up	Height changes with sitting up

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The Respiratory System

5

Mubashar Hussain Sherazi

Common Respiratory Symptoms for the Objective Structured Clinical Examination

For the respiratory system, common presenting symptoms are the following:

- Cough
- Sputum
- Coughing up blood (hemoptysis)
- Wheezing
- Runny nose
- Shortness of breath
- Chest pain

History Overview: Respiratory System

In the objective structured clinical examination (OSCE), there is usually one respiratory system scenario. It will either be a history-taking station or history taking along with respiratory system examination. The key with history and physical examination stations is time management. It is extremely important to master history-taking skills; you should be able to ask and extract only the most relevant questions and information. If the station time is 10 min, the history should finish in the first 4–5 min. Before appearing in real examination, you should also practice performing the relevant physical examination in 3–4 min. One to 2 min must be kept in the end to address the patient's concerns/questions or for wrapping up the scenario. In respiratory system stations, you should also look for any relevant material/equipment on the side of the bed such as inhaler/disk, spacer, O₂ cylinder, nebulizers, and peak flow charts for clues.

This chapter will outline common respiratory system topics important for OSCE. An overview of the pattern of his-

tory taking required for respiratory system stations (see Table 5.1) is followed by important topics. It is recommended to read guidelines for management of asthma and chronic obstructive pulmonary disease (COPD). You must be good at the emergency management of pneumothorax, hemothorax, and pulmonary nodule. Make yourself familiar with how to read and interpret different chest X-rays.

Physical Examination: Respiratory System

Candidate Information:

A 32-year-old male, an ambulance driver, presents with cough for 1 day.

Vital Signs: Heart rate (HR), 66/min, regular; blood pressure (BP), 120/65 mm Hg; temp, 36.8 °C; respiratory rate (RR), 14/min; O₂ saturation, 98%

Please perform a detailed respiratory system examination. Please do not perform rectal, genitourinary, or breast examination.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your identification (ID).
- Stand on the right side of the patient and start the examination.

Opening:

“Good morning/good afternoon. I am Dr. I am your attending physician. Are you Mr.? Are you 32 years old? Is it alright if I examine your respiratory system and associated parts of the body affected by it? During the examination, if you feel uncomfortable please let me know.”

M. H. Sherazi
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Table 5.1 Quick review of history taking of the respiratory system

Introduction:
Name and age
Chief complaint
In patient's own words
History of present illness
Analysis of chief complaint:
Onset
Location
Duration
Character
Aggravating/alleviating factors
Radiation
Timing
Severity of symptoms
Associated factors
Symptoms related to the same system
Symptoms related to adjacent systems
Constitutional symptoms
Review of systems
Cardiovascular
Gastrointestinal
Genitourinary
Neurology
Predisposing factors
Red flags/risk factors
Impact on patient
Rule out differential diagnosis
Past medical and surgical history
Medical illnesses, any previous or recent surgery
Hospitalization history or emergency admission history
Medications history
Current medications (prescribed, over the counter, and any herbal)
Allergic history/triggers
Any known allergies?
Family history
Family history of same symptoms
Family history of any long-term or specific medical illness
Any long-term diseases
Home situation:
With whom do you live?
Occupation history
How do you support yourself?
Personal history
(Only if relevant)
Birth history
Early childhood to adolescence
Adulthood
Onset of illness
Any diagnosis
Social history
Smoking
Alcohol
Recreational/illicit drugs
Sexual history (male, female, both)
Educational/vocational
If adult female:
Menstrual history (LMP)

Table 5.1 (continued)

Gynecology history
Obstetric history
If teen:
Home
Education
Employment
Activities
Drugs
Sexual activity
If child:
Birth history
Immunization
Nutrition
Development
Wrap-up
Describe the diagnosis
Management plan
Possible medical treatment
Duration of treatment and side effects
Red flags
Laboratory tests
Further information websites/brochures/support groups or societies/toll-free numbers
Follow-up

Vitals:

Start with commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.) Comment on the vital signs findings: "Mr vital signs are normal" or mention any abnormal finding.

General Physical Examination:

"I need to ask you a couple of questions as a part of my examination." (May skip these questions if it is a history and physical examination station to save some time):

- "What is the date today?"
- "Do you know where you are now?"
- Comment: "Patient is oriented and alert." Or "Patient is in distress!" Or "Patient is sitting comfortably and he is well oriented and alert."

"I need to expose you from the neck down to the waist; is that alright?" If you think the patient is having difficulty taking off his/her shirt and requires help, then offer to help; otherwise let him do it. Drape the patient appropriately if required.

Stand on the right side of the bed or at the foot of the bed and tell the patient (indirectly to the examiner) "Mr, I will start with inspecting or observing your chest."

Observe for posture, distress, sweating, difficulty in speaking, use of accessory muscles attached to oxygen, any

medications in the patient's hand or at bedside, or attached intravenous (IV) lines, and cachectic appearance.

Hands:

"Now I would like to see your hands, is that alright?"

Observe for: Color, capillary refill, palmar erythema, peripheral cyanosis, nicotine stain, clubbing, muscle wasting, contractures (Dupuytren's), and asterixis, press wrist and note for any tenderness (hypertrophic pulmonary osteoarthropathy resulting from periosteal inflammation secondary to Pancoast tumor), and look for flapping tremors or CO₂ retention.

Engage the patient by saying: "I am going to feel your pulse now." Comment on rate, rhythm, and volume of pulse.

Face:

- Color of the face, plethora, central cyanosis, cushingoid/moon face.
- Eyes: Ptosis (Horner syndrome), pallor, jaundice.
- Sinuses: Check for tenderness of maxillary and frontal sinuses.
- Nose: Flare, perforated septum.
- Lips: Pursed lips.
- Mouth: Moist tongue, ulcers, thrush, central cyanosis – check for focus of infection.
- Intercostal spaces: Retractions.
- Have the patient speak a sentence for hoarseness.

Neck:

"I am going to feel your neck now." See Fig. 5.1.

- Trachea: Position (central or midline) and mobility.
- Tracheal deviation will be away from the contralateral pneumothorax or effusion.
- Fixed trachea: Mediastinal tumor and tuberculosis.



Fig. 5.1 Examining the trachea

- Jugular vein distention (JVD) (discussed in cardiovascular examination).
- Lymph nodes.

Chest Examination:

Inspection: The chest examination will start with inspection and is done while the patient is sitting:

- Observe for respiratory rate and pattern.
- Comment: "Breathing rate is.... It is regular/irregular."
- Look from the front, side, and back.

Observe for:

- **Contour:** Symmetrical or asymmetric
- **Shape:** Normal/barrel shaped/funnel/scoliotic/kyphosis (pectus caverosum/excavatum or kyphoscoliosis)
- **Skin:** Scar marks, erythema/signs of inflammation, dilated veins, or intercostal retractions, radiation marks, and tattoos
- **Expansion:** Equal on both sides

Palpation

Warm up your hands. (Rub your hands for a few seconds to let the patient and examiner know you are warming up your hands for the patient's comfort – especially in cold weather.)

I usually start any palpation on a patient with this question: "Are you sore anywhere on your chest? Or do you have any pain on your chest?"

Method: Inform the patient, "I am going to feel your chest." Gently palpate all areas of chest for tenderness and deformity. You can skip this step if it is a history and physical examination station and time is running short. Palpation of the chest is important for musculoskeletal pain and, in case of trauma cases, rib fracture. Also compress the chest from side to side and front to back for tenderness.

Chest Expansion

"I will check how well your chest expands with each breath." See Fig. 5.2a–c.

Method: Tell the patient to hold both arms crossed on their chest. Place your hands flat on the back of the patient's chest during normal expiration, with the thumbs parallel to the midline at the level of the tenth rib and fingers gripping the flanks. Ask the patient if he can take a deep breath in and out. Watch for symmetry in outward movement of the hands. Normally, the thumbs should move 3–5 cm symmetrically away from the midline.

The same procedure can be repeated on the front. (May skip if time is running short.)

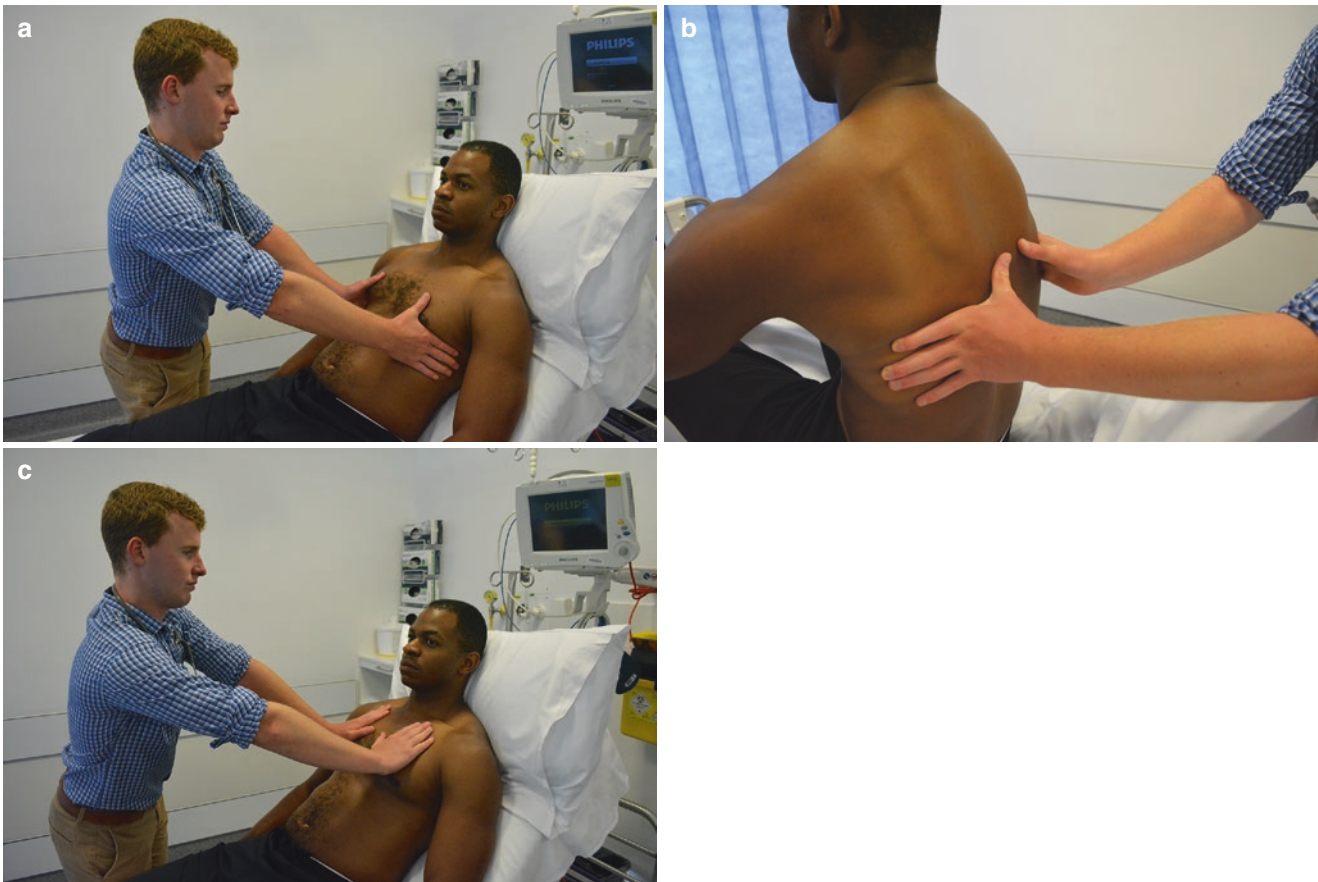


Fig. 5.2 (a) Testing expansion of the midthorax. (b) Expansion of posterior thorax. (c) Testing movements of costal margins

Asymmetry will be seen in pleural effusion, pulmonary fibrosis, lobar pneumonia, bronchial obstruction, and pneumothorax [1].

Tactile Fremitus:

“I am going to put my hand on various points on your chest.” Place the ulnar side of your hand on the patient’s chest. Ask the patient to say “99” at the same time you feel with your hand on the patient’s chest (Fig. 5.3a–d). Keep moving your hand to the next point and compare both sides. You will feel increased vibrations over areas of consolidation.

Start anteriorly at the supraclavicular spaces on the right and left – comparing both sides. Move down to the tenth rib and repeat. Then palpate the posterior starting at the suprascapular spaces medially, moving down at least six posterior positions.

Comment on the findings:

- “Tactile fremitus is symmetrical and normal.”
- “Tactile fremitus is increased.” Consolidation (pneumonia) and atelectasis [2].
- “Tactile fremitus is decreased (voice is too soft).” Obstructed bronchus, chronic obstructive pulmonary disease (COPD), pleural effusion, pleural thickening, pneumothorax, infiltrating tumor, or thickened chest wall [2].

Percussion:

“I am going to tap on your chest with my fingers.” Start percussion in the same areas as you palpated during tactile fremitus, anterior and then posterior. Normal chest notes are resonant except over the areas of cardiac dullness left three to five intercostal spaces.

Method: Place your left middle finger firmly on the patient’s chest, while the other fingers are off, and then tap the left middle phalanx with your right middle finger moving only your wrist. Percuss on the front of the chest comparing both sides, then the axilla, and then on the back, as shown in Fig. 5.4.

Comment on the findings: “Percussion is symmetrical and normal.”

Listen to see if the examiner will give some specific findings for the particular station, such as if the percussion note is dull or hyperresonant in some specific area:

- Resonant note: Normal lung
- Dull notes: Consolidation (pneumonia)
- Flat notes: Large pleural effusion
- Tympanic: Gastric air bubble
- Hyperresonant: COPD, pneumothorax

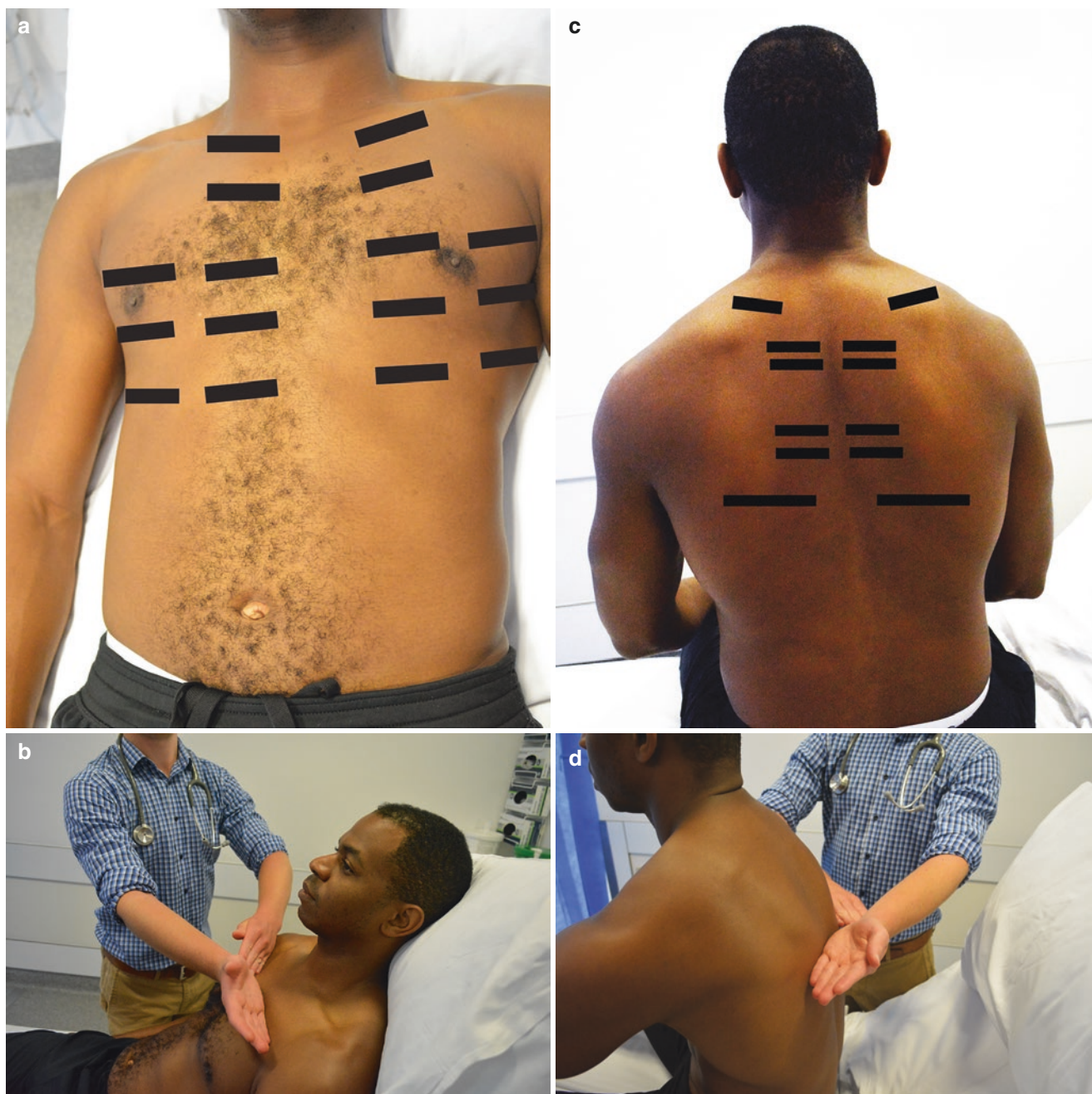


Fig. 5.3 Tactile fremitus points: (a) anterior points. (b) Placing ulnar side of hand on patient's chest. (c) Posterior points. (d) Placing ulnar side of hand on patient's back

Diaphragmatic Excursion:

(Only perform if asked by the examiner.) It is performed to look for hemiparalysis of the diaphragm.

Method: Inform the patient that you are going to draw two marks on his back with a pen. Ask the patient for his permission.

1. **The first step** is to locate the level of the diaphragm during quiet respiration. Ask the patient to take normal breaths and start percussing on their posterior chest wall

top to bottom. Repeat on both sides of the spine. Observe for a change from resonance to dullness. Mark the area (Fig. 5.5).

2. **The second step** is to mark the position of the diaphragm upon deep inspiration. The diaphragm will move downward. Ask the patient to take a deep breath in and hold his breath. Percuss from your previous mark downward until a change from resonance to dullness is noted. Mark the level.
3. **The third step** is to mark the diaphragm's position after expiration. Tell the patient to breathe out as much as possi-



Fig. 5.4 Technique of percussion

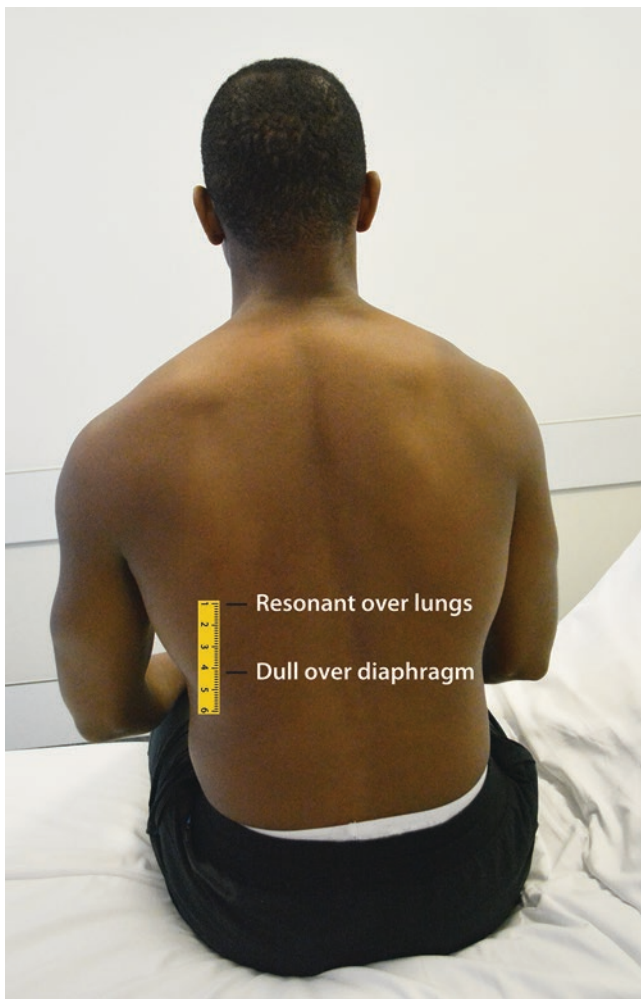


Fig. 5.5 Mark the patient's back to show where it changes from resonance to dullness

ble and hold his breath. Percuss from your first mark upward until dullness changes to resonance. Mark this level.

4. Repeat on the other side.
5. The diaphragm level should be at T12 level, and excursion should be 4–5 cm and symmetrical on both sides.

Chest Auscultation:

Inform the patient: “I am going to listen to your chest and back with my stethoscope.” Warm the stethoscope.

Method: Listen to the breath sounds on the same areas as for percussion and tactile fremitus with the diaphragm of a stethoscope, comparing both sides and instructing the patient to take deep breaths through an open mouth (Fig. 5.6a, b).

Listen for intensity, pitch, adventitious sounds, and the ratio of inspiration to expiration:

- **Vesicular breath sounds:** Normal breath sounds are described as vesicular breath sounds. These are soft, low-pitch, and like gentle rustling sounds. They are heard over the periphery of the lung fields. The inspiration-to-expiration ratio is 3:1.
- **Bronchial breath sounds:** These are loud, high-pitch sounds, like air rushing through the tubes, heard over the manubrium. The inspiration-to-expiration ratio is 1:3.
- **Bronchovesicular breath sounds:** Heard over main stem bronchi or in bronchospasm. These are moderate-pitch, moderate-intensity sounds like rustling but tubular. The inspiration-to-expiration ratio is 1:1.
- **Tracheal breath sounds:** Very loud, high-pitched sounds heard over the trachea in the neck. Inspiration-to-expiration ratio is 1:1.
- **Adventitious breath sounds:** These are discontinuous sounds. If these are present, always describe the location and do vocal fremitus.
- **Crackles/rales/crepitations:** These are short, discontinuous sounds heard mostly upon inspiration. Crackles are heard because of excess airway secretions. Coarse crackles are low pitched. Fine crackles are high pitched. Crackles are heard in pulmonary edema, congestive heart failure (CHF), bronchitis, respiratory infection, and atelectasis.
- **Wheezes:** These are continuous high-pitched sounds caused by air passing through partially obstructed or narrowed airways on expiration or inspiration. These are heard in pulmonary edema, asthma, and bronchitis. They are also heard in the presence of tumors and foreign bodies.
- **Rhonchi:** These are low-pitched and deep sounds caused by transient airway plugging by mucus, which may disappear with coughing; suggest bronchitis.
- **Pleural rub:** These are grating, brushing, or creaking sounds heard on the end of inspiration and start of expiration. They indicate pneumonia or pulmonary infarction.
- **Stridor:** This is an inspiratory sound heard over trachea caused by upper airway extra-thoracic obstruction.

At the end of the auscultation, comment on your findings. For example, “Breath sounds are normal with no adventitia.”

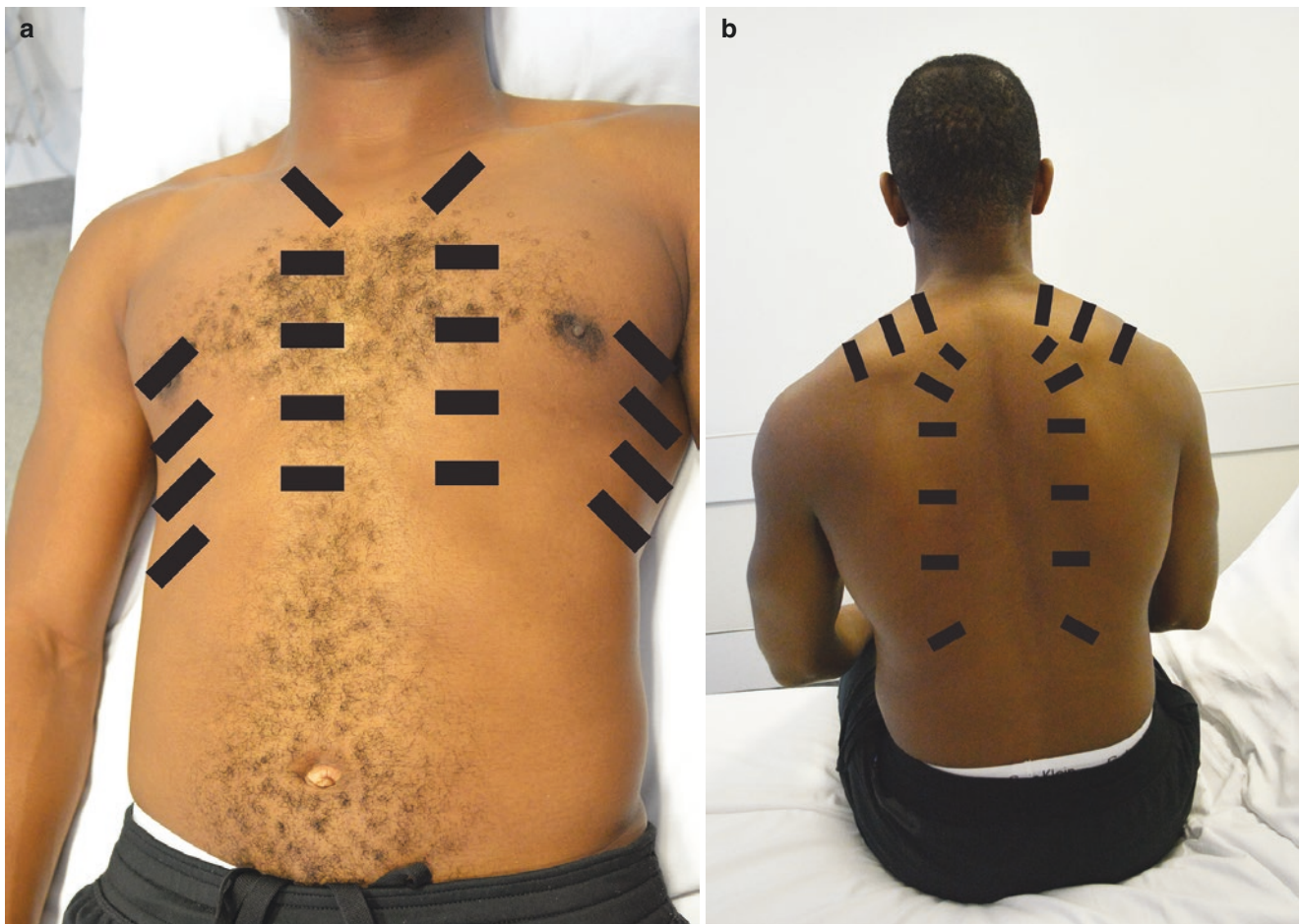


Fig. 5.6 Sites for chest auscultation: (a) Anterior. (b) Posterior

Vocal Fremitus:

If there is still some time left, continue with vocal fremitus; otherwise it can be skipped.

It is also not required if there are no added breath sounds on the lung periphery (area of consolidation).

- **Bronchophony:** Ask the patient to say “99.” Listen over areas of suspected consolidation. It is usually muffled but will be louder and clearer over areas of consolidation.
- **Egophony:** Ask the patient to say “ee.” Listen on areas of consolidation. It will be heard like “aa.”
- **Whispered pectoriloquy:** Ask the patient to whisper a few words such as “Friday, Saturday, and Sunday.” The whispered words will be heard more clearly over areas on consolidation.

Forced Expiratory Time:

Explain to the patient, “I am going to note the time of your breathing in and out. Can you please take a deep breath in as much as you can and hold it?” Note the time in seconds. Ask the patient to breathe out as fast as possible. Note the time.

Forced expiratory time should normally be <3 s.

If there is still time left, continue with listening to the heart and feel for sacral edema.

If time is ending, then mention that you will complete your examination with:

- **Cardiovascular system examination:** Listening to the heart and feel for sacral edema.
- **Lymph nodes:** Axial, femoral, popliteal, head, and neck.
- **Lower legs:** Edema; check for calf tenderness (deep vein thrombosis [DVT], Homan’s sign)

Wrap-Up:

- Thank the patient and ask the patient to dress.
- Ask the patient if he wants to ask any questions or has any concerns.
- Wrap up your findings with the examiner or the patient.

Checklist: Respiratory System Examination

See Table 5.2 for a checklist that can be used as a quick review before the exam.

Table 5.2 Respiratory system examination checklist

Starting the interview	Knock on the door
	Enter the station
	Hand wash/alcohol rub
	Greet the examiner and patient
	Give stickers to the examiner if required or show your ID badge
	Sit on the chair or stand the right side of the patient. Start the physical exam
Opening	Introduction, greet patient, and explain procedure
	Position and expose/drape the patient appropriately
	Ask for vital signs and interpret
General physical examination	Check level of consciousness and alertness
	Look for any abnormal findings in:
	Hands
	Face (eyes, nose, lips, and mouth)
Chest examination	Neck and intercostal spaces
	Inspection
	Exposure: neck down to the waist
	Look from the front, side, and back
	Respiratory rate and pattern
	Observe for contour, shape, skin, and chest expansion
	Palpation: warm up your hands
	Chest expansion
	Tactile fremitus
	Percussion
	Chest auscultation
	Listen for breathing sounds and the presence of any adventitious sounds
	Vocal fremitus
	Bronchophony
	Egophony
	Whispered pectoriloquy
	Cardiovascular
	Listen to heart and measure JVD
	Lymph nodes
	Lower legs
Edema, calf tenderness	
Wrap-up	Thank the patient and ask them to dress
	Ask the patient and examiner if they have any questions or concerns
	Wrap up your findings with the examiner of the patient

History and Physical Examination Sore Throat (Common Cold)

Candidate Information:

A 21-year-old female, a university student, presents with sore throat, runny nose, and fatigue for 3 days.

Vital Signs: HR, 66/min, regular; BP, 120/70 mm Hg; temp, 37.8 °C; RR, 17/min; O₂ saturation, 99%

Take a focused history and perform a focused physical examination. Please do not perform rectal, genitourinary, or breast examination. Please address the patient's concerns.

Differentials:

- Viral and bacterial pharyngitis
- Viral and bacterial tonsillitis
- Upper respiratory tract infection (URTI) (common cold)
- Infectious mononucleosis
- Human immunodeficiency virus (HIV), acute retroviral syndrome

Other Causes:

- Gastroesophageal reflux
- Postnasal drip secondary to rhinitis
- Persistent cough
- Allergies
- Foreign body
- Smoking

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr ... I am your attending physician. Are you Miss ...? Are you 21 years old?”

“Is it alright if I ask you a few questions about your sore throat? I would also like to do a relevant physical examination. In the end we will discuss the plan. During the history or examination if you have any questions or if you feel any discomfort please let me know. Is this alright?”

History of Present Illness:

- “What do you mean by sore throat?”
- “Can you describe it for me?”
- “When did it start?” *Three days ago.*
- “How did it start?” *It's gotten progressively worse over the last 3 days.*
- “Is this the first time you've had such symptoms?”
- “Is it getting better or worse?” *Worse.*
- “Do you need to clear your throat often?”
- “Do you have a hard time swallowing?” *Yes.*

Precipitating or Aggravating Factors:

“Is there anything that makes your throat feel worse?”
Nothing.

Associated Symptoms:

- “Do you have runny and stuffy nose?” *Yes.*
- “Any cough?” *It started today.*
- “Shortness of breath?” *No.*
- “Any hoarseness?” *No*
- “Any chest pain?” *No.*
- “Any headache?” *No.*
- “Any fever?” *Yes, I’ve had mild fevers for about 3 days. Tylenol helped lower my temperature. I’ve also had two to three episodes of chills.*
- “Any night sweats?” *No.*
- “Any muscle aches?” *Mild.*
- “Any yellowness of eyes/skin or dark urine/jaundice?” *No.*
– Maybe say “Yellowing of the skin?”
- “Any abdominal pain?” *No.*
- “Any nausea/vomiting?” *No.*
- “Any loss of appetite?” *No, it’s been normal.*
- “Any change in bowel habits?” *No.*
- “Any change in urination?” *No.*
- “Have you had any fatigue?” *I’ve been quite tired for 3 days.*
- “Do you suffer from heart burn or the condition called gastroesophageal reflux disease (GERD)?” *No.*
- “Have you had contact with any sick individuals recently?” *I’m not sure.*
- “Any recent travel?” *No.*

Past Medical History: “How is your health otherwise? Do you have any previous health issues?” *No I’m very healthy.*

Past Hospitalization and Surgical History: “Have you had any previous hospitalizations or any previous surgeries?” *I’ve never had surgery or been admitted to hospital.*

Medication History: “Are you taking any prescribed medications? Any over-the-counter or herbal remedies?” *I’ve just been taking Tylenol for my fever.*

Allergic History: “Do you have any known allergies?” *No, none that I know of.*

Family History: “Is anyone in your family having similar symptoms or any ongoing health problems?” *No, everyone in my family is healthy.*

Social History: “Do you smoke? Do you drink any alcohol? Have you ever tried any recreational drugs?” *I drink socially, one to two drinks each weekend. I don’t smoke or do any drugs.*

Relationships: “Are you sexually active? Do you have sex with men, women, or both?” *Yes. Only with my boyfriend/husband, we always use condoms.*

Self-Care and Living Condition:

“Where do you live?” *I’m a university student, I live on campus.*

Functional Status: “How is this impacting you?” *I skipped class today due to a fever.*

General Physical Examination:

“Now, I will start the examination.” Comment on the vital signs findings and if there are any mentionable findings. Otherwise comment that vitals are normal.

- Check level of consciousness and alertness.
- General appearance: Tired and irritated.
- Head and neck exam.
 - Nose: Blocked and may be red.
 - Mouth and throat: Check for sinus tenderness.
 - Cervical lymph nodes: Several enlarged lymph nodes.
- Skin: Look for any rash (usually no abnormal finding).
- Chest examination.
 - Inspection and auscultation (usually no abnormal finding)
- Cardiovascular examination.
 - Auscultation for heart sounds (usually no abnormal finding)
- Abdominal examination.
 - Inspection and palpation (usually no abnormal finding)

Wrap- Up:

- Comment on your findings.
- Thank the patient and tell the patient they can now cover up.
- Ask the patient if she has any questions.

Patient Concerns

Question 1. “What is going on with me?” (Questions may be asked by the patient or the examiner.)

Answer: “Miss..., with our current discussion and clinical findings, you are suffering from a common cold also known as an upper respiratory tract infection (URTI). The common cold is the most frequent infectious disease in humans. It most commonly occurs in winter. These symptoms are caused by a viral infection. It is caused by either the rhinovirus, picornavirus, influenza virus, or the parainfluenza virus” [3].

Question: “Do we need to do any tests?” (Questions can be asked by examiner or patient.)

Answer: “We do not need to do any tests today. But if your symptoms do not improve with conservative management, then we may consider doing complete blood count

(CBC), throat swab, sputum culture, heterophile antibody test, C-reactive protein (CRP), chest X-ray (CXR), or viral testing” [4].

Question: “Do I need to take antibiotics? My friend got sick a few weeks back. Her doctor wrote her a prescription for antibiotics, and it worked for her.”

Answer: “Because it looks like a viral infection, you do not need antibiotics. The symptoms peak in 2–4 days after the onset of symptoms and usually resolve in 7–10 days. Occasionally they may last longer, up to 2–3 weeks.”

Treatment Plan

Patient instructions:

- “Acetaminophen can be taken to relieve fever and body aches.”
- “For your blocked nose, steam inhalation may help.”
- “Resting at home will help.” (Off from work and university – offer work note.)
- “Drink plenty of fluids. Avoid drinking alcohol or eating fatty foods.”
- “Throat lozenges and salt water gargles can treat your sore throat.”
- Quit smoking advice (this patient is not a smoker).
- Ask about flu vaccination. If she has not received, then offer one.

Warning Signs: “If you do not feel well, or if your fever does not settle, you should seek medical attention immediately. Be aware of the possible complications: pneumonia, otitis media, and sinusitis.”

Follow-Up: Provide a brochure about influenza/common colds (Table 5.3) and a website for more information.

Table 5.3 Symptoms of the common cold versus those of influenza

Symptoms	Common cold	Influenza
Fever	Rare	Frequent (102–104 °F or 38–41 °C) Sudden onset and lasts for several days
Headache	Rare	Common
Cough	Sometimes, dry cough	Common, wet cough
Sore throat	Common	Common
Aches, pains	Mild	Common, sometimes severe
Fatigue, weakness	Mild	Severe, can last 2–3 weeks
Runny or stuffy nose	Common	Sometimes
Sneezing	Common	Sometimes
Chest discomfort	Mild	Moderate to severe

History and Physical Examination Sore Throat (Glandular Fever)

Candidate Information:

A 21-year-old female presents with sore throat, fatigue, loss of appetite, and fever for 1 week. She complains of a rash, neck lymphadenopathy, and some central and left-sided abdominal pain. Her girlfriend also had similar symptoms recently.

Vital Signs: HR, 81/min, regular; BP, 123/78 mm Hg; temp, 38 °C; RR, 16/min

Take a focused history and perform a focused physical examination. Please do not perform rectal, genitourinary, or breast examination. Please address the patient’s concerns.

Differentials:

- Infectious mononucleosis
- Viral and bacterial pharyngitis
- Viral and bacterial tonsillitis
- URTI (common cold)
- Less common for OSCE
 - Acute HIV infection
 - Secondary syphilis

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr I am your attending physician. Are you Miss? Are you 21 years old? Is it alright if I ask you a few questions about your sore throat? I would also like to do a relevant physical examination. At the end we will discuss the plan. During the history or examination if you have any questions or if you feel any discomfort please let me know. Would that be alright?”

History of Present Illness:

- “What do you mean by sore throat?”
- “Can you describe it for me?”
- “When did it start?” *One week ago.*
- “How did it start?”
- “Is this the first time you’ve had such symptoms?”
- “Is it getting better or worse?” *Worse.*

- “Does speaking irritate your throat?” *Yes.*
- “Do you need to clear your throat often?”
- “Do you have a hard time swallowing?” *Yes, I’ve also felt pain and small lumps in my neck.*

Precipitating Factors or Aggravating Factors:

“Is there anything that increases the intensity of your symptoms?” *Nothing.*

Associated Symptoms:

- “Do you have a runny nose?” *No.*
- “Any cough?” *No.*
- “Any shortness of breath?” *No.*
- “Any chest pain?” *No.*
- “Any headache?” *No.*
- “Any fever?” *Yes, going on for about a week, it was 38 °C. Advil helped in lowering the fever. I’ve also had two to three episodes of chills.*
- “Any night sweats?” *No.*
- “Any yellowing of the skin?” *No.*
- “Any abdominal pain?” *Some mild pain and discomfort in the center and upper left side of my abdomen.*
- “Can you describe your pain for me? How intense is it on a scale of 1–10?” *It’s a dull, constant pain, a 4–5/10.*
- “Is your pain aggravated by movement or food? Is it a radiating pain? Is there anything you’ve found that can alleviate your pain?” *It seems to get worse with movement, but there is no relation with food. The pain isn’t radiating and nothing makes it go away.*
- “Any nausea/vomiting?” *No.*
- “Any loss of appetite?” *Yes. I haven’t eaten much for 3 days.*
- “Any weight loss?” *No.*
- “Any change in bowel habits?” *No.*
- “Any change in urination?” *No.*
- “Any fatigue?” *I’ve been feeling tired for a week.*
- “Do you suffer from heartburn or a condition known as GERD?” *No.*
- “Have you come into contact with any sick individuals recently?” *My girlfriend had similar symptoms a few weeks back.*
- “Any recent travel?” *No.*
- “Do you have any pain anywhere else in the body?” *No.*

Past Medical History: “How is your health otherwise? Have you had any previous health issues?” *I had a sexually transmitted infection (STI) about a year ago. It was treated with antibiotics twice.*

Past Hospitalization and Surgical History: “Have you had any previous hospitalizations or any surgeries?” *I have never had surgery or been admitted to a hospital.*

Medication History: “Are you taking any prescribed medications? Any over-the-counter or herbal remedies?” *I’ve been taking ibuprofen for my fever.*

Allergic History: “Do you have any known allergies?” *No, none that I know of.*

Family History: “Does anyone in your family have similar symptoms or have any ongoing health problems?” *No, everyone in my family is healthy.*

Social History: “Do you smoke? Do you drink alcohol? Have you ever tried any recreational drugs?” *I drink socially, one to two drinks every weekend. I smoke five to ten cigarettes a day and have for about 1 year now. I’ve never used recreational drugs.*

Relationships: “Are you sexually active? Do you have sex with men, women, or both?” *Yes, I’ve had two different partners. My boyfriend and I dated up until a year ago and I am currently in a relationship with my girlfriend.*

Self-Care and Living Condition: “Where do you live?” *I’m a university student, I live on campus.*

Functional Status: “How is this impacting you?” *I skipped classes today because of my fever and stomach pain.*

General Physical Examination:

“Now I will start the examination.”

- Check level of consciousness and alertness.
- Head and neck exam.
 - General appearance.
 - Nose.
 - Mouth and throat; check for sinus tenderness.
- Cervical lymph nodes.
- Skin: Comment that you are looking for the rash mentioned by the patient.
- Chest examination: Inspection and auscultation (usually no abnormal finding).
- Cardiovascular examination: Auscultation for heart sounds (usually no abnormal finding).
- Abdominal examination: Inspection and palpation (inspection, palpation for tenderness in the left upper quadrant [LUQ], liver, and spleen – splenomegaly).

Wrap-Up:

- Comment on your findings.
- Thank the patient and tell the patient they can now cover up.
- Ask the patient if she has any questions.

Investigations

The presence of at least 10% atypical lymphocytes supports the diagnosis (with 92% specificity) of infectious mononucleosis. In a patient with typical symptoms, no further testing is needed.

“We need to run some tests”:

- CBC
- Throat culture
- Monospot test
- Liver panel
- HIV antibody and viral load (only if risk factors present)
- Anti-Epstein-Barr virus (EBV) antibodies
- Venereal disease research laboratory (VDRL); rapid plasma reagin (RPR)

Describe the Diagnosis**Patient Concerns****Question 1. What is going on with me?**

Answer: “Miss...with our current discussion and clinical findings, my clinical judgment is that you are have a condition called glandular fever/infectious mononucleosis.”

Question 2. What are the symptoms?

Answer: “It is a viral infection. Some symptoms are similar to influenza. The symptoms include fever; blocked nose; headache; sore throat; swollen, tender glands in the neck, armpits, and groin; a rash; and sometimes jaundice.”

Question 3. Can you tell you more about it?

Answer: “It is also known as infectious mononucleosis/Epstein-Barr mononucleosis. It is sometimes called “the kissing disease” because it may transmit from one person to another through the mouth. It is also transmitted by coughing and sharing food. The disease is usually seen in 15- to 25-year-olds.”

Question 4. How is it diagnosed?

Answer: “It is done with a blood test. The blood test will show abnormal specific cells called monocytes under the microscope. That’s why it’s called infectious mononucleosis.”

Question: “Can I play basketball?”

Answer: “Avoid contact sports for at least 4–6 weeks, once you have recovered completely. Abdominal injury may cause the enlarged spleen to rupture, which can be fatal.”

Management Plan:**Question: “How long does it last?”**

Answer: “You should start feeling better in 2–3 weeks as most of the symptoms usually settle during this period. It may take another 2–3 weeks for the fatigue and weakness to resolve. Occasionally, the fatigue lasts longer and suggests a chronic glandular fever. It sometimes causes hepatitis, which can make patients very sick.”

Treatment Plan:**Question: “Do I need to take antibiotics or any other medication?”**

Answer: “No antibiotics are required (viral infection). Acetaminophen can be taken to relieve discomfort, pain, and fever.”

Patient Instructions:

- “The symptoms will improve over time.”
- “Rest at home will help.” (Off from work and university – offer work note.)
- “Drink plenty of fluids. Avoid drinking alcohol or eating fatty foods.”
- “Avoid sharing drinking containers.”
- “Avoid any oral contact with your partner.”
- “Throat lozenges and gargling soluble aspirin will help the sore throat.”
- “Wash and store clothes infected with nose and throat secretions.”

Warning Signs:

“If you do not feel well, if your fever will not settle, or if you notice jaundice, you should seek medical attention immediately. I will give you a brochure about infectious mononucleosis and a website to read more about it.”

Follow-Up:

“I will send your blood work to the lab. The clinic will call you once the results are back.

Do you have any questions?”

History and Physical Examination: Sore Throat (Influenza)**Candidate Information:**

A 21-year-old female, a university student, presents with sore throat, runny nose, headache, and high fever for 2 days.

Vital Signs: HR, 100/min, regular; BP, 120/70 mm Hg; temp, 38.8; RR, 20/min

Take a focused history and perform a focused physical examination. Please do not perform rectal, genitourinary, or breast examination. Please address the patient’s concerns.

Differentials:

- Viral and bacterial pharyngitis
- Viral and bacterial tonsillitis
- URTI (common cold)
- Infectious mononucleosis

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr ... I am your attending physician. Are you Miss ...? Are you 21 years old? Is it alright if I ask you a few questions about your sore throat? I would also like to do a relevant physical examination. At the end we will discuss the plan. During the history or examination if you have any questions or if you feel any discomfort please let me know. Would that be alright?”

History of Present Illness:

- “What do you mean by sore throat?”
- “Can you describe it for me?”
- “When did it start?” *Two days ago.*
- “How did it start?” *It came on suddenly.*
- “Is this the first time you’ve had these symptoms?”
- “Is it getting better or worse?” *Worse.*
- “Do you need to clear your throat often?”
- “Do you have difficulty swallowing?” *Yes.*

Precipitating Factors or Aggravating Factors: “Does anything make your symptoms worse?” *Talking.*

Associated Symptoms:

- “Do you have runny nose?” *Yes.*
- “Are your eyes irritated and watering?” *Yes.*
- “Any coughing?” *Yes with some white phlegm.*
- “Any shortness of breath?” *No.*
- “Any hoarseness?” *No.*
- “Any chest pain?” *No.*
- “Any headache?” *Yes.*
- “Any fever?” *Yes, I’ve had a fever for about 2 days; it was 39 °C last night with chills. Tylenol helped to lower it.”*
- “Any night sweats?” *No.*
- “Any muscle aches?” *Yes, my whole body is sore.*
- “Any yellowing of the skin?” *No.*
- “Any abdominal pain?” *No.*
- “Any nausea/vomiting?” *I’ve had some nausea but no vomiting.*
- “Any loss of appetite?” *Yes, I’ve had a decreased appetite.*
- “Any change in bowel habits?” *No.*
- “Any change in urination?” *No.*
- “Any fatigue?” *I’ve been feeling extremely tired for 2 days.*

- “Do you suffer from heart burn or GERD?” *No.*
- “Have you been in contact with any sick individuals recently?” *Not sure.*
- “Any recent travel?” *No.*

Past Medical History: “How is your health otherwise? Do you have any previous health issues?” *I am otherwise healthy.*

Past Hospitalization and Surgical History: “Have you been hospitalized in the past? Any previous surgeries?” *I’ve never been hospitalized nor had any surgeries.*

Medication History: “Are you taking any prescribed medication? Any over-the-counter or herbal remedies?” *I’ve been taking Tylenol for my fever.*

Allergic History: “Are you allergic to anything?” *No, not that I know of.*

Family History: “Does anyone in your family have similar symptoms or any ongoing health problems?” *No, my family is healthy.*

Social History: “Do you smoke? Do you drink alcohol? Have you ever tried any recreational drugs?” *I drink socially, one or two drinks over the weekends. I don’t smoke and I’ve never used recreational drugs.*

Relationships: “Are you sexually active? Do you have sex with men, women, or both?” *Yes, I’ve had one male partner and we always used condoms.*

Self-Care and Living Condition: “Where do you live?” *I’m a university student, I live on campus.*

Functional Status: “How are your symptoms impacting your life?” *I skipped classes today because of my fever.*

General Physical Examination:

“Now, I shall start the examination.”

- Comment on the vital signs: “Vital signs are normal” or mention if there is any abnormal finding.
- Check level of consciousness and alertness.
- General appearance: tired and irritated.
- Head and neck exam:
 - Face: flushed.
 - Eyes: may be red and watering.
 - Nose: blocked or secreting discharge.
 - Mouth and throat, check for sinus tenderness: throat may be congested/hyperemic.
- Cervical lymph nodes: Several enlarged lymph nodes.
- Skin: Warm/hot and moist.

- Chest examination: Inspection and auscultation (dry cough with clear lungs or rhonchi, with focal wheezing).
- Cardiovascular examination: Auscultation for heart sounds (usually no abnormal finding).
- Abdominal Examination: Inspection and palpation (usually no abnormal finding).

Wrap-Up:

- Comment on your findings.
- Thank the patient and tell the patient they can now cover up.
- Ask the patient if she has any questions.
- “We need to run some tests.”

Patient Concerns/Examiner Questions

Question 1. What is going on with me?

Answer: “Miss... with our current discussion and clinical findings, my clinical judgment is that you are suffering from influenza (the flu). It is a viral infection caused by many kinds of influenza viruses. These viruses keep changing over time, and we need to get vaccinated every year against influenza to keep from getting infected.”

Question 2. How did I catch it?

Answer: “Usually, it is seen in epidemics as it spreads through coughs and sneezes. The virus enters the nose or throat and then spreads to the lungs. It is extremely infectious.”

Question 3. What are the risks?

Answer: “The influenza infection may spread to the lungs and possibly cause bronchitis or even pneumonia. These complications are more likely to be seen in patients with poor nutrition and other health issues, such as chest problems in heavy smokers and the elderly. Other possible complications are otitis media, tracheobronchitis, acute sinusitis, Reye’s syndrome, pericarditis, myositis, myoglobinuria, encephalitis, transverse myelitis, Guillain-Barré syndrome, and rhabdomyolysis.”

Questions 4. What is the treatment?

Answer: “The flu usually lasts 3–4 days, sometimes longer. Symptoms can be eased, and complications can be prevented through proper care.”

Medication:

- The use of antiviral drugs is reserved for severe cases. Anti-influenza drugs used are zanamivir (Relenza) and oseltamivir (Tamiflu). Routine antibiotics are not helpful (viral infection).
- Acetaminophen is given to relieve discomfort and pain. Pain medicines such as codeine compound and anti-inflammatory compounds such as ibuprofen can also be used.

Patient Instructions:

- “The symptoms improve over time.”
- “Rest at home will help.” (Off from work and university – offer work note.)
- “Drink plenty of fluids. Avoid drinking alcohol or eating fatty foods.”
- “Avoid sharing drinking containers.”
- “Throat lozenges and gargling soluble aspirin will help the sore throat.”
- “Wash and store clothes infected with nose and throat secretions.”
- “Any special remedy that makes the patient feel comfortable is good. Some people find freshly squeezed lemon juice mixed with honey helpful.”
- “Some people find that taking 1 to 2 grams of vitamin C each day helps recovery.”

Prevention:

The influenza vaccine helps some people, but vaccination does not provide immunity to all influenza strains. Vaccination is worthwhile specially for patients at risk, for example, patients with lung diseases and diabetes or who are over 65 years, very young, or pregnant.

Warning Signs:

“If you do not feel well or you experience that your symptoms are not improving, then you should seek medical attention immediately. I can give you a brochure about influenza/ common colds and a website to read more about it.”

Follow-Up:

“I am sending you for blood work. The clinic will call you once the results are back.

Do you have any questions?”

Further Discussion:

Other Infectious Causes:

1. **Group A Beta Hemolytic Strep (GABHS):** GABHS is one of the most common bacterial causes of pharyngitis. Patients usually do not have rhinorrhea, cough, or conjunctivitis. Patients present with fever, sore throat, throat exudates, respiratory difficulty, and swollen neck lymph nodes. There is usually a history of recent exposure to infection and often presence of comorbid conditions such as diabetes. While doing the physical examination, one should look for fever, rash, pharyngeal swelling/erythema, edematous uvula, tonsillar exudates, and cervical adenopathy. It is also important to listen for the presence of a heart murmur and feel for hepatosplenomegaly.

Centor criteria can be used to identify the likelihood of a bacterial infection (Table 5.4) [5].

See Fig. 5.7 for algorithm for evaluating patients with sore throat.

Table 5.4 Centor criteria to identify likelihood of a bacterial infection [5]

Symptom	Score
Fever	Add 1 point
Absence of cough	Add 1 point
Tender anterior cervical adenopathy	Add 1 point
Tonsillar swelling or exudates	Add 1 point
Modified criteria includes patient's age	
Age	Score
Younger than 15 years	Add 1 point
15–45 years	0 points
Older than 45	Subtract 1 point
Score interpretation:	
0 or –1 points	Streptococcal infection ruled out
1–3 points	Order rapid test – treat accordingly
4–5 points	Probable streptococcal infection – consider empiric antibiotics

Investigations:

- Laboratory testings should be used as an adjunct to the history and physical examination.
- Throat culture.
- Rapid antigen detection test or rapid streptococcal antigen test.
- Monospot test.

Complications:

Untreated GABHS infection may last up to 7–10 days. Patients with untreated streptococcal pharyngitis are infectious during the acute phase and 1 week after. Antibiotic therapy reduces the infectious period to 24 h and also decreases the duration of symptoms by 1 day and also prevents most complications. Complications such as rheumatic fever, scarlet fever, peritonsillar abscess, and post-streptococcal glomerulonephritis are not commonly seen these days.

2. **Gonococcal pharyngitis** occurs in sexually active patients. It presents with fever, sore throat, dysuria, and a greenish exudate. Gonococcal pharyngitis is diagnosed by a positive culture (Thayer-Martin medium) for

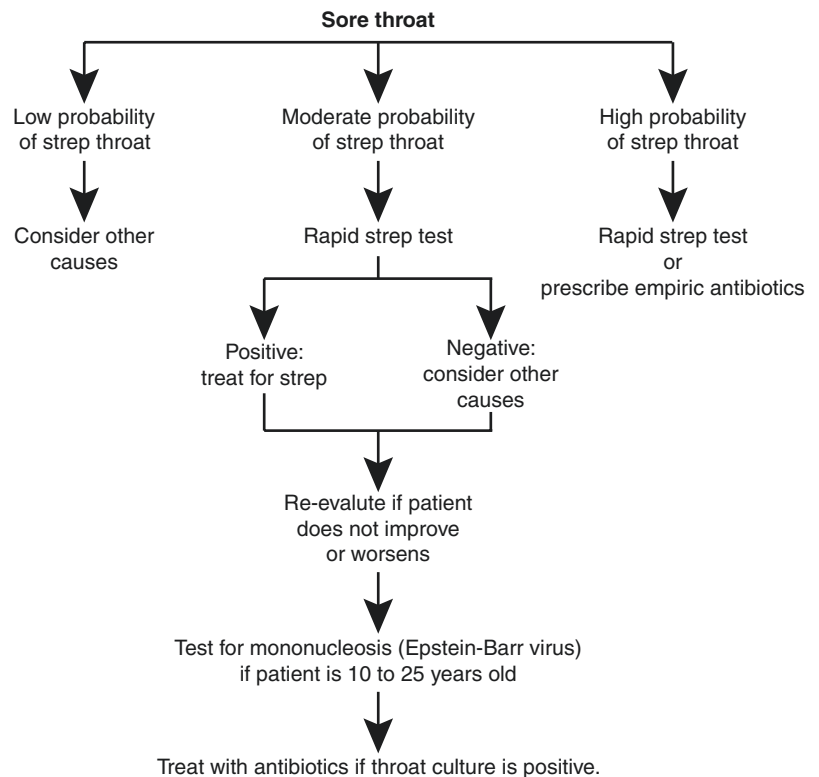


Fig. 5.7 Sore throat diagnosis algorithm. ENT ear, nose, throat

If the mononuclear spot test is negative, order throat culture for a patient younger than 10 or older than 25 years old.

If there is unresolved pharyngitis, consider ENT referral.

Neisseria gonorrhoeae. Vaginal, cervical, penile, and rectal cultures should also be obtained when gonococcal pharyngitis is suspected.

3. **Diphtheria** is another cause of sore throat. Patients present with sore throat, low-grade fever, an adherent grayish membrane, and inflammation of the tonsils, pharynx, or nasal passages. The throat is moderately sore, with tender cervical adenopathy. The incubation period for diphtheria is 2–4 weeks. A confirmatory diagnosis is made by microbiologic analysis.
4. **HIV (acute retroviral syndrome)** is another possible differential. The patient may present with sore throat, fever, rash, and weight loss. Patient may give a history of IV drug use and sharing needles. Will need to get CBC, peripheral smear, HIV antibody and viral load, CD4 count, throat culture, and liver panel. Treatment will depend on the lab results and may include referral to an HIV clinic.
5. **Atypical pneumonia:** A patient with atypical pneumonia may present with 1–2 weeks of ongoing nonproductive cough, sore throat, and possibly a runny nose. Investigations required are CBC, sputum Gram stain and culture, chest X-ray, immunoglobulin M (IgM) detection for *Mycoplasma pneumoniae*, and urine *Legionella* antigen.

History and Physical Examination: Shortness of Breath

Candidate Information:

A 40-year-old man comes to your clinic with shortness of breath.

Vital Signs: HR, 81/min, regular; BP, 130/78 mm Hg; temp, 37 °C; RR, 16/min; O₂ saturation, 96% on room air

Take a focused history and perform a focused and relevant physical examination. Please do not perform rectal, genitourinary, or breast examination.

Candidates usually find shortness of breath a difficult station in OSCE scenarios. Patients may have an underlying respiratory or cardiovascular disease. Some life-threatening conditions may also present with shortness of breath. Missing red flags and skipping important questions in the history can result in failure of this station. One of the examples of such cases is pulmonary embolism. In this station, asking about recent travel and other risk factors for pulmonary embolism will be crucial.

It is extremely important to practice the history and physical examination stations before the real exam with a time limit. The history should be relevant and focused. Try not to miss any red flags or serious differentials. The second part of the station is examination. You should be able to perform the

examination in 3–4 min. Try to save 1–2 min for wrap-up or counseling.

Differentials:

For the respiratory system, some of the possible differentials include the following:

- Pneumonia
- Asthma
- Asthma exacerbation
- Exercise-induced asthma
- COPD
- Bronchiectasis
- Bronchogenic carcinoma (less likely in this station, but you must rule it out)
- Pulmonary embolism
- Pneumothorax
- Pulmonary tuberculosis
- HIV
- Anemia

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr ... I am your attending physician. Are you Mr ...? Are you 40 years old?”

History of Present Illness:

“I understand you are here for shortness of breath; how are you doing now?”

Start with a quick evaluation of the airway, breathing, and circulation. The patient may require an immediate intervention such as supplemental O₂ or airway management.

Is the patient able to speak?

- If the patient is speaking and does not show any signs of restlessness or shortness of breath, then continue with the history.

“Are you comfortable sitting? I want to ask you some questions about your shortness of breath? Should we start?”

- “What do you mean by shortness of breath?” *Difficulty in breathing, not enough air, chest pain, chest tightness.*
- “When did it start?”

- “How did it start? Was it a sudden onset or gradual?”
- “Does it come and go or is it progressive?”

If acute onset:

- “Can you please tell me what happened?”
- “What were you doing at that time?”
- “What did you do once you became short of breath?”
- “Was there any wheezing?”
- “Did you notice any chest tightness?”
- “Any sweating? Did you turn blue? Did you notice your heart racing? Does it get better or worse? Were you able to talk? Did you pass out?”
- “Did you have to go to the ER?”
- “Were you intubated or put on a breathing machine? Did they give you any medicine? What medicines? Did they give you any discharge medication?”

If gradual onset:

- “In which setting does it come on: minimal activity, walking (how far), running (for how long), taking stairs (how many flights), cold, stress, at rest, lying flat?”
- “Does it cause you to wake up at night?”
- “Is it recently getting worse?”
- “How many times a day or in a week does this occur?”
- “Are you already taking medications such as puffer or any other medication for your shortness of breath?” (If patient history suggests asthma or any other differential then continue with the specific history instead of shortness of breath.)

Cough

If shortness of breath with cough:

- “When did your cough start?”
- “Did it start gradually or suddenly?”
- “Is it continuous or does it come and go?”
- “Is the cough present all the time or at any specific time?” (day/night)
- “Does your cough present with any certain position?” (Lying down?)
- “Is it accompanied by phlegm?”
 - If phlegm then (consistency, odor, color, amount, blood).
- “What increases or decreases this cough?”

Associated Symptoms:

- “Do you have pain anywhere in the body? Joint pain? Pain in your legs?”
- “Any recent travel?”
- “Any fever? Chills? Night sweats?”
- “Any weight loss?”
- “Any loss of appetite?”
- “Any swelling in your ankles?”

- “Any skin rash?”
- “How is this affecting your daily activity?”

Precipitating or Aggravating Factors:

“I will ask you a few more questions that will guide me to why you have shortness of breath.” (Choose questions according to the history.)

- “Do you suffer from heartburn or GERD?”
- “Have you recently experienced (up to 10 weeks) any flu-like symptoms or chest infection?”
- “Does the shortness of breath come on with exercise?”
- “Any recent stress or emotions?”
- “Any exposure to cold air, odor, dust, smoke, or pollen?”
- “Do you, or anyone around you, smoke?”
- “Have there been any recent changes in your home environment? Paints, carpets, linens, pillows, blankets, curtains, pets, plants, or renovations?”
- “Do you have any mold in your home or workplace?”
- “Do you have any exposure to chemicals at your work site?”

Relieving Factors: “Does anything relieve your symptoms?”

Past Medical History:

- “Do you have any previous health issues?”
- “Any lung, heart, or kidney disease?”
- “Any immunocompromised states?”
- “Have you ever had a tuberculosis test?”

Past Hospitalization and Surgical History: “Have you ever been hospitalized or undergone any surgeries? If so, were there any complications?”

Medication History: “Are you taking any medication?” If he says no, then continue to the next question. Otherwise, ask for aspirin, nonsteroidal anti-inflammatory drugs (NSAIDs), amiodarone, bleomycin, methotrexate, B-blockers, over-the-counter or herbal remedies, and any side effects.

Allergic History: “Do you have any known allergies?”

Family History: “Has anyone in your family had similar symptoms or health problems? Is there any lung or heart disease in your family?”

Social History:

- “Do you smoke? Does anyone else in your home or close at work smoke?”
- “Do you drink alcohol?” If the answer is yes, then ask further questions: “How much? Daily? For how long?”

- “Have you ever tried any recreational drugs?” If the answer is yes, “Which ones? For how long? When?”

Relationships: “Are you sexually active? Do you have sex with men, women, or both?”

Self-Care and Living Condition: “How do you live? Do you live alone or with someone? Do you require any help in daily self-care activities?”

Work Conditions and Financial Status: “What do you do for living? How do you bear your routine expenses? What is your occupation? Do you have health insurance or have a private health insurance coverage?”

Support: “Do you have good support from your family and friends?”

Functional Status: “How has this impacted your life?”

Physical Examination:

“Now, I shall start the respiratory system examination.”

- Comment on vital signs.
- Check level of consciousness and alertness.
- Look for any abnormal findings in:
 - Hands
 - Face (nose, lips and mouth)
 - Neck and intercostal spaces

Chest Examination:

- **Inspection:**
 - Position: sitting
 - Exposure: neck down to the waist
 - Observation: performed from front, side, and back
 - Respiratory rate and pattern
 - Observe and comment on contour, shape, skin, and chest expansion
- **Palpation:**
 - Warm up your hands
 - Chest expansion
 - Tactile fremitus
- **Percussion.**
- **Chest auscultation:** Listen for breathing sound and presence of any adventitious sounds.

Comment: “I will complete my examination by performing the vocal fremitus, listening to the heart, and measuring the JVD. I would also like to do cervical and axillary lymph nodes.”

Wrap-Up:

- Thank the patient and tell him that he can now cover up.
- Ask the patient if he has any questions or concerns.
- Tell the patient that you need to run some tests (select from the following list).

Investigations:

- O₂ saturation
- ABGs
- CBC, electrolytes, liver panel, kidney function test, lipid profile, and blood sugar
- TSH and D-dimer
- Urine analysis
- Pulmonary function test (PFT)
- Chest X-ray (pneumonia, infection, neoplasm)
- ECG

Describe the Diagnosis:

- According to the station diagnosis.
- Explain the nature of the disease and goals of treatment
- “Do you want me to tell you more about.....?”

Management Plan

Possible Medical Treatment – Describe the duration of treatment, use of prescribed medication, compliance, and common side effects.

Further Information

- Advice regarding lifestyle modification.
- Triggers and environmental control.
- Warning signs.
- Information through brochures, websites, and support groups.
- Flu shot every year in the fall and pneumococcal vaccine.

Follow-Up:

- Discuss a follow-up visit according to the diagnosis.
- “Do you have any questions?”

History: Pneumonia

Candidate Information

A 40-year-old man comes to your clinic with productive cough, fever, and pleuritic chest pain for 3 days.

Vital Signs: T, 39.7 °C; HR, 100; BP, 110/65; RR, 22; O₂ saturation, 92%

Please take a detailed history. Discuss a management plan with the examiner. No examination required for this station.

Differentials:

- Community-acquired pneumonia
- Acute bronchitis
- Upper respiratory tract infection-associated cough
- HIV (*Pneumocystis jiroveci*)
- Pulmonary tuberculosis
- Lung abscess
- Lung cancer

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr I am your attending physician. Are you Mr? Are you 40 years old?”

History of Present Illness:

“I understand you are here for a cough. I am going to ask you few questions. Should we start?”

- “When did your cough start?” *Three days ago.*
- “Did it start gradually or suddenly?” *It came on gradually.*
- “Is it continuous or does it come and go?” *It has been continuous since it started.*
- “Is the cough present all the time or does it come on at a specific time?” *No particular time.*
- “Does your cough come with certain positions? Lying down?” *There is no change in my cough in any position.*
- “Is it getting worse with time?” *Yes it is.*
- “How long does each bout of coughing last?” *A few minutes.*

Associated Symptoms:

- “What increases/decreases this cough?” *Talking, walking, or taking the stairs.*
- “Is it accompanied by phlegm?” *Yes.*
 - Consistency: *Thick*
 - Odor: *No odor*
 - Color: *White*
 - Amount: *About half a cup a day*
 - Any blood: *No blood*
- “Do you become short of breath?” *No.*

- “Have you noticed any difficulty in breathing, not enough air, chest pain, chest tightness, or wheezing?” *No.*
- “Do you have any upper respiratory tract symptoms such as nasal discharge, sore throat, dryness of mouth, and difficulty in swallowing?” *No.*
- “Do you have any chest pain?” *Yes, sharp chest pain, which increases with taking deep breaths. More on right side.*
- “Do you have pain anywhere else in your body? Or any joint pain?” *No pain.*

Risk Factors:

- “Have you had any recent contact with sick people?” *No.*
- “Do you have any pain in your legs?” *No.*
- “Have you traveled recently?” *No.*
- “Do you smoke?” *No.*
- “Have you ever taken any recreational drugs?” *No.*
- “Do you have any birds at home?” *No.*

Precipitating or Aggravating Factors:

“I will ask you more questions, which will guide me to why you have this cough.”

- “Do you suffer from heartburn or GERD?” *No.*
- “Have you recently experienced (up to 10 weeks) any flu-like symptoms or chest infection?” *No.*
- “Have you had the flu vaccine?” *Yes, last year.*
- “Do you exercise?” *I do not do any exercise.*
- “Have you experienced any recent stress or emotions?” *No.*
- “Have you been exposed to cold air, odor, dust, smoke, or pollen recently?” *No.*
- “Do you or does anyone around you smoke?” *No.*
- “Has there been any recent change in your home environment such as paints, carpets, linens, pillows, blankets, curtains, pets, plants, and renovations?” *None.*
- “Are you exposed to mold in your home?” *No.*
- “Are you exposed to chemicals at your work site?” *No.*

Relieving Factors: “Does anything relieve your symptoms?” *Yes, lying down or sitting.*

Constitutional Symptoms:

- Fever – *Yes, with chills for 3 days*
- Night sweats – *None*
- Loss of weight – *None*
- Loss of appetite – *Good appetite*

Past Medical History:

- “Do you have any previous health issues?” *No.*
- “Do you have any lung, heart, or kidney problems? Any immunocompromised states?” *None.*
- “Have you ever had a tuberculosis test?” *No.*

Past Hospitalization and Surgical History: “Have you ever been hospitalized? Have you ever undergone any surgeries? If so, were there any complications?” *I’ve never been hospitalized nor had any surgeries.*

Medication History: “Are you taking any medication?” *No regular medications.*

Allergic History: “Do you have any known allergies?” *No, none that I know of.*

Family History: “Does anyone in your family have similar symptoms or similar health problems? Is there any lung or heart disease in your family?” *No.*

Social History: “Do you smoke? Do you drink any alcohol? Have you ever tried any recreational drugs?” *I drink socially. I don’t smoke and I’ve never used any recreational drugs.*

Relationships: “Are you sexually active?” *Yes, I live with my wife and my 4-year-old son.*

Self-Care and Living Condition: “What do you do for a living?” *I’m an office manager.*

Support: “Do you have good support from your family and friends?” *Yes, they are very supportive.*

Functional Status: “How is this affecting your day-to-day activities?” *I didn’t go to work today.*

Wrap-Up

Question: “What would you like to do next?”

Answer: “I would like to do a general physical and respiratory system examination. I would also like to run some tests.”

Question: “Do you want to do any investigations?”

Answer: Suggest the following:

- O2 saturation
- ABGs
- CBC, ESR, inflammatory markers, electrolytes, blood cultures, liver panel, kidney function test, D-dimer, urine for legionella, and PCR
- Urine analysis
- Sputum culture
- Will send for a pulmonary function test and a chest X-ray if required

Findings:

The examiner may provide these findings:

- *History: Pain on inspiration, fever, and chest pain*

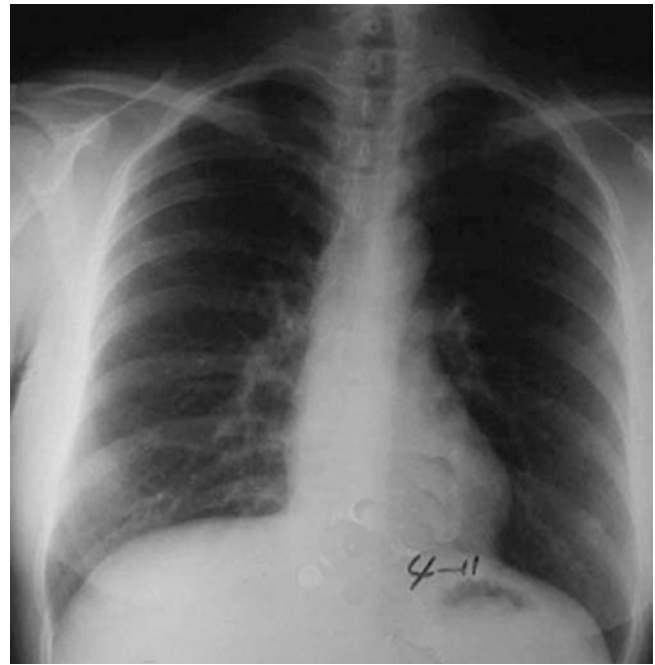


Fig. 5.8 On day 1 of pneumonia, the chest X-ray shows subpleural flakes of blurry shadow at the right lower lung. (Reprinted with permission from Liang [6])

- *Investigation:*
 - WBC 15500
 - ESR 29

The examiner may give an X-ray (Fig. 5.8):

- CXR – right middle lobe consolidation

Question: “What is your diagnosis?”

Answer: “With this history, clinical examination, and investigation findings, in my opinion, you are suffering from a condition called pneumonia.”

Question: “Doc, can you please tell me more about pneumonia?”

Answer: “Pneumonia is an inflammation of the lung tissue due to either a bacterial or a viral infection. It is called a lobar pneumonia if an area or lobe of the lung is involved. In cases of patchy involvement, it is called bronchopneumonia. It will be called atypical pneumonia if it is caused by bacteria other than the typical ones that cause infection. Common pneumonia found attended in family practice is also classified as hospital-acquired or community-acquired pneumonia.”

Causes:

- *Streptococcus pneumoniae*
- Haemophilus influenza B
- *Mycoplasma pneumoniae*
- *Chlamydia pneumoniae*
- *Legionella pneumophila*

Question: “Can we do something for pneumonia prevention?”

Answer: “Immunization for influenza through the annual flu injection given in autumn can help prevent pneumonia. The pneumococcal vaccine is recommended for those over 65 years of age and for those at risk of infection. Avoiding smoking and seeking immediate medical care for respiratory infections, especially when there is a preexisting health issue will also help.”

Further Information for the Patient

Treatment at Home – This is acceptable if you are generally healthy and if the pneumonia is not severe:

- Take analgesics such as acetaminophen or ibuprofen.
- Rest is important.
- Drink lots of fluids.
- Take prescribed antibiotics (if infection is bacterial).
- “We can review the antibiotics after the sputum culture report is back to identify the bug and its appropriate antibiotic.”
- Avoid cough-suppressant medications.

Treatment at a Hospital - Hospital admission is required for:

- Patients with poor health.
- Moderate to severe pneumonia.
- For patients who do not respond quickly to antibiotics.
- Some strains such as influenza may rapidly progress to a life-threatening state, causing the need for immediate hospital admission.

Question: “What antibiotics you would like to prescribe?”

(Please check your regional guidelines.)

Answer: No comorbidities/previously healthy; no risk factors for drug-resistant *S. pneumoniae*:

- Azithromycin/clarithromycin/doxycycline

If patient received antibiotics in the last 3 months:

- Azithromycin/clarithromycin plus amoxicillin/amoxicillin-clavulanate

- Respiratory fluoroquinolone (e.g., levofloxacin or moxifloxacin)

Comorbidities present (alcoholism, bronchiectasis/cystic fibrosis, COPD, IV drug user, post-influenza, asplenia, diabetes mellitus, lung/liver/renal diseases)

- Levofloxacin/moxifloxacin/amoxicillin-clavulanate
- Ceftriaxone/cefuroxime plus a macrolide (azithromycin or clarithromycin)

Duration of Therapy: A minimum of 5 days and patient should be afebrile for 48–72 h. There is longer duration of therapy if initial therapy was not active against the identified pathogen or if it was complicated by extrapulmonary infections [7].

Further Information:

- Advice regarding lifestyle modification.
- Triggers and environmental control.
- Warning signs.
- Information through brochures, websites, and support groups.
- Flu shot every year in the fall and pneumococcal vaccine if over 65 or at risk.

Follow-Up:

“Follow up in 3 days or once the labs will be back. Do you have any questions?”

History: Atypical Pneumonia**Candidate Information**

A 24-year-old man comes to your clinic with complaints of fever and cough and feels unwell and tired for 2 weeks.

Vital Signs: T, 38.7 °C; HR, 100; BP, 110/65; RR, 22; O₂ saturation, 92%

Please take a detailed history. No examination is required for this station.

Differentials:

- Atypical pneumonia (*Legionella pneumophila*, *Mycoplasma pneumoniae*, and *Chlamydia pneumoniae*)
- Post-upper respiratory tract infection
- Reactive airway disease
- HIV (*Pneumocystis jiroveci*)
- Lung cancer
- Pulmonary tuberculosis
- Tropical diseases (Q fever, psittacosis, brucellosis, bovine TB)

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr ... I am your attending physician. Are you Mr ...? Are you 24 years old?”

History of Present Illness:

“I understand you have not been feeling well for a few days. I am going to ask you a few questions; should we start?”

- “How long you have been feeling unwell?” *About 2 weeks.*
- “Can you please tell me more about it?” *I started feeling tired and low in energy for the first few days and then had a low temp. I took Tylenol, which partially helped in reducing the fever and tiredness. Two to 3 days after the symptoms started, a dry cough started, which changed to a productive one over the next few days.*
- “How is your fever now?” *It comes and goes. It is not constant, but it has been happening almost every day now for the last 5 days. The highest temp I recorded at home was 38.8 °C. My fever seems to be reduced by taking Tylenol.*
- “Is it associated with chills or night sweats?” *I feel cold and have chills when my fever is coming back. I haven’t had any night sweats.*
- “How is your appetite?” *It has decreased. I do not feel like eating or drinking.*
- “How is your cough now?” *I still have a cough and it is producing phlegm every day.*
- “Is the cough present all the time or at a specific time of day?” *No particular time.*
- “Does your cough come on with a certain position such as lying down?” *No change with any position.*
- “Is it getting worse?” *Yes, it is.*
- “How long does each bout of coughing last?” *A few minutes.*
- “You just mentioned phlegm? Can you describe it?”
 - Consistency: *Thick.*
 - Odor: *No odor.*
 - Color: *White to start and now it is greenish.*
 - Amount: *About half a cup a day.*
 - Any blood: *No blood.*
- “Any lumps and bumps?” *No.*
- “Bone pain?” *No.*
- “Any itchiness?” *No.*

- “Any headache or sensitivity to light and neck pain?” *Yes, I’ve had a headache since the symptoms started.*
- “Any history of sinusitis, nasal stuffiness, sore throat, or ear pain?” *None.*
- “Have you had any recent dental procedures?” *No.*
- “Any shortness of breath (SOB) or chest tightness?” *No.*
- “Any discomfort in the tummy?” *No.*
- “Any discoloration of the skin?” *No.*
- “Any bowel or urine problems?” *No.*
- “Any joint pain?” *No.*
- “Any skin nodules?” *No.*

Associated Symptoms:

- “What increases/decreases this cough?” *Talking, walking, or taking the stairs makes my cough worse.*
- “Do you become short of breath?” *No.*
- “Do you notice any difficulty in breathing, chest tightness, or wheezing?” *No.*
- “Do you have any upper respiratory tract symptoms such as nasal discharge, sore throat, dryness of the mouth, or difficulty in swallowing?” *No.*
- “Do you have any chest pain?” *Yes, I get sharp chest pain that increases with taking deep breaths in. More on the right side.*

Risk Factors:

- “Have you had any recent contact with sick individuals?” *No.*
- “Do you have any pain in your legs?” *No.*
- “Have you done any recent travel?” *No.*
- “Are you a smoker?” *Yes.*
- “Have you ever done any recreational drugs?” *No.*
- “Do you have any birds at home?” *No.*

Precipitating Factors or Aggravating Factors:

“I am going to ask you more questions, which will guide me to why you have this cough.” (Pick a question according to the history.):

- “Do you suffer from heartburn or GERD?” *No.*
- “Have you recently experienced (up to 10 weeks) any flu-like symptoms or chest infection?” *No.*
- “Have you had the flu vaccine?” *Yes, last year.*
- “Do you exercise?” *I do not do any exercise.*
- “Have you experienced any recent stress or emotions?” *None.*
- “Have you recently been exposed to any cold air, odor, dust, smoke, or pollen?” *None.*
- “Does anyone smoke around you?” *No.*
- “Has there been any recent change in your home environment such as paints, carpets, linens, pillows, blankets, curtains, new pet, plant, renovations?” *None.*
- “Is there any mold present in your house?” *No.*
- “Are you exposed to chemicals at your work site?” *None.*

Relieving Factors: “Does anything relieve the symptoms?”
Sitting or lying down.

Constitutional Symptoms:

(Ask here if you have not already asked)

- Fever? *Yes, with chills for 3 days.*
- Night sweats? *None.*
- Weight loss? *None.*
- Loss of appetite? *Good appetite.*

Past Medical History:

- “Have you had any previous health issues?” *None.*
- “Have you ever had a tuberculosis test?” *No.*
- “Have you ever been in contact with an individual with TB?” *No.*
- “Have you ever been in an immunocompromised state?” *No.*

Past Hospitalization and Surgical History: “Have you ever been hospitalized or undergone any surgeries? If so were there any complications?” *No.*

Medication History: “Are you taking any medications?”
No regular medication.

Allergic History: “Do you have any known allergies? *No allergies that I know of.*

Family History: “Does anyone in your family have similar symptoms or similar health problems? Is there any lung or heart disease in your family?” *No.*

Social History: “Do you smoke or drink? Have you ever taken any recreational drugs?” *I drink socially and have smoked five to ten cigarettes a day for 5 years. I’ve never taken any illicit drugs.*

Travel History:

- “Have you done any recent travel?” *I went to Thailand with friends last month. I did some scuba diving training.*
- “Where did you stay?” *We stayed in a hotel.*
- “Did you get any tattoos or body piercings?” *No.*
- “I need to ask you a personal question. Did you have unprotected sex during or after your trip?” *No.*

Relationships: “Are you sexually active?” *Yes, I live with my girlfriend. She does not have similar symptoms.*

Self-Care and Living Condition: “What do you do for living?” *I work in an office as a receptionist.*

Support: “Do you have good support from your family and friends?” *Yes, they are very supportive.*

Functional Status: “How has this impacted your day-to-day activities?” *I didn’t go to work today.*

Wrap-Up:

Question: “What would you like to do next?”

Answer: “I would like to do a general physical and respiratory system examination. I would also like to run some tests.”

Findings:

The examiner may provide these findings:

- History: Pain on inspiration, fever, and chest pain
- Vital Signs: Temp 38.7 °C, HR 100, BP 110/65, RR 22, O₂ sat 92%
- Physical examination:
 - Slight RUQ tenderness
 - Reduced chest wall movement on the right side
 - Dullness on percussion of the right lung base
 - Crackles and bronchial wheezing to the right lung base

Question: “Do you want to do any investigations?”

Answer: Suggest the following:

- O₂ saturation
- ABGs
- CBC, ESR, CRP, electrolytes, and blood cultures
- D-dimer, urine for legionella antigen, and IgM detection for *Mycoplasma pneumoniae*
- Urine analysis
- Sputum examination for AFB staining
- Sputum microscopy and culture
- Pulmonary function test
- Chest X-ray (Fig. 5.9)

Question: “What is your diagnosis?”

Answer: “With this history, clinical examination, and investigation findings, in my opinion, you are suffering from a condition called atypical pneumonia.”

Question: “Can you tell me more about it?”

Answer: “Atypical pneumonia is also called walking pneumonia. It is an infection of the lung caused by certain bugs that are usually acquired by droplet rather than by one of the more common pathogens. A variety of microorganisms cause it such as *Legionella pneumophila*, *Mycoplasma pneumoniae*, and *Chlamydia pneumoniae*. It is mostly seen in late summer and fall, but most cases are seen throughout the year.”



Fig. 5.9 Atypical pneumonia. X-ray showing diffuse infiltration. (Reprinted with permission from Liang [6])

“*Mycoplasma pneumoniae* is caused by the bacteria *M. pneumoniae* and often affects patients younger than 40. *Legionella pneumoniae* is commonly seen in middle-aged and older adults, patients with chronic illnesses, and smokers. It may cause severe symptoms, and the pneumonia is also known as Legionnaires’ disease.”

“*Chlamydia* causes a milder form of pneumonia. It can occur at any time during the year.”

When it develops independently from another disease, it is called primary atypical pneumonia. Most of the patients with atypical pneumonia are treated as outpatients, and some can even go to work and continue with their daily routines.

“Atypical pneumonia spreads with droplets from the nose and throat mostly through sneezes and coughing. It spreads slowly. The contagious period is usually less than 10 days. People who live and work in crowded areas such as homeless shelters and prisons are at a higher risk of contracting the disease.”

Question: “Can we prevent atypical pneumonia?”

Answer: “There is no vaccine for mycoplasma infections, but there are certain steps we can take to reduce the risk of getting atypical pneumonia.”

Further Information for the Patient:

- **Treatment at home** – “This is acceptable if you are generally healthy and if the pneumonia is not severe.”
 - “Take analgesics such as acetaminophen or ibuprofen.”
 - “Rest is important with adequate sleep.”

- “Drink lots of fluids and maintain a balanced diet.”
- “Take prescribed antibiotics (bacterial pneumonia).”
- “We can review the antibiotics after the sputum culture report is back to identify the bug and its appropriate antibiotic.”
- “Avoid cough-suppressant medication.”
- “Wash your hands frequently.”
- “Please try to stop smoking. Smokers are more susceptible to infection.”
- “Cover your mouth with your sleeve when you cough or sneeze. Coughing and sneezing are the most common ways to spread infection.”
- **Treatment as outpatient** – “Macrolides (azithromycin) are considered the treatment of choice. In addition to macrolides, fluoroquinolones are recommended for the treatment of adults and tetracyclines (e.g., doxycycline) can be used for older children and adults” [8].
- **Patient instructions:** “You need to take antibiotics for at least 2 weeks. If during that time you develop any symptoms such as a high spiking fever, vomiting, malaise, or difficulty in breathing, you should immediately seek medical attention.”
- **Possible complications [9]:**
 - Severe lung damage
 - Meningitis, myelitis, and encephalitis
 - Hemolytic anemia

Follow-Up:

“Please understand that the symptoms of atypical pneumonia take a long time to resolve. However, we will follow you up with a repeat X-ray and culture in about 2 weeks. The prognosis is good, so don’t worry.”

Advice regarding lifestyle modification:

- Triggers and environmental control
- Warning signs
- Information through brochures, websites, and support groups
- Flu shot every year in the fall and pneumococcal vaccine

“I will follow up in 3 days or once the labs will be back. Do you have any questions?”

Physical Examination: Human Immunodeficiency Virus and Pneumonia

Candidate Information

A 31-year-old HIV-positive man comes to your clinic with 5 days of shortness of breath, cough, and fatigue.

Vital Signs: HR, 81/min, regular; BP, 130/78 mm Hg; temp, 37 °C; RR, 16/min; O₂ sat 93%

Perform relevant physical examination. Please do not perform rectal, genitourinary, or breast examination.

In this station, we need to do a relevant general physical examination and detailed respiratory system examination. HIV and AIDS are not the same diseases. Signs of infection or malignancy in an HIV patient indicate the progression of AIDS.

Important in this station is to look for specific physical findings related to HIV.

Differentials:

- Pneumonia (*Streptococcus*, *Mycoplasma*, *Haemophilus*)
- *Pneumocystis carinii* pneumonia (PCP)
- Tuberculosis
- *Mycobacterium avium*

Starting the Physical Examination:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Stand on the right side of the patient and start the examination.

Opening:

“Good morning/good afternoon. I am Dr ... I am your attending physician. Are you Mr ...? Are you 31 years old?”

“I understand you are here because of shortness of breath, cough, and fatigue. I have been asked to perform your examination. During the examination, if you feel uncomfortable at any point, please let me know.”

- Comment on the vital signs given by the candidate information.
- Interpret the findings: “Vitals are normal.”
- HIV-positive patient may have fever and tachypnea.
- General appearance: looks malnourished and dehydrated.

General Physical Examination:

“I need to ask you a couple of questions as a part of my examination.”

- “What is the date today?”
- “Do you know where you are right now?”
- Comment: “Patient is oriented and alert.”
- Observe the patient for:
 - Distress
 - Sweating
 - Difficulty speaking
- **Hands:** “Can I see your hands?” Observe for color, capillary refill, palmar erythema, peripheral cyanosis,

nicotine stain, clubbing, muscle wasting, contractures (Dupuytren’s), and asterixis.

- “I am going to feel your pulse now.” Comment: rate, rhythm, and volume of pulse.
- **Face:** Observe for the following:
 - **General:**
 - Face: color, plethora, central cyanosis, cushingoid/moon face, ptosis (Horner syndrome)
 - Nose: flare, perforated septum
 - Lips: pursed
 - **Eyes:** CMV retinitis, pallor, jaundice.
 - **Oral cavity:** angular cheilitis, stomatitis, hairy leukoplakia, thrush, mucosal petechiae, and gingivitis
 - **Sinuses:** tenderness
 - **Skin and mucous membranes:** bacteria/fungal infection; Kaposi’s sarcoma; morbilliform eruption; seborrheic dermatitis; eosinophilic pustular folliculitis; herpes simplex/herpes zoster, nasolabial and genital areas/chest wall; warts, molluscum contagiosum; and HPV, hairy leukemia and clubbing and cyanosis (central, peripheral)
- **Neck:** “I am going to feel your neck now.”
 - **Trachea:** Position (central or mid line) and mobility. Look for use of accessory muscles.
 - **Lymph nodes:** Palpate for cervical lymph nodes. Look for generalized lymphadenopathy.
- **Cardiovascular:** Listen for murmurs and rubs (underlying pericarditis, myocarditis, or endocarditis).
- **Joint:** Look for sensory/motor dysfunction, arthritis, or vasculitis.
- **Neural:** Look for meningitis/encephalitis-meningeal irritation and focal defects.
- **Mental status:** Check for dementia/delirium.
- **Abdomen:** Palpate for tenderness, any mass, in the liver and spleen.
- **GU:** Just mention. If there will be any positive finding, the examiner will tell or will ask what investigations you will do further in this regard.
- DRE, Pap smear, and any cervical lesions.

Respiratory

- **Inspection:** Observe from the front, side, and back.
 - Look for contour, shape, skin, intercostal retractions, respiratory distress, and expansion. Respiratory rate and pattern.
- **Palpation:** Check for tenderness.
 - Chest expansion
 - Findings: Chest movements may be asymmetrical.
 - Tactile fremitus
 - Findings: May be increased on the areas of consolidation
- **Percussion:** Comment on the findings – percussion note will be asymmetrical and dull at the pneumonia site.

- **Chest auscultation:** “I am going to listen to your chest.”
 - Expected auscultation findings: Breath sounds may be decreased over the consolidated area. Bronchial or bronchovesicular breath sounds and late inspiratory crackles may also be heard in this area.
 - At the end of the auscultation: Comment on your findings.

Wrap-Up:

- Thank the patient and tell him he can now cover up.
- Ask the patient if he has any questions.
- Describe your findings to the patient or to the examiner.

Question: “What would you like to do next?”

Answer: “I would like to do some tests”:

- O₂ saturation
- ABGs
- CBC, CRP, electrolytes, and blood cultures
- HIV antibody and viral loads
- CD4 count
- Urine analysis
- Sputum examination for AFB staining
- Sputum microscopy and culture
- Pulmonary function test
- Chest X-ray

The examiner may show an X-ray or will ask about the X-ray findings (Fig. 5.10 showing pneumonia).

Question: “What is your diagnosis?”

Answer: “With the clinical examination and X-ray findings, in my opinion, you are suffering from a condition known as *Pneumocystis carinii* pneumonia.”

Question: “Can you tell me more about it?”

Answer: “*Pneumocystis carinii* pneumonia is a serious infection spread through air, caused by a fungus called *Pneumocystis jiroveci*, which leads to inflammation and fluid collection in the lungs. Most of the population are exposed to this fungus at a young age. But the immune system of a healthy individual will overcome it. In individuals with HIV, due to the weak immune system, the patients become prone to this opportunistic infection, and it may cause pneumonia. Sometimes, PCP can affect other parts of the body such as the liver, lymph nodes, and bone marrow.”

“Patients may present with cough, sputum, tachypnea, cyanosis, and abrupt onset of high fever. Findings may vary in presentation. In most cases, the chest X-ray will show an interstitial pattern. However, the X-ray finding may vary as irregular pattern distribution of infiltrate, nodules, cavities, diffuse or focal consolidation, or cystic changes.”

“Two HIV tests are recommended. The HIV viral load test helps to diagnose a new HIV infection. An HIV antibody test is done for a preexisting infection. With the use of HIV medication, PCP rates have decreased significantly. PCP is still the most common opportunistic infection in people with HIV/AIDS. Those with a CD4 cell count less than 200 units

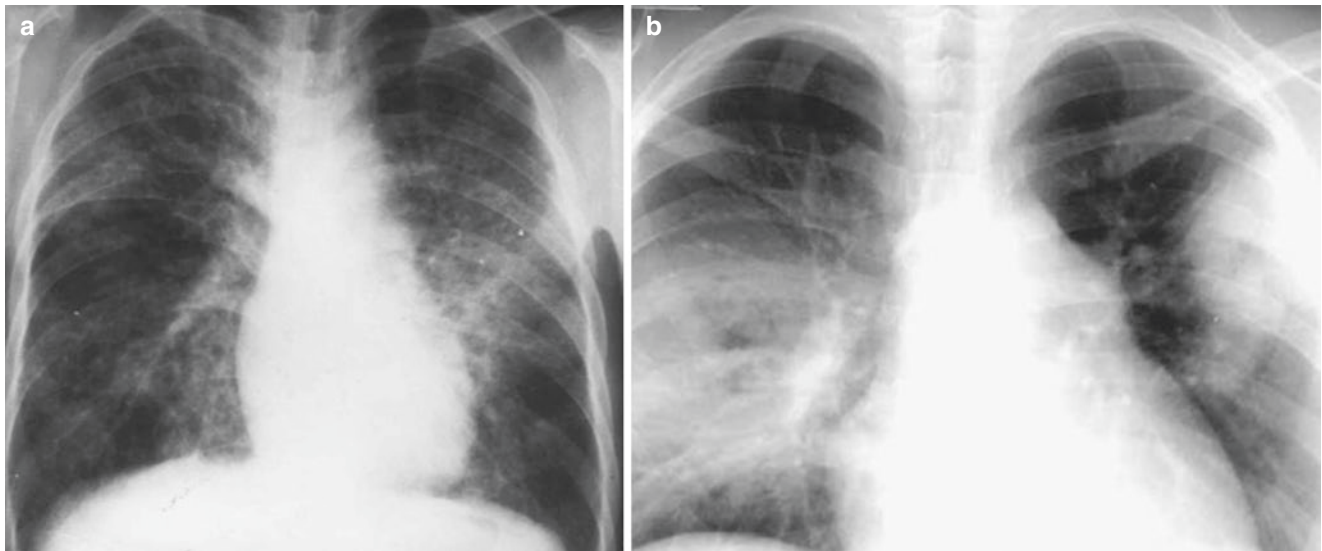


Fig. 5.10 *Pneumocystis carinii* pneumonia (PCP). (a) X-ray demonstrates grid-like and cord-like shadows at both lungs and accompanying diffusely increased density. (b) In a different patient with PCP,

X-ray demonstrates large flakes of shadows with increased density in both lungs and left pneumothorax. (Reprinted with permission from Liang [6])

are at highest risk. PCP is a highly treatable and preventable infection” [10].

Treatment:

- Oxygen: Keep SaO₂ >90%
- Trimethoprim-sulfamethoxazole is recommended as the treatment of choice for pneumocystis pneumonia (PCP) of any severity in HIV-infected patients [11]. This is frequently combined with a course of oral steroids.
- Other drugs that may be used are Dapsone, inhaled pentamidine, and Mepron (atovaquone) can be taken as an oral suspension.

Preventing Pneumocystis Pneumonia:

- There is no vaccine available to prevent this type of pneumonia.
- Highly active antiretroviral therapy (HAART) is considered to be the best option to prevent PCP.
- Quitting smoking also reduces the risk for PCP.
- Another recommendation is to start PCP drugs before CD4 cell counts drop too low.

Further Information for the Patient:

- “I would strongly recommend using condoms during intercourse to avoid unwanted pregnancy and to prevent STIs.”
- “If during that time you develop any symptoms such as high fever, vomiting, malaise, or difficulty in breathing, you should immediately seek medical attention.”
- Advice regarding lifestyle modification.
- Information through brochures, websites, and support groups.
- Flu shot every year in the fall and pneumococcal vaccine.

Follow-Up:

- Follow-up in 1 week or once labs are back.
- Please ask before finishing the conversation: “Do you have any questions?”

History: Cough for 4 Weeks

Candidate Information

A 40-year-old man comes to your clinic with an ongoing cough for 4 weeks. Please take a detailed history.

Differentials:

- Asthma
- GERD
- Postnasal drip
- Post infectious cough (Post viral URTI)
- Chronic bronchitis

- Bronchiectasis
- Interstitial lung disease
- Cardiac causes: congestive heart failure
- Drugs: ACE inhibitors
- Occupational

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr ... I am your attending physician. Are you Mr ...? And you are 40 years old?”

“I understand you are here for a cough. I am going to ask you a few questions. Should we start?”

History of Present Illness:

- “How would you describe your cough?”
- “When did your cough start? Is it a chronic cough lasting more than 3 weeks?”
- “How did it start? Gradually or suddenly?”
- “Is this the first time you’ve had this cough?”
- “Is it continuous or does it come and go?”
- “Is the cough present all the time or more so at a particular time of day/night?”
- “Does your cough come on with a specific position such as lying down?”
- “Is it worsening with time?”
- “How long does each bout of coughing last?”
- “What increases/decreases this cough?”
- **Associated Symptoms:** “Does the cough come with sputum/phlegm?” If yes, ask about consistency, odor, color, amount, and blood.
- **Shortness of breath and asthma:**
 - “Have you had any shortness of breath?”
 - “Do you get shortness of breath with a change in position?”
 - “Has there been any wheezing?”
 - “Did you notice any chest tightness?”
 - “Any sweating? Did you turn blue?”
 - “Did you notice any heart racing?”
 - “Does it get better or worse?”
 - “Were you able to talk?”
 - “Did you use your puffer or any other medication?”
 - “How many times did you use the puffer?”
- **Upper respiratory tract symptoms**
 - “Do you have any nasal discharge?”

- “Do you have a sore throat?”
- “Do you have any dryness of the mouth?”
- “Do you have difficulty swallowing?”
- “Do you feel any dripping in your throat that you have to clear (postnasal drip)?”
- “Do you recall any recent contact with sick people?”
- “Did you recently travel anywhere out of town?”
- **Chest pain:** If the patient has chest pain, then ask about pain and the associated symptoms such as a racing heart, nausea, vomiting, and syncope.
- **GERD:** “Do you suffer from heartburn or GERD/reflux?” (Cough is worse on lying down, after meals or after bending on waist. Ask for any previous PPI treatment.)
- **Allergic history** (it can be asked here or after the past medical history).
- “How is this affecting your daily activity?”

Constitutional Symptoms: Fever, night sweats, loss of weight, loss of appetite

Precipitating Factors or Aggravating Factors:

“I am going to ask you a few more questions that will guide me to why you have this cough.”

- “Is your cough aggravated by exercise?”
- “Do you think your cough is related to emotions or stress?”
- “Does cold air, odor, dust, smoke, or pollen worsen your cough?”
- “Do you, or does anyone around you, smoke?”
- “Is there any recent change in home environment such as new paints, carpets, linens, pillows, blankets, curtains, new pet, plant, or renovations?”
- “Are you exposed to chemicals at your work site?”

Relieving Factors:

“Does anything relieve your symptoms?”

Past Medical History:

- “Have you had any previous health issues?”
- “Do you have any health issues related to your lungs, heart, or kidneys?”
- “Have you ever had a tuberculosis test?”

Past Hospitalization and Surgical History:

“Have you ever been hospitalized or had any surgeries? If so, were there any complications?”

Medication History:

“Are you taking any medications?” If he says no, then continue to next question. Otherwise ask for aspirin, NSAIDs, amiodarone, bleomycin, methotrexate, beta-blockers, over-the-counter or herbals, and any side effects.

Allergic History:

“Do you have any known allergies?”

Family History:

“Does anyone in your family have similar symptoms or similar health problems? Is there any lung or heart disease in your family?”

Social History:

- “Do you or does anyone else in close proximity to you smoke? Do you drink alcohol?” If yes, then further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which one? How long? When?”

Relationships:

“Are you sexually active? Do you have sex with men, women, or both?”

Self-Care and Living Condition:

“What do you do for living? Who lives with you?”

Work Conditions and Financial Status:

“Are there any current renovations at your work or home?”

Support:

“Do you have good support from your friends and family?”

Functional Status:

“How is this impacting your day-to-day life?”

Wrap-Up:

Further steps: “I would like to do a general physical and respiratory system examination. I would also like to run some tests (only if asked).”

Investigations:

Suggest the following:

- O₂ saturation
- ABGs
- CBC, electrolytes, liver panel, kidney function test, and D-dimer
- Urine analysis
- Pulmonary function test
- Chest X-ray (pneumonia, infection, neoplasm)
- ECG

Describe the Diagnosis:

According to the station diagnosis, nature of the disease, and goals of treatment.

Ask, “Do you want me to tell you more about it?”

Management Plan:

- **Possible medical treatment:** Duration of treatment, use of prescribed medication, compliance, and common side effects

Further Information:

- Advice regarding lifestyle modification.
- Triggers and environmental control.
- Warning signs.
- Information through brochures, websites, and support groups
- Flu shot every year in the fall and pneumococcal vaccine (if patient is over 65 or at risk).

Follow-Up:

- Discuss about a follow-up visit according to the diagnosis.
- Ask, “Do you have any questions?”

Checklist: Cough

See Table 5.5 for a checklist that can be used as a quick review before the exam.

Table 5.5 Checklist for cough

Starting the interview	Knock on the door
	Enter the station
	Hand wash/alcohol rub
	Greet the examiner and patient
	Give stickers to the examiner if required or show your ID badge
	Sit on the chair or stand the right side of the patient. Start the physical exam
Opening	Introduction
	OCD of cough
	What increases/decreases cough
	How cough is affecting daily activity
	Triggers
Associated symptoms	Sputum
	Consistency, odor, color, amount, blood
	<i>If shortness of breath is present:</i>
	Ask a few questions about it (<i>with change in position, etc.</i>)
	<i>Upper respiratory tract symptoms:</i>
	Runny nose, sore throat, dry mouth, difficulty swallowing, postnasal discharge
	<i>Chest pain:</i>
	Ask questions regarding the pain and about racing heart, nausea, vomiting, syncope
	Constitutional symptoms:
	<i>Fever, night sweats, weight loss, loss of appetite</i>
<i>GERD:</i>	
Does anything relieve the symptoms?	

Table 5.5 (continued)

Risk factors	Recent contact with sick people
	Leg pain
	Recent travel
	Allergies
	Smoking
	Drugs
	HIV
	Past medical history
	Past hospitalization and surgical history
	Medication history
	Allergic history
	Family history
	Social history
	Smoking/alcohol/drug/sexual
	Self-care/living conditions and relationships (<i>what they do for a living</i>)
	Work conditions and financial status
	Renovations at work or home
	Support
	From family and friends
	Functional status
Impact on daily activities	
Wrap-up	Commit to do a general physical and respiratory system examination
	Investigations
	Describe the diagnosis
	Nature of the disease and goals of treatment
	Management plan
	Explain possible medical treatment
	Further information
	Advice regarding lifestyle modifications
	Triggers and environmental control
	Warning signs
Information through brochures, websites, and support groups	
Flu shot every year in the fall and pneumococcal vaccine if over 65 or at risk	
Discuss follow-up visit according to diagnosis	
Ask patients if they have any questions	

History: Hemoptysis**Candidate Information**

A 65-year-old man who coughed up some blood at home presents to the emergency department.

Please take a detailed history. No physical examination is required

Differentials:

- Acute infection (URTI or acute bronchitis)
- Chronic bronchitis
- Community-acquired pneumonia
- Pulmonary tuberculosis
- Bronchogenic carcinoma/metastatic carcinoma

- Pulmonary embolism/infarction
- Trauma
- Left heart failure
- Autoimmune diseases (Goodpasture and Wegener granulomatosis)
- Lung abscess
- Bronchiectasis
- Aspiration of foreign body
- Anticoagulation therapy

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr ... I am your attending physician. Are you Mr ...? Are you 65 years old?”

History of Present Illness:

- “How can I help you today?” *Doc, I am very worried about myself. I coughed up some blood!!*
- Show empathy: “I am sorry to hear that, that must have been scary!”
- Quickly evaluate the patient to see if the patient needs any immediate intervention.
- Show support: “I am here to help you. I am going to ask you a few questions.”
- “How are you now? Will you be able to answer some questions?”
- “Are you comfortable sitting or do you want to lie down?”
- “Are you feeling dizzy/tired or have you lost consciousness?”
- Ask for a set of vitals from the examiner and comment: “I just want to make sure my patient is stable enough to proceed with a history.”
- “When did you cough up blood?” *Early this morning.*
- “Did you cough up blood or vomit blood?” *Coughed up.*
- “How much blood?” *About a cup.*
- “What was the color? (bright red/pink/brown/rusty or like coffee ground appearance?)” *Bright red.*
- “Was it pure blood or was there mucus mixed with the blood?” *It was mixed with phlegm.*
- “Was this the first time, or how long has this been going on?” *It is the first time.*
- “What were you doing when it happened?” *I had just woken up and was getting ready to go to work.*
- “Did you have an ongoing cough?” *No.*

If There Is an Ongoing Cough, Then Ask a Few Questions About the Cough:

- “Is the cough continuous or does it come and go?”
- “Is the cough present all the time or does it worsen at a particular time of day?”
- “Does your cough worsen with a specific position such as lying down?”
- “Is your cough worsening?”
- “How long does each bout of coughing last for?”

Associated Symptoms:

- “Was it accompanied by sputum?” *Yes.*
 - Consistency: *Thick.*
 - Odor: *No odor.*
 - Color: *It was white to start with; now it is yellow.*
 - Amount: *Almost a cup a day.*
- “What increases/decreases this cough?” *Nothing in particular.*
- “Any hoarseness in your voice?” *No.*

If Shortness of Breath Is Present, Then Ask a Few Questions About It:

Do you get shortness of breath with change in position? Upon lying flat?

If Chest Pain Is Present, Then:

Ask about the pain and the presence of a racing heart, nausea, vomiting, syncope.

Constitutional Symptoms:

Fever, night sweats, loss of weight, and loss of appetite

Risk Factors:

- “Have you recently had any flulike symptoms or a chest infection?”
- “Have you had any recent contact with sick people such as people with tuberculosis?”
- “Have you ever been screened for tuberculosis?”
- “Do you have any pain in your legs?”
- “Have you done any recent travel?”
- “Are you bleeding elsewhere? Bleeding gums?”
- “Are you exposed to asbestos?”
- “Do you smoke or do drugs?”
- “Are you exposed to birds?”

Past Medical History:

- “Have you had any previous health issues?”
- “Any lung, heart or kidney disease problems? Any immunocompromised states?”
- “Have you ever had a tuberculosis test?”

Past Hospitalization and Surgical History:

“Have you previously been hospitalized or undergone surgery?”

Medication History:

“Are you taking any medication?” If he says no, then continue to the next question. Otherwise ask about use of blood thinners, anticoagulants such as warfarin, any over-the-counter or herbals, and any side effects.

Allergic History:

“Do you have any known allergies?”

Family History:

“Has anyone in your family had similar symptoms or similar health problems? Is there any lung or heart disease in your family?”

Social History:

- “Do you or does anyone else in your home or close to you at work smoke? Do you drink alcohol?” If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which ones? How long? When?”

Relationships:

“Are you sexually active? Do you have sex with men, women, or both?”

Self-Care and Living Condition:

“What do you do for living? Who lives with you?”

Support:

“Do you have good support from your family and friends?”

Functional Status:

“How is this affecting your daily activities?”

Wrap-Up:

“I would like to do a general physical and respiratory system examination. I would also like to run some tests (only if required based on history).”

Investigations:

- CBC, ABGs, electrolytes, liver panel, kidney function test, and D-dimer
- INR/PTT
- Urinalysis
- Sputum for cytology, AFB, C&S, and fungal
- Pulmonary function test
- Bronchoscopy
- Serology (ANA, ANCA, C3, C4, anti-GBM)

Management Plan:

“I want to keep you in the emergency room until we will get the lab results and chest X-ray back. We may need to admit you for further evaluation and specialist evaluation.”

“Do you have any questions?”

If the similar patient presents in a walk-in clinic and patient seems to be stable enough to do outpatient blood work up and a chest X-ray, then the patient may be sent home and a follow-up should be booked. If the patient is unstable and requires immediate attention, then refer him to the emergency room or call an ambulance for transfer.

History: Asthma**Candidate Information***Scenario 1:*

A 22-year-old male came into the office for a follow-up. He has had asthma for 4 years. He recently had an asthmatic attack and was treated in the emergency department. Please take a detailed history and address the patient’s concerns.

Scenario 2:

A 22-year-old male comes to your office with a cough and shortness of breath that he has been experiencing for 1 day.

Scenario 3:

A 22-year-old male has shortness of breath, which increases with exercise. He also has a cough at night. He has had a history of asthma since the age of 9. He uses a Ventolin inhaler as required.

Please take a detailed history. No examination is required for this station.

Differentials:

- Asthma
- Asthma exacerbation
- Exercise-induced asthma
- COPD
- Pneumonia
- Bronchiectasis
- Bronchogenic carcinoma

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr ... I am your attending physician. Are you Mr ...? Are you 22 years old?”

Introduction (for Scenario 1):

“I understand you had to go to the emergency department 3 days ago with an asthma attack. How do you feel now?”

History of Present Illness:

“I would like to ask you some questions about your recent asthma attack.”

History of Recent Event:

- “Can you tell me what happened at the time of your attack?”
- “Have you visited the ER before for your asthma?”
- “When did it happen?”
- “Was it a sudden or a gradual onset?”
- “Did you have any shortness of breath?”
- “Was there wheezing?”
- “Did you notice any chest tightness?”
- “Any sweating? Did you turn blue?”
- “Did you notice your heart racing?”
- “Is it getting better or do you think it is getting worse?”
- “Were you able to talk?”
- “Did you pass out?”
- “Did you use the puffer or any other medications to ease your symptoms?” If so, ask: “How many times did you use the puffer?”
- “How did you get to the ER?”
- “Did they give you any medicine?” If so, ask: “Which medicines?”
- “Were you intubated?”
- “Did they give you any discharge medicines?”

History of Asthma:

“As I am seeing you for the first time, I want to ask you about your asthma.”

- “When were you diagnosed?”
- “How were you diagnosed?”
- “Are you on any puffers? Which ones?”
- “Do you use a spacer?”
- “Do you use a peak flow meter/spirometer?”
- “Has your asthma been under control since?”
- “How many times do you use your puffer?”
- “Do you use it before exercise?”
- “Have you noticed a need to increase the doses recently?”
- “Have you noticed any increase in the number of attacks recently?”
- “Do you have regular follow-ups?”
- “When was the last time you were seen by your GP?”
- “When was the last time you had a pulmonary function test?”
- “Have you had any attacks during the night?”
- “Have you had any attacks at rest?”
- “Does your doctor have to adjust your medication often?”
- “How often do you have to use your medicine?”

History of Cough:

- “When did your cough start?”
- “Did it come on gradually or start suddenly?”

- “Was it continuous or does it come and go?”
- “Is the cough present all the time or does it worsen at a particular time of day?”
- “Does your cough worsen with a specific position such as lying down?”
- “Does your cough produce any sputum?” If there is sputum, ask about consistency, odor, color, amount, or with blood.
- “What increases and decreases this cough?”

Relieving Factors:

“Does anything relieve your symptoms?”

Precipitating Factors or Aggravating Factors:

“I’m going to ask you a few more questions that will guide me as to why you had this recent asthma attack.”

- An easy way is to go through the following list [12]:
 - **A:** Allergen
 - **B:** Bronchial infection
 - **C:** Cold air
 - **D:** Drugs – aspirin, NSAIDS, and beta-blockers
 - **E:** Emotions, exercise
 - **F:** Food – sodium metabisulfite, seafood, nuts, and monosodium glutamate
 - **G:** GERD
 - **H:** Hormones – pregnancy and menstruation
 - **I:** Irritants – smoke, perfumes, and smells
 - **J:** job – wood dust, flour dust, isocyanates, and animals
- “How do you use your puffer?”
- “Do you carry it with you so that it’s readily available in case of emergency?”
- “Have you checked its expiry date?”
- “Do you store it properly?”
- “Have there been any recent changes in your home environment such as new paints, carpets, linens, pillows, blankets, curtains, new pets, plants, or renovations?”
- “Is there any mold present in your home?”

Associated Symptoms:

- “Do you have pain anywhere in your body?”
- “Have you recently traveled anywhere?”
- “Have you noticed any fever?”
- “Have you recently lost weight?”
- “Do you have night sweats? Do you ever wake up with your clothes or body wet with a lot of sweat?”
- “How is this affecting your daily activities?”
- “Are you currently under any stress?”

Past Medical History:

- “Do you have any health issues?”
- “Do you have a history of eczema, fever, runny nose, or allergies?”

- “Any lung, heart, or kidney diseases? Any immunocompromised states?”
- “Have you ever had a tuberculosis test?”

Past Hospitalization and Surgical History:

“Have you previously been hospitalized or undergone surgery?”

Medication History:

“Are you taking any medication?” If he says no, then continue to next question. Otherwise ask about use of blood thinners, anticoagulants such as warfarin, any over-the-counter or herbals, and any side effects.

Allergic History:

“Do you have any known allergies?”

Family History:

“Does anyone in your family have asthma? Are there any other lung or heart diseases in your family?”

Social History:

- “Do you or does anyone else in your home or close to you at work smoke? Do you drink alcohol?” If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which ones? How long? When?”

Relationships:

“Are you sexually active? Do you have sex with men, women, or both?”

Self-Care and Living Condition:

“What do you do for living? Who lives with you?”

Support:

“Do you have good support from your family and friends?”

Functional Status:

“How is this affecting your daily activities?”

Wrap-Up:

“I would like to do a general physical and respiratory system examination. I would also like to run some tests.”

Investigations:

- PEF, CBC, ABGs, electrolytes, liver panel, kidney function test, lipid profile, blood sugar, blood cultures, and CRP
- ABG analysis and D-dimer
- Chest X-ray (to rule out pneumonia, infection, or neoplasm)
- Sputum for cytology, AFB, C&S, and fungal testing

- **ABGs:** Acute attack – patients usually show a normal or slightly reduced PaO₂ and low PaCO₂ secondary to hyperventilation.
 - If PaO₂ is normal and the patient is hyperventilating, then the ABGs should be repeated later.
 - If PaCO₂ is raised, the patient needs to be transferred to high dependency unit or ICU as this signifies failing respiratory effort [13].
- **Spirometry** is the key investigation: FEV₁ < 80% of the predicted value.
 - FEV₁/FVC ratio < 80% predicted indicates obstruction. In case of asthma, there will be a characteristic rise in FEV₁ > 12% after bronchodilator (SABA) use.
- **Allergy tests.**

Describe the Diagnosis:

“From our discussion today, it looks like your asthma is not very well controlled with your current use of a Ventolin (blue) puffer.”

Question: “Can you tell me more about asthma?”

Answer: “Asthma is a common chest condition (7–10% in adults) in which there is reversible and temporary narrowing of the breathing tubes in the lungs. It occurs because these breathing tubes become hyper-responsive to various stimuli. There will also be tightening of the muscles present in the breathing tube walls. These tubes also become inflamed, and there will be swelling of their linings and increased mucus secretion in their lumens. All of these effects will lead to a decreased air flow through breathing tubes.”

“The main symptoms are shortness of breath, tightness in the chest, wheezing, sputum, and coughing (especially at night).”

Management Plan:

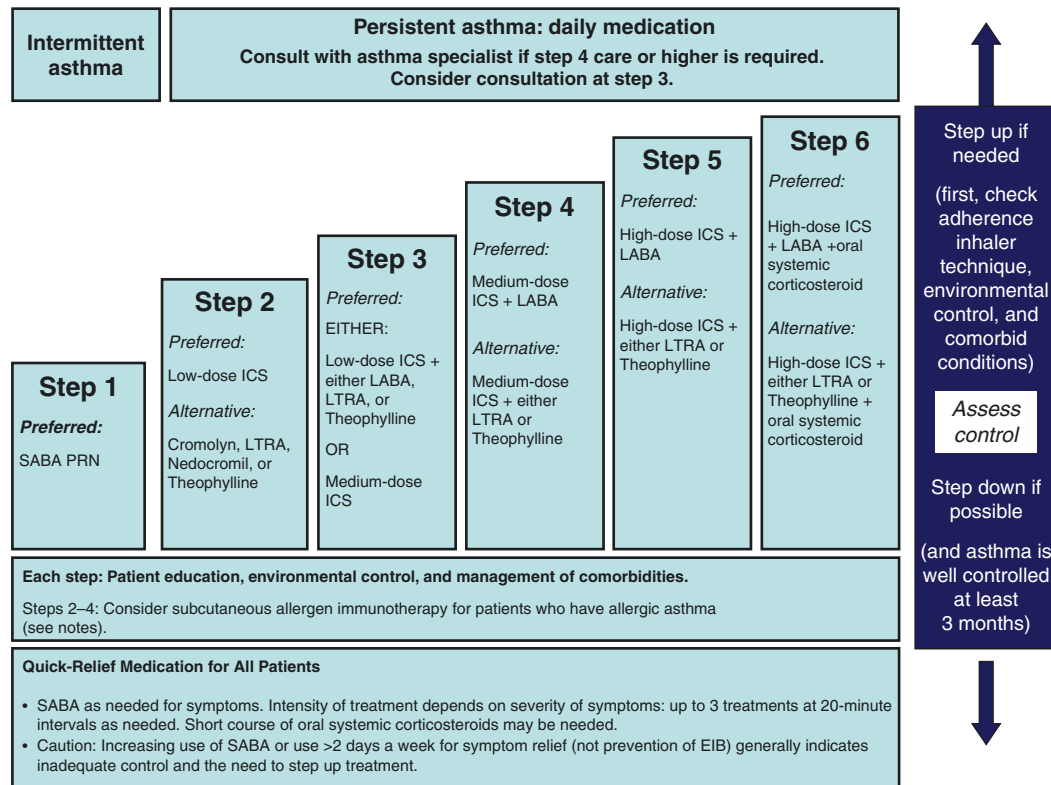
- **Triggers and environmental control** – “It is extremely important to learn about your trigger factors and make a plan to control the environment to minimize your exposure to these.”
- **Education and action plan** – “Read about asthma and be informed.”
- **Self-management education including the following:**
 - Education regarding nature of the disease, avoidance of triggers, and goal of treatment.
 - Understanding the use of prescribed medications.
 - Importance of compliance of medications.
 - Proper use of inhalation devices.
 - Use of peak flow monitor.
 - Knowing and understanding severe symptoms/red flags.
 - Regular follow-up with your family physician.
 - Learn breathing exercises.

Action Plan:

Action plans are a key component of care for all ages (Fig. 5.11). An action plan should outline the following:

- Daily preventive management to maintain control.
- When and how to adjust reliever and controller therapy for loss of control.
- Clear instructions regarding when to seek urgent medical attention.

- Some national asthma action plans can be viewed at:
 - https://www.lung.ca/sites/default/files/media/asthma_action_plan.pdf
 - https://www.nhlbi.nih.gov/files/docs/public/lung/asthma_actplan.pdf
 - https://www.asthmaaustralia.org.au/ArticleDocuments/1073/AAP_DoHA.pdf.aspx
 - https://www.ucalgary.ca/icancontrolasthma/files/ican-controlasthma/2012_asthma_guidelines.pdf [15].



Key: **Alphabetical order is used when more than one treatment option is listed within either preferred or alternative therapy.** ICS, inhaled corticosteroid; LABA, inhaled long-acting beta₂-agonist, LTRA, leukotriene receptor antagonist; SABA, inhaled short-acting beta₂-agonist

Notes:

- The stepwise approach is meant to assist, not replace, the clinical decisionmaking required to meet individual patient needs.
- If alternative treatment is used and response is inadequate, discontinue it and use the preferred treatment before stepping up.
- Theophylline is a less desirable alternative due to the need to monitor serum concentration levels.
- Step 1 and step 2 medications are based on Evidence A. Step 3 ICS + adjunctive therapy and ICS are based on Evidence B for efficacy of each treatment and extrapolation from comparator trials in older children and adults—comparator trials are not available for this age group; steps 4–6 are based on expert opinion and extrapolation from studies in older children and adults.
- Immunotherapy for steps 2–4 is based on Evidence B for house-dust mites, animal danders, and pollens; evidence is weak or lacking for molds and cockroaches. Evidence is strongest for immunotherapy with single allergens. The role of allergy in asthma is greater in children than in adults. Clinicians who administer immunotherapy should be prepared and equipped to identify and treat anaphylaxis that may occur.

Fig. 5.11 Stepwise approach for managing asthma. (Reprinted from National Asthma Education and Prevention Program Expert Panel Report 3 [14]. Used under terms of Creative Commons Attribution 2.5 Generic license. <https://creativecommons.org/licenses/by/2.5/deed.en>)

Medical Treatment

Medication Delivery Modes:

The most effective mode of delivery of medication into the lungs is by inhalation:

- Puffer with a spacer device
- Dry powder inhaler
- Nebulizer

There are three types of puffers that are usually used:

- **Relievers** – (Ventolin, Bricanyl, or Atrovent) Also called bronchodilators, they are quick acting and open the airways during an attack.
- **Preventers** – (Pulmicort, Flixotide, Alvesco) These are slow acting. They prevent an attack or treat inflammation.
- **Combined** – Preventer + reliever (Seretide or Symbicort).

Question: “Do you know how to use the puffer (MDI)/ inhalers?”

Answer:

“In order for the medication to reach deep into the lungs, it is important to use the puffer correctly. It is a common error to not use the puffer correctly. The most important thing to understand about the puffer is your coordinated inhalation with the simultaneous pushing of the puffer chamber. It is not the pressure of the aerosol pushing the medication into the lungs.”

“I can explain how to use it. You can also seek help from your asthma educator or pharmacist if you have any further questions.”

The Closed-Mouth Technique of Using Puffers

1. Remove the cap.
2. Shake the puffer vigorously.
3. Hold it upright (canister on top and mouthpiece on the lower end).
4. Place the mouthpiece between your teeth and close your lips around it.
5. Breathe out gently and hold your breath.
6. Tilt your head back slightly.
7. Then slowly start breathing in from your mouth not from nose. At the same time, press the puffer canister firmly, breathing in as much as you can for 3–5 s.
8. Remove the puffer from your mouth and hold your breath for approximately 10 s.
9. Breathe out gently.
10. Breathe normally for about 1 min.
11. Repeat the process if you need to.

Question: “Do you know how to use the inhalers with a spacer?”

Answer: “Some people who have difficulty using the metered dose inhalers (MDIs) can use a spacer devices. The spacer device is attached onto the mouthpiece of the inhaler. The patient puts the mouthpiece of the spacer in his mouth. One puff of the inhaler is put into the spacer. The patient breathes in and out from the spacer mouthpiece, taking a deep breath, which should be followed by one to two very deep breaths (four to six normal breaths)” (see Fig. 5.12).

Signs and Symptoms of Severe Asthma/Red Flags:

Inform and advise the patient: “If you notice any of the following symptoms, you should seek urgent medical attention or call the ambulance” [16]:

- Marked breathlessness
- Sleep being greatly disturbed by asthma
- Feeling frightened
- Difficulty in speaking; unable to say more than a few words
- Pulses paradoxes
- Exhaustion and sleep deprivation
- Drowsiness and confusion
- Silent chest
- Cyanosis
- Chest retraction
- Respiratory rate greater than 25 (adults) or 50 (children)
- Pulse rate >100 beats/min
- Peak flow <100 L/min or <40% predicted FEV1
- Oximetry on presentation (SaO₂) <90%



Fig. 5.12 An asthma inhaler spacer. (Source: Oxiq, own work. Reprinted under terms of Creative Commons CC0 1.0 Universal Public Domain Dedication. <https://creativecommons.org/publicdomain/zero/1.0/deed.en>)

Wrap-Up:

- Offer further information through brochures, websites, and support groups.
- Encourage flu shot every year in the the fall and the pneumococcal vaccine for patients over 65 and at risk.

Follow-Up:

Follow up in 2–3 weeks.

In follow-up visits, you should monitor:

- Asthma symptom control
- Asthma triggers
- Pulmonary function tests
- Adherence to asthma treatment
- Inhaler techniques
- Comorbidities

History: Chronic Obstructive Pulmonary Disease

Candidate Information

A 55-year-old man comes to your clinic presenting a cough with sputum and shortness of breath. He has had COPD for 5 years. He is on two puffers and is a chronic smoker.

Please take a detailed history. No physical examination is required.

Differentials:

- Exacerbation of COPD (try to find out triggers, which can be infection, heart failure, non-compliance of inhalers)
- Pneumonia
- Chronic bronchitis/emphysema
- Community acquired pneumonia
- Bronchiectasis
- Bronchogenic carcinoma (less likely in this station but must rule out)
- Pulmonary tuberculosis

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr I am your attending physician. Are you Mr? Are you 55 years old?”

History of Present Illness:

“What brings you to the clinic today?”

Cough Questions:

- “When did your cough start?”
- “Did it come on gradually or start suddenly?”
- “Is this your first time having this cough?”
- “Was it continuous or does it come and go?”
- “Is the cough present all the time or does it worsen at a particular time of day?”
- “Does your cough worsen with a specific position such as lying down?”
- “Is your cough getting worse with time?”
- “How long does each bout of coughing last?”
- “When was the last PFT done?”
- “What was the severity of your previous episodes, and how are you coping now?”

Associated Symptoms:

- “Does your cough produce sputum?” If yes to sputum, then ask about consistency, odor, color, amount, and blood.
- “What increases and decreases your cough?”
- “Do you become short of breath?”
- *If shortness of breath is present*, then ask a few questions about it: Wheezing? Does it come on with any change in position?
- *Signs of infection*: Fever, increases quantity or production of purulent sputum.
- *Upper respiratory tract symptoms*: Nasal discharge, sore throat, dry mouth, difficulty swallowing.
- *Congestive heart failure*: Chest pain, racing heart, swelling in legs, shortness of breath upon walking or going up stairs, syncope.

Constitutional Symptoms:

Fever, night sweats, weight loss, and loss of appetite

Risk Factors:

- “Have you had any recent contact with sick people?”
- “Do you have any pain in your legs?”
- “Have you traveled recently?”
- “Have you had any recent stressor such as anxiety or depression?”
- “Do you smoke?” If so, “How long have you been smoking? How many cigarettes per day? Have you ever tried to quit?”
- “Do you do any drugs?”

Relieving Factors:

“Does anything relieve the symptoms?”

Past Medical History:

- “Do you have any health issues?”
- “Do you have a history of eczema, fever, runny nose, or allergies?”

- “Any lung, heart or kidney diseases? Any immunocompromised states?”
- “Have you ever had a tuberculosis test?”

Past Hospitalization and Surgical History:

“Have you previously been hospitalized or undergone surgery?”

Medication History:

“Are you taking any medication?” If he says no, then continue to next question. Otherwise ask about use of blood thinners, anticoagulants such as warfarin, any over-the-counter or herbals, and any side effects.

Allergic History:

“Do you have any known allergies?”

Family History:

“Does anyone in your family have asthma? Are there any other lung or heart diseases in your family?”

Social History:

- “Do you or does anyone else in your home or close to you at work smoke? Do you drink alcohol?” If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which ones? How long? When?”

Relationships:

“Are you sexually active? Do you have sex with men, women, or both?”

Self-Care and Living Condition:

“What do you do for living? Who lives with you?”

Support:

“Do you have good support from your family and friends?”

Functional Status:

“How is this affecting your daily activities?”

Wrap-Up:

The management plan should be made according to severity of the symptoms.

Mild Symptoms:

- **Investigation:**
 - Labs: CBC, electrolytes, cardiac enzymes, blood sugar, kidney function and liver panel, and lipid profile
 - ABGs
 - ECG
 - Chest X-ray
 - Pulmonary function test

Treatment plan:

- Prolong survival
 - Smoking cessation
 - Respiratory rehabilitation

Medications:

“COPD medications cannot cure COPD, but they can improve your symptoms. Your doctor will prescribe the COPD medications that are right for you. To help you manage your COPD medications, your doctor may also give you a **COPD action plan** that explains what you should do when you are not feeling well. The different types of COPD medicines include the following”:

- **Bronchodilators** – “With COPD, the main symptom is shortness of breath. You might get short of breath when you exercise, when you do chores, when you feel upset, or for no reason at all.”
- “Bronchodilator medications open up the airways (breathing tubes). When your airways are more open, it is easier to breathe. Doctors may prescribe more than one kind of bronchodilator to treat your COPD.”
- “There are 2 main types of bronchodilators that come in inhalers:
 - Beta-2 agonists. For example, salbutamol (Ventolin), terbutaline (Bricanyl), formoterol, and salmeterol (Serevent)
 - Anticholinergics. For example, ipratropium bromide (Atrovent), tiotropium (Spiriva), and glycopyrronium”
- **Corticosteroid Pills** – “Corticosteroid pills are often used for short periods of time, usually when you have a COPD flare-up. However, in some cases they may need to be taken on a regular basis. If you need to take corticosteroid pills on a regular basis, your health care provider will work to keep you on the lowest dose necessary.”
- “If you have any questions on medication side effects, you should talk to your health-care provider or pharmacist.”
 - “**Some side effects of combination inhaled bronchodilator and corticosteroids** include shaky hands (tremor), fast heartbeat, thrush (a whitish film covering your throat and tongue), sore throat, or hoarse voice.”
 - “You can have fewer side effects if you take the medicine as directed by your health-care provider, rinse your mouth with water after each dose, and use a spacing chamber with your inhaler.”
- **Antibiotics** – “COPD flare-ups can be caused by viral infections or bacterial infections. If you have a bacterial infection, you can treat the infection with antibiotics.
- “As part of a COPD action plan, we will give you an antibiotic prescription to have on hand and tell you to fill the prescription if you feel a COPD flare-up starting. It is very important for you to recognize the signs of worsening COPD. Be sure to ask questions of your health-care professional so you understand your action plan.”

- **Flu and pneumonia shots** – “Shots (vaccines) can help protect you against some strains of flu and pneumonia. Flu and pneumonia shots can lower your chances of getting a flare-up and needing hospital care. You need to take a flu shot every year, usually in the fall.”
- **Supplemental oxygen** – “If you have more severe COPD, it may be hard for you to get enough oxygen from the natural air. Low oxygen levels can make you more short of breath and tired. If your blood oxygen level is very low, your doctor may prescribe supplemental oxygen. People who take supplemental oxygen must continue taking their other medications.
- “Oxygen therapy can help people with:
 - Very low blood-oxygen levels (hypoxemia)
 - Temporary lung damage from infections (e.g., pneumonia)”

“Oxygen only helps people who have very low blood-oxygen levels. Ask your doctor to test to see if oxygen might help you” [17].

COPD Exacerbation:

This presents with episodes of increased dyspnea, coughing, increase in sputum volume, or purulence. It is usually triggered by a URTI, air pollution, congestive heart failure, or pulmonary embolism.

If symptoms are severe, then the patient needs to be transferred to the nearest emergency room.

Inform the Patient:

“Based on our discussion today, I understand that you have been diagnosed with COPD. Your cough, shortness of breath, and sputum quantity has significantly increased, indicating that you have a chest infection on top of your COPD.”

- If the patient is a smoker, please do not forget to mention that one probable cause of COPD flare ups is smoking.

“I would like to refer you to the nearest hospital now. I can call the emergency physician and arrange an ambulance for you if you would like. I want to make sure that you will receive proper ventilation on your way to the emergency room.”

Follow-Up:

“I will follow up with you after you are discharged from the hospital. Do you mind if we discuss next time the possibility of quitting smoking? Do you have any questions?”

Physical Examination: Pneumothorax

Candidate Information:

A 25-year-old man presents in the emergency room with sudden onset of right-sided chest pain and shortness of breath.

Vital Signs: HR, 101/min, regular; BP, 70/50 mm Hg; temp, 37 °C; RR, 21/min; O₂ saturation, 89%

Perform a relevant physical examination. Please do not perform rectal, genitourinary, or breast examination.

Differentials:

- Pneumonia
- Tension pneumothorax
- Acute pulmonary embolism
- Acute myocardial infarction

Starting the Physical Examination:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Stand on the right side of the patient and start the physical examination.

Opening:

“Good morning/good afternoon. I am Dr. I am your attending physician. Are you Mr.?”

“I have been asked to perform your detailed respiratory system examination. During the examination, if you feel uncomfortable please let me know. Is it alright to start?”

Start by commenting on the given vital signs: “Patient has tachycardia, tachypnea, hypotension, and low O₂ saturation.”

Further comment: “I will evaluate the patient’s airway, breathing, and circulation during my examination. This is to ensure that the patient is stable enough to continue with the examination and he does not require any immediate intervention.”

(During the examination, the examiner will either tell the findings with each part of the examination or at the end.)

General Physical Examination:

Observe the patient:

- Are they alert and conscious?
- Are they able to speak or do they have difficulty speaking?
- Observe for any obvious distress, sweating, pallor or cyanosis.
- **Hands:**
 - Check for pulse.
 - Comment on rate, rhythm, and volume of the pulse: “Tachycardia, regular rhythm, and possible low volume.”
 - Check the hands and fingers for any abnormal findings.

- **Face:** Observe for cyanosis.
 - Nose: Flared
- **Trachea:**
 - Check for position: Deviated to the opposite site of pneumothorax.
 - Look for use of accessory muscles; patient may be using them.
 - Look for distension of neck veins.

Chest Examination:

“I need to expose you from the neck down to the waist; is it alright?” Help the patient take off his shirt if he asks; otherwise let him do it and wait. Then, drape the patient if required by the station.

- Patient position: Sitting.
- Observe for respiratory rate and pattern.
- Comment: “Tachypnea may be present.”
- **Inspection:**
 - Look from the front, side, and back.
 - Observe the chest for contour, shape, and skin.
- **Palpation:**
 - Warm up your hands.
 - Check for any tenderness: usually no tenderness unless a trauma case.
 - Chest expansion: chest movements may be decreased on the side of the pneumothorax.
 - Tactile fremitus: decreased or absent on the side of the pneumothorax.
- **Percussion:** Findings – Percussion note hyperresonant or tympanic over pneumothorax.
- **Chest auscultation:**
 - Inform the patient: “I am going to listen to your chest.”
 - Expected auscultation findings: Breath sounds may be decreased to absent over the pneumothorax.
 - No added sound is usually heard.
 - **Cardiovascular system:** Quickly listen to the heart and measure the JVD.

At the end of the auscultation, comment on your findings. Thank the patient and tell him he can now cover up.

Wrap-Up:

The examiner may either show an X-ray (Fig. 5.13) or, on the basis of your clinical findings, will ask the possible diagnosis [19].

Question: “What you will do next?”

Answer: Immediate next step: Insertion of a large-bore needle into the second intercostal space at the midclavicular line to release the pressure (Fig. 5.14) and then a portable chest X-ray followed by the insertion of a chest tube

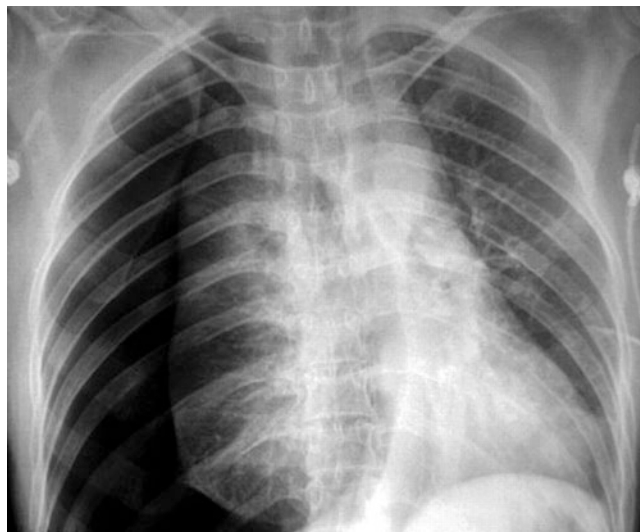


Fig. 5.13 Right-sided tension pneumothorax (please do not forget to mention the side). (Reprinted with permission from McRoberts et al. [18])

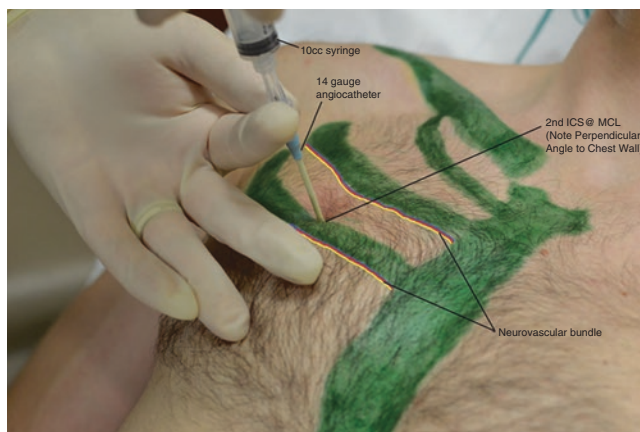


Fig. 5.14 Needle decompression at the second intercostal space (ICS). MCL midclavicular line. (Reprinted with permission from Greene and Callaway [20])

Further Management:

- Admit to hospital.
- Investigations: CBC, X-ray chest (portable), ABG analysis.
- Monitor vital signs and ABG.
- Thoracic surgery consult.
- Tetanus prophylaxis (penetrating injury).
- If hypotension persists: Look for other causes of the patient’s condition.

Question: “What are the causes for tension pneumothorax?”

Answer: “It is usually caused by a rupture of the pleura and can be spontaneous. The causes include asthma, COPD,

pneumonia, lung cancer, lung abscess, pulmonary tuberculosis, and trauma.”

Question: “What are other immediate life-threatening conditions caused by this?”

Answer: “Airway obstruction, open pneumothorax, massive hemothorax, pericardial tamponade, and flail chest”

Physical Examination: Hemothorax

Candidate Information:

A 25-year-old man was brought into the emergency room after a roadside accident. He is conscious and complaining of left-side chest pain and shortness of breath.

Vital Signs: HR, 101/min, regular; BP, 70/50 mm Hg; temp, 37 °C; RR, 21/min; O₂ saturation, 89%

Perform a relevant physical examination. Please do not perform rectal, genitourinary, or breast examination.

Differentials:

- Pneumothorax
- Hemothorax
- Atelectasis
- Pericardial tamponade
- Flail chest

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner if required or show your ID badge.
- Now sit on the chair or stand on the right side of the patient and start the interview.

This is a trauma case; proceed with **Advanced Trauma Life Support (ATLS)** steps.

Start by commenting on the given vital signs: “Patient has tachycardia, tachypnea, hypotension, and low O₂ saturation.”

Further comment: “I will evaluate the patient’s airway, breathing, and circulation during my examination to make sure that the patient is stable enough to continue with the examination and that he does not require any immediate intervention.”

“I have been asked to perform a detailed respiratory system examination. During the examination, if you feel uncomfortable, please let me know. Is it alright to start?”

(During the examination, the examiner will either tell you the findings with each part of the examination or at the end.)

General Physical Examination:

Observe the patient:

- Is he alert and conscious?
- Is he able to speak or does he have difficulty speaking?
- Observe for any obvious distress, sweating, pallor, or cyanosis.
- **Hands:**
 - Check for pulse.
 - Comment on rate, rhythm, and volume of the pulse: “Tachycardia, regular rhythm, and possible low volume.”
 - Check the hands and fingers for any abnormal findings.
- **Face:** Observe for cyanosis.
 - Nose: Flared
- **Trachea:**
 - Check for position: Deviated to the opposite site of hemothorax.
 - Look for use of accessory muscles; patient may be using them.
 - Look for distension of neck veins.

Chest Examination:

“I need to expose you from the neck down to the waist; is it alright?” Help the patient take off his shirt if he asks; otherwise let him do it and wait. Then, drape the patient if required by the station.

- Patient position: Sitting.
- Observe for respiratory rate and pattern.
- Comment: “Tachypnea may be present.”
- **Inspection:**
 - Look from the front, side, and back.
 - Observe the chest for: contour, shape, and skin.
- **Palpation:**
 - Warm up your hands.
 - Check for any tenderness: There may be localized tenderness on the left side of the chest (as this is a trauma case).
 - Chest expansion: Chest movements may be decreased on the side of the hemothorax.
 - Tactile fremitus: Decreased or absent on the side of the hemothorax.
- **Percussion:**
 - Findings: Percussion note will be dull over the hemothorax.
- **Chest auscultation:**
 - Inform the patient: “I am going to listen to your chest.”
 - Expected auscultation findings: Breath sounds may be decreased to absent over the hemothorax.
 - No added sound is usually heard.
 - **Cardiovascular system:** Quickly listen to the heart and measure the JVD.

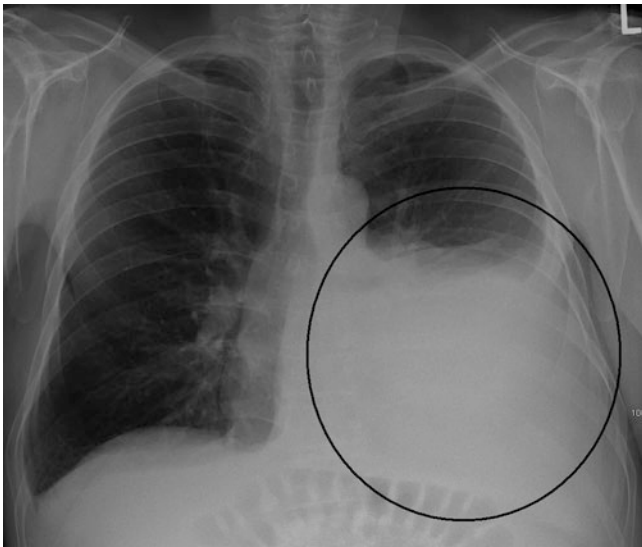


Fig. 5.15 A chest X-ray showing a large left-sided pleural effusion (please do not forget to mention the side). X-ray by James Heilman, MD, own work. (Reprinted under terms of CC BY-SA 3.0 license. <https://creativecommons.org/licenses/by-sa/3.0/>)

At the end of the auscultation, comment on your findings. Thank the patient and tell the patient they can now cover up.

Wrap-Up:

The examiner may either show an X-ray (Fig. 5.15) or, on the basis of your clinical findings, may ask for a possible diagnosis.

Question: “What you will do next?”

Answer: Immediate next step: Portable chest X-ray and then insertion of chest tube. Hemothorax can be confirmed by a CT scan.

Further Management:

- Admit to the hospital.
- Investigations: CBC, routine blood work up, ABG analysis.
- Monitor vital signs.
- Thoracic surgery consult.
- Tetanus prophylaxis, if penetrating injury.
- If hypotension persists: look for other causes of the patient’s conditions.

Question: “What are the causes?”

Answer: “The most common cause of hemothorax is chest (thoracic) trauma. Thoracic injury directly accounts for 20–25% of deaths from trauma. Hemothorax can also occur in persons who have:

- A blood clotting defect
- Chest (thoracic) or heart surgery
- Death of lung tissue (pulmonary infarction)
- Lung or pleural cancer, primary or secondary (metastatic, or from another site)
- A tear in a blood vessel caused by placing a central venous catheter or associated with severe high blood pressure
- Tuberculosis [21]”

Question: “What are the complications of chest tube insertion?”

Answer: “Common complications associated with chest tube insertion include bleeding and hemothorax due to intercostal artery perforation, perforation of visceral organs (lung, heart, or intra-abdominal organs), and perforation of major vascular structures such as the aorta or subclavian vessels, intercostal pain due to trauma of neurovascular bundles, subcutaneous emphysema, infection of the drainage site, pneumonia, and empyema. There may be other technical problems such as intermittent tube blockage from clotted blood, pus, or debris or incorrect positioning of the tube causing ineffective drainage.”

History: Lung Nodule

Candidate Information

A 52-year-old man, asymptomatic, has chest X-ray done during a routine insurance checkup. The X-ray report shows an incidental solitary lung nodule. The patient comes to your outpatient clinic for a follow-up.

Please take a detailed history. Discuss various differentials with the patient. No physical examination is required.

There will be an X-ray on the table, or the examiner will give you the X-ray before starting the interview (Fig. 5.16).

Differentials:

- Benign
 - Artifact
 - Benign lesion (bronchial adenoma, hamartoma)
 - Fluid-filled cyst
 - Pulmonary tuberculosis
 - Hematoma
 - Infarct/vascular lesion
 - Fungal (histoplasmosis, aspergilloma)
 - Lung abscess
- Malignant
 - Bronchogenic carcinoma (squamous cell carcinoma, adenocarcinoma, small cell carcinoma, large cell carcinoma)
 - Metastatic lesion from the breast, head and neck, melanoma, colon, kidney, or sarcoma

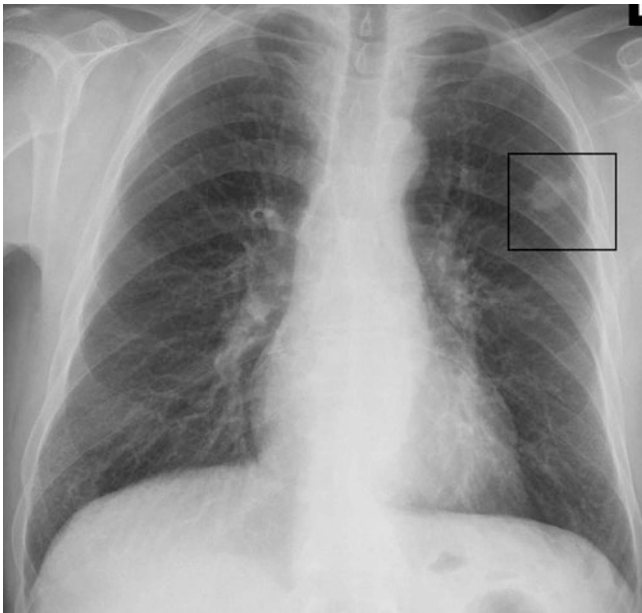


Fig. 5.16 Solitary pulmonary nodule (inside black box) in the left upper lobe. (Reprinted from: Lange123 at the German language Wikipedia (GFDL) <http://www.gnu.org/copyleft/fdl.html> under terms of Creative Commons license CC-BY-SA-3.0 <https://creativecommons.org/licenses/by-sa/3.0/>)

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr I am your attending physician. Are you Mr? Are you 52 years old?”

History of Present Illness:

“What brings you in the clinic today?” *The clinic called me and asked me to come in and discuss my X-ray results.*

Question: “What is going on, Doctor?”

Answer: Address the patient’s concern: “Mr..... we called you because we found a small spot in your X-ray. I need to ask you some questions to take a detailed history from you and at the end, we will discuss the plan. Is that alright?”

- “Why was the X-ray taken?” *For an insurance checkup.*
- “When was the X-ray ordered? *A few weeks back.*
- “Who ordered it?” *The insurance company physician.*

Associated Symptoms:

- “Do you have any cough?”
- “Do you have any shortness of breath?”
- “Have you noticed any wheezing?”
- “Are you spitting up any phlegm?” If yes, then ask: “Is there any blood with it?”

Go through your differentials:

- Upper respiratory tract symptoms – Nasal discharge, sore throat, dryness of mouth, difficulty swallowing, or hoarseness.
- Chest pain – Ask questions regarding pain and the presence of racing heart, nausea, vomiting, or syncope.

Constitutional Symptoms:

- Fever, chills, night sweats, weight loss, loss of appetite
- Pain anywhere else in body (i.e., bone pain)
- Any seizures or neurological deficit, dizziness
- Lumps in the neck or anywhere else in the body
- Change in eye size

Risk Factors:

- “Have you had any recent contact with sick people, such as individuals with tuberculosis?”
- “Have you ever been screened for tuberculosis?”
- “Do you have any pain in your legs?”
- “Have you travelled recently?”
- “Are you exposed to any hazardous substances such as asbestos?”
- “Do you have any pets at home?”
- “Do you smoke?” If so: “How long have you been smoking? How many cigarettes per day and have you ever tried to quit?”
- “Do you do any drugs?”

Past Medical History:

- “Do you have any previous health issues?”
- “Any lung, heart, or kidney diseases? Any immunocompromised states?”
- “Have you ever had cancer?” If so, “Was it treated?”

Past Hospitalization and Surgical History:

“Have you ever been hospitalized or undergone surgery?”

Medication History:

“Are you taking any medication?” If not, then continue to next question. Otherwise ask about over-the-counter medications or herbals and any side effects, as well as the use of any puffers such as salbutamol or Spiriva.

Allergic History:

“Do you have any known allergies?”

Family History:

“Is there a history of any lung diseases or chronic health issues in your family?”

Social History:

- “Do you or does anyone else in your home or close to you at work smoke? Do you drink alcohol?” If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which ones? How long? When?”

Relationships:

“Are you sexually active? Do you have sex with men, women, or both?”

Self-Care and Living Conditions:

“What do you do for living? Who lives with you?”

Work Conditions and Financial Status:

“Are there any renovations underway at your home or work?”

Support:

“Do you have good support from your family and friends?”

Wrap-Up:

“I would like to do a detailed physical examination.”

Investigations: “I will look at any available previous chest X-rays for comparison and look for the same nodule.”

Describe the Diagnosis: “I have reviewed your current and previous (if available) chest X-rays. I have also read the radiologist report. You have a lesion in your lung called a solitary pulmonary nodule or a lung nodule.”

Question: “What is a lung nodule?”

Answer: “By definition, it is a small, round or oval, well-defined margins/borders, ball-shaped spot seen on the X-ray. It can range in size from smaller than a pea to the size of a golf ball or larger. It may or may not be calcified and is usually surrounded by normal lung tissue.”

“Your doctor can see it on a chest X-ray or CT scan. Most of the time, there are no symptoms.”

Question: “Does a lung nodule mean cancer?”

Answer: “About 70% of nodules are benign, or not cancerous. Infectious granulomas are the most common cause of benign nodules. The other common causes of benign lesions are abscesses, cysts, and benign tumors named as hamartoma

or fibroma. Granulomas are formed when a group of immune cells in your body tries to fight an infection.”

Question: “What are the features of benign lesions on X-ray?”

Answer: “Less than 3 cm in size, smooth margins, calcified pattern either central or popcorn (hamartoma), usually no cavity. Size doubling time can be less than a month or more than 2 years.”

Question: “Could it be cancer?”

Answer: “A lung nodule can also be malignant or cancerous, or it may turn into a cancer. Patients who smoke or have smoked in the past, who are older than 40 years, and who have other types of cancers are at higher risk of getting lung cancer. There is a 30% chance that it is malignant (bronchogenic carcinoma such as squamous cell carcinoma, adenocarcinoma, or small cell carcinoma). It could also be a metastatic lesion from the breast, head, and neck or a melanoma.”

Investigations:

- O₂ saturation
- ABGs
- Labs: CBC, electrolytes, liver panel, kidney function test, lipid profile, and blood sugar
- Sputum cytology
- Pulmonary function test
- Chest CT
- PET scan
- Biopsy or excision of the nodule

Question: “How it should be followed up?”

Answer: “We will usually look at X-rays and CT scans of your chest to check a lung nodule. We may also review old X-rays or CT scans to see if the nodule is old or new or has changed over time.”

“We may need to watch the nodule over time with several CT scans. The scans may be done 3, 6, or 12 months apart to make sure the nodule is not growing.”

Question: “What if the nodule is malignant or growing?”

Answer: “We may need to send you to a lung or cancer specialist if your nodule is growing or if we suspect that it may be malignant. The specialist might do a biopsy, which is when a doctor takes out a small piece of lung tissue and examines it under a microscope to see if it is cancerous.”

Further Information

- Warning signs
- Information through websites, such as <http://www.aafp.org/afp/2015/1215/p1084.html> [22]
- Flu shot every year in the fall and pneumococcal vaccine if over 65 or at risk

Follow-Up:

Discuss a follow-up visit according to the diagnosis.

“Do you have any questions?”

History: Lung Cancer**Candidate Information:**

A 52-year-old man comes in the clinic with cough, blood in sputum, and weight loss for 6 months.

Please take a detailed history. Give a management plan.

Differentials:

- Pulmonary tuberculosis
- Bronchiectasis
- Emphysema
- Malignant:
 - Bronchogenic carcinoma (squamous cell carcinoma, adenocarcinoma, small cell carcinoma, large cell carcinoma)
 - Metastatic lesions from breast, head and neck, melanoma, colon, kidney, or sarcoma

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview,

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician. Are you Mr ...? Are you 52 years old?”

History of Present Illness:

- “How can I help you today?” *Doc, I am very worried about myself, I coughed out some blood!!*
- Show empathy: “I am sorry to hear about that; that must be really scary.”
- Quickly evaluate the patient to determine if the patient needs any immediate intervention.
- Show support: “I am here to help you. I am going to ask you few questions.”

- “How are you now? Are you able to answer some questions?”
- “Are you comfortable sitting or do you want to lie down?”
- “Are you feeling dizzy/tired or losing consciousness?”
- **Ask for a set of vitals from the examiner and comment: “I just want to make sure my patient is stable enough to proceed with the history.”**
- “When did you cough up blood?” *I have been noticing it for the last few days. Since last night it has increased in quantity.*
- “Did you cough up blood or vomit blood?” *Coughed up.*
- “How much blood?” *About a cup during the night, otherwise it was just a small amount mixed with phlegm.*
- “What was the color?” (bright red/pink/brown/rusty or like coffee ground appearance) *Bright red.*
- “Was it pure blood or was mucus mixed with the blood?” *It was mixed with phlegm.*
- “How long has this been going on for?” *For about a month.*
- “Have you had an ongoing cough?” *Yes.*
- **Cough questions:**
 - “Is the cough continuous or does it come and go?”
 - “Is the cough present all the time or does it worsen at any particular time of the day?”
 - “Does your cough come with a certain position such as lying down?”
 - “Is your cough worsening with time?”
 - “How long does each bout of coughing last for?”
 - “Does anything increase or decrease this cough?” *Nothing particular.*
 - “Any hoarseness of your voice?” *No.*

Associated Symptoms:

- If shortness of breath is present, then ask a few questions about it: “Wheezing? Does it come on with any change in position?”
- Upper respiratory tract symptoms – Nasal discharge, sore throat, dryness of mouth, difficulty swallowing, or hoarseness.
- Chest pain – Ask questions regarding pain and the presence of racing heart, nausea, vomiting, or syncope.
- Constitutional symptoms:
 - “Have you noticed any fever?” *Yes, I’ve had a fever off and on and feel very tired.*
 - “Have you noticed any chills/rigors or night sweats?” *Yes, I have chills and have had night sweats two to three times.*
 - “Do you have pain anywhere else in your body? Any bone pain?”
 - “Have you lost any weight?” *Yes, I have noticed that I lost about 12 lb in the last 3 months.*
 - “How is your appetite?” *I do not feel like eating.*

Risk Factors:

- “Have you had any recent contact with sick people, such as individuals with tuberculosis?”
- “Have you ever been screened for tuberculosis?”
- “Do you have any pain in your legs?”
- “Have you travelled recently?”
- “Are you exposed to any hazardous substances such as asbestos?”
- “Do you have any pets at home?”
- “Do you smoke?” If so, “How long have you been smoking? How many cigarettes per day and have you ever tried to quit?”
- “Do you do any drugs?”
- “Have you had bleeding anywhere else? In the gums?”

Symptom and Presentation by Location of the Tumor Spread:

- **Pain:** Patient will have increased pain as the tumor grows in size and spreads along the chest wall and ribs.
- **Lung, hilum, mediastinum or pleura:** Pleural effusion, atelectasis, and wheezing
- **Hoarseness:** Involvement of the recurrent laryngeal nerve.
- **Lung apex (Pancoast tumor):** Pain, muscle wasting, and change in temperature sensation secondary to involvement of the sympathetic chain and Horner’s syndrome (ptosis, miosis, and anhidrosis).
- **Pleuritic chest pain:** Due to involvement of the pleura.
- **Superior vena cava (SVC) obstruction:** Neck and facial swelling with cough and shortness of breath.
- **Brain:** Any seizures or neurological deficit, dizziness.
- **Lumps** in the neck or anywhere in the body.
- **Phrenic N:** Paralysis of diaphragm.
- **Distant metastasis:** In the brain, liver, or bones.
- **Paraneoplastic syndrome:** Most commonly seen in small cell lung cancer (SCLC).
- Look for hypercalcemia, SIADH, Cushing syndrome, hypoglycemia, gynecomastia, Lambert-Eaton syndrome, peripheral neuropathy, cerebellar degeneration, clubbing, hypertrophic osteoarthropathy, and glomerulonephritis.

Past Medical History:

- “Do you have any previous health issues?”
- “Any lung, heart, or kidney disease problems? Any immunocompromised states?”
- “Do you have a previous history of cancer?” If so, “Was it treated?”

Past Hospitalization and Surgical History:

“Have you ever been hospitalized or undergone surgery?”

Medication History:

“Are you taking any medication?” If not then continue on to the next question. Otherwise ask about over-the-counter

medications or herbals and any side effects. Ask about the use of puffers such as salbutamol or Spiriva.

Allergic History:

“Do you have any known allergies?”

Family History:

“Is there a history of lung disease or any chronic health issues in your family?”

Social History:

- “Do you, or does anyone else in your home or close to you at work, smoke? Do you drink alcohol?” If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes: “Which ones? How long? When?”

Relationships:

“Are you sexually active? Do you have sex with men, women, or both?”

Self-Care and Living Condition:

“What do you do for living? Who lives with you?”

Support:

“Do you have good support from your friends and family?”

Wrap-Up**Question: “What would you do next?”**

Answer: “I would like to do a detailed physical examination and to run some tests.”

Investigations:

Suggest the following:

- O₂ saturation
- ABGs
- CBC, electrolytes, liver panel, calcium
- Pulmonary function test
- Chest X-ray/CT
- Sputum for cytology

Further Staging Workup:

- Bronchoscopy and biopsy
- CT abdomen
- PET scan
- Bone scan
- Mediastinoscopy

Describe the Diagnosis:

“After our discussion today, unfortunately, I think there is a slight chance that you might be suffering from lung cancer. I cannot say that with certainty, but your history is suggesting

this. I need to examine you now, after which we will do some lab tests, send a phlegm sample for examination, and take a chest X-ray. I will follow up on your results, at which point I can arrange a visit to a lung specialist if that is required.”

Further Information

- Quit smoking programs
- Warning signs
- Information through websites
- Flu shot every year in the fall and pneumococcal vaccine for individuals over 65 and at risk

Follow-Up:

Discuss a follow-up visit. Finish the conversation by asking “Do you have any questions?”

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The Gastrointestinal System

6

Mubashar Hussain Sherazi

History Overview: The Gastrointestinal System

In the Objective Structured Clinical Examination (OSCE), you may or may not get one station related to the gastrointestinal (GI) system. Usually the scenario includes a detailed history with relevant physical examination. Abdominal examination is very important for OSCE. You may also be asked to perform an abdominal examination as part of a general surgery scenario. Abdominal pain is a very common and important station for OSCE, so it is important to practice various abdominal pain cases. (Some cases are explained in detail in the General Surgery chapter.) Sometimes you may be asked to manage a case of upper or lower gastrointestinal bleeding.

This chapter outlines a few important gastrointestinal cases. The chapter begins with an overview of the history taking (Table 6.1), followed by abdominal examination, and some common gastrointestinal presentations.

Common Signs and Symptoms for the Objective Structured Clinical Examination

For the gastrointestinal (GI) system, common presenting symptoms are:

- Difficulty in swallowing
- Nausea and vomiting
- Hematemesis
- Bloating/gas
- Reflux
- Mass
- Diarrhea
- Melena

- Loss of appetite
- Constipation
- Abdominal pain
- Jaundice
- Weight loss

Detailed History: The Gastrointestinal System

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your identification (ID).
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr...I am your attending physician for today. Are you Mr/Mrs/Miss...? Are you ...years old?”

Chief Complaint:

Chief complaint or the reason patient is visiting the clinic. “What brings you in today?”

History of Present Illness:

Chief Complaint:

- Onset
- Course
- Duration
- Progression
- Severity of symptoms

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Table 6.1 Quick overview of the gastrointestinal system history

Introduction
Name and age
Chief complaint
In patient's own words
History of present illness
Analysis of chief complaint:
Onset
Course
Duration
If pain
Location: right upper quadrant (RUQ), right lower quadrant (RLQ), left upper quadrant (LUQ), left lower quadrant (LLQ), epigastrium, suprapubic, or flanks
Progression
Quality
Radiation
Severity (1–10)
Timing
Associated symptoms: nausea, vomiting, diarrhea, constipation, change in bowel habits, reflux, appetite, blood in vomiting/feces/urine, jaundice
Predisposing factors
Aggravating and relieving factors
Red flags/risk factors
Constitutional symptoms: anorexia, chills, sweating, fever, weight loss
Review of systems:
Respiratory
Genitourinary
Cardiovascular
Neurology
Impact on body
Rule out differential diagnosis
Past medical and surgical history
Medical illnesses
Any previous or recent surgery
Hospitalization history or emergency admission history
History of hepatitis, previous blood transfusion, inflammatory bowel disease
HIV testing? (consent first) hepatitis profile and vaccination history for hepatitis B
Medications history:
Current medications (prescribed, over-the-counter, and any herbal)
Laxatives, antacids
Allergic history/triggers:
Any known allergies?
Family history
Family history of same symptoms
Family history of any long-term or specific medical illness (inflammatory bowel disease/bowel cancers)
Any long-term disease
Home situation
With whom do you live?
Occupation history
How do you support yourself?

(continued)

Table 6.1 (continued)

Social history
Smoking
Alcohol
Street drugs
Sexual history
Tattoos
If adult female:
Menstrual history (LMP)
Gynecology history
Obstetric history
If teen:
Home
Education
Employment
Activities
Drugs
Sexual activity
If child:
Birth history
Immunization
Nutrition
Development
Wrap-up
Describe the diagnosis
Management plan
Possible medical treatment
Duration of treatment and side effects
Red flags
Laboratory tests
Further information websites/brochures/support groups or societies/toll-free numbers
Follow-up

Pain Questions:

- Onset: “When did the pain start?”
- Course: “How did it start (suddenly or gradually)?”
- Duration: “How long have you had this pain?”
- Location: “Where does the pain start?” Then clarify the area: right upper quadrant (RUQ), right lower quadrant (RLQ), left upper quadrant (LUQ), left lower quadrant (LLQ), suprapubic, epigastrium, or flanks.
- Character: “What is the pain like?”
- Progression: “Is the pain progressing?”
- Severity: “From 0–10 with 10 being the worst pain and 0 as no pain, how is your pain now? What was the maximum pain? When?”
- Radiation: “Does the pain move anywhere?”
- Timing (Time of the day): “Is there any specific time when the pain appears?”
- Same pain before: “Have you ever had similar pain before?”
- Aggravating: “Anything that increases the pain?”
- Alleviating: “Anything that relieves the pain?”

Associated Symptoms:

- Nausea
- Vomiting. If yes, ask about:
 - Times, last vomit, contents, odor, amount, blood?
 - If the patient has vomited multiple times and intake was low, then add questions about dehydration.
- Diarrhea. If yes, ask about:
 - Times, last episode, contents, odor, amount, blood?
 - If the patient has multiple episodes of loose stools and intake was low, then add questions about dehydration.
- Constipation
- Change in bowel habits
- Acid reflux
- Appetite
- Blood in vomiting or bowel movements or urine
- Jaundice

Malignancy Symptoms: abdominal distension, pain abdomen, constipation, weight loss, fever, fatigue, anemia, and bleeding per rectum

Constitutional Symptoms: Fatigue and malaise, night sweat, fever, and weight loss

Review of Systems and Extra-articular Features:

- **Urine:** Hematuria, change in color of urine, dysuria, polyuria, change in frequency of urine, nocturia, and anuria
- **Skin:** Malar rash, nodules, alopecia, nail pitting/clubbing, erythema nodosum, and pyoderma gangrenosum
- **Eyes:** Iritis, scleritis, and conjunctivitis
- **Mouth:** Ulceration/erosion
- **Respiratory system:** History of tuberculosis, pulmonary fibrosis, and pulmonary nodules
- **Gastroenterology:** Gastroesophageal reflux disease (GERD), small bowel obstruction, and malabsorption
- **Liver disease:** Nausea, vomiting, anorexia, abdominal distension, blood in vomiting or blood with bowel movements, easy bruising, impotence, change in normal sleep pattern, confusion, bad taste, and jaundice (yellowness of the eyes or skin)

Past Medical History:

- “Do you have any previous health issues?”
- “Do you have any health issues related to your lung, heart, or kidney?”
- “Did you ever have a tuberculosis test?”
- “Previous blood transfusion?”
- “Inflammatory bowel disease or irritable bowel syndrome?”
- “Do you have any previous hospitalization or previous surgery?”

- “History of hepatitis, hepatitis profile, and vaccination history for hepatitis B?”
- “Human immunodeficiency virus (HIV) testing (need consent first)?”
- “Previous blood transfusion?”
- “Tattoos?”
- “Inflammatory bowel disease?”
- “Hospitalization history or emergency admission history?”

Medications History:

- Current medications (prescribed, over-the-counter, and any herbal).
- Laxatives and antacids.
- If diarrhea then ask about use of recent antibiotics.

Allergic History: Do you have any known allergies?

Family History:

- “Has anyone in your family had similar symptoms or similar health problem?”
- “Family history of any long-term or specific medical illness (inflammatory bowel disease)?”

Social History:

- “Do you smoke? Do you drink alcohol?” If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which one? How long? When?”
- “Ear and body piercing and tattoos?”
- “Intravenous (IV) drug use?”
- “Recent travel?”

Relationships: “Are you sexually active? Do you have sexual preferences? Man, woman, or both?”

Self-Care and Living Condition: “What do you do for living? Who lives with you?”

Support: “Do you have good family and friends support?”

Impact on Life/Disability and Adaptation: “Effects on life? Any effect on your daily activity?”

If Patient Is a Teenager, Then Add These Questions: Home, education, employment, activities, drugs, and sexual activity

If Patient Is an Adult Female, Then Ask These Questions:

- Menstrual history (last menstrual period [LMP])
- Gynecology history
- Obstetrics history

If Patient Is More Than 65 Years Old, Add These Questions Here:

- Any problem with balance?
- Any difficulty in peeing/urination?
- Any issues with sleeping?
- Any change in vision/hearing?
- Any recent change in memory?
- Any regular medication? Prescribed or over-the-counter?

Wrap-Up:

- Describe the diagnosis.
- Laboratory tests.
- Management plan.
- Duration of treatment and side effects.
- Red flags.
- Further information: Websites/brochures/support groups or societies.
- Follow-up.

Physical Examination: The Gastrointestinal System

A 32-year-old male, with abdominal pain for 1 week, comes into your clinic.

Vital Signs: Heart rate (HR), 76/min, regular; blood pressure (BP), 120/75 mm Hg; Temp, 36.8 °C; respiratory rate (RR), 16/min; O₂ saturation 100%.

Please perform a detailed gastrointestinal system examination. Please do not perform rectal, genitourinary, or breast examination.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Stand on the right side of the patient and start the examination.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician. Are you Mr...? Are you 32 years old? Is it alright, if I examine your abdomen? I will also do some particular tests to find out the cause of your symptoms. During the examination, if you feel uncomfortable, please let me know.”

Vitals:

Start with commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.) “Mr..., vital signs are

normal” or mention if there is any abnormal finding. Or comment like, “He has tachycardia or fever.”

General Appearance:

- “I need to ask you a couple of questions as a part of my examination: What is the date today? Do you know where you are now?” (You may skip these questions if it is a history and physical station.)
- Comment: “Patient is oriented and alert.” “Patient is not in any distress.” Or “patient is sitting comfortably and he is well oriented and alert.”

General Physical Examination:

- It should start with height, weight, waist circumference (body mass index [BMI]) and general nutritional status (just mention).
- **Hands:** “I want to start with examining your hands. Can you please let me see your hands?” Look for capillary refill, clubbing, koilonychia (spoon-shaped nails – iron deficiency anemia), leukonychia (white nails – liver disease), palmar erythema, nicotine stains, peripheral cyanosis, (bluish cool fingers/toes), muscle wasting (thenar and hypothenar muscles) and contractures (Dupuytren’s).
- **Asterixis (flapping tremors):** “I want you to extend both your arms and back flex your hands. I will show you how to do it. Please follow me. Now you can close your eyes.” Watch for the patient’s wrist and fingers for a flap because of a brief rapid relaxation of wrist dorsiflexion (Fig. 6.1a–c).
- **Pulse:** Engage the patient by saying, “I am going to feel your pulse now.” Comment on rate, rhythm and volume of pulse.
- **Face:** Look for pallor, jaundice, plethora (pink), central cyanosis (blue lips and buccal mucosa SO₂ <80%), cushingoid (moon face round and puffy), myosis, and ptosis (Horner’s syndrome).
 - Nose: Nasal flaring and perforated septum.
 - Lips: Pursed lips, cheilosis, and dryness.
 - Mouth: please open your mouth and any bad smell (fedor).
 - Look at the tongue for: Moist/dry, ulcers, thrush, central cyanosis, and glossitis.
 - Check gums for any bleeding.
- **Neck:** “I am going to feel your neck now.”
 - Trachea: Position (central or mid line) and mobility
 - Jugular vein distention (JVD)
 - Cervical lymph nodes
- **Chest:** Inform the patient, “I am going to examine your chest first.” Examine chest only if it is a detailed physical examination station. If it is a history and physical examination station, it can be skipped.
 - “Can you please uncover your chest?” Look anteriorly and posteriorly.
 - Comment on your findings: “Chest is symmetrical, normal shape (no barrel, funnel, or pigeon chest), no

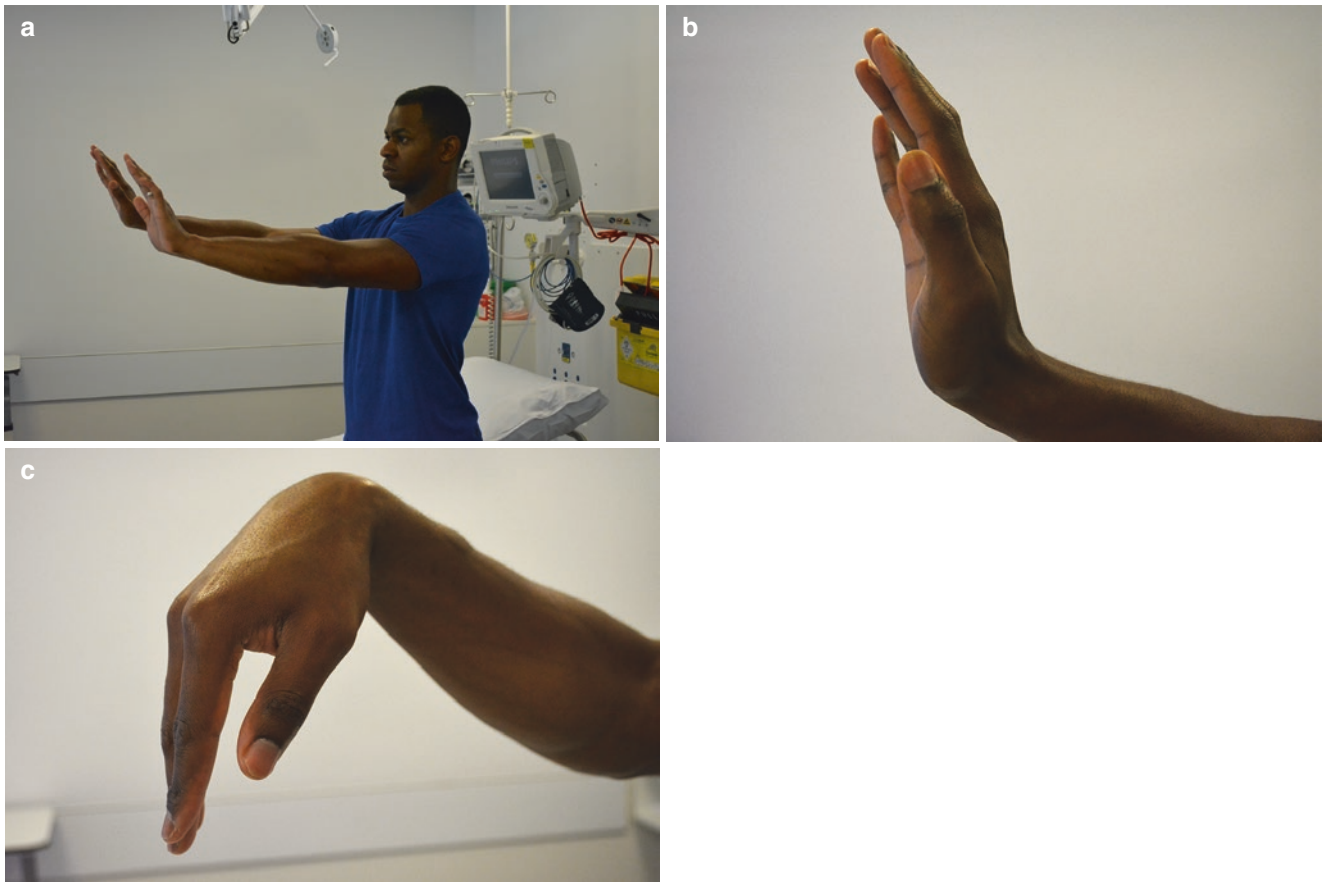


Fig. 6.1 Checking hands for asterixis. (a) Patient extends arms. (b) Patient flexes hand up and (c) down

surgical scars or dilated veins, no gynecomastia, no axillary hair loss.”

- Do a quick auscultation of the heart and move on to abdomen inspection.

Abdominal Examination:

- **Posture:** Patient lying flat with his arms on the sides (Fig. 6.2). Knees can be flexed to relax the abdomen. “I will start with inspecting or observing your abdomen. Is it alright if I expose you abdomen from the ribs to the waist below?” (Please do not expose the breasts or the inguinal area.) Drape the patient.
- **Observe for:**
 - Skin: Scars, striae, dilated veins, jaundice, and ulceration
 - Umbilicus: Position, contour, location, color (bluish: Cullen sign), and any herniation.
- **Contour:** Symmetrical or asymmetric, flat/bulging/protruberant, scaphoid, visible mass, and visible organs (Fig. 6.3).
- **Skin:** Scar marks, dilated veins, spider naevi, intercostal retractions, jaundice, or ulceration.
- **Movements:** Abdominal thoracic in case of male.
- **Peristalsis:** Visible/no visible peristalsis.
- **Pulsation:** Check for aortic pulsation (abdominal aortic aneurysm).
- **Ask patient to cough:** Check for any visible hernias – umbilical area, epigastric area, inguinal/femoral (just mention – usually not to be exposed).
- **Observe patient posture:**
 - Completely still – peritonitis
 - Moving in distress – colic
 - Curled up in fetal position – visceral pain
 - Lying with one hip flexed – splinting
- **Distended abdomen:**
 - **Common causes:** Fat, feces, flatus, fluid, fetus, or fatal growth
- **Comment:** Abdomen is scaphoid; umbilicus is central and inverted. No visible abnormal finding seen.

Auscultation:

- **Bowel sounds:** Then say, “I am going to listen to your bowel sounds with my stethoscope.” Rub the diaphragm to show you are warming it up. Auscultate in at least two quadrants for 30 s each, but do not spend too much time on it. Listen for: clicks, gurgles, or borborygmi (loud and prolonged gurgles) (Table 6.2).
- **Bowel sounds findings:**
 - Decreased or absent: Ileus or peritonitis
 - Increased: Diarrhea or early obstruction
 - Intermittent crescendo with pain onset: Small bowel obstruction

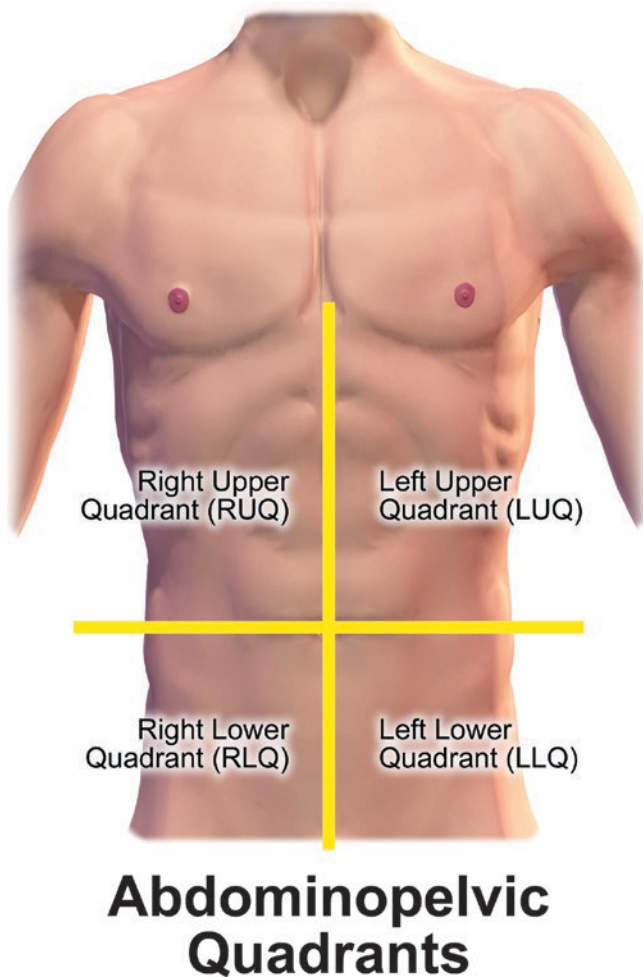


Fig. 6.2 Abdominopelvic quadrants. (Reprinted under terms of Creative Commons license from Blausen.com staff [1]. Own work <https://creativecommons.org/licenses/by/3.0/>)



Fig. 6.3 Note the shape of the abdomen: flat, scaphoid, or distended

Table 6.2 Auscultation for bowel sounds

Bowel sounds	
Absent	No bowel sounds for 5 min
Hypoactive	Bowel sounds are fewer than 5 per minute
Active	Bowel sounds occur 5–30 per minute
Hyperactive	Bowel sounds are more than 30 per minute

Bruits:

- Vascular bruits: Aortic, iliac, and renal arteries
- Hepatic bruit: Hepatic cancer or alcoholic hepatitis
- Venous hum: Portal hypertension
- Comment: No aortic, renal, iliac, or hepatic bruits

Palpation:

Warm up your hands (rub your hands for few seconds to let patient and examiner know you are warming up your hands for patient comfort especially in cold weather).

I usually start palpation of the abdomen with this question: “Do you have pain anywhere in your abdomen?” Or ask the patient to cough and ask if patient is tender anywhere. Then remember to examine the tender area at the end. Inform the patient while putting hand on the abdomen, “I am starting now to feel your abdomen.”

- **Superficial/light palpation:** Gently palpate each quadrant (Fig. 6.4). Make sure to go through all the areas. Feel for any tenderness, mass, or muscular resistance. A simple and easy-to-remember way will be to start from LLQ to LUQ; then epigastrium, umbilical to suprapubic; and then RLQ to RUQ.
- **Deep palpation:** (Fig. 6.5) Again palpate for all four quadrants but this time with deeper palpation. Feel for any tenderness or lump/mass.
- **Specific signs:**
 - **Rebound tenderness:** If there is any area of tenderness then inform the patient that you want to do a little test, which consists of pressing firmly with your fingers on the area of tenderness and abruptly releasing the pressure from hand. Ask the patient whether the pain was more on pressing or releasing the pressure. Increase of pain on removing the pressure is rebound tenderness. It is a sign of local or diffuse peritoneal irritation by inflammation.
 - **McBurney’ point:** This particular site is one-third the distance between the anterior superior iliac supine and the umbilicus (Fig. 6.6). Tenderness at this site is the sign of appendicitis [2].
 - **Rovsing’s sign:** Tell the patient, “I am going to press on the left side of your abdomen and please let me know if you feel increasing pain on your right lower abdomen.” If the sign is positive, it is also a classical sign of appendicitis (Fig. 6.7) [4].



Fig. 6.4 Lightly palpate each quadrant of the abdomen



Fig. 6.5 Murphy's sign



Fig. 6.6 McBurney's point

- **Psoas sign:** Place the patient in left decubitus and extend right leg at the hip (Fig. 6.8). If there is pain with this movement, then the sign is positive. The sign

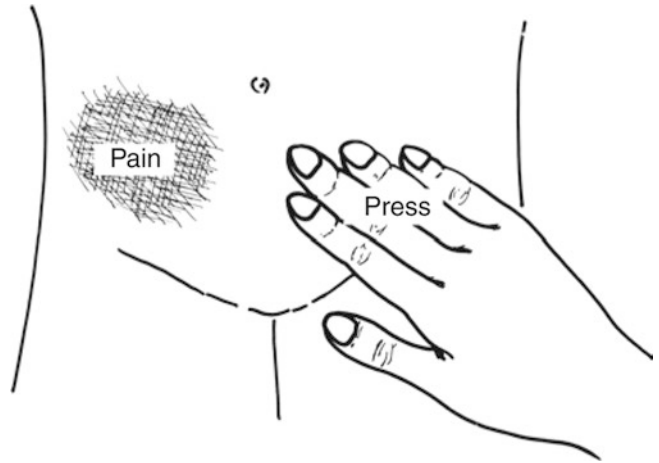


Fig. 6.7 Rovsing's sign. Deep palpation of the left iliac fossa causes pain in the right iliac fossa. (Reprinted with permission from Hutson and Beasley [3])



Fig. 6.8 Psoas sign

is positive in psoas muscle irritation. Occasionally the appendix lies on the psoas muscle, and the patient will lie with the right hip flexed for pain relief.

- **Obturator's sign:** Tell the patient, "I am going to flex your right thigh at the hip with the knee bent." Rotate the leg internally at the hip (Fig. 6.9). Increasing pain suggests obturator muscle irritation and is also seen in cases of acute appendicitis.
- **Murphy's sign:** It is performed by asking the patient to breathe out, and then gently palpate the right subcostal area and ask the patient to inspire deeply. If the patient feels pain upon this maneuver and holds breath, the sign is positive and is a sign of cholecystitis.
- **Courvoisier's sign:** Comment while palpating the RUQ. Palpable distended painless gallbladder. This sign is positive in gall bladder cancer [5].
- **Liver palpation:** The patient should be positioned supine. Both arms at the sides. Place your right hand paralleled to



Fig. 6.9 Obturator's sign

the abdomen wall starting from the RLQ. Ask the patient to take deep breaths in and out. While the patient is in inspiration, push inward and upward, and repeat until the edge of the liver is felt on the finger tips. Measure the liver length below the costal margin in midclavicular line. Mention, “The liver is ... cm below the costal margin.” Also mention about the edge of the liver that the edge of the liver is soft, firm, smooth nodular, tender, or not tender.

- **Liver percussion:** Let the patient know that you will be tapping on the abdomen. Start in the RLQ below the umbilicus in the midclavicular line, and percuss upward toward the costal margin. Identify and mark the area where the tympanic note becomes dull. The second step is to start percussing in the midclavicular line in the second or third intercostal spaces going downward toward the RUQ. Note the area where the resonant note becomes dull. Measure the distance between the two marks. It will be the liver span and it should be 6–12 cm at the midclavicular line (Fig. 6.10).
- **Spleen palpation:** Start with the patient supine and arms at the sides. Inform the patient, “I am going to lift your left side.” With the left hand, lift the patient’s left rib cage upward. Place your right hand obliquely on the abdomen pointed toward the anterior axillary line starting from the RLQ moving toward the LUQ. During inspiration, push inward and upward, and repeat until the edge of the spleen is felt on your fingertips (Fig. 6.11a). Comment that the spleen is not enlarged.
- **Spleen percussion:**
 - **Castell’s sign:** Percuss the tenth intercostal space at the left mid-axillary line (Fig. 6.11b). The note should be tympanic. Ask the patient to take a deep breath and percuss again. The percussion note should remain tympanic if the spleen is normal in size. If the spleen is enlarged, then the note will change to dull, and Castell’s sign will be positive.

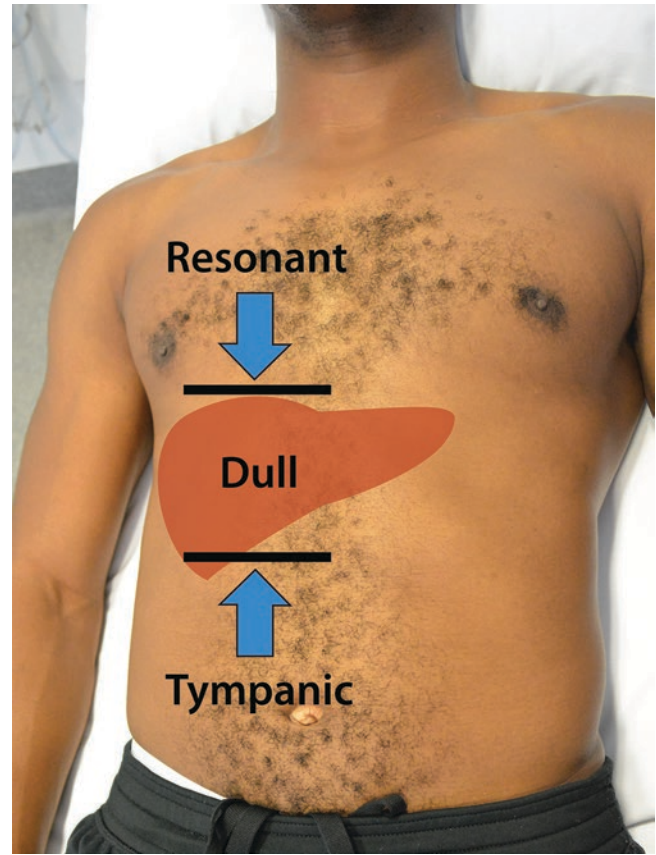


Fig. 6.10 Liver percussion

- **Traube’s space:** Percuss along the left lower anterior chest wall between the area of lung resonance above and the costal margin below. There will be dullness in this space if the spleen is enlarged.
- **Nixon’s sign:** Turn the patient to the left lateral decubitus position, and start percussing at the midpoint of the left costal margin. Then continue percussing in a perpendicular line toward the axillary region. In case of splenic enlargement, the dullness will be more than 8 cm.
- **Kidney palpation:** Kidneys are not palpable in adults. Inform the patient, “Now I am lifting your right side upward.” With your left hand, lift the patient’s right flank upward (below the rib cage). With the right hand, palpate deeply (Fig. 6.12). Then repeat it on other side. Comment that the kidneys are not palpable.
- **Costovertebral angle (CVA) tenderness:** Ask the patient to sit up. Inform the patient, “I will tap on your back.” Make a fist, and tap gently and repeatedly on the right CVA and then on the left side (Fig. 6.13).
 - Ask the patient: *Does it hurt?*
 - Comment: *There is CVA tenderness.*

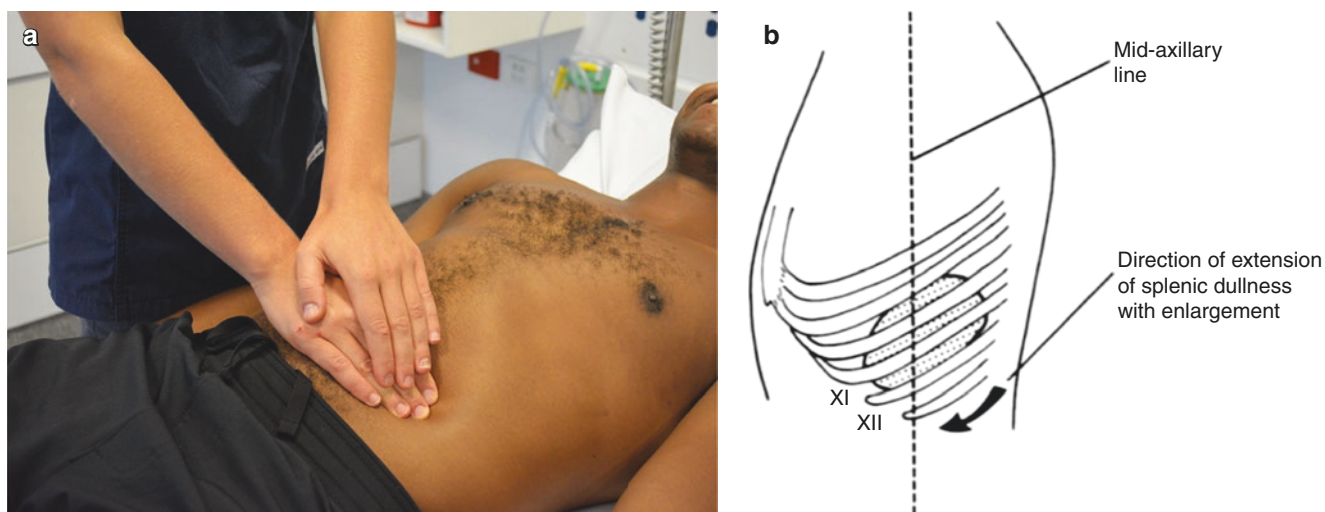


Fig. 6.11 (a) Splenic palpation. (b) The common direction of splenic enlargement. An early sign of splenic enlargement is the extension of splenic dullness to percussion anterior to the mid-axillary line along the

line of the tenth rib. (Figure 6.11b reprinted with permission from Bergman and Heidger [6])



Fig. 6.12 Kidney palpation



Fig. 6.13 Checking for costovertebral angle tenderness

Percussion:

Percussion should be done in four quadrants. The notes should be tympanic. There may be areas of dullness because of fluid or feces.

- **Fluid thrill and shifting dullness:** Both tests are performed to check for ascites. It becomes detectable once there is ~500 ml of fluid. The patient will tell about an increase in waist size and increase in weight. It is always started with inspecting for protuberant abdomen, bulging umbilicus, and flanks. Fluid thrill or fluid wave is done by asking the patient to put hypothenar aspect of one or both hands in the midline of the abdomen. This helps in stopping the transmission of wave through the abdominal wall fat. Then let the patient know that you will be tapping on one side of the abdomen. Tap on the right or left side of the flank with your finger tip and feel on the opposite side

for a transmitted wave. A palpable fluid wave/thrill is indicative of ascites.

- **Shifting dullness:** You should let the patient know that you will be tapping on the abdomen, then start percussion from the midline going outward. The usual percussion note in the midline will be tympanic, and it will become a dull note in the flanks. Guide the patient to turn onto the other side, then wait for 20–30 s; this area percussion note will change from dull to tympanic. It is because the ascetic fluid will sink with gravity and the bowel loops with gas float on the top (Fig. 6.14).

Hernia Examination:

“I would like to check for groin hernias.” (The examiner will give the findings but will not expose.) Umbilical, paraumbilical, inguinal, femoral, spigelian, and incisional hernias

Fig. 6.14 Shifting dullness in ascites

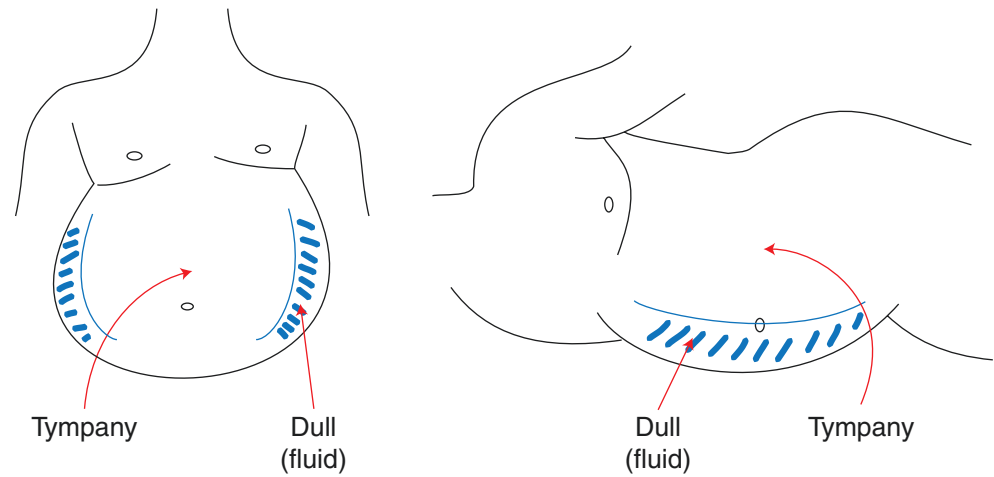
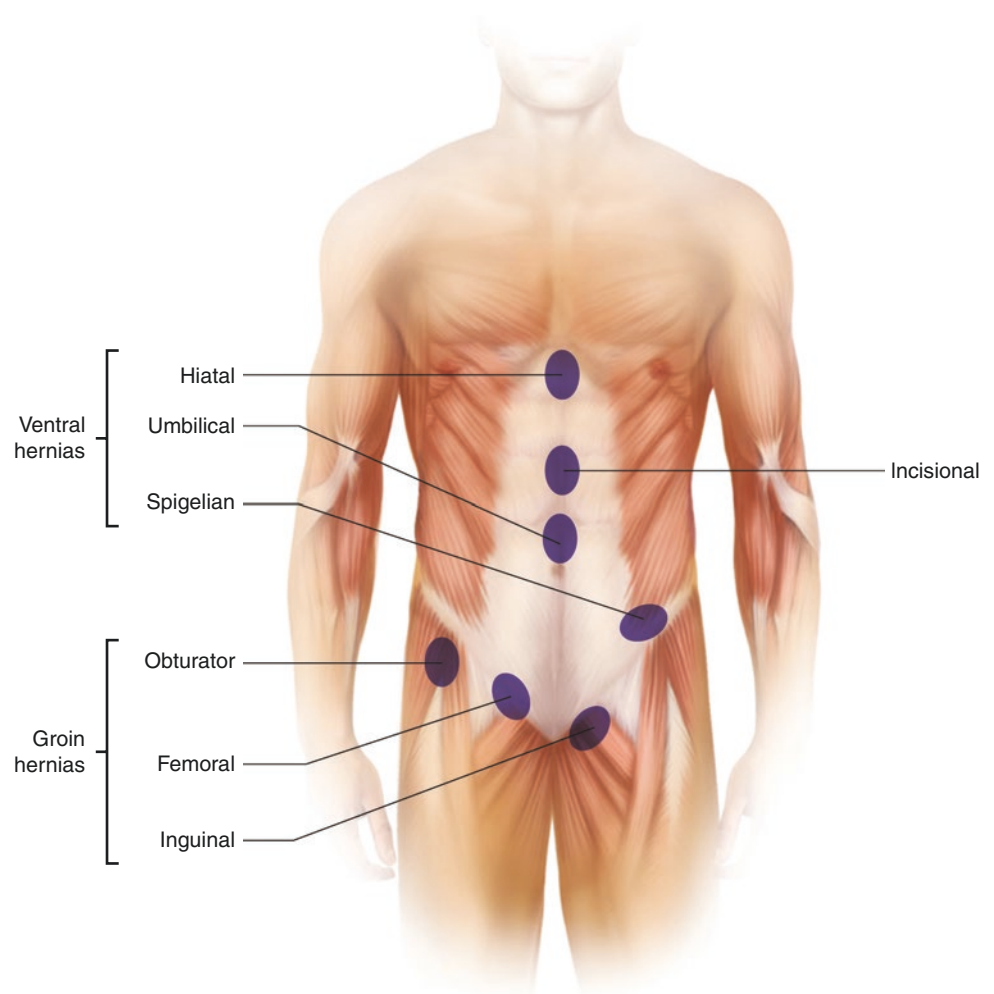


Fig. 6.15 Types of abdominal wall hernias. (Reprinted with permission from Ganti [7])



should be looked for (Fig. 6.15). In OSCE scenarios it is often written or told that please do not expose the inguinal area. In such a case, if the presentation is with abdominal

symptoms, it is very important to mention that you will check for groin hernias. The patient may need to be examined in supine and then in standing position.

For Hernia Examination:

- **Inspection:** Bulge, lump, scars, asymmetry, skin changes, cough reflex, or ask the patient to bear down.
- **Palpation:** Palpation of the visible lump or masses. Check for tenderness, size, margins, and reducibility.
- **Auscultation:** Not done in the exam. If it needs to be done, it should be done over the lump and done with diaphragm of the stethoscope. Presence of bowel sounds in the hernial sac indicates bowel within the hernia sac.

Say, “I will next do palpation for the groin lymph nodes, a digital rectal and vaginal examination.” (The examiner will give the findings. You will never have to do the rectal or vaginal examination in the OSCE.)

Wrap-Up:

- Thank the patient and ask the patient to cover up.
- Wrap up your findings with the examiner or the patient.

Checklist: Physical Examination of the Gastrointestinal System

Table 6.3 provides a checklist that can be used for a quick review before the exam.

History: Dysphagia**Candidate Information:**

A 59-year-old male presents with difficulty in swallowing for 2 months. He has lost some weight and is concerned about it.

Vital Signs: HR: 76/min, regular; BP, 120/65 mmHg; Temp, 36.8 °C; RR, 14/min; O₂ saturation, 99%.

Please take a detailed history and discuss your differentials with the examiner. No physical examination is required for this station.

Differentials:

- Esophageal stricture (ingestion of caustic substance)
- Achalasia
- Obstructive lesions: Tumors (esophageal, pharyngeal, or mediastinal), Zenker’s diverticulum, esophageal webs, extrinsic structural lesions, anterior mediastinal masses, and cervical spondylosis
- Neurogenic disorders: Cerebrovascular accident (CVA) and bulbar palsy
- Spastic motor disorders: Diffuse esophageal spasm, hypertensive lower esophageal sphincter, and nutcracker esophagus

Table 6.3 Checklist for physical examination of the gastrointestinal system

Starting the station	Knock on the door
	Enter the station
	Hand wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required, or show your ID badge
	Now sit on the chair or stand on the right side of the patient, and start the interview
Opening	Introduction, greet, explain, position, and exposure/drape
	Ask for vital signs – interpret the vital signs
General physical examination (may skip these questions if it is a history and physical station)	Check for alertness and orientation
	Look for any abnormal finding in: hands, face, neck, and chest
Abdominal examination	Inspection:
	Observe for skin, umbilicus, contour, movements, peristalsis, pulsation, scars, masses, and cough reflex
	Auscultation: bowel sounds and bruits
	Percussion:
	Shifting dullness and fluid thrill
	Liver and spleen span
	Palpation:
	Superficial/light palpation
	Deep palpation
	Specific signs:
	Rebound tenderness
	McBurney’s point
	Rovsing’s sign
	Psoas sign
	Obturator sign
Murphy’s sign	
Courvoisier’s sign	
Liver palpation	
Spleen palpation	
Kidney palpation	
CVA tenderness	
Mention	“I will next do palpation for the hernias, groin lymph nodes, and a digital rectal and vaginal examination”
	“I will also do respiratory and cardiovascular examination.” (The examiner will give the findings)
Wrap-up	Thank the patient and ask the patient to cover up
	Wrap up your findings with the examiner or the patient

- Scleroderma
- Muscular dystrophy: Myotonic dystrophy and oculopharyngeal dystrophy
- Degenerative diseases: Amyotrophic lateral sclerosis (ALS), multiple sclerosis (MS), and Huntington disease

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Mr...? Are you 59 years old? You are here because you have difficulty in swallowing. Can you please tell me more about this?”

History of Present Illness:

- Start with clarifying about “Feeling of a lump in throat or food getting stuck in the chest?”
- Onset: “When did it start? Started suddenly or gradually?”
- Character: “Can you please describe to me regarding your difficulty in swallowing?”
 - Solid, liquid, or both
 - Liquids only: Achalasia
 - Solids: Mechanical obstruction
 - Both solids and liquids: Motility disorder or diffuse spasm
- Duration: “When was the first time you noticed it?”
- Progression: “How did it progress? Initially with solids and then liquids? Is it getting worse? Any aspiration? What kind of diet are you taking?”
- Level: “Do you have difficulty in initiating the process, or is it difficult to move the things through esophagus? Or where exactly does the food stop?”
- Frequency:
 - Intermittent? (ring, web, spasm)
 - Constant? (stricture, cancers)
- “Any pain when you swallow?”

Associated Symptoms to Rule Out Differentials:

- “Do you suffer from heart burn or the condition called as GERD?”
- “Do you have peptic ulcer disease?” If yes then, “Did you ever get any treatment for it?”
- “Mouth thrush?”
- “Any cough?”
- “Does the food ever come from the nose?”
- “Any chest pain?”
- “Choking?” (CVA)

- “Do you have weakness? Do you have loss of sensation?” (CVA)
- “Any change in voice? Slurred speech?” (CVA)
- “Swelling in the neck?” (thyroid)
- “Does heat or cold bother you more than usual?”
- “Any swelling of joints?”
- “Any skin tightness?” (Scleroderma)
- “Blue fingers in cold weather?”
- “Do you have abnormal movement of hand?”
- “History of corrosive material swallowing?” (stricture)
- “Did you lose any weight? How much weight did you lose?”
- “Any lumps or bumps?”

Relieving Factors: “Does anything relieve the symptoms? Fluids? Any medication makes it better (antacid, spasmolytics)? Vomiting or regurgitation?”

Constitutional Symptoms:

Fever, night sweats, loss of weight, or loss of appetite

Weight Loss:

- Assess the weight loss in the previous 6 months: Less than 5% is insignificant, 5–10% is potentially significant, and more than 10% will be definitely significant.
 - “Over what time of span has the weight been lost?”
 - “Do you still enjoy eating?”
 - “Describe your usual meals.”
 - “Any associated nausea, vomiting, or diarrhea with meals?”
 - “Do you pass an excessive amount of urine?”
 - “Have you noticed any recent weather tolerance?”
- Assess current **dietary intake** as compared to patient previous intake. “Have you not been eating well?”
- “Is your appetite normal, decreased, or increased?”
- Assess for **malnutrition**: Muscle wasting, loss of subcutaneous fat, ankle/sacral edema, and ascites

Past Medical History:

- “Gastroesophageal reflux disease?”
- “Peptic ulcer disease?”
- “Have you ever been investigated for esophagus or stomach problem?”
- “Ever had a scope? Nasogastric tube?”
- “Previous history of esophageal cancer? Neuromuscular disease? Iron deficiency anemia? Ingestion of caustic agent? HIV testing?”

Past Hospitalization and Surgical History:

“Do you have any previous hospitalization or previous surgery?”

Medication History:

“Are you taking any medication?” If he says no, then continue to next question. Otherwise ask for aspirin, nonsteroidal anti-inflammatory drugs (NSAIDs), over-the-counter or herbal, and any side effects.

Allergic History:

“Do you have any known allergies?”

Family History:

“Any family history of esophageal or bowel cancers?”

Social History:

- “Do you smoke or anyone else in your home or close at work smoke? Do you drink alcohol?” If yes, then further ask: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which one? How long? When?”

Relationships:

“Are you sexually active? Do you have sexual preferences? Man, woman, or both?”

Self-Care and Living Condition:

“What do you do for living? Who lives with you?”

Work Conditions and Financial Status?

Support: “Do you have good family and friends support?”

Functional status or severity or impact on life activities?

Wrap-Up:**Describe the Diagnosis:**

According to the station diagnosis. Nature of the disease and goals of treatment

Question: (If history is suggestive of esophageal cancer) What you will do next? (Questions may be asked by the patient or the examiner.)

Answer: “I will perform a detailed gastrointestinal system examination. I will order routine blood workup and will order barium swallow study to see the nature of the lesion.”

“Investigations: CBC, electrolytes, liver panel, kidney function test, urine analysis, and chest X-ray.”

Question: How will you confirm your diagnosis?

Answer: “I will refer the patient to a gastroenterologist for upper GI scope and possible biopsy.”

Question: How will you stage it?

Answer: “Liver panel, computed tomography (CT) chest/abdomen, and bronchoscopy”

Follow-Up:

- Discuss about a follow-up visit according to the diagnosis.
- Ask, “Do you have any questions?”

History and Management: Upper Gastrointestinal Bleeding**Candidate Information:**

You are working in an emergency room. A 44-year-old male presents with complaining of vomiting for 1 day. He noticed some blood in his last vomit.

Vital Signs: HR, 76/min, regular; BP, 120/65 mmHg; Temp, 36.8 °C; RR, 14/min; O₂ saturation, 99%

Please take a detailed history. Give your differential diagnosis to the examiner at the end. No physical examination is required for this station.

Differentials:

- **Esophagus:**
 - Varices
 - Esophagitis
 - Ulcers
 - Cancer
 - Mallory Weiss tear
- **Gastric or duodenal:**
 - Peptic ulcer disease (gastric or duodenal ulcer)
 - Gastric erosions
 - Gastritis
 - Duodenal ulcers
 - Cancers
 - Dieulafoy’s lesion

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.

Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Mr...? Are you 44 years old? What brings you to the emergency room today?

History of Present Illness:

The patient will give details about the vomiting and how he noticed some blood, which made him come to seek medical help. He may act as he is terrified and worried about it. *Show empathy and offer support.* Inform the patient, “I am going to ask a few questions to find out the cause of this blood in your vomiting. Then we will discuss about the plan. Is that alright?”

“How do you feel now? I just want to make sure you are stable and therefore I’ll give some orders to the nurse.” Mention, “I will go through ABC (airway, breathing, circulation).

I will also need to get a set of vitals. Recumbent blood pressure, evidence of postural hypotension, and capillary filling time.”

The examiner may give the information, and the patient will be stable enough to continue with the history:

- “When did you start vomiting?”
- “How did it start? Suddenly or gradual onset?”
- “Forceful and retching? Or did you start vomiting before the bleeding?” (protracted retching and vomiting – Mallory Weiss tear)
- “How many times did you vomit?”
- “How much?”
- “What are the contents of vomit?”
- “When was your last vomiting?”
- “How did you notice that there was blood in your vomit?”
- “Describe the bleeding.”
- “Where is the blood coming from?”
- “Differentiate between coughing up blood, vomiting blood, or swallowed blood from a nose bleed?”
- “How much blood?”
- “How severe was the bleeding?”
- “Just blood or mixed with food?”
- “Color of the blood? Dark/bright red/coffee ground?”
- “Any clots?”
- “Any smell?”
- “Did you ever have blood in your vomit or feces before?”
- “Acute vs. chronic?”
- “Any bleeding from any other location?”

Associated symptoms to rule out differentials:

- “Pre-syncope?”
- “Syncope?”
- “Any abdominal pain?”
- “Epigastric pain?”
- “Diffuse abdominal pain?”
- “Melena (sticky, black, dark, tarry stools)?”
- “When was your last bowel movement?”
- “Color?”
- “Any history of bleeding disorder?”
- “Hematochezia (passage of bloody stool)?”
- “Dyspepsia?”
- “Any nausea?”
- “Heartburn?”
- “Dysphagia?”
- “Weight loss?”

Liver:

If there will be no pain, then the cause may be likely related to liver disease. Explore about liver problems:

- “Jaundice?”
- “Any ongoing liver disease?”
- “Any previous screening for liver disease?”
- “Any bruising in body?”
- “Increase in abdominal size lately?”
- “Alcohol: How long? How much?”
- “Use of NSAIDs (aspirin) – How much? How long? Why? Who prescribed?”
- “Any blood thinner?”
- “Any long-term disease?”

Constitutional Symptoms:

“Fever, night sweats, loss of weight, loss of appetite, and any lumps or bumps?”

Past Medical History:

“Peptic ulcer disease? Have you ever been investigated for esophagus or stomach problem, previous history of esophageal varices/cancer? Previous liver disease, ever had a scope? Previous intestinal surgery? Previous intestinal bleeding? Coagulopathy? Abdominal aortic aneurysm repair (aortoenteric fistula)?”

Past Hospitalization and Surgical History:

“Have you had any previous hospitalization or previous surgery?”

Medication History:

(Important for this station) “Are you taking any medication?” Ask for aspirin, NSAIDs, anticoagulants, steroids, over-the-counter or herbal, and any side effects.

Allergic History:

“Do you have any known allergies?”

Family History:

“Any family history of esophageal or bowel cancers? Coagulopathy?”

Social History:

- “Do you smoke or does anyone else in your home or close at work smoke? Do you drink alcohol?” If yes, then further question: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs? If yes, “Which one? How long? When?”

Relationships:

“Are you sexually active? Do you have sexual preferences? Man, woman, or both?”

Self-Care and Living Condition:

“What do you do for living? Who lives with you?”

Work Conditions and Financial Status?:**Support:**

“Do you have good family and friends support?”

Functional status or severity or impact on life activities?

Wrap-Up:

Question: How will you manage him (if you suspect peptic ulcer bleeding)?

Answer: Continuous monitoring. Attach a pulse oximeter and cardiac monitor to the patient.

Assess for: heart rate, respiratory rate, recumbent blood pressure, postural hypotension, reduced filling time, hydration status (dry tongue, sunken eyes, reduced skin turgor), pallor, and decreased urine output. Look for stigmata of liver disease (flapping tremors, jaundice, spider naevi).

“I will put two large-bore intravenous (IV) lines, will take blood, and send for complete blood count (CBC), electrolytes, liver panel, kidney function test, urine analysis, and group and save.

Commence high-dose oxygen via a face mask. Maintain the oxygen saturation above 94%. Begin fluid replacement with normal saline 10–20 ml/kg, targeting urine output of 0.5–1 ml/kg per hour. I will start IV PPI (Pantoprazole 80 mg IV followed by an infusion 8 mg/h).

Question: What you will do next?

Answer: “I will consult the on-call gastroenterologist and discuss. Patient may require an urgent upper GI endoscopy. Arrange a family meeting and social worker visit if required.”

History and Counseling: Epigastric Pain**Candidate Information:**

A 45-year-old male presents to your clinic with a history of epigastric pain for the past 1 month.

Vital Signs: HR, 76/min, regular; BP, 120/65 mmHg; Temp, 36.8; RR, 14/min; O₂ saturation 99%

Please take a detailed history. Discuss your probable diagnosis and management plan with examiner. No physical examination is required for this station.

Differentials [8]:

- Esophagitis
- Acute/chronic gastritis
- Peptic ulcer disease (PUD)
- Gastric erosions
- Gastroesophageal reflux disease (GERD)
- Acute coronary syndrome
- Acute cholangitis
- Biliary colic
- Cholecystitis
- Cholelithiasis
- Gastroenteritis
- Inflammatory bowel disease
- Viral hepatitis
- Pancreatitis
- Acute coronary syndrome

Epigastric pain/discomfort is a common presentation in a GP setup. The common epigastric pain cases in OSCE are gastroesophageal reflux disease or peptic ulcer disease. An important part of this station is to rule out serious medical problems such as acute coronary syndrome or pancreatitis.

The important points in a history of gastroesophageal reflux/peptic ulcer disease are:

- The pain or discomfort is burning in nature.
- Burning sensation when lying down.
- Pain is not severe in intensity.
- Does not radiate up to the chest or elsewhere.
- Usually lasts from 30 min to a few hours.
- It usually has inconsistent relationship to eating.
- It is temporarily relieved by antacids.
- It does not wake patient from sleep.
- It is not associated with exertion.
- It is worse during stressful days.
- Sometimes history suggests recent NSAIDs use.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Mr...? And you are 45 years old? What brings you here today?”

History of Present Illness:

- “How would you describe the discomfort?”
- “Can you show me exactly where it is?”
- Onset: “When did it start? Started suddenly or gradually?”
- Duration: “When was the first time you noticed it?”
- Progression: “Is it progressing?”
- “What makes your discomfort worse?”
 - “What effect does food, milk, and antacids have?”
 - “What effect does coffee have?”
 - “What effect does a big meal have?”
 - “What about drinking alcohol? Wine?”
 - “What effect does exercise have?”
 - “Do fried or fatty foods make it worse?”
 - “Do hot spicy foods affect it?”
- “What relieves it?”
- “Does the problem come on at night soon after you go to bed?”
- “Does it wake you up at night?”
- “Do you use any pillows when you lie down?”
- “Does bending over make it worse?”
- “Do you rush your meals?”
- “Do you chew your food properly?”

Questions to Rule Out Differentials:

- “Nausea and vomiting?”
- “Do you feel discomfort between your shoulder blades, shoulders, or throat?”
- “Do you have difficulty swallowing?”
- “Lump or constriction in throat?”
- “Acid regurgitation?”
- “Water brash?”
- “Bloating? belching?”
- Symptoms of anemia: “Dizziness, tiredness, or shortness of breath?”
- “Night time cough?”
- “Tiredness?”
- “Change in bowel habits?”
- “Have you lost weight recently?”
- “Do you get constipated or have diarrhea?”
- “Difficulty on swallowing or pain on swallowing?”
- “Any abdominal pain?”
- “Diffuse abdominal pain?”
- “Melena (sticky, black, dark, tarry stools)? When was your last bowel movement? Color?”
- “Any history of bleeding disorder?”
- “Hematochezia (passage of bloody stool)?”
- Explore about liver problems:
 - “Jaundice?”
 - “Any ongoing liver disease?”
 - “Any previous screening for liver disease?”
 - “Any bruising in body?”
 - “Increase in abdominal size lately?”

- Alcohol: “How long? How much?”
- Use of NSAIDs (aspirin) – “How much? How long? Why? Who prescribed?”
- “Any blood thinner?”
- “Any long-term disease?”

Constitutional Symptoms:

“Fever, night sweats, loss of weight, loss of appetite, and any lumps or bumps?”

Past Medical History:

“Peptic ulcer disease? Have you ever been investigated for esophagus or stomach problem, previous history of esophageal varices/cancer? Previous liver disease? Ever had a scope?”

Past Hospitalization and Surgical History:

“Have you had any previous hospitalization or previous surgery?”

Medication History:

“Are you taking any medication, over-the-counter or herbal, and any side effects?”

Allergic History:

“Do you have any known allergies?”

Family History:

“Any family history of significant health problems?”

Social History:

- “Do you smoke or does anyone else in your home or close at work smoke? Do you drink alcohol?” If yes then further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which one? How long? When?”

Relationships:

“Are you sexually active? Do you have sexual preferences? Man, woman, or both?”

Self-Care and Living Condition:

“What do you do for living? Who lives with you?”

Work Conditions and Financial Status:**Support:**

“Do you have good family and friends support?”

Functional status or severity or impact on life activities?

Wrap-Up:

Question: What is your most likely diagnosis?

Answer:

- Peptic ulcer disease
- Non-ulcer dyspepsia
- Gastritis

Question: What will you do next?

Answer:

- “I will do physical examination.”
- “Investigations: CBC, urea, creatinine, electrolytes, lipase, and ECG.”
- “Specific test: Urea breath test.”

Question: What are a few important factors for this patient that you will assess in the history?

Answer:

- Unexplained weight loss >10%
- Bleeding (hematemesis/melena)
- Dysphagia and odynophagia
- Palpable mass
- Anemia
- Chronic NSAID use
- Family history (FHx) or upper GI tract or colorectal cancer
- Short history of symptoms

Question: What are your other differentials?

Answer [9]:

1. **Gall bladder:** Gall bladder related issues such as acute cholecystitis, biliary colic, cholangitis – RUQ pain, fever, and jaundice – radiate to right shoulder or shoulder blade and raised liver function tests (LFTs).
2. **Pancreatitis:** Constant pain, gradually increases over 30–60 min, pain radiates to the back, vomiting, and increased amylase/lipase more pronounced than with cholecystitis; LFTs may be increased if due to gall stones. Symptoms and examination correlate with severe pain associated with marked tenderness.
3. **Intestinal obstruction:** Colicky pain with nausea and vomiting, no bowel movement, and obstructive pattern seen on imaging.
4. **Dissecting aortic aneurysm:** Sudden onset; pain may radiate to lower extremities.
5. **Perforated PUD:** RUQ or mid-epigastric pain, sudden onset, and free intraperitoneal air.
6. **Pneumonia:** Fever and respiratory symptoms such as dyspnea, cough, sputum, and chest pain.
7. **Acute coronary syndrome:** Epigastric/chest pain, shortness of breath, and abnormal ECG/rise in troponins.
8. **Mesenteric ischemia:** Abdominal pain severe, out of proportion to tenderness with a fairly benign examination. Look for post-prandial abdominal pain, weight loss, and abdominal bruit.

Question: What will be your management plan?

Answer:

- Educate the patient and lifestyle modification:
 - Weight reduction.
 - Reduction or cessation of smoking.
 - Avoid fatty foods, coffee, tea, and chocolate.
 - Avoid coffee and alcohol at night.
 - Reduction or cessation of alcohol.
 - Avoid gaseous drinks.
 - Leave at least 3 h between the evening meal and retiring.
 - Increase fiber intake.
 - Small regular meals and snacks.
 - Eat slowly and chew food well.
 - Sleep on left side.
 - Have main meal midday and light evening meal.
 - Avoid spicy foods and tomato products.
 - Avoid drugs: doxycycline, calcium channel blockers, iron sulfate, steroids, and NSAIDs.
 - Elevation of head of bed or wedge pillows.
- **Antacids:** Gaviscon or Mylanta plus.
- **Proton-pump inhibitors (PPIs):** Omeprazole or Pantoprazole × 4 weeks.
- **Triple therapy** if *Helicobacter pylori* (+ ve): clarithromycin, amoxicillin, and omeprazole.
- Follow up in 4 weeks. If symptoms persist then continue PPI and review by a gastroenterologist.

History and Management: Lower Gastrointestinal Bleeding

Candidate Information:

You are working in an emergency room. A 64-year-old male presents with complaining of passing bright red blood in his stools.

Vital Signs: HR, 89/min, regular; BP, 120/65 mmHg; Temp, 36.4; RR, 14/min; O₂ saturation 99%

Please take a detailed history. Give your differential diagnosis to the examiner at the end. No physical examination required for this station.

Differentials:

- **Rectal/anal:**
 - Anal fissure
 - Hemorrhoids
 - Anorectal trauma (elderly abuse)
 - Proctitis
- Diverticular disease
- Angiodysplasia
- Bowel cancers
- Ischemic colitis

- Polyps
- Invasive diarrhea (enteroinvasive *Escherichia coli*)
- Inflammatory bowel disease (ulcerative colitis)
- Upper GI bleeding:
 - Esophageal varices
 - Aortoenteric fistula
 - Ischemic colitis
 - Mallory Weiss tear
- Coagulopathy

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Mr...? Are you 64 years old? What brings you to the emergency room today?”

History of Present Illness:

Patient will give details that he has noticed blood coming with his bowel movements. He may show that he is concerned and worried about it. Show empathy and offer support.

Inform him that you need to ask him a few questions to find out the cause of this blood in his bowel movements, then you will discuss about the plan. Ask him. “Is this alright?”

“How do you feel now? I just want to make sure you are stable and therefore I’ll give some orders to the nurse.” Mention, “I will go through ABC (airway, breathing, circulation). I will also need to get a set of vitals. Recumbent blood pressure, evidence of postural hypotension, and capillary filling time.”

The examiner may give the information and the patient will be stable enough to continue with the history:

- “Can you please describe your bleeding?”
- “Where is the blood coming from?” (urethra, vagina for female patients, rectum)
- “When did it start?”
- “How long has the bleeding been going on?”
- “How many times did you notice?”
- “What is the quantity?”
- “Has it gotten worse?”
- “How is the stool?” (loose/watery/formed/solid)
- “What is the color (black or bright red)?”
- “Does anything make the bleeding better or worse?”

Associated Symptoms to Rule Out Differentials:

- “Pre-syncope?”
- “Syncope?”
- “Signs of anemia?” (tiredness, pallor, pre-syncope)
- “Any history of bleeding disorder?”
- “Dyspepsia?”
- “Nausea?”
- “Dysphagia?”
- “Did you notice any changes in your bowel habits?” (cancers)
- “Is the stool getting narrower? Mucus? Pus?”
- “Have you noticed any change in caliber of your stool?” (pencil stools)
- “Does this constipation alternate with diarrhea?”
- “Do you feel pain while having the bowel movement/perianal itching?” (fissure)
- “Do you have any mass coming out of the bowel movement?” (hemorrhoids)
- “Any urgency to pass your bowel?” (colon cancer)
- “Did you have a colonoscopy done?” (“Have you had any test done with a camera from your back passage?”)
- “Any history of polyps?”
- “Do you have chronic diarrhea?”
- “Did you have abdominal pain/epigastric pain (IBD/ischemic colitis)?”
- Ask for extra-intestinal manifestations:
 - “Do you have any skin rash/nodule?”
 - “Do you have any joint swelling?”
 - “Do you have eye redness or eye discharge?”
- “What is your sexual orientation?” (trauma)
- “Have you eaten any suspect food?” (undercooked meat)
- “Have you recently eaten beets or iron pills?” (may change color of stools)
- Explore about liver problems:
 - “Jaundice?”
 - “Any ongoing liver disease?”
 - “Any previous screening for liver disease?”
 - “Any bruising in body?”
 - “Increase in abdominal size lately?”

Constitutional Symptoms:

“Fever, night sweats, loss of weight, loss of appetite, and any lumps or bumps?”

Past Medical History:

“Peptic ulcer disease? Have you ever been investigated for esophagus or stomach problem, previous history of esophageal varices/cancer? Previous liver disease? Ever had a scope? Previous intestinal surgery? Previous intestinal bleeding? Coagulopathy? Abdominal aortic aneurysm repair (aortoenteric fistula)?”

Past Hospitalization and Surgical History:

“Have you had any previous hospitalization or previous surgery?”

Medication History:

(Important for this station) “Are you taking any medication?” Ask for aspirin, NSAIDs, anticoagulants, steroids, over-the-counter or herbal, and any side effects.

Allergic History:

“Do you have any known allergies?”

Family History:

“Any family history of esophageal or bowel cancers? Coagulopathy?”

Social History:

- “Do you smoke or does anyone else in your home or close at work smoke? Do you drink alcohol?” If yes then further questions: “How much? Daily? How long?” CAGE questionnaire.
- “Have you ever tried any recreational drugs?” If yes. “Which one? How long? When?”
- “Are you experiencing physical or sexual abuse?”

Relationships:

“Are you sexually active? Do you have sexual preferences? Man, woman, or both?”

Self-Care and Living Condition:

“What do you do for living? Who lives with you?”

Support:

“Do you have good family and friends support?”

Functional status or severity or impact on life activities?

Wrap-Up:**Question: What is your plan of management?****Answer:**

“I will perform a physical examination, and I will take consent and will perform a digital rectal exam (DRE).”

“I will also look for stigmata of liver disease. I will inform the patient about my findings and plan. I will discuss with my seniors to admit him to the emergency room. I will ask the nurse to attach a pulse oximeter and cardiac monitor to the patient. I will assess for heart rate, respiratory rate, recumbent blood pressure, postural hypotension, reduced filling time, hydration status (dry tongue, sunken eyes, and reduced skin turgor), pallor, and decrease urine output. I will put in IV lines; I will take blood and send for CBC,

electrolytes, liver panel, kidney function test, and group and save.”

“Collect a stool sample (if infectious cause), and send for culture and sensitivity or ova/parasites and *Clostridium difficile* toxin. Commence high-dose oxygen via a face mask. Maintain the oxygen saturation above 94%. If patient is unstable, then I will begin fluid replacement with normal saline 10–20 ml/kg, targeting urine output of 0.5–1 ml/kg per hour.”

Question: What you will do next?

Answer: “According to the history, physical examination, and blood results findings, I will consult the on-call gastroenterologist and discuss. CT scan vs upper and lower endoscopies outpatient or inpatient according to the patient’s condition. Arrange a family meeting and social worker visit if required.”

History and Counseling: Constipation**Candidate Information:**

A 67-year-old male presented to your clinic complaining of constipation off and on for 8 weeks. He has difficulty in passing stools and has a sensation of incomplete evacuation.

Vital Signs: HR, 89/min, regular; BP, 120/65 mmHg; Temp, 36.8; RR, 14/min; O₂ saturation 99%

Please take a detailed history. Address patient concerns. No physical examination is required for this station.

Differentials:

- Functional constipation
- Bowel obstruction (adhesions/stricture/tumors/internal or external hernias)
- Irritable bowel syndrome (IBS)
- Metabolic: hypothyroidism and hypercalcemia (hyperparathyroidism)
- Hemorrhoids
- Anal fissure/stricture
- Spinal cord injury/stroke/autonomic neuropathy
- Drugs

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Mr...? Are you 67 years old? What brings you to the clinic today?”

History of Present Illness:

Patient will tell about his decreased number of bowel movements.

- “When did this start?”
- “Can you please describe to me more about your current bowel movements?”
- “How frequent do you have bowel movements?”
- “Please tell me about its color?”
- “How about consistency of stool?”
- “How is the stool?” (loose/watery/formed/solid/too hard)
- “Shape?”
- “What is the quantity?”
- “Was there any urgency to pass a stool?”
- “Did you notice any pain while passing bowel movements?”
- “Do you have feelings of incomplete evacuation of stool?”
- “Do you have any urinary problems?”
- “Have you noticed any bleeding with passing a bowel movement?”
 - “Has it gotten worse?”
 - “What is the color?” (black or bright red)
 - “Does anything make the bleeding better or worse?”
- “Have you tried any over-the-counter constipation medicines?”
- “Do you drink enough water?”

Associated Symptoms to Rule Out Differentials:

- “Did you notice any changes in your bowel habits?” (cancers)
- “Does this constipation alternate with diarrhea?”
- “Any urgency to pass your bowel?”
- “Have you noticed any change in caliber of your stool?” (pencil stools)
- “Is the stool getting narrower? Mucus? Pus?”
- “Did you have a colonoscopy done?” (“Have you had any test done with a camera from your back passage?”)
- “Do you feel pain while having the bowel movement/perianal itching?” (fissure)
- “Do you have any mass coming out of the bowel movement?” (hemorrhoids)
- “Do you have any nausea or vomiting?”
- “Did you have abdominal pain?” (bowel obstruction)
- “Do you feel fatigued?”
- “Increase in abdominal size lately?”
- Ask about hypothyroidism:
 - Cold intolerance
 - Weight gain
- Ask about hyperparathyroidism:

- Bone pain
- Fracture
- Renal stone
- Abdominal pain
- Depression

Constitutional Symptoms:

“Fever, night sweats, loss of weight, loss of appetite, and any lumps or bumps?”

Past Medical History:

“Any previous medical problems? Intestinal cancer, perianal disease, IBS, stroke, hypothyroid or hyperparathyroid, or rectal stricture?”

Past Hospitalization and Surgical History:

“Have you had any previous hospitalization or previous surgery? Abdominal surgery?”

Medication History:

“Are you taking any medication, over-the-counter or herbal, and any side effects (antidepressants, tricyclic antidepressants, opioids)?”

Allergic History:

“Do you have any known allergies?”

Family History:

“Any family history of medical problems?”

Social History:

- “Do you smoke or does anyone else in your home or close at work smoke? Do you drink alcohol?” If yes then further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which one? How long? When?”

Relationships:

“Are you sexually active? Do you have sexual preferences? Man, woman, or both?”

Self-Care and Living Condition:

“What do you do for living? Who lives with you?”

Support:

“Do you have good family and friends support?”

Functional status or severity or impact on life activities?

Wrap-Up:**Question: What is your plan of management?**

Answer: “I will perform physical examination and will take consent and will perform a DRE (fecal impaction).”

Question: What you will do next?

Answer: “According to the history and physical examination, I will order routine blood tests, thyroid screen, and stool examination.”

Question: What is constipation?

Answer: “Constipation is hard, often small stools and infrequent bowel movements, or it can be simply defined as a feeling of unsatisfied emptying of the bowel. One can expect to have many other symptoms, such as bloated, uncomfortable abdomen, straining to pass stools, and longer time spent in toilet to pass a bowel movement. Constipation occurs when stool moves through the large intestine too slowly. In the large intestine, the fluid from the stool is absorbed into the body, so the stool becomes hard and dry. This leads to the stool being difficult to pass.”

Question: What causes constipation?

Answer: “There are many factors that cause constipation.” Some causes are listed below:

- Neglecting the habit of going to the toilet.
- Not responding when there is a desire to go to toilet.
- Inadequate fluids intake.
- Poor nutrition.
- Poor diet with a lack of fiber.
- Inadequate sleep.
- Stress and anxiety.
- Change in daily routine, such as while traveling.
- Overuse of laxatives/painkillers.
- Limited exercise.
- Some diseases may also cause constipation, such as bowel cancers.
- Old age.

Question: What are the risks?

Answer: “Constipation can cause discomfort in the abdomen and lead to blockage of the bowel. This can present as impaction of hard stool with overflow incontinence of liquid stool. Straining and chronic constipation can cause perianal itching, hemorrhoids, and anal fissures and can even lead to rectal prolapse.”

Question: How does fiber help with constipation?

Answer: “Fiber is the part of plant food that is not digested. There are two kinds of fiber: soluble and insoluble. Soluble fiber gives stool bulk. Apples, bananas, oats, and beans are good sources of soluble fiber. Insoluble fiber speeds up the transit of food in the digestive tract and helps prevent constipation. Most vegetables, wheat bran, and legumes are good sources of insoluble fiber. The goal should be to have around 20–30 g dietary fiber.”

Question: What advice will you give to your patient?

Answer: I will counsel my patient for the following:

- Adequate exercise.
- Plenty of fluids – around 2 l a day.

- Eat food that provides bulk and provides adequate fiber.
- Attend the toilet to empty your bowel as soon as possible once the desire comes to defecate.
- If laxatives are required, then contact your physician first. Usually the physicians may recommend one of the hydrophilic bulk-forming agents such as ispaghula or psyllium. Sometimes an osmotic laxative such as macrogol or lactulose.

History and Counseling: Diarrhea**Candidate Information:**

A 36-year-old male presents to the emergency department with a 1-week history of diarrhea and intermittent vomiting. He vomited a few times today.

Vital Signs: HR, 89/min, regular; BP, 120/65 mmHg; Temp, 36.8; RR, 14/min; O₂ saturation 99%

Please take a detailed history. Address the patient’s concerns. No physical examination is required for this station.

Differentials:

- Infectious: Bacterial, viral, parasitic, and pseudomembranous colitis
- Metabolic: Hyperthyroidism
- Idiopathic/iatrogenic: IBD, IBS, malabsorption
- Congenital: Cystic fibrosis, lactose intolerance
- Autoimmune: Celiac disease, Whipple disease
- Vascular: Ischemic colitis

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Mr...? Are you 36 years old? What brings you to the clinic today?”

History of Present Illness:

Start history with two symptoms – vomiting and then loose stools.

- “When did you start **vomiting**?”
 - “How did it start? Suddenly or gradual onset?”
 - “Forceful and retching?”
 - “How many times did you vomit?”

- “How much?”
- “What are the contents of vomit?”
- “When was your last vomiting?”
- “How did you notice that there was blood in your vomit?”
- Then start with **loose stools**.
- “When did your loose stool start?”
- “Can you please describe to me more about your current bowel movements?”
- “How frequently do you have bowel movement?”
- “Constant or intermittent?”
- “Do you pass large amount every time or scanty?”
- “What is the consistency?” (loose, watery, bulky, shapeless, greasy, sticky, floating)
- “Please tell me about its color.” (normal, green, pale, black, blood streaks and mixed with blood)
- “How is the stool?” (loose/watery/formed/solid/too hard)
- Odor: “Foul smelling?” (malabsorption)
- Mucus: “Do you pass a lot of mucus?”
- “Was there any urgency to pass a stool?”
- “Did you notice any pain while passing bowel movements?”
- “Do you have feelings of incomplete evacuation of stool?”
- “Do you have any urinary problems?”
- “Have you noticed any bleeding with passing a bowel movement?”
 - “Has it gotten worse?”
 - “What is the color?” (black or bright red)
 - “Does anything make the bleeding better or worse?”
- “Did you notice any undigested food?”
- “Any particular triggers: Stress, dining out, antibiotics, or laxatives?”
- “Where were you when these symptoms started?” (Recent travel: “Tropical and subtropical regions? Have you had infectious contact? Did you think you drank contaminated water?”)
- “Do you drink enough water?”
- “Have you ever had these symptoms before?”
- “Do you think anything makes these symptoms better?” If yes, then “What? Fasting/medications?”
- “Anything that makes the symptoms worse? Dairy?”

Associated Symptoms to Rule Out Differentials:

- “Do you have any nausea or vomiting?”
- “Did you have abdominal pain?” (bowel obstruction)
- “Did you notice any changes in your bowel habits?” (cancers)
- “Have you noticed any change in the caliber of your stool?” (pencil stools)
- “Does this constipation alternate with diarrhea?”
- “Do you feel fatigued?”
- “Bloating with gas?”

- “Worst in early morning?” (IBS)
- “Facial flushing?” (carcinoids)
- “Heat intolerance?”
- IBD extra-intestinal manifestations: “Joint pain, red eyes, vision problems, bone pain, skin rash, and light-headedness?”

Symptoms of Dehydration:

- Light-headedness
- Dry mouth
- Faint when stand
- Thirsty
- Decreased amount of urine
- Heart racing
- Weight loss

Constitutional Symptoms:

Fever, night sweats, loss of weight, loss of appetite, and any lumps or bumps?

Past Medical History:

“Any previous medical problems?” (previous history of diarrhea, liver disease, pancreas disease, thyroid disease, diabetes mellitus, HIV, abdominal surgery)

Past Hospitalization and Surgical History:

“Have you had any previous hospitalization or previous surgery? Abdominal surgery?”

Medication History:

“Are you taking any medication? Antibiotics, laxatives?”

Allergic History:

“Do you have any known allergies?”

Family History:

“Any family history of medical problems? IBD?”

Social History:

- “Do you smoke or does anyone else in your home or close at work smoke? Do you drink alcohol?” If yes then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which one? How long? When?”

Relationships:

“Are you sexually active? Do you have sexual preferences? Man, woman, or both?”

Self-Care and Living Condition:

“What do you do for living? Who lives with you?”

Support:

“Do you have good family and friends support?”

Functional status or severity or impact on life activities?

Wrap-Up:**Question: What you will do next?**

Answer: “According to the history and physical examination, I will order routine blood tests and stool examination.”

Question: What is diarrhea?

Answer: Diarrhea is the passing of a number of watery, loose, and offensive smelly bowel movements. It is usually associated with abdominal pain and vomiting. It is commonly caused by a viral, bacterial, or parasitic infection of the intestines. Usual sources are eating contaminated food or drinking contaminated water. Common viruses are rotavirus and norovirus and bacteria are *E. coli*, *Campylobacter*, *Shigella*, *Salmonella*, and *Staphylococcus aureus*. Common parasites are *Giardia lamblia* and *Cryptosporidium*.

Question: What is the treatment?

Answer: “Diarrhea often resolves naturally.”

- **Rest:** “Take rest as much as you can until the diarrhea stops.”
- **Diet:** “You should avoid eating solid food in the start. Try to drink enough fluids to prevent dehydration. These may include clear fluids such as water and tea. Take an electrolyte solution such as hydrolyte or gastrolyte, which you can get over the counter. Take these until the diarrhea settles. Once diarrhea starts resolving, eat low-fat and starchy foods such as boiled rice, soups, mashed bananas, boiled potatoes, and mashed vegetables.”
- “Avoid alcohol, coffee, strong tea, fatty foods, fried foods, spicy foods, raw vegetables, and raw fruit.”
- “Start eating dairy produce such as yogurt containing live cultures, a small amount of milk in tea or coffee, and a little butter or margarine on toast around the third day.”
- **Medicines:** “Diarrhea often resolves naturally. Medicines are best to avoid. Kaolin-based preparations or intestine-slowing drugs such as loperamide (e.g., Imodium, Gastro-Stop) or Lomotil can be helpful.

Question: How will you diagnose pseudomembrane colitis?

Answer: *Clostridium difficile* toxin assay

Question: What are the risk factors?

Answer: Risk factors for *Clostridium difficile* include:

- Recent antibiotic use
- Long hospital stay
- Cancer chemotherapy and other immune suppression
- Other serious underlying illness

Question: “What is the management?”

Answer: “Metronidazole or oral vancomycin in more severe disease and recurrent infections. Oral or IV hydration”

History: Jaundice**Candidate Information:**

This is important and frequently repeated in various different ways:

A 29-year-old male presents with jaundice for 4 days.

Or A 29-year-old male just returned from Mexico. He complains of yellowish discoloration of his eyes and skin and felt tired. Take a focused history.

Or A 29-year-old comes to your clinic with a blood test showing an abnormal liver test. (There might be a liver panel report attached or it may be given by the examiner). Take a focused history.

Vital Signs: HR, 71/min, regular; BP, 120/65 mmHg; Temp, 36.8; RR, 14/min; O₂ saturation 99%

Please do not perform rectal, genitourinary, or breast examination.

Differential Diagnosis:

- Infectious: Viral hepatitis (hepatitis A, B, or C)
- Idiopathic/iatrogenic: Biliary tract obstruction (choledocholithiasis, biliary stricture)
- Cancers: Obstructing biliary cancer (cholangiocarcinoma, pancreatic carcinoma)
- Alcoholic hepatitis
- Drug-induced (birth control pills, NSAIDs, isoniazid, diuretics, angiotensin-converting-enzyme inhibitor [ACEI])
- Metabolic: Hemolysis
- Autoimmune hepatitis

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician. Are you Mr...? Are you 29 years old? Is it

alright if I ask you few questions about jaundice? If you have any concern or question, please ask me.”

History of Present Illness:

1. “What do you mean by jaundice?”
2. “Yellowness of eyes/skin/dark urine/stool?”
3. “When did you notice? How long?”
4. “Is it progressing? Stationary?”
5. “Is it the first time you had jaundice?”
6. “Any ongoing liver disease?”
7. “Any previous screening for liver disease?”

Explore Risk Factors of Hepatitis:

- Blood transfusions
- Ear or body piercing
- Acupuncture
- Tattoos
- Unprotected sex
- IV drug abuser
- Occupation (blood handlers, dentist)
- Patient on dialysis

Explore Travel to Mexico:

- “How long did you stay in Mexico?” (hepatitis A incubation period)
- “Did you consume unhygienic food or drinks there?”
- “Have you been exposed to people with hepatitis?”
- “Did you have unprotected sexual intercourse there?” If yes, then ask: With how many partners?” (hepatitis B)
- “Any history of a blood transfusion?” (hepatitis B and C)
- “Any history of drug abuse?” (hepatitis B and C)

Explore Associated Symptoms:

- “Itching?”
- “Nausea/vomiting?”
- “Abdominal pain?”
- “Any cough?”
- “Shortness of breath?”
- “Headache?”
- “Loss of appetite?”
- “Any change in bowel habits?”
- “Any change in color of stool? Clay color or white?”
- “Does your stool float in the commode?” (pancreatic disease)
- “Any change in passing urine?”
- “Fatigue?”
- “Any recent travel?”
- “Confusion?”

Constitutional Symptoms:

“Fever, night sweats, loss of weight, loss of appetite, and any lumps or bumps?”

Past Medical History:

“How is your health otherwise? Past history of gall stones? Hepatitis? Cirrhosis? Malignancy, Pancreatic disease? IBD? Anemia? Blood diseases such as sickle cell anemia?”

Past Hospitalization and Surgical History:

“Have you had any previous hospitalization or previous surgery?”

Medication History:

“Are you taking any medication prescribed, over-the-counter, or herbal?” (birth control pills, methotrexate, NSAIDs, methyldopa, anticonvulsants, chemotherapy, chlorpromazine, antipsychotics, isoniazid, diuretics, ACEI)

Allergic History:

“Do you have any known allergies?”

Family History:

“Does anyone in your family have jaundice or any ongoing health problem? History of pancreatic cancers, blood diseases, or gall stones?”

Social History:

- “Do you smoke?”
- (Important) “Do you drink alcohol?” If yes, then: “How much? How long?” CAGE questions.
- “Have you ever tried any recreational drugs?”

Relationships:

“Are you sexually active? Do you have sexual preferences? Man, woman, or both?”

Self-Care and Living Condition:

“How do you support yourself?”

Functional status or severity or impact on life activities?

Wrap-Up:

Thank the patient. Ask the patient if he wants to ask any questions or has any concerns.

Wrap up your findings with the examiner or the patient.

Question: What are the symptoms of your main differentials?

Answer:

- Hepatitis symptoms: Nausea, vomiting, anorexia, mild fever, and chills
- Cholelithiasis: Pain RUQ and indigestion
- Pancreatic cancer: Painless jaundice and weight loss

Question: What you will do next?

Answer:

“I will do a detailed physical examination. I would also like to order routine blood tests and liver panel. According to the most probable diagnosis, I may add ultrasonography (USG) of the liver and biliary tree.”

Question: What signs you will look for in liver disease?

Answer:

- Jaundice
- Palmer erythema
- Dupuytren’s contracture
- Lindsay’s nail (white spots in the nails)
- Bulging flanks
- Caput medusae
- Gynecomastia
- Redistribution of hair pattern
- Liver bruits
- Venous hum
- Liver size (decreases in cirrhosis)
- Ankle edema
- Fluid thrill
- Shifting dullness

Question: Which will be initial tests for liver disease?

Answer:

- Liver function test
- Hepatitis serology
- USG of abdomen/liver and biliary tree
- Prothrombin time (PT), activated partial thromboplastin time (APTT), international normalized ratio (INR)

Question: Patient has obstructive picture in labs? What are your two top differentials?

Answer:

Cholelithiasis and carcinoma head of pancreas

Question: What investigation will you write to assess level of obstruction?

Answer:

Endoscopic retrograde cholangiopancreatography (ERCP)

Follow-Up:

“I am sending your blood workup. The clinic will call you once the results are back.

Do you have any questions?”

Checklist: Physical Examination for Cirrhosis/ Chronic Liver Disease

Table 6.4 provides a checklist that can be used for a quick review before the exam.

Table 6.4 Physical examination checklist for cirrhosis or chronic liver disease

Starting the station	Knock on the door
	Enter the station
	Hand wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
Opening	Now sit on the chair or stand on the right side of the patient, and start the examination
	Introduction, greet, explain, position, and exposure/drape
Position	Ask for vital signs – interpret the vital signs
	Sitting and then lying
General physical examination	Mental status: check for alert and orientation (time and place), drowsiness, asterixis
	Head and neck examination: jaundice, parotid gland enlargement, temporal muscle wasting, Keiser Fleischer ring
	Hands: clubbing, palmar erythema, Dupuytren contracture, Terry’s nails
	Inform the patient about abdominal examination
	Inspection
	Chest: gynecomastia, spider angiomas, armpit hair loss
	Abdomen: caput medusae, bulging flanks, abdominal mass, or hernias
Auscultation: liver bruit and spleen bruit	
Wrap-up	Percussion: liver span, ascites (fluid thrill and shifting dullness)
	Back: sacral edema
	Legs: edema
Wrap-up	Genitourinary: testicular atrophy
	Thank the patient. Ask to cover up
	Wrap up your findings and ask patient if any concern

History: Increased Abdominal Girth

Candidate Information:

A 52-year-old male presented in your GP clinic with complaining of increasing abdominal girth.

Vital Signs: HR, 72/min, regular; BP, 120/65 mmHg; Temp, 36.8; RR, 14/min; O₂ saturation 99%

Please take a detailed history. No physical examination required for this station.

Differentials:

- Cirrhosis of liver
- Abdominal cancers
- Bowel obstruction
- Abdominal wall hernia
- Heart failure
- Renal failure

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Mr...? Are you 52 years old? How can I help you today?”

History of Present Illness:

- “When did it start?” Or “When did you notice that your abdominal size was increasing?”
- “How did it start?” (sudden vs gradual)
- “Has it gotten worse or the same?”
- “How did you notice that?” (“Trouble putting pants on or increased the holes in your belt?”)
- “Any trouble putting shoes on?”
- “Any increase in overall body weight? How much and since how long?”
- “Any aggravating or relieving symptoms?”

Associated Symptoms to Rule Out Differentials:

- “Did you have abdominal pain?”
- Explore liver problems:
 - “Did your skin turn yellow?” (jaundice?)
 - “Change in color of your eyes?” (becoming yellow?)

- “Any ongoing liver disease?”
- “Any previous screening for liver disease?”
- “Itching?”
- “Nausea or vomiting?”
- “Decreased appetite?”
- “Change in urine color (tea or cola color) and volume?”
- “Change in stool color?” (gray)
- “Any bruising in body? Easy bruising?”
- “Confusion?”
- Risk factors for liver disease:
 - Blood transfusions
 - Ear or body piercing
 - Acupuncture
 - Tattoos
 - Unprotected sex
 - IV drug abuser
 - Occupation (blood handlers, dentist)
 - Patient on dialysis
- “Chills?”
- “Did you notice any changes in your bowel habits?” (cancers)
- “Have you noticed any change in the caliber of your stool?” (pencil stools)
- “Does this constipation alternate with diarrhea?”
- “Did you have a colonoscopy done?” (“Have you had any test done with a camera from your back passage?”)
- Alcohol: “How long? How much?”
- “Any long-term disease?”
- “Shortness of breath with activity?” (heart failure)
- “Shortness of breath on lying flat or at night time?”
- “Ankle swelling?”
- “Face swelling?”
- “Is there any change in the abdominal swelling with position or cough?” (abdominal wall hernia)

Constitutional Symptoms:

“Fever, night sweats, loss of weight, loss of appetite, and any lumps or bumps?”

Past Medical History:

“Any previous medical problem?”

Past Hospitalization and Surgical History:

“Do you have any previous hospitalization or previous surgery?” Ask specifically, “Abdominal surgery?”

Medication History:

“Are you taking any medication, over-the-counter, or herbal medication, and any side effects?”

Allergic History:

“Do you have any known allergies?”

Family History:

“Any family history of esophageal or bowel cancers?”

Social History:

- “Do you smoke or does anyone else in your home or close at work smoke? Do you drink alcohol?” If yes then further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which one? How long? When?”

Relationships:

“Are you sexually active? Do you have sexual preferences? Man, woman, or both?”

Self-Care and Living Condition:

“What do you do for living? Who lives with you?”

Support:

“Do you have good family and friends support?”

Functional status or severity or impact on life activities?

Wrap-Up:

Question: What will you do next?

Answer: “I will complete physical examination. I will order blood test according to the history and physical examination findings. If it is secondary to cirrhosis of the liver, then add ultrasound abdomen and referral to gastroenterologist and discuss.”

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Introduction to Ethics Cases

The following stations will require good communication skills. You should be attentive and respectful throughout these stations. Your ability to transfer important and relevant information to the patient or a relative in an understandable and a simple way will be assessed. There are no exact right or wrong answers. There are no red flags for these stations, and there are no set of key questions.

In almost all the objective structured clinical examination (OSCE) stations, there will always be a rush to chase the time lines. The ethical stations are quite different; many candidates are able to finish these within the first 5 min. Then it will be the examiner, patient (role-player), and you sitting in a quiet room looking at each other. To avoid getting into this kind of situation, it is suggested *not* to rush into the problem-solving part of the station. Commence with making good rapport initially and then getting some further information about the situation. As the discussion goes along, try to resolve the issue or give precise and relevant information. Before finishing the conversation, you should have a plan in place and ask if the patient agrees to and understands the plan. In all of these cases, finishing off with offering further support or asking if they want to have another family meeting is recommended.

Case Discussion: Death Before Arrival

Candidate Information

A 62-year-old male was rushed to the emergency department in a profound coma; he died while being transported to the hospital. You attended him and pronounced him dead. He had a background history of diabetes mellitus and was on

insulin. You were told by the ambulance staff that his wife gave him an extra insulin dose by mistake.

His wife and son are in the family room. Please visit them and address their concerns.

Inform the family that the coroner must be notified.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient's family.
- Give stickers to the examiner (if required) and/or show your identification (ID).
- Sit on the chair and start the interview.

Opening:

“Good morning/good afternoon, I am Dr.... and you are? I am here to discuss about Mr.... Is it alright if I ask you a few questions about Mr...? Can you please describe what happened?” They may describe that insulin was given before dinner, and Mr... became unresponsive. They called the ambulance, and he was brought to the emergency department.

Ask them:

- “How much insulin was injected and when?”
- “Who injected it?”
- “What was the usual dose?”

They may ask you, “How is Mr...?”

- Inform the family that unfortunately Mr... passed away during transport in the ambulance. He died before arrival to the hospital.
- Provide a moment of silence.
- Show empathy and respond according to their emotions.

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If they ask, “What was the possible cause of death?” Explain that for now it looks like that the possible cause of death was an insulin overdose.

If his wife expresses feelings of guilt, respond by saying “Don’t blame yourself. Any person in your place may have reacted in the same way.”

Discuss the next steps:

- Need for an *autopsy*.
- Ask about their wishes

Tell them about the need to inform the *coroner*.

If they ask “Why is the coroner’s involvement necessary?”, explain that a notification to the coroner is required in all deaths where:

- There is involvement of:
 - Violence
 - Negligence
 - Misconduct
- In cases of sudden or unexpected death
- Death due to unknown disease
- Death due to suspicious circumstances

The coroner will determine the cause of death and means of death (natural or accidental).

- Ask if there is a will and who is the power of attorney.
- Ask them if they want to inform anyone or call anyone.
- Offer further help and support.
- Thank the relatives.

Case Discussion: Brain Death and Organ Donation

Candidate Information:

A 37-year-old male was brought in a critical condition after a motor cycle accident by ambulance to the emergency department. He had a major head injury. He was intubated and resuscitated but did not improve. He has been pronounced to have “brain death” by a neurologist in the emergency department.

His wife is in the family room. Please inform her about his condition and discuss about possible organ donation.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient’s wife.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair and start the interview.

Opening:

“Good morning/good afternoon, I am Dr. Are you Mrs.? I am here to discuss about your husband’s condition. Is it alright to go ahead?”

Start with Some Information About the Resuscitation

Efforts:

Tell her that Mr. ... came in a critical condition after having a motorcycle accident. You and your team worked hard and started immediate resuscitation. Further state that chest compressions were given and he was intubated.

“When he came in, he was not breathing. We needed to put a tube down in his wind pipe to support breathing and attached him to a machine called a ventilator. As his heart was not beating, we also did chest compressions.”

Inform His Wife of the Outcome:

“Despite all the possible efforts to improve his condition, unfortunately it seems that things did not improve. He is not responding to treatment due to the severe trauma to the head.”

Explain Brain Death:

Inform her that he is in a state called “brain death.” Ask her if she understands what brain death means:

- Irreversible brain damage.
- Brain is not functioning at all.
- When we shine a light into his eyes, his pupils do not respond to the light.
- No response on pain stimulation.
- No spontaneous breathing; he is only breathing with a breathing machine.
- His heart is being supported by drugs.
- He will never gain consciousness, which means he will not recover.

Certainty of Diagnosis:

- Legal term for death.
- Confirmed by two specialists.
- Apnea test: Ventilator ceased followed by no spontaneous breathing.
- Certainty of prognosis: We can clearly say, “He is dead now.”
- Further state that it is a legal definition of death.
- Give a pause. Show empathy and react according to her response.

What Should Be Done Next?

- He is on a support machine to breathe, which should then be stopped.

- Show empathy again. You are sorry for her loss; the patient was very young.
- Give her time if she wants to express her feelings.

Bring Up Organ Donation:

- He was very healthy and he is thus a good candidate for organ donation.
- Ask her if he ever mentioned his views about organ donation.
- Further ask if he had a will or advanced directive.
- Ask about her views about organ donation.
- If she agrees, appreciate her decision. Then say that it will be a precious gift and will save many lives.

Explain How Organ Donation Is Handled:

If she asks about the process of organ donation, explain:

- A team of doctors will be involved.
- They will respond very quickly.
- There is a time limit; the decision should be made within the next 24 h.
- Many organs can be used.
- Tell her she will be notified which organs are used and where they go, but she will not get the individual recipients' names.

Explain How Organ Donation Affects the Funeral:

- Reassure her that it will not affect the funeral arrangement.
- Still can have the open casket, because organ donation will not affect the face.

Address Any Questions or Concerns:

Offer her the option to visit him now.

Case Discussion: Decision to Forgo Treatment

Candidate Information:

A 72-year-old male was admitted to a medical unit. This morning he was diagnosed with having bowel cancer. The nurse just informed you that he is refusing any treatment and wants to go home.

Please visit him and discuss with him.

The patient has the right to make a decision about his own health and body, but to make this kind of decision, the patient needs to be competent. Being competent means that the patient:

- Understands the nature of the disease/issue
- Knows the different treatment options available
- Has reasonable information about the advantages and disadvantages of each treatment

- Understands the consequence of his decision
- Should not be diagnosed with any psychiatric illness (depressed), confusion, intoxication, and/or delirium
- Does not have a burden of suffering so great that it impairs his decision
- Has no memory loss
- Will make a reasonable decision that a reasonable person will make

This station is to assess the patient's ability to make a decision. If the patient is competent and capable, then respect his wishes and decision. In the end make sure to offer help and all the support even if the patient changes his wishes at any time. Be supportive and empathetic throughout the interview.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair and start the interview.

Opening:

"Good morning/good afternoon, I am Dr.... Are you Mr...? How are you today? I was informed by the nurse that you do not want to continue with any treatment. May I discuss this with you?"

Ask for Reasons:

- "Why do you not want to go ahead with any treatment?"
- "How long have you been thinking that way?"
- "Have you discussed your decision with anyone?"

Ascertain His Understanding of the Disease:

"What is your understanding of your illness?"

Assess His Views About the Disease:

"If you don't have this disease, then what will be your thoughts about your life?"

Treatment Options:

- "Has anyone discussed with you about the diagnosis and various treatment options? What do you think about them?"
- Discuss further that if he will not get any treatment what the consequences will be.
- Is he aware about supportive treatments such as pain medication, intravenous (IV) fluids, and use of antibiotics?

Collateral Information:

Would he like to talk to someone who has a similar condition?

Consequences:

- “What do you think would happen if you don’t want to go ahead with treatment?”
- If he persists on not getting any treatment, next ask him whether he wants to die.
- “I just want to make sure you understand about your condition, and I want to make sure that this is what you want.”
- Ask about life-sustaining measures such as oxygen, intubation, and chest compression.

Ask About Depression:

- “When we discuss about decision-making, we need to also ask about mood. So please tell me how is your mood lately?”
- Interests?
- Suicidal ideation? Any major event, death, accident in the family recently?

Offer Help:

- “Do you want someone to talk to you further, what is going on?”
- “I can ask a psychiatrist to come and visit you.”
- “Do you think you would want to see a social worker?”
- “Are you aware that we also have clergy/chaplain available in the hospital? If you would like, I can ask one to come and talk to you.”
- “Do you want to discuss this with your family members or any friend?”
- Ask about his home situation, job, family, and support system. Ask if he would like to seek help in any regard.
- “Do you think you need some time to think about it?”

Further Treatment Option:

Assess if the patient is aware of what he needs for further investigations and you will be referring him to specialists who are experts in this field.

Make a Conclusion:

- If the patient does not agree and is competent, then tell him that you respect his decision. He has the right to refuse treatment.
- Further inform him that you can come and visit him again if he would like to discuss anything or if he changes his mind at any time.
- If the patient is noncompetent, then state that you would like to arrange a family meeting, call a social worker, and arrange a mental health review.
- Tell him “I will come back to talk to you again.”

Case Discussion Phone Call: Confidentiality**Candidate Information:**

A 28-year-old female is your general practice patient. She has been under treatment for depression. Her mother is also your patient. Her mother calls you and tells you that she is very much concerned about her daughter. She wants to know the diagnosis, her medication, and further plan of treatment.

This is a phone consultation. Please talk to the mother on the phone.

Starting the Station:

- Knock on the door.
- Enter the station.
- There will be no one in the room.
- Observe carefully the phone and the instruction sheet. Sit down on the chair. Lift up the phone, and press the button mentioned in the instruction sheet or will be clearly marked on the phone. As soon as you press the button, commence talking. Keep in mind you do not need to talk very loud or fast.
- If the person on the other side is not able to hear you well, then you may need to adjust the volume. And you can also request that the person on the phone speak a bit louder if you think you are not listening properly.

Opening:

“Good morning/good afternoon, I am Dr.... To whom am I speaking? Are you the mother of Miss....? How can I help you today?”

She will introduce herself and will tell you that her daughter is your patient. She wants to discuss about her daughter’s medical issues.

- Refuse to discuss about her daughter’s medical history.
- State that due to confidentiality you can not disclose the information.
- Tell her that you are happy that she called and is concerned about her daughter.
- Appreciate her role as a caring person.
- You should inform her that you will document this phone conversation in her chart.
- Ask her why did she not discuss this with her daughter directly.
- Offer her a joint meeting with her and her daughter together if both agrees, but she will need to talk to her daughter about it.
- Tell her that as a doctor you have an obligation to keep your patient’s information confidential and protected.
- Further emphasize that it is against the law to disclose such information.
- Say that the patient may lose trust in the doctor if there will be a breach of confidentiality.

- Show empathy and support and recognize her feelings and emotions.
- If she says that she will talk to her daughter and they will visit together, then offer to book a follow-up appointment.

Case Discussion: Confidentiality

Candidate Information:

You are a general practitioner (GP) and wrote a prescription for birth control pills to a 19-year-old female a few days back. Her mother found your clinic appointment card in her daughter's coat while doing laundry. Her mother came to visit you, inquiring about her daughter's visit.

Please talk to the mother.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient's mother.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair and start the interview.

Opening:

"Good morning/good afternoon. I am Dr.... Are you the mother of Miss....? How can I help you today?"

She will introduce herself and will tell you that she found your clinic's appointment card in her daughter's coat. She wants to know why her daughter visited the clinic.

Address the Confidentiality and Reason:

- Start by refusing to tell her the reason for her daughter's visit.
 - You can admit that the daughter is your patient (mom has the appointment card), but explain to the mother that you cannot discuss the reason why she came to your office due to patient confidentiality.
 - Mention that a doctor and patient's relationship is confidential.
- She may say, "I am her mother and would like to know everything about my daughter. She is only 19 years old and very young to make her own decisions."
 - Address this concern first. Tell her that her daughter is competent and mature. She understands the situation and so you believe she can make her decisions on her own.
- Tell the mother that you are happy that she is concerned about her daughter.
- Appreciate her role as a caring person.
- You should inform her that you will document her visit in her daughter's chart.

- Tell her the best way to get the information is from her daughter.
- Ask her why she did not discuss this with her daughter directly.
- Offer her a joint meeting with her and her daughter together if they both agree, but she will have to talk to her daughter about it.
- Tell her that as a doctor you have an obligation to keep the patient's information confidential and protected.
- Further emphasize that it is against the law to disclose such information.
- Say that the patient may lose trust in the doctor if there is a breach of confidentiality.
- Show empathy and support and recognize her feelings and emotions.
- If she says that she will talk to her daughter and they will visit together, then offer to book a follow-up appointment.

Case Discussion: Relative as Decision-Maker

A 72-year-old male with known chronic obstructive pulmonary disease (COPD) comes frequently to the emergency department with severe episodes of shortness of breath. He came today in a critically ill condition and you provided treatment. He is improving with initial management. He is currently in the resuscitation room. His daughter is in the family room. She wants to discuss with you about "do not resuscitate" (DNR) orders for the patient.

Please discuss with her.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient's daughter.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair and start the interview.

Opening:

"Good morning/good afternoon. I am Dr.... Are you the daughter of Mr....? How can I help you today?"

She will introduce herself and will tell you that she does not want her father to be resuscitated and would like to sign a DNR document.

- Start by asking her why she is asking for a DNR order for her father.
- Ask about her father's usual mental status.
- Mention that he is now alert and competent.
- Ask her if she has discussed this matter with her father before.

- Ask if her father has an advance directive.
- Further inquire if she knows about her father's wishes and preferences in this regard.
- Mention that it is her father's right to decide.
- Ask her to put herself in his condition and see how she feels.
- Tell her that you are going to discuss this with her father directly.
- Offer her to take her to the resuscitation room and talk to her father first.
- You can arrange a meeting with her and her father together if both agree.
- Refuse to write a DNR without her father's consent.
- Appreciate her concern about her father.
- Stay firm but not hostile.
- Ask if she has a written will.
- Ask about who is the legal power of attorney.
- Ask about wishes of other close family members.
- Does she have parents or children?
- Ask if he has discussed this with them.
- Offer to have a family meeting before making a final decision.
- Encourage him that it will be a big step for him and he should involve close family members in this decision. It will be great to have the family members' support with him.
- Further inquire that if he knows about his wife's wishes and preferences in this regard.
- Ask him to put himself in her condition and see how he feels.
- Offer support from a chaplain or a support worker.
- If everything favors him and he is the right surrogate decision-maker, then agree to remove the tube.
- Inform him that you will need to let the hospital staff know about it.
- Tell them that you will document all this in her chart and you and he will need to sign it for record keeping.
- Empathize and understand his feelings.

Case Discussion: Surrogate Decision-Maker

Mr... is the husband of Mrs...., a 59-year-old female who got into a roadside accident few years back. She has been in a vegetative state since then. She is fully dependent on the nurses' care. She has had a feeding tube since the accident. He has come to see you because he wants to discuss the possibility of removal of the feeding tube.

Please discuss with him and address any concern.

Surrogate Decision-Maker:

- One who decides on behalf of an incompetent patient
- Who can be a surrogate decision-maker:
 - Power of attorney
 - Spouse
 - Parents
 - Children
 - Sibling

Starting the Station:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient's husband.
- Give stickers to the examiner if required or show your ID badge.
- Now sit on the chair and start the interview.

Opening:

"Good morning/good afternoon. I am Dr.... Are you Mr...? How can I help you today?"

He will introduce himself and will tell you that his wife has been in the hospital for a long time now, and he wants to get her feeding tube removed.

- Start by asking him why he wants to have the feeding tube removed.
- Ask if she has made an advance directive.

Case Discussion Telephone Call: Pharmacist Refusal to Fill Prescription

You are a GP in a small community. A 16-year-old female came to your practice in the morning concerned that she had unprotected sex last night and asked for a "morning after" pill. You gave a prescription. The local pharmacist refused to fill the medication for her. Your nurse told you that he is on the phone and wants to discuss it with you.

This is a phone consultation. Please talk to the pharmacist on the phone.

Starting the Station:

- Knock on the door.
- Enter the station.
- There will be no one in the room.
- Carefully observe the phone and the instruction sheet. Sit down on the chair. Lift up the phone and press the button mentioned in the instructions sheet or that will be clearly marked on the phone. As soon as you press the button, start talking. Keep in mind you do not need to talk very loud or fast. Talk as you usually talk on the phone.
- If the person on other side is not able to hear you well, then you may need to adjust the volume. And you can also request that the person on the phone speak a bit louder if you think you are not able to listen properly.

Opening:

"Good morning/good afternoon, I am Dr... and you are...? How can I help you today?" He will mention that your patient

is in the pharmacy and she is only 16 years old asking for a “morning after” pill. He may further suggest to talk to her parents and inform them about her visit because he knows them.

- Ask him why does he think so.
- Tell him that you also know the parents but in this regard she is competent to make her own decision.
- She is mature and can decide for herself.
- State that a 16-year-old can decide independently about herself.
- Further mention that it will breach confidentiality if we inform her parents.
- Discuss that by breaking the confidentiality, she will lose trust in him and the pharmacist as well.
- Tell him that we can only inform her parents if she allows.
- Offer a meeting with both the patient and the pharmacist.
- Mention the urgency of the issue in that she needs to have the pills now.
- Appreciate his paternalistic role.
- If the pharmacist agrees to fill in the prescription, then thank him and offer to have a later meeting to discuss these kinds of issues that may come up in the future.
- If the pharmacist resists, then inform him that it is against the rules and regulations set by the College of Pharmacists.
- Tell him that by not filling the prescription and by informing the parents, he will violate her rights.
- Inform him that you will discuss the matter with the College of Pharmacists today.
- Stay firm but not hostile.
- It is a phone conversation so keep a check on your tone and volume throughout the conversation.

Case Discussion: Truth Telling

You are looking after Mr..., a 62-year-old male who has been recently diagnosed with metastatic bowel cancer. His son has asked to see you in the family room and is requesting that you not disclose the information to the patient.

Please talk to the son and address his concerns.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient’s son.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... Are you Mr...? How can I help you today?” He will mention that his father

has been diagnosed with metastatic bowel cancer today. He does not want his father to be informed about the diagnosis.

Appreciate that he is concerned about his father.

Make a Comment:

Start with making a comment: “It is not unusual for families to have that request.”

Ask the Son Why He Thinks So:

He will say that his father will not be able to handle the bad news due to ongoing health issues, depression, and a fragile personality.

- Ask about advanced directive or a will.
- Ask about a substitute decision-maker.
- Ask if he has ever discussed this matter with his father.

Then discuss with him that it is reasonable to have such feelings about loved ones. Tell him, “People go through various stages when faced with bad news. We have specialists here who can help the patient and his family members to adjust with the reality of the situation.”

Reasons to Disclose the Information to the Patient:

- The patient has the right to know.
- The patient needs to be involved in his own decision-making.
- We need to discuss further treatment options.
- If he agrees, then I will refer him to an oncologist.

Explain the Implications Not to Tell:

- It is difficult to hide information, as the decision-making is a teamwork process.
- He will eventually know or find out.

Mention:

- Conclude that you will go and talk to the patient and will ask his wishes about how much detail he wants to know.
- Ask the son to discuss with the family first and then talk to the patient.

Plan:

- Offer a family meeting.
- Offer social worker support.
- Encourage the son to discuss with other family members. You can have a family meeting before talking to the patient.
- Thank him.

Case Discussion: Pre-Human Immunodeficiency Virus Test Visit

Mr..., a 32-year-old male, is your next patient in your general practice clinic. He is a new patient to your practice. He has booked an appointment to get his human immunodeficiency virus (HIV) test done.

Please discuss with him about the test and address any concern.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... Are you Mr...? How can I help you today?” The patient will mention that he is here to get his HIV test done.

- Welcome him to your practice.
- Be very supportive and show him that you are ready to help him.
- “Absolutely, I can arrange that for you.”
- Discuss with him first before ordering the test. Because it is his first visit to you, you need to ask a few questions. You need to know about the patient’s health before ordering the test.
- Who is this person? Check his identity.
- How is his general health?
- Does he have any ongoing medical problems?
- Is he on any home medication?
- Does he smoke, drink, or use any other drugs?
- Why does he want to have this test?
- Any particular concerns?

Rule Out HIV Risk Factors:

- Inquire about his sexual behavior:
 - “Are you sexually active?”
 - “How many partners do you have?”
 - “Do you have sex with female or male or both?”
 - “Do you use condoms all the time?”
- “Do you or your partners have any of the following physical symptoms?”:
 - Fatigue
 - Fever
 - Weight loss
 - Frequent infections
 - Penile or vaginal discharges
 - Lymph nodes enlargement
- “Have you had blood transfusions before?”
- Use of IV drugs?
- Sharing the needles?
- Tattoo or piercing?
- Does the partner know about his visit today?

Before giving the information about the test, check with the patient:

- How much does he know about the test itself?
- What is his understanding about the test?

Explain the Test:

- Need the patient’s signed consent and this will be documented in the chart.
- Various test options: Nominal/non-nominal/anonymous
- Further explain if he wants to know:
 - **Non-nominal reporting:** meaning that the full name of the individual is not reported to public health. The first name, initials, and date of birth are reported to the Medical Health Officer for surveillance purposes. The full name of the individual is still on the specimen sent to the laboratory.

How We Do the Test:

“We will sent the bloods and request form to the lab. The lab will do the screening test, which usually takes about 2 weeks for the results to come back.”

Negative Test Results:

If the results are negative, they will send a negative test report. And it is suggested to repeat the same test. Explain the window period. When people have picked up the virus, it usually takes quite a few months for the body to develop enough antibodies to be detectable in the blood test. Waiting for about 3 months after exposure is recommended. Newer HIV tests have shortened the window period. The average window period for newer enzyme immunoassays (EIA) tests, which detect p24 antigen and HIV antibodies, is about 16–18 days.

Positive Test Results:

- If the results are positive, then the lab will reconfirm the test before sending the positive report.
- What does a positive test mean? HIV + is different from acquired immunodeficiency syndrome (AIDS). There are advantages of earlier detection of the virus because treatments are available to control the disease process. A positive test needs to be reported to public health.
- Ask the patient if he has any question.
- How is his mood now?
- Did he understand the information?
- Ask if he has any suicidal or homicidal ideation.
- Ask if he requires any help or support.
- Inform him that the results are not given on the phone, so once the results come back, the practitioner will call him to book a follow-up visit.
- Ensure him that the information will be kept confidential.

- Advise him to engage in protected sex regardless of the results of the test from now on.
- Ask him if he has any concerns.
- Offer him further information about HIV (Web site or a handout)

Case Discussion: Delivering Bad News (HIV Test Positive Results Visit)

You are working as a locum general practitioner in a general practice. Mr..., a 32-year-old male, is your next patient. Another GP requested an HIV test for him 2 weeks back. The results have come back positive.

Please inform him about the results. Please address any concern.

Starting the Station:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner if required or show your ID badge.
- Now sit on the chair and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... Are you Mr....? How can I help you today?”

The patient will mention that he is here to get his HIV test results.

Introduction:

- Tell him that his GP is on vacation and you are covering for him as a locum GP.
- “I have your file with me. Can I please ask you a few questions before I go through the results of your tests?”
- “Why did you request the test?”
- “Did you feel sick in any way?”
- “Was there anything that made you worried about your own health?”
- Be empathetic and flexible.

Give the Test Result (Breaking Bad News):

SPIKES (setting, perception, invitation, knowledge, empathy/exploration, and summary/strategy):

- **Setting:** Familiarize yourself with the patient’s background, medical history, test results, and future management plan. Arrange for a colleague or a nurse to accompany you. Relatives can be in attendance in the patient prefers. Arrange for privacy. Switch off your phone or pager.

- **Perception:** Assess the patient’s understanding of his condition.

- “What do you know about HIV?”
- “What do you think is going on?”
- “What have you been told about all this so far?”
- “Are you worried that this might be something serious?”

- **Invitation:** “How much detail do you want me to discuss with you?”

- “How much information would you like me to tell you about your diagnosis and treatment?”
- “Are you the kind of person who prefers to know all the details?”
- “Do you want someone else to be present?”

- **Knowledge:**

- Gently inform him of the result of the test.
- “Unfortunately, I have some bad news to tell you. I am sorry to tell you that your test results are positive.”
- Silence.
- Monitor the patient’s reaction. Wait until he expresses his emotions.
- Be sensitive to his emotions.
- “Do you want me to proceed?”

- **Empathy:**

- Normalize the patient’s feelings. Say, “All the feelings you are having now are very normal.” Offer a glass of water.
- “Do you need more time?”
- “How do you feel now? I think I understand how you must be feeling now.”
- Please do not say: “I know how you feel.”
- If he argues that there might be an error or mistake, mention that you are pretty sure about the result, because they do two tests before giving a positive result.

- **Strategy and Summary:**

- Assess the patient’s expectations of further treatment and plan.
- “What kind of thoughts are going through your mind?”
- “Do you have any questions or concerns now?”
- Tell him that you have an obligation to inform the public health department.

Partner:

- Ask about the partner or partners.
- How to tell the partner? “You should tell your partner.”
- Ask about the duration of the relationship; how close they are to each other.
- Partner has to know:
 - There is a risk of infection.
 - Partner needs to be tested as well.
 - Even if he will not inform the partner, the public health department will.
 - Prefer for him to tell, but offer him some help to tell his partner.

If he asks if he has **AIDS**, say, “You don’t have AIDS.” Ask him if he wants to know more about HIV and AIDS.

What Is HIV/AIDS?

HIV stands for human immunodeficiency virus, which is the virus that causes HIV infection. The abbreviation “HIV” can refer to the virus or to HIV infection. AIDS stands for acquired immunodeficiency syndrome. AIDS is the most advanced stage of HIV infection. HIV attacks and destroys the infection-fighting CD4 cells of the immune system. The loss of CD4 cells makes it difficult for the body to fight infections and certain cancers. Without treatment, HIV can gradually destroy the immune system and advance to AIDS. HIV is spread through contact with the blood, semen, pre-seminal fluid, rectal fluids, vaginal fluids, or breast milk of a person with HIV. Antiretroviral therapy (ART) is the use of HIV medicines to treat HIV infection. People on ART take a combination of HIV medicines (called an HIV regimen) every day. ART cannot cure HIV infection, but it can help people with HIV live longer and healthier lives. HIV medicines can also reduce the risk of transmission of HIV [1].

Before Discharging the Patient:

- Ask if he understands the information provided.
- Summarize important issues (wrap up).
- Ask the patient if he has any questions.
- How is his mood now?
- Make sure the patient is safe to go home, safe to drive back, and no suicidal or homicidal ideation.
- Make sure to arrange a follow-up visit.
- Offer any help or support if required.
- Emphasize the importance of safe sex: Advise the use of barrier contraceptive methods always with all partners to prevent transmission in the future.
- Ask him if he has any concerns.
- Offer him further information about HIV (Web site or a handout).

Management and Counseling: Medical Error – Wrong Blood Transfused

You are working in a busy medical unit. A nurse just informed you that a 65-year-old male was started on the wrong blood transfusion bag. Please go and talk to the nurse and then manage the patient.

Starting the Station:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the nurse.
- Give stickers to the examiner if required or show your ID badge.
- Sit on the chair and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... Are you the nurse? Are you looking after Mr...? I just got a call to come and attend Mr.... What happened?” She will tell you that Mr... was supposed to get a blood transfusion today, and by mistake the wrong blood bag was started. But she noticed it soon after the transfusion was started.

The first question you must ask the nurse is: “Did you stop the blood?”

If she says yes, then appreciate her decision. That is a good thing she did.

If she says no, then ask her to immediately stop the blood transfusion.

She may request that you should not tell the patient because she is worried that she may lose her job. Address this concern first. Tell her, “It is too early to determine who is responsible. Errors take place in medical practice. We do not know what happened exactly. We need to assess and stabilize the patient. You want to ensure he is fine and deal with this issue later.”

Now address the patient who will be lying on the bed. Mention again to cease and remove the blood unit but keep in the cannula.

Now Talk to the Patient:

“I am Dr... and I am the doctor in charge. It looks like an unintentional medical error took place. You have been started on the wrong unit of blood. We need to make sure you are stable.”

If he asks who is responsible? Say, “We don’t know who is responsible. There are at least 15 steps and within any step there could have been an error. We will fill out an incident report, and as soon as we get the results we will inform you.”

If he states that he will sue the hospital, inform him that “You can sue, it is your right. However, at the moment it is my priority to stabilize you.”

Start a Primary Survey (ABCD):

Ask the nurse to get you a set of vital signs.

- **A: Assess Airway**
 - “Can you please open your mouth?”
 - Check for signs of anaphylaxis:
 - Swelling in mouth or around the lips.
 - Ask if there is any itchiness.
 - Difficulty in breathing.
- **B: Breathing/Oxygen Saturation**
 - Assess for breathing.
 - Assess for air entry (auscultate lungs).
 - Listen for heart sounds.
- **C: Circulation**
 - Put the patient on a cardiac monitor.
 - Request an electrocardiogram (ECG).
 - Start a new IV line.
 - Get blood samples for a full blood count (FBC), electrolytes, international normalized ratio (INR), partial

thromboplastin time (PTT), liver function test (LFT), creatinine, and urea.

- Send urine for analysis and check for hemoglobinuria.
- Blood unit to be sent to blood bank for cross matching.
- Ask the nurse to call the blood bank and inform them about the incident.
- **D: Disability**
 - Check the pupils: Round, active, and symmetrical.
 - “Squeeze my finger, wriggle...wriggle...”
 - Ask for blood sugar.
 - Check the glaucoma coma scale (GCS)

Drugs:

If febrile ask the nurse to give paracetamol (acetaminophen).

Ask the nurse: “Please prepare for me Benadryl (diphenhydramine) 50 mg, hydrocortisone, and epinephrine, just in case we require these next.”

Secondary Survey:

- Take some further history:
 - “Why was the blood transfusion given?”
 - “Is it the first time you have received a blood transfusion?”
 - If he received blood before, then ask “Were there any complications?”
 - Does he have any long-term diseases?
- How is he feeling now?
- Check for symptoms of anaphylactic shock:
 - Swelling around the lips or fingers?
 - Difficulty in breathing? Chest wheezing?
 - “Do you feel warm?”
 - Itchiness?
 - Chills?
 - Tingling?
 - Hives?
 - “Did you have a fever before the transfusion was started?”
- Check for hemolytic reaction. “Do you have any back or flank pain?”
- Check for any bleeding.

Counseling:

Ask him if he would like to know more about blood transfusions. Tell him “It is a life-saving measure, and there are a lot of steps and set protocols that are taken into account to make sure that it is safe. Like any other medication, blood transfusions may cause some side effects. Some of these side effects can be serious. Some common side effects are:

- **“Febrile reaction.** Usually it is self-limiting. It can potentially happen again in subsequent blood transfusions. Next time you receive a blood transfusion, we will give you paracetamol.”

- **“Anaphylactic reaction.** It is a severe allergic reaction, which is very serious and cannot be predicted. Whenever we give a blood transfusion, we make ourselves ready for this, and we have good measures to deal with it.”
- **“Hemolytic reaction.** This usually happens when patients receive blood belonging to another blood group.”

If the patient asks whether he is going to have a hemolytic reaction: “The blood which was started for you was of the same blood group as yours. Your symptoms are not consistent with a hemolytic reaction. The blood has been sent to the blood bank, and once results are back, we can discuss it further.”

- Offer support.
- Ask the patient if he wants to talk to a family member or a friend.
- Tell him that you will keep him under close observation and will visit him again shortly.
- Ask him if he has any concerns or questions.
- Thank the patient.

Counseling: Marijuana Found in Son’s Bag

Mrs... is your patient. She has booked an urgent appointment today because she found a small amount of “green stuff” in her son’s belongings.

She is in the clinic room. Please talk to her and address her concerns.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair and start the interview.

Opening:

“Good morning/good afternoon. How are you, Mrs....?” (She is your regular patient.) “How can I help you today?”

She will mention that among her son’s belongings, she has found a small plastic bag of “green stuff,” which she thinks is marijuana. She is here to talk to you about it.

Appreciate that she is concerned about her son. Tell her that you need to ask a few questions about him.

Introduction:

- “What is his name? What is his age?”
- “What makes you believe that it was marijuana?”
- “Where did you find it?”
- “How much did you find?”
- “Did you ask him about it?”

- “Is it the first time you have found it?”
- “How do you know that he is using it?”

Changes in Behavior:

- “Did you notice any change in his behavior?”
- “How is his mood lately?”
- “Is he depressed?”
- “Is he still interested in his hobbies?”
- “Does he worry a lot?”
- “Does he have excessive fears and avoid situations?”
- “Do you have concerns that he may harm himself or anyone else?”
- “Is he very excited at times? Laughing out?”
- “Is he preoccupied?”
- “Does he spend more time in his room?”
- “Does he stare at a wall?”
- “Does he talk to himself?”
- “Is he aggressive at times?”
- “Is he more forgetful?”
- “Does he lose his belongings easily?”
- “Does he take more time to react?”

Social History:

- “How much time do you spend with him?”
- “How much time is he out of the home?”
- “How much time does he spend with his friends?”
- “Do you know any of his friends?”
- “What kind of activity are they involved in?”
- “Does he have a lot of money?”
- “Does he get into fights?”
- “Has he had any problems with the law?”
- “Does he have any criminal records?”
- “Does he ask for money?”
- “Do you believe he steals money?”
- “Do you think he smokes?”
- “Do you think he drinks?”
- “Do you think he uses other drugs?”

Education:

- “How is he doing in school?”
- “Have his grades dropped?”

Past Medical History: Any other health issues?

Past Psychiatry History: Diagnosis, treatments, admissions, follow-ups, previous similar episodes

Medication History: “Is he on any medications?”

Allergies: “Does he have any allergies?”

Family History and Family Psychiatric History

Social History: Already asked

Living Conditions and Relationships

Counseling: “Based on what you have told me (if there are no changes in behavior), it looks like there is no change in his health and behavior.”

“Marijuana is a commonly used drug. It is used by teenagers and sometimes only once for experimentation. When we talk about substance abuse and drugs, we talk about different drugs. Marijuana is a soft drug. It is not like other hard drugs such as cocaine, heroin, and amphetamines.”

Do You Want to Know More About Marijuana?

“It is from the *Cannabis* family, and it affects the brain by creating feelings of happiness, excitement, and enhances experience. Sometimes with prolonged use or in high doses, it can cause side effects including apathy”. There may also be:

- Psychological effects
 - Relaxation
 - Euphoria
 - Alteration in perception of time, color, and space
 - Short-term memory loss
 - Irritability
- Physical effects
 - Dry mouth
 - Dry eyes
 - Bloodshot eyes
 - Increased heart rate
- Effects are prolonged for 2–3 h after smoking, with no clear evidence of hangover or lasting effect.
- The ability to drive and ability to operate machinery are impaired due to effects on motor skills and depth perception [2].
- It can cause lung cancer.
- If injected, it increases the risk of HIV and hepatitis B and C.
- In some teens, in high doses it may unmask schizophrenia and can cause psychosis.
- It can interfere with sexual function.
- It can cause infertility and weight gain.
- By itself marijuana is not strongly addictive.
- If he is using it, then we can help him to stop.
- It can be a crime to use and possess these drugs.

Further add if she has concerns about tolerance, withdrawal effects or hard drugs: “One major concern of marijuana is it acts as a bridge to hard drugs. These drugs are addictive. These also cause tolerance, which means one needs to increase the dose to have the same effect. If one wants to stop the drug, it causes withdrawal effects.”

Plan:

- Offer her to have a family meeting with her and her son.
- Try to be close to him.
- She should talk and discuss the matter with him.
- Try to find out about his friends and try to know what his activities are outside the home environment.
- Offer further information about marijuana (Web sites and handout).
- Book a follow-up visit if she wants.
- Thank the patient.

Further Reading

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5. Varian F, Cartwright L. *The situational judgement test at a glance*. 1st. Wiley-Blackwell; 2013.

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1. <https://aidsinfo.nih.gov/understanding-hiv-aids/fact-sheets/19/45/hiv-aids%2D%2Dthe-basics>. Accessed Oct 13, 2017.
2. <https://patient.info/doctor/cannabis-use-and-abuse>. Accessed Oct 13, 2017.

Introduction

In the objective structured clinical examinations (OSCE), the number of stations is always limited between 10 and 14, with 1–2 pilot stations. One may or may not get a case from the genitourinary system. This is usually a history-taking station with counseling or discussing a management plan with the patient. You would not be asked to perform a pelvic, rectal, or vaginal examination. Please keep in mind that with the increasing use of manikins/plastic models in practice modules and training facilities, one can expect to take a history from a role player, and then the examiner can ask you to perform a rectal/vaginal examination on a manikin/model. So do not be surprised if you get one. Breast examination has already been introduced in some OSCE, in a similar way.

This chapter outlines common genitourinary system-related topics important for the OSCE. An overview of the history taking required for the genitourinary system stations is given in the start of the chapter. The outlines of male and female examinations of the genitourinary system are also given.

Common Genitourinary System Symptoms for the Objective Structured Clinical Examination

Common presenting symptoms are:

Male:

- Change in frequency, urgency, and quantity of urination
 - Difficulty in either initiating or stopping/holding urinary stream
- Post-void dribbling and/or feels bladder is incompletely empty

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- Painful or difficulty in urination (*dysuria*) and its associated timing during voiding (at the start or at the end or throughout voiding)
 - Pain in the costovertebral angle or suprapubic
- Urinary retention
- Excessive urination at night (*nocturia*)
- Involuntary leakage of urine (*incontinence* – including urge and stress)
 - Change in color or smell of urine
 - Blood in urine (*hematuria*)
 - Presence of stones or sediment in the urine
 - Testicular pain or swelling/mass
 - Discharge from the penis, itching
 - Lesions on external genitalia
- Fever/rigors (*infection/urosepsis*)
- Nausea/vomiting (*pyelonephritis*)

Female:

- Change in frequency, urgency, and quantity of urination
- Involuntary leakage of urine (*incontinence* – including urge and stress)
 - Painful or difficulty in urination (*dysuria*)
 - Urinary retention
 - Change in color or smell of urine
 - Blood in urine (*hematuria*)
 - Presence of stones or sediment in the urine
- Pelvic pain
- Discharge from the vagina/urethra, itching
 - Lesions on external genitalia
- Symptoms related with pregnancy, ectopic or pelvic inflammatory disease (PID):
 - Missed period (last menstrual period (*LMP*) date?)
 - Pain during intercourse (*dyspareunia*)
 - Postcoital bleeding
 - Urethral or vaginal discharge
 - Lesions on external genitalia
 - Itching

History Overview: The Genitourinary System

See Table 8.1 for an overview of the pattern of history taking required for genitourinary system stations.

Table 8.1 An overview of the pattern of history taking required for genitourinary system stations

Introduction
Name and age
Chief complaint
In patient's own words
History of present illness
Analysis of chief complaint:
Onset
Course
Duration
If pain:
Nature
Intensity (1–10)
Location
Progression
Frequency
Quality
Radiation
Severity (1–10)
Timing
Contributing factors
Aggravating/alleviating factors
Related symptoms (see Common Genitourinary Symptoms in detailed history)
Associated symptoms: nausea, vomiting, change in bowel habits, appetite, blood in vomiting/feces/urine
Predisposing factors
Aggravating and relieving factors
Red flags/risk factors
Rule out differential diagnosis
Review of systems:
Respiratory
Cardiovascular
Neurology
Musculoskeletal
Constitutional symptoms:
Anorexia
Chills
Night sweats
Fever
Weight loss
Past medical history and surgical history
Medical illnesses
Any previous or recent medical issues
History of previous surgery/operation , especially relevant to the area of concern
Any related anesthetic/ surgical complication?
Hospitalization history or emergency admission history
Medications history:
Current medications (prescribed, over the counter, and any herbal)

Table 8.1 (continued)

Allergic history/triggers:
Any known allergies?
Family history
Family history of any long-term or specific medical illness
Home situation
Occupation history
What do you do for a living?
Social history
Smoking
Alcohol
Street drugs
Sexual history
If adult female:
Menstrual history (LMP)
Gynecology history
Obstetric history
If teen:
Home
Education
Employment
Activities
Drugs
Sexual activity
Wrap-up
Describe the diagnosis
Management plan
Possible medical treatment
Duration of treatment and side effects
Red flags
Laboratory tests
Further information websites/brochures/support groups or societies/toll-free numbers
Follow-up

Detailed History: Genitourinary System

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required), and/or show your identification (ID).
- Sit on the chair or stand on the side of the patient and start the interview.

Opening:

“Good morning/good afternoon, I am Dr. . . . I am your attending physician for today. Are you Mr/Mrs. . . ? Are you . . . years old?”

Chief Complaint

Chief complaint or the reason the patient is visiting the clinic. “What brings you in today?” or “Tell me about your symptoms.”

Allow the patient to answer, trying not to interrupt or direct the conversation. Try to facilitate the patient to expand on their presenting complaint if required. Like “So tell me more about that....”

It is important to keep in mind that sometimes the patient coming with genitourinary problems will be quite disturbed and will reflect this during the interview. For example, a patient with a prostate problem may say, “I haven’t slept well for many nights.” A female patient with urinary incontinence may say, “I haven’t attended a party for many months.” Showing empathy and support in the early part of the interview will help.

Secondly, care should be taken to ensure privacy and comfort while conducting the interview and performing the examination. Establish confidence and rapport. It will help particularly in gaining a sexual and psychosexual history. Specific questions may be appropriate. It is important to make the patient aware before asking further questions: such as questions regarding vaginal discharge/history of intercourse/sexual partners. A single sentence may be helpful such as “I need to ask you more questions about your vaginal discharge; is that alright?” Another example relating to positional pain during intercourse would be to explain first that this will give you an idea of which internal structures or organs are producing the pain.

Thirdly, the patient should be assessed in the context of the age, gender, and past history. Urinary symptoms may not be indicative of urological abnormality but may have other causes. For example, a patient coming in with frequency of micturition might be related to their anxiety. Urinary symptoms also may be caused by a neurological disease.

History of Present Illness

If pain is the chief complaint, then quickly go through the pain questions

- Onset
- Course
- Duration
- Progression
- Quality of pain (burning, throbbing, dull)
- Radiation
- Severity (scale of 1–10)
- Timing (time of the day)
- Pain before
- Aggravating
- Alleviating
- Associated symptoms:
 - If the patient is a female, then discuss the relationship of symptoms to menses (dysmenorrhea, Mittelschmerz), and also discuss the relationship of symptoms to intercourse (dyspareunia).
 - Pay attention to the location and type of pain. Pain originating from the renal capsule will be located in the ipsilateral costovertebral angle and may radiate to the upper abdomen or umbilicus. Mid-ureteral pain may be referred to the lower quadrant of the abdomen and scrotum. Lower ureter pain may be referred to the suprapubic area and penis. Vesical pain will be located in the suprapubic area. Prostatic pain would present in the perineum and may refer toward the lower back/inguinal region or even to the testes.

Constitutional Symptoms: Fatigue, malaise, night sweats, fever, and weight loss

Common genitourinary symptoms:

- Obstruction.
 - Difficulty in starting or initiating in passing urine?
 - “Do you have to strain/push hard to pass urine?”
 - “Did you notice a change in stream? How full is the urinary stream?”
 - “Did you notice any dribbling? Is there any terminal dribbling of micturition?”
 - “After passing urine, do you still have the feeling/need to pass more urine?”
 - Irritation
 - “How many times are you going to the washroom in a day? How many times during the day and how many times during the night?”
 - “Does it affect your sleep?”
 - “Do you need to rush/run to the washroom?”
 - “Are you able to make it on time?”
 - “Have you ever lost control?”
 - “Do you have a burning sensation while passing urine or after finishing?”
 - Urinary changes, ask specific questions about the urine:
 - Color of the urine
 - Any particular smell/odor
 - Amount of urine
 - Consistency
 - Clear urine
 - Frothy urine
 - Cloudy urine
 - Not clear urine
 - Noticed any blood?
 - Incontinence: Is there any incontinence or urgency of micturition? Stress incontinence/detrusor instability, detrusor underactivity, or urethral obstruction.
 - Urge incontinence: Ask if this leads to partial or total voiding.
 - Stress incontinence: Ask what provokes this and whether it leads to partial or total voiding.
- Renal:** Renal stones, pyelonephritis, chronic renal failure
- Ask about recurrent urinary tract infections (UTIs).

Prostate issues (Male Patients): Benign prostatic hypertrophy (BPH)/prostate cancer

- Is there any hesitancy of micturition?
- “Do you have to stand for a few minutes before voiding?”
- “Did you notice any change in the urine stream?” *Weak stream?*
- “Did you notice any dripping of urine?”
- “Did you notice any change in *frequency* of passing urine? Increase in urination with or without increased urine output?”
- “Are you peeing more frequently during the night?” *Nocturia*
- “Did you have any painful urination? In the start, during urination, or at the end?” *Dysuria*
- “Do you stand closer to the toilet?”
- “Do you feel you still want to void after you finish?”

Urethral discharge:

- Color.
- Amount.
- Consistency.
- Odor.
- Presence of blood.
- Any itching or burning.
- Ask about dysuria and possible exposure to sexually transmitted diseases. If the answer is yes, then explore further:
 - When was the last contact? And with whom?
 - Single or multiple partners?
 - Has their partner had any symptom?
 - Are there any other symptoms?

Testicular Pain: This can be an intense pain.

Ask about:

- Trauma?
- When did it start?
- Sudden onset?
- Association with other conditions such as mumps? History of trauma, infection, torsion, and epididymitis.

Genital Ulcers: Ask similar questions asked for sexually transmitted disease.

Impotence:

- Ask about emotional and psychological factors, associated with drugs and alcohol.
- Relevant diseases such as diabetes mellitus (DM), neurological disease, and cardiovascular disease.
- Loss of libido and erectile dysfunction.

Infertility:

This may be primary (no conception) or secondary (past conception).

- Conception history
- Length of infertility
- Sexual history:
 - History of sexual development
 - Timing and frequency of intercourse
 - Impotence and ejaculation
- Medication history
- Medical history: Conditions affecting erectile function
- Any chemotherapy or cancer treatment

Dyspareunia (only female patients):

- Determine if this is superficial (vaginismus or coming from an episiotomy scar), or if it is deep, then it can be uterine, cervical, or possibly an adnexal origin.
- Ask if it is intermittent/recurrent or always present.
- Ask if it occurs on penetration/preventing penetration or full intercourse.
- Note whether there is radiation of the pain.
- Discuss positional factors.
- Any relationship to menses.
- Ask if libido and foreplay are sufficient.
- Note whether the patient is postmenopausal.
- Ask if there is dryness/atrophy.
- Ask if there is any rash.
- Establish the degree of distress.
- Assess for any mood disorder.

Vaginal discharge (only female patients):

- Ask about the vaginal discharge.
- Color.
- Amount.
- Consistency.
- Odor.
- Presence of blood.
- Any itching, burning, or fever.
- Use of gels, douches, or perfumed bath additives.
- Any associated localized tenderness (Bartholinitis).

Abnormal vaginal bleeding (only female patients):

- Passing clots or flood of blood.
- Discuss relationship to menses. Intermenstrual?
- Relationship to coitus. Postcoital bleeding?
- Establish periodicity.
- Ask about possibility of pregnancy.

If any of the above symptoms are present, you need to ask and get further details of each:

- Onset: When did the symptom start? What was the onset – acute or gradual?
- Course: Is the symptom worsening, improving, and continuing to fluctuate?
- Intermittent or continuous: Is the symptom always present, or does it come and go?

- **Duration:** How long has it been going on?
- **Severity:** How severe? How many times a day?
- **Previous episodes:** Has the patient experienced this symptom previously?
- **Precipitating factors:** Are there any obvious precipitants/triggers for the symptoms?
- **Relieving factors:** Does anything improve the symptoms?
- **Discuss whether there is restriction on normal activities and plans.**

Systemic Review:

Just ask a few questions from each system. This can pick out any symptoms that patients may have not mentioned before in the presenting complaint. Some symptoms may be relevant to the diagnosis; for example, backaches may be associated with kidney stones.

- **Gastrointestinal:** Nausea, vomiting, appetite, dysphagia, weight loss, abdominal pain, and bowel routine
- **Cardiovascular system:** Chest pain, palpitations, dyspnea, syncope, orthopnea, and peripheral edema
- **Respiratory system:** Cough, wheeze, sputum, hemoptysis, and chest pain
- **Central nervous system:** Problems with vision, headache, motor or sensory loss, loss of consciousness, and confusion
- **Musculoskeletal:** Bone point, joint pain, and muscular pain
- **Dermatology:** Rashes, ulcers, or lesions
- **Kidney disease:** Systemic symptoms of acute kidney injury or chronic kidney disease such as anorexia, vomiting, fatigue, pruritus, and peripheral edema

Past Medical History:

“Do you have any other health issues?”

- Ask about renal disease, renal stones, pyelonephritis, congenital structural abnormality of the genitourinary tract, recurrent cystitis, pelvic inflammatory disease (PID), human papilloma virus (HPV), sexually transmitted infections (STI), human immunodeficiency virus (HIV), diabetes, hypertension (HTN), gout, and history of back injury.
- Neurological diseases may cause abnormal bladder function such as Parkinson’s disease, multiple sclerosis, or cerebrovascular disease.
- In a male patient, also ask about hydrocele, epididymitis, prostatism, varicocele, hernia, undescended testis, spermatocele, erectile dysfunction, testicular torsion, and vasectomy.

Past Hospitalization and Surgical History: “Have you had any previous hospitalization or surgeries?” Ask about previous catheterization. Abdominal or pelvic surgery can cause denervation injury to the bladder. Ureteric injury may occur following abdominal or gynecological procedures.

Medication History: “Are you taking any medications prescribed, over the counter, or herbal? If so, have there been any side effects?”

- Prolonged analgesic use may cause chronic kidney disease. Dosages of some drugs need to be adjusted or stopped in context of chronic kidney disease.
- Diuretics: May contribute to nocturia/incontinence.
- Alpha-blockers: Used in prostatic enlargement.
- Nephrotoxic agents: Angiotensin-converting enzyme (ACE) inhibitors, nonsteroidal anti-inflammatory drugs (NSAIDs), and antibiotics (gentamycin).

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke? Or does anyone else in your home or close proximity at work smoke?”
- “Do you drink alcohol?” If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs? If yes, which ones? How long? When?” Specifically ask about intravenous (IV) drug use (red flag for back pain).

Family History: Marital status, number of children, any significant history in first-degree relatives. Any family history of chronic kidney or polycystic kidney disease

Occupational History: Exposure to chemical carcinogens such as 2-naphthylamine or benzidine found in the chemical or rubber industries. These are risk factors for bladder cancer, after many years of exposure.

Foreign Travel: Travel to Egypt or Africa may result in exposure to schistosomiasis. Dehydration during travel time in a hot climate may lead to development of kidney stones.

Relationships: “Are you sexually active? Do you have sex with men, women, or both? Do you have single or multiple partners? Do you use protection?”

Self-Care and Living Condition: “What do you do for a living? Working status and occupation? Educational status? Who lives with you?”

Support: “Do you have good support from your family and friends?”

Functional status or severity or impact on life activities.

If a teenager, then add questions regarding: Home, education, employment, activities, drugs, and sexual activity

Female Genitourinary History

You need to ask further details about the menstrual history, gynecological history, and obstetric history.

Menstrual History:

- Age at menarche?
- If you notice any abnormality with puberty, then consider precocious puberty or delayed puberty. Ask about the onset of other secondary sexual characteristics and the onset of breast development.
- Ask about the pattern of the menstrual cycle:
 - When was the last normal menstrual period?
 - When was the first day of the last normal menstrual period?
 - How many days of blood loss?
 - The duration or length of the cycle?
 - Whether blood loss was heavy? If yes then ask about number of tampons and/or pads. Ask further about passing clots.
 - What form of contraception is being used?
 - Any other vaginal discharge other than the menses?
- The normal menstrual cycle:
 - Each cycle usually ranges between 21 and 35 days, with an average of 28.
 - Most healthy and fertile women have regular cycles with 1 or 2 days of variation.
 - Blood loss is 50–200 mls with an averages of 70 mls.
- Passage of large clots suggests excessive bleeding.
- Different abnormal patterns of bleeding:
 - Polymenorrhea: Unusually frequent periods.
 - Oligomenorrhea: Unusually infrequent or scanty periods.
 - Menorrhagia: Unusually heavy periods.
 - Menometrorrhagia: Prolonged, excessive, and irregular uterine bleeding.
 - Intermenstrual bleeding: Bleeding between periods.
 - Breakthrough bleeding: Patient is on the pill.
- Diseases of the uterus and cervix:
 - Mucosal disorders
 - Postcoital bleeding (usually local cervical or uterine disease)
- Postmenopausal bleeding: Bleeding occurring more than 12 months after amenorrhea of menopause.
- Dysfunctional uterine bleeding: Abnormal bleeding that cannot be ascribed to pelvic pathology. Regular pattern will suggest that ovulation is occurring. Irregular pattern suggests no ovulation or anovulatory cycles.

Psychosexual History:

It should be conducted sensitively. It is important to pick up psychosexual problems and differentiate them from other causes of symptoms. Ask about:

- Relationship details
- Intercourse and sexual practices
- Association of other symptoms
- Issues of sexuality
- Libido
- Orgasm

Obstetric History:

Ask if the patient has ever been pregnant.

- How many full-term pregnancies?
- Ask about the length of labor and whether there was any prolonged pushing?
- Ask about the size of babies: small or large size baby.
- Ask whether any methods of assisted delivery were required, such as forceps or cesarean section.
- Any complications of pregnancy? Such as hypertension, preeclampsia, eclampsia, gestational diabetes, and HELLP (*Hemolysis, Elevated Liver enzymes, Low Platelet count*) syndrome.
- Ask about any postpartum hemorrhage.
- How many unsuccessful pregnancies?
- Any miscarriages or terminations?

If the patient is more than 65 years old, add these questions:

- “Any problem with balance?”
- “Any difficulty with peeing/urination?”
- “Any issues sleeping?”
- “Any change in vision/hearing?”
- “Any recent change in memory?”
- “Are you taking any regular medications? Do you have any prescribed medicine? Are you taking any over the counter medicine?”

Wrap-Up:

- Describe the diagnosis.
- Laboratory tests.
- Management plan.
- Duration of treatment and side effects.
- Red flags.
- Further information Websites/brochures/support groups or societies.
- Follow-up.

Physical Examination: Female Genitourinary System Examination

It is highly unlikely to be asked to perform a female pelvic examination. You must be familiar with the main steps and the how to verbalize these. The examiner may ask you to



Fig. 8.1 Speculum and swabs

verbalize these steps, or you may be asked to perform an examination on a manikin.

Candidate Information:

You have been asked to do a detailed genitourinary system examination on a 32-year-old female.

Vital Signs: heart rate (HR), 76/min, regular; blood pressure (BP), 120/75 mm Hg; temperature (Temp), 36.8 °C; respiratory rate (RR), 16/min; O₂ saturation 100%

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Stand on the right side of the patient and start the examination.

Preparation for the Examination

- Equipment should be made ready beforehand (Fig. 8.1):
 - Vaginal speculum
 - Lubricating gel/tape water
 - Gloves
 - Culture swab tubes
 - Light source
- Ask for a chaperone, preferably another doctor or a nurse.
- Establish a good rapport. It will help patients to prepare for the pelvic examination.
- Explain what you will be doing and why you need to do this examination. Inform the patient that the pelvic examination consists of visual external inspection, insertion of the speculum, performance of any tests or cytol-

ogy, and then bimanual examination to determine the size and character of the uterus and ovaries. Right-handed individuals generally put their right hand in the vagina and use their left hand abdominally [1].

- Make sure you get a clear consent for the examination.
- Inform the patient that if she does not feel comfortable during the exam, she should let you know, and immediately stop that step of the examination.
- Encourage patients to empty their bladder before the examination.

Opening

- Introduction (greet, explain, position, and expose/drape)
- Ask for vital signs – interpret

General Physical Examination

(You may skip these questions if it is a history and physical station.)

- Check that the patient is alert and oriented.
- Look for abnormal findings in:
 - Hands
 - Face (eyes, nose, lips, mouth)
 - Neck
- Mention that you will look for signs related to a possible endocrine disorder: thyroid disease, Cushing syndrome, hirsutism, and acne.
- Mention that you would like to do a breast examination, a check for lymphadenopathy (especially inguinal nodes), and an assessment of secondary sexual characteristics.

Abdominal Examination

- **Posture:** Patient lying flat with his arms at the sides.
- **Inspection:** Observe for skin, umbilicus, contour, movements, peristalsis, pulsation, scars, masses, and cough reflex.
- **Auscultation:** Bowel sounds and bruits.
- **Percussion:** Shifting dullness and fluid thrill. Large ovarian cysts, which can be detected by abdominal percussion revealing central dullness.
- Liver and spleen span.
- **Palpation:**
 - Superficial/light palpation
 - Deep palpation
 - Feel for pregnancy fundal height
 - Pregnancy (often used to equate the size of other pelvic tumors):
 - 12 weeks: Palpable above the pubic bone
 - 16 weeks: Palpable midway between the pubic bone and umbilicus
 - 20 weeks: Just below the umbilicus

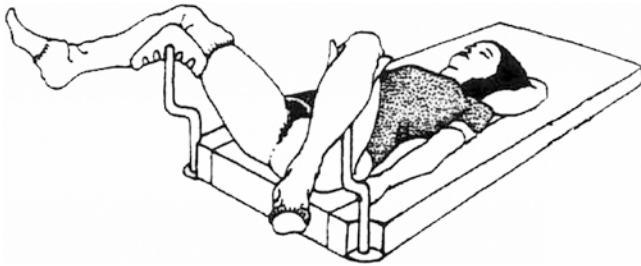


Fig. 8.2 Pelvic exam: lithotomy position. (Modified with permission from Simpson [3])

- 28 weeks: Just midway between the umbilicus and xiphisternum
- 34 weeks: Just below the xiphisternum
- Palpable bladder in urinary retention
- **Liver palpation**
- **Spleen palpation**
- **Kidney palpation**
- **Costovertebral angle (CVA) tenderness:** Renal angle tenderness suggesting a renal cause for pain

Pelvic Examination

Positioning: The patient should be asked to undress from the waist below. Drape her from the waist to knees. The patient should be placed in the dorsal lithotomy position. The dorsal supine lithotomy position is best accomplished with the use of supports, which are adjusted to the patient's leg length and allow the legs to be flexed and abducted (Fig. 8.2).

Most office foot supports require the patient to have adequate muscle control to hold her legs upright. For patients with neurologic conditions or who are anesthetized or sedated, the feet can be placed in candy cane stirrups, which support the legs in the lithotomy position [2].

In the office or examination setting, the other possible position will be putting the patient supine on the couch with flexed hips and knees with heels together and thighs abducted (Fig. 8.3) [3]. Cover the patient's abdomen with a sheet.

Position lighting to give a clear view of the external genitalia.

Put on disposable gloves.

Examination of the External Genitalia

- Systematically examine the labia majora, labia minora, introitus, urethra, and clitoris.
- Bartholin's glands are not normally tender or palpable.
- Assess for pubertal development in teenagers.
- Assess for atrophic changes in those who have reached menopause.
- Examine the labia majora and labia minora for lesions, ulcerations, masses, induration, and areas of different color and hair distribution.

The Diamond-Shaped Position

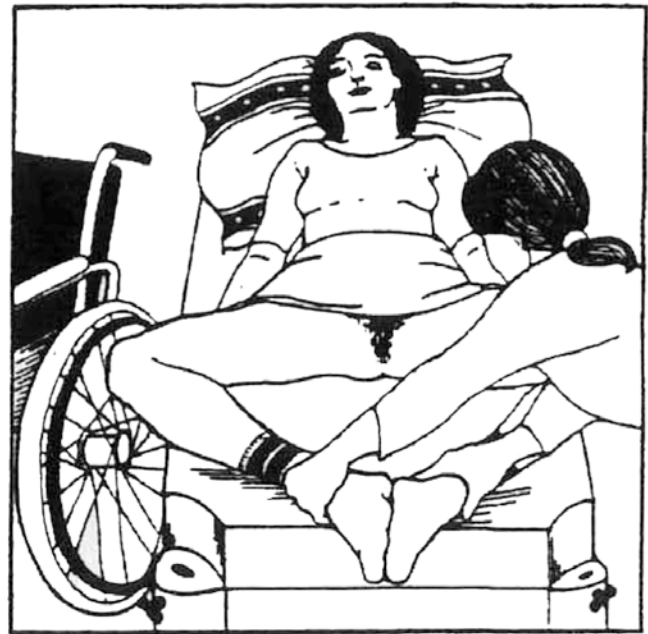


Fig. 8.3 Pelvic exam position: the diamond-shaped position. (Reprinted with permission from Simpson [3])

- Examine the perineum: lesions, ulcerations, masses, induration, and scars.
- Examine the clitoris: size, lesions, and ulcerations.
- Examine the urethra: discharge, lesions, and ulcerations.
- Examine the urethra: discharge, lesions, and ulcerations.

Examination of the Vagina: Both digital and speculum

- Separate the labia and ask the patient to push down or bear down, then examine the vestibule, and look for cystocele, rectocele, and uterine descent or prolapse.
- Observe the vagina for discharge, inflammation, lesions, ulcerations, masses, induration, nodularity, relaxation of perineum, and atrophy.

Examination of the Cervix:

Inform the patient that you will be inserting the speculum now (Fig. 8.4) [4]. It is best to show her the speculum before proceeding. And tell her that this is the instrument you will be using for examination. The patient should breathe deeply and try to relax her vaginal, rectal, and abdominal muscles during insertion.

- Look for the position of the cervix in relation to uterine position (anteverted, axial, or retroverted).
- Further examine the cervix for its color, shape, size, consistency discharge, erosions, and ulcerations.
- Cervical os shape relates to whether the patient is parous or not.

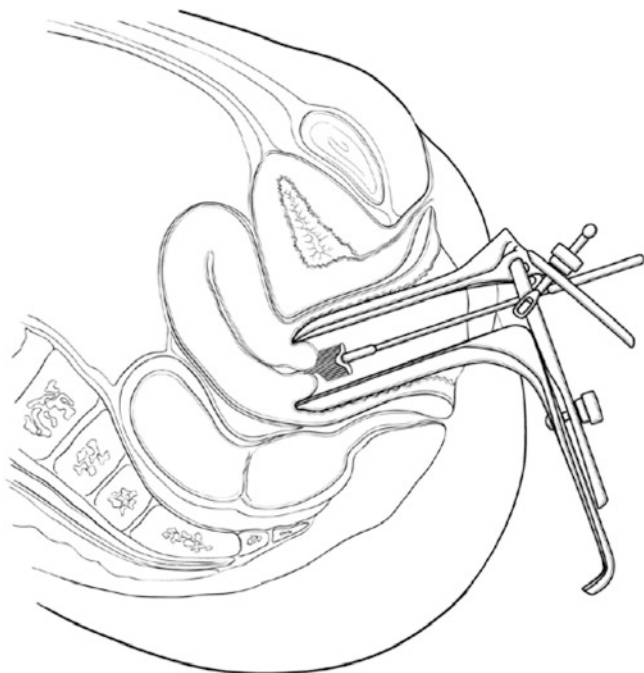


Fig. 8.4 Pelvic examination with speculum. (Reprinted with permission from Acevedo [4])

- The cervix may be bluish in early pregnancy (Chadwick's sign).
- Look for cervical tenderness.
- The squamocolumnar junction should be visualized.
- Cytology is important to diagnose and exclude cervical cancer.
- Take the cervical smears. Swabs should be labeled, prepared, and sent according to the local and regional guidelines.
- The speculum should be removed carefully and without discomfort to the patient.

Internal Examination of the Uterus:

Explain and perform a bimanual examination (Fig. 8.5) [5]. Explain that it is required to examine the uterus, fallopian tubes, and ovaries internally.

- Expose introitus, and hold the labia apart with a gloved left hand.
- Introduce lubricated right index and middle fingers.
- Palpate the uterus between abdominal (left) hand and internal (right) hand.
- Identify the cervix and uterus. The right and left adnexa are not normally palpable.
- Feel for the uterus position, size, contour, consistency of uterine tissue, and mobility on movement.
- Palpate for adnexa: ovaries for tenderness, masses, consistency, contour, mobility, and pain on movement (Chandelier sign).

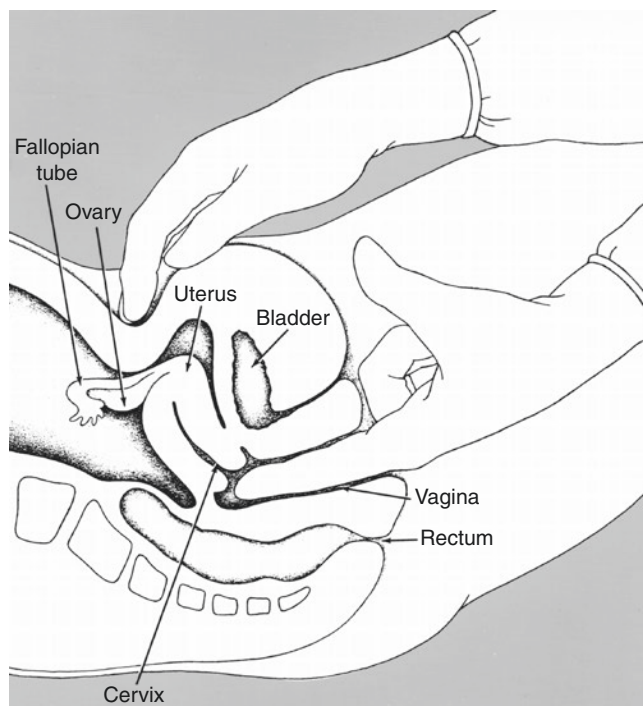


Fig. 8.5 Bimanual examination of the uterus. (Source: National Cancer Institute, AV Number: AV-0000-4114)

- Assess the size, consistency, and mobility of organs felt.
- Hegar's sign: in pregnancy, the cervix softens.
- In uterine or adnexal infection or inflammation, one can observe cervical excitation.

Rectal Examination

Mention that you will complete your examination with a rectal examination if required.

Look for pain, occult blood, masses, hemorrhoids, anal fissures, and sphincter tone.

Thank the patient. Ask the patient to dress.

Describe your findings to the examiner.

Checklist: Female Genitourinary System Examination

See Table 8.2 for a checklist that can be used as a quick review before the exam.

Physical Examination: Male Genitourinary Examination

Just as with the female genitourinary examination, it is highly unlikely to be asked to perform a male pelvic examination. You must be familiar with the main steps. The exam-

Table 8.2 Checklist for female genitourinary system examination

Starting the station	Knock on the door
	Enter the station
	Hand wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Now sit on the chair or stand on the right side of the patient, and start the interview
Opening	Introduction, greet, explain, position, and exposure/drape
	Introduce/offer chaperone
General physical examination	Ask for vital signs. Interpret the vital signs
	Look for any abnormal findings in:
	Hands
	Face
	Neck
Chest	
Abdominal examination	Posture: patient lying flat with their arms on the sides
	Inspection: observe for the skin, umbilicus, contour, movements, peristalsis, pulsation, scars, masses, and cough reflex
	Auscultation: bowel sounds and bruits
	Percussion: shifting dullness and fluid thrill
	Palpation: superficial/light palpation and deep palpation
	Liver palpation
	Spleen palpation
	Kidney palpation
CVA tenderness	
Pelvic examination	Positioning
	Inspection external genitalia: examine the labia majora and labia minora, perineum, clitoris, and urethra
	Speculum examination: examine the vestibule, vagina, and cervix
	Palpation: internal examination of the uterus – uterus and adnexa
	Rectal examination: look for pain, occult blood, masses, hemorrhoids, anal fissures, and sphincter tone
Wrap-up	Thank the patient
	Ask patient to get dressed
	Describe your findings to the examiner

iner may ask you to verbalize these steps, or you may be asked to perform an examination on a manikin.

Candidate Information:

You have been asked to do a detailed genitourinary system examination on a 52-year-old male.

Vital Signs: HR, 76/min, regular; BP, 140/75 mm Hg; Temp, 36.8 °C; RR, 18/min; O₂ saturation 100%

Starting the Physical Examination:

- Knock on the door.
- Enter the station
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Stand on the right side of the patient and start the examination.

Preparation for the Examination:

- Equipment should be made ready beforehand.
 - Lubricating gel
 - Gloves
 - Light source
 - Cleaning towel/tissue paper
- Ask for a chaperone.
- Establish a good rapport. It will help patients to prepare for the pelvic examination.
- Explain what will you be doing and why you need to do this examination. Inform the patient that the pelvic examination consists of visual external inspection, palpation, and digital rectal examination. Make sure that you get a clear consent for the examination.

Opening:

- Introduction (greet, explain, position, and expose/drape)
- Ask for vital signs – interpret

General Physical Examination:

(You may skip these questions if it is a history and physical station.)

- Check that patient is alert and oriented.
- Look for abnormal findings in:
 - Hands
 - Face (eyes, nose, lips, mouth)
 - Neck
 - General sexual development and secondary sexual characteristics.
 - Observe for evidence of anemia.
 - Mention that you will look for signs related to possible endocrine disorders such as thyroid disease, Cushing syndrome, hirsutism, and acne.
 - Look for evidence of liver disease or thyroid disease.
 - Note whether there is evidence of gynecomastia.
 - Signs of dehydration such as a dry mouth and tongue may indicate kidney failure or polyuria associated with diabetes.

- Feel for lymphadenopathy: Lymph nodes may be enlarged due to metastatic spread from any urological cancer.

Abdominal Examination:

- **Posture:** Patient lying flat with arms at his sides.
- **Inspection:** Observe for the skin, umbilicus, contour, movements, peristalsis, pulsation, scars, masses, and cough reflex.
 - Abdomen may be distended due to large polycystic kidneys or ascites due to nephritic syndrome or nephrotic syndrome.
- **Auscultation:** Bowel sounds and bruits. Auscultation for a renal bruit in renal artery stenosis. Auscultate 2 cm to the left or right of the midline and also in both flanks with the patient sitting up.
- **Percussion:** Shifting dullness and fluid thrill.
 - Liver and spleen span.
- **Palpation:**
 - Superficial/light palpation
 - Deep palpation
 - Palpate for an enlarged bladder or an abdominal aortic aneurysm.
- **Liver palpation**
- **Spleen palpation**
- **Kidney palpation:** Examine by bimanual examination with one hand posteriorly lifting up the kidney up toward the other examining abdominally placed hand. Tenderness over the kidney should be tested by gentle pressure over the renal angle. Palpation for renal enlargement or masses. An enlarged kidney usually bulges forward.
- **CVA tenderness:** Renal angle tenderness suggesting a renal cause for pain.
- **Hernias and hernial orifices:** Check cough reflex.

Pelvic Examination:

Ask the patient to undress below the waist and cover him over his abdomen.

- **Penis**
 - Inspection and palpation:
 - Prepuce, glans, and foreskin: exclude a phimosis, and watch for signs of hypospadias.
 - Examine the skin for ulcers and rashes.
 - The shaft of the penis is examined for plaques of Peyronie's disease.
 - Urethral discharge.
- **Scrotum**
 - Inspection and palpation:
 - Inspect scrotal skin.

- Palpate testis for the size, shape, and surface. The testis should be smooth and relatively firm. Small firm testes suggest hypogonadism or testicular atrophy.
- Absence of a testis: undescended testis, previous excision, or a retractile testis.
- Feel for a scrotal swelling:
 - Try getting above the swelling.
 - Reexamine, while the patient is standing. If it is not possible to locate the upper border of the swelling in the scrotum, then it is likely to be an inguinal hernia.
 - Feel for the consistency of the swelling: solid or cystic. Identify if it can be a hydrocele, varicocele, or epididymal cyst.
 - Check for translucency with a torch. A solid and non-translucent swelling attached with the testis can possibly be a testicular tumor. A cystic and translucent swelling attached with the testis will likely be a hydrocele. A swelling separate from the testis and that is solid and non-translucent can be a chronic epididymitis; and a cystic and translucent swelling will be an epididymal cyst.
- **Examine the groin and lymphatics.**
- Prostate: This is examined by a digital rectal examination.
 - Feel for its size, consistency, medical sulcus, any tenderness, and any swelling.
 - A hard lump in the prostate can represent prostate cancer, and a biopsy is warranted.

Neurological Examination

- Dermatome sensory loss of the perineum or lower limbs and lower limb motor dysfunction suggest possible spinal cord or root pathology.
- Trauma or compression of the spinal cord may cause urinary retention if acute or urgency of micturition if it is a more chronic process.
- Acute compression of either the spinal cord or cauda equina may cause bladder and bowel dysfunction and are both neurosurgical emergencies, requiring urgent treatment to prevent irreversible neurological damage.

On completing the examination, thank the patient. Ask the patient to dress. Describe your findings to the examiner.

History and Counseling: Urinary Hesitancy (Benign Prostatic Hyperplasia)

Candidate Information:

For this station, you may be presented with any of the following five cases:.

Case 1

A 60-year-old male presents in the emergency department with 6 h of lower abdominal discomfort and inability to urinate. An indwelling urinary catheter was passed and 1100 ml urine collected in the bag. Please take a detailed history. What is the most likely cause? Discuss your differentials with the examiner.

Case 2

A 60-year-old male presents in your outpatient clinic with difficulty in passing urine. Please take a detailed history.

Case 3

A 60-year-old male presents in your outpatient clinic because he is recently feeling very tired. He has to wake up multiple times during the night to go to the toilet for urination. Please take a detailed history and discuss your differentials with the examiner.

Case 4

A 60-year-old male comes to your outpatient clinic with nocturia, urgency, weak stream, and terminal dribbling. He does not have any weight loss or bone pain. Recently he had to go to the emergency department and was catheterized.

Case 5

A 60-year-old male comes to your outpatient clinic with nocturia, urgency, weak stream, and terminal dribbling. He does have a 5 kg weight loss in the last 2 months and has felt fatigued and lower back pain for 2 months. Recently he had to go to the emergency department and was catheterized.

Vital Signs: HR, 86/min regular; BP, 155/80 mm Hg; Temp, 36.8 °C; RR, 18/min; O₂ saturation 99%

No physical examination is required for this station.

Differentials:

- Benign prostatic hypertrophy
- Prostate cancer
- Prostatitis
- Urinary tract infection
- Post-traumatic urethral stricture
- Bladder calculi
- Renal cell carcinoma

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient, and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Are you ... years old?”

The opening of Case 1 should be handled like this:

- “I understand you came to the emergency department because of difficulty in passing urine for 6 h and a Foley catheter has been passed. Do you know that 1100 ml of urine was drained. How do you feel now?”
- If the patient tells that he has pain and asks for medication, then make sure to ask questions about pain in the history of present illness.
- Show empathy.
- Now address his concern first about pain. Tell him that you need to ask a few questions and in the meanwhile you will order pain medication and he will get some medication soon.

The opening of Case 2 should be:

“I understand you are here because you have difficulty in passing urine. Can you please tell me more about this?”

The opening of Case 3 should be:

Show empathy in the start. “I am sorry to hear that you have not been feeling very well recently. You have to go to toilet multiple times during the night. Should we discuss more about it?”

The opening of cases 4 and 5 should be:

Because there are multiple presenting complaints, the easiest way to start is with: “How can help you today?” Then let the patient describe the presenting complaints.

History of Present Illness:

- “Can you please tell me more about your difficulty in passing urine?”
- “When did it first start?”
- “How did it start? Sudden/gradual?”
- “Did you notice any change in passing urine?”
- “Is it the first time you are having this problem?”
- “Has your problem being progressing?”
- “How many times did you void during the night and during the day?”
- “What were your urinary habits before?”
- “Is it affecting your sleep?”
- “Do you have pain anywhere? Do you feel pain while passing urine?”
- “How much urine are you able to pass each time?”
- “Do you have difficulty in initiating the stream?”
- “Did you notice any change in the stream of urine?”
- “Do you need to push to empty your bladder?”
- “Did you notice any dribbling of urine?”
- “Do you have to rush?”
- “Are you able to make it to the toilet?”

- “Have you ever lost control on passing urine?”
- “Do you have sensation of incomplete emptying of your bladder? Did you have urge to pass more urine even after passing urine?”
- “Do you have urge to void even after you have once passed urine?”

Show empathy.

Associated Symptoms to Rule Out Differentials:

- Ask a few questions about urinary changes.
- Ask specific questions about urine:
 - Color of urine
 - Any particular smell/odor?
 - Amount of urine
 - Consistency
 - Clear urine
 - Frothy urine
 - Cloudy urine
 - Not clear urine
- Noticed any blood?
- “Have you ever been screened or diagnosed with having prostrate disease?”
- “Have you ever had the blood test for prostate?” (Prostate-specific antigen [PSA])
- Previous recurrent urinary tract infections?
- “Have you noticed passing any stones in urine?”
- “Did you notice any burning sensation?”
- “Did you have any flank pain/back pain?”
- “Did you notice any fever?”
- “Did you have nausea or vomiting?”
- “Did have any previous back injury?”
- “What setting do you notice this problem? Home or in public places?” (Psychological)
- Ask about symptoms of liver disease. (Liver metastasis)
- Ask about cough or blood in sputum. (Lung metastasis)
- Ask about confusion or any neurological weakness. (Brain metastasis)
- Ask about symptoms of renal failure: puffy face, decrease or no urine output, and swollen ankles.

Constitutional Symptoms:

Fever, night sweats, loss of weight, or loss of appetite

Past Medical History: “How is your health otherwise? Any medical problems? DM, HTN, history of kidney/prostate problem, urinary tract infections?”

Past Hospitalization and Surgical History: “Have you had any previous hospitalization or previous surgery?”

Medication History: “Are you taking any medication?” If he says no, then continue to the next question. “Anticholinergics? Over-the-counter or herbal medications and any side effects?”

Allergic History: “Do you have any known allergies?”

Family History: “Any family history of prostate cancer? Who and age at which diagnosed?”

Social History: “Do you smoke or does anyone else in your home or close at work smoke? Do you drink alcohol?” If yes, then further ask, “How much? Daily? How long?”

“Have you ever tried any recreational drugs? If yes, which one? How long? When?”

Relationships: “Are you sexually active? Do you have sexual preferences? Man, woman, or both?”

Self-Care and Living Condition: “What do you do for living? Who lives with you?”

Work Conditions and Financial Status?

Support: Do you have good family and friends support?

Functional status or severity or impact on life activities?

Wrap-Up:

Question: What is BPH? (Questions may be asked by the patient or the examiner.)

Answer: “Benign prostatic hyperplasia (BPH) is the name given to enlargement of the prostate gland. This enlargement is believed to be caused by the effects of male sex hormones. Rarely symptoms of BPH occur before the age of 40, but more than 50% of men in their 60s and as many as 90% in their 70s and 80s have some symptoms of BPH. Some men begin to have difficulty in passing urine because the enlarged prostate gland presses against the urethra, the tube leading from the bladder. This causes the urethra to narrow, obstructing urine flow from the body. Your doctor will check your symptoms, check the size of your prostate, and may carry out a blood test.”

Question: What is a prostate gland?

Answer: “The prostate is a small gland found at the base of a man’s bladder. It is about the size of a chestnut and sits around the urethra, through which urine passes. The role of the prostate is not understood fully. It is believed to assist in the production of semen.”

Question: Is BPH a type of cancer?

Answer: “BPH is not a type of cancer. Some of the symptoms of BPH and prostate cancer are similar, but having BPH does not mean that you have cancer of the prostate or that you will develop this type of cancer later on. However, if ever you notice blood in your urine or semen, you should tell your doctor” [6].

Question: What is your most likely diagnosis?

Answer: “Benign prostatic hyperplasia”

Question: What are two other likely diagnoses?

Answer: “Urinary tract infection or prostate cancer”

Question: What investigations?

Answer: Rectal examination, urea/creatinine, urinalysis, prostate-specific antigen (PSA), renal/prostate ultrasound

Question: What are other investigations, if considering prostatic malignancy?

Answer: Ultrasonography (USG) of the prostate (transrectal) and computed tomography (CT) pelvis

Question: What are the risk factors?

Answer: Risk factors for prostate gland enlargement include [7]:

- **Aging.** Prostate gland enlargement rarely causes signs and symptoms in men younger than age 40. About one-third of men experience moderate to severe symptoms by age 60, and about half do so by age 80.
- **Family history.** Having a blood relative, such as a father or brother, with prostate problems means you are more likely to have problems.
- **Ethnic background.** Prostate enlargement is less common in Asian men than in white and black men. Black men might experience symptoms at a younger age than white men.
- **Diabetes and heart disease.** Studies show that diabetes, as well as heart disease and use of beta blockers, might increase the risk of BPH.
- **Lifestyle.** Obesity increases the risk of BPH, while exercise can lower your risk.

Question: What initial treatment will you recommend for BPH?

Answer:

- Watchful waiting; 50% resolve spontaneously.
- Medical:
 - *Alpha-adrenergic antagonists:*
 - Alfuzosin (Uroxatral)
 - Doxazosin (Cardura)
 - Silodosin (Rapaflo)
 - Tamsulosin (Flomax)
 - Terazosin (Hytrin)
 - *5-Alpha-reductase inhibitors*
 - Dutasteride (Avodart)
 - Finasteride (Proscar)
- Surgery: transurethral resection of prostate (TURP) and others. A urologist will decide.

History and Counseling: Hematuria

Candidate Information:

A 60-year-old male presents with microscopic hematuria on his annual checkup urinalysis. Please take a detailed history and determine what is the most likely cause. Discuss your differentials with the examiner. What investigations would be helpful?

Or

A 60-year-old male presents with sudden onset of severe flank pain and noticed blood in his urine since the morning. Please take a detailed history and determine what is the most likely cause. Discuss your differentials with the examiner. What investigations would be helpful?

Differentials:

See Tables 8.3 and 8.4 for etiology and key symptoms of hematuria.

Painless/Painful Hematuria

- Painless hematuria:
 - UTI
 - Renal or bladder stones
 - Trauma
 - Autoimmune: Wegener granulomatosis, Goodpasture syndrome
 - Sickle cell anemia, coagulopathy
 - Drugs
 - Glomerulonephritis
 - Exercise
- Flank pain and hematuria:
 - Urinary tract infection
 - Trauma
 - Renal colic
 - Hemorrhagic cystitis
 - Incarcerated/strangulated hernia
 - Diverticulitis
 - Hematologic or coagulation disorders
 - Sickle cell anemia
 - Ruptured/leaking abdominal aortic aneurysm

Table 8.3 Etiology of hematuria by age

Age range	Etiology
0–20	Glomerulonephritis, UTI, congenital anomalies
20–40	UTI, stones, bladder tumor
40–60	Male: UTI, stones, bladder tumor (transitional cell carcinoma of bladder), renal cell carcinoma Female: UTI, stones, bladder tumor
>60	Male: UTI, BPH, bladder tumor, prostate cancer, renal cell carcinoma Female: bladder tumor, UTI

UTI urinary tract infection, BPH benign prostate hypertrophy

Table 8.4 Hematuria and key related symptoms

	Key related symptoms
Urolithiasis	Hematuria and CVA tenderness, severe colicky flank pain; pain may migrate to the groin
Glomerulonephritis	IgA nephropathy is most common. Acute glomerulonephritis – presents with gross hematuria. Presentation is usually concurrent with UTI, GI symptoms, or a flu-like illness
BPH	Classic urinary symptoms, microscopic hematuria if present
Prostate cancer	Urinary symptoms, metastatic symptoms, and examination findings may present
Renal cell carcinoma	Hematuria, flank pain, and a palpable mass
Bladder cancer	Hematuria, irritative voiding symptoms, occupational exposure

CVA costovertebral angle, IgA immunoglobulin A, UTI urinary tract infection, GI gastrointestinal, BPH benign prostate hypertrophy

- Gynecologic sources should be excluded in female patients.
- Gross hematuria in adult patients represents malignancy until proven otherwise.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient, and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Are you 60 years old? I understand you are here because of pain and passing blood in urine. Is it alright if I ask you a few questions about it? Then we can discuss a management plan.”

If the patient looks tired or worried, show empathy.

History of Present Illness

Start with pain questions.

- **If pain is the chief complaint, then quickly go through the pain questions:**
 - Onset
 - Course
 - Duration
 - Progression
 - Quality of pain (burning, throbbing, dull)
 - Radiation

- Severity (scale of 1–10)
- Timing (time of the day)
- Pain before
- Aggravating
- Alleviating
- Associated symptoms (back pain, groin pain)
- **Continue with urinary symptoms:**
 - Urinary changes, ask specific questions about urine:
 - Noticed any blood? *Yes.*
 - Then continue with more questions about blood in urine:
 - What color is the urine? Bright red or dark? Passing clots?
 - When was the first time he notice blood in urine?
 - Any pain while passing urine?
 - Any other bleeding from any other body site?
 - Any particular smell/odor?
 - Amount of urine.
 - Consistency.
 - Cloudy urine.
 - Ask a few questions to rule out obstruction:
 - Difficulty in starting or initiating in passing urine?
 - “Do you have to strain/push hard to pass urine?”
 - “Did you notice change in stream? How full is the urinary stream?”
 - “Did you notice any dribbling? Is there any terminal dribbling of micturition?”
 - “After passing urine, do you still have the feel/need to pass more urine?”
 - Irritation.
 - “How many times do you go to the washroom?”
 - Any recent change in frequency of urination? Any change before or especially any change during the night?
 - “Have you ever lost control?”
 - “Do you have burning sensation while passing urine or after finishing?”
 - Incontinence: Is there any incontinence or urgency of micturition?
 - Ask about recurrent urinary tract infections? (UTIs)
 - Previous history of passing stones or any grit in urine?
 - Provoking factors (exercise, trauma).
 - Any urethral discharge?

Systemic Review:

- GI: Nausea, vomiting, appetite, weight loss, abdominal pain, and bowel routine
- Cardiovascular system: Chest pain, dyspnea
- Respiratory system: Cough, hemoptysis, and chest pain
- Central nervous system: Problems with vision, headache, loss of consciousness, and confusion

- Musculoskeletal: Bone point, joint pain, and muscular pain
- Kidney disease: Systemic symptoms of acute kidney injury or chronic kidney disease such as anorexia, vomiting, fatigue, pruritus, and peripheral edema.

Constitutional Symptoms (Only Ask if Not Asked Before in the History):

Fatigue and malaise, night sweats, fever, weight loss

Past Medical History:

- “Do you have any other health issues?”
- Ask about renal colic/disease, renal stones, pyelonephritis, or recurrent cystitis.

Past Hospitalization and Surgical History:

- “Have you had any previous hospitalization or surgeries?”
- History of recent UTI, sexually transmitted diseases (STDs), tuberculosis (TB) exposure, pelvic irradiation, and bleeding diathesis.
- Ask about previous catheterization. Abdominal or pelvic surgery.

Medication History:

- “Are you taking any medication prescribed, over the counter, or herbal? If so, have there been any side effects?”
- Analgesics, anticoagulants, or chemotherapy – hemorrhagic cystitis.

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke? Or does anyone else in your home or close at work smoke?”
- “Do you drink alcohol?” If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs? If yes, which ones? How long? When?” Specially ask about intravenous (IV) drug use (red flag for back pain).

Family History: “Any family history of chronic kidney disease, sickle cell anemia, renal colic, or polycystic kidney disease?”

Occupational History: “Any exposure to chemical carcinogens such as 2-naphthylamine or benzidine in the chemical or rubber industries?” These may induce bladder cancer many years later after the exposure.

Foreign Travel: Travel to Egypt or Africa may result in exposure to schistosomiasis. Dehydration during the time in a hot climate may lead to development of kidney stones.

Relationships: “Are you sexually active? Do you have sex with men, women, or both?”

Self-Care and Living Condition: “What do you do for living? Working status and occupation? Educational status? Who lives with you?”

Support: “Do you have good support from your family and friends?”

Functional status or severity or impact on life activities.

Wrap-Up:

Question: What will you do next?

Answer: “I will like to perform a physical examination.”
These are the physical examination findings:

- Patient is in no acute distress.
- Vitals signs: Within normal limits.
- Respiratory: Clear breath sounds bilaterally with good air entry.
- Cardiovascular: Normal S1/S2; no murmurs.
- Abdomen: Soft, nondistended, and nontender.
- No hepatosplenomegaly. No mass or hernia.
- **Mild right CVA tenderness.**
- Extremities: No edema.

Question: Describe the diagnosis.

Answer: “Most likely renal colic due to renal or ureteric stones”

Question: What investigations will you advise to rule out differential diagnosis?

Answer:

- **Genital exam:** To find out a urology-related source of bleeding in men.
- **Rectal exam:** To feel and detect prostatic enlargement or nodules.
- **Complete blood count (CBC):** To rule out anemia.
- **Blood urea nitrogen (BUN)/creatinine:** To assess kidney function.
- **Urinalysis (UA):** To assess hematuria, pyuria, and bacteriuria.
- Dysmorphic red blood cells (RBCs) or casts are signs of glomerular disease.
- **Urine culture:** To exclude UTI.
- **Urine cytology:** For detecting bladder cancers.
- **PSA:** Correlates with the volume of both benign and malignant prostatic tissue. Can be normal in about 20% of patients who have nonmetastatic prostate cancer.
- **USG kidneys:** Can detect bladder and renal masses and stones.
- **Cystoscopy:** The gold standard for the diagnosis of bladder cancer.

- **CT abdomen/pelvis:** To evaluate the urinary tract. It can pick up stones, benign lesions, as well as neoplasms.

Question: One of my friends told me that blood in urine is due to my old age. Is that true?

Answer: “Blood in urine is rarely normal. We need to investigate it and find a source of bleeding.”

Question: What will be the management plan?

Answer: “Initial pain medication and according to the diagnosis. Likely an urgent urology referral”

History and Counseling: Erectile Dysfunction

Candidate Information:

A 41-year-old male presents with impotence that started 3 months ago. He has hypertension and diabetes. He is on atenolol and metformin.

Vital Signs: T 36.6 °C, HR 65, BP 120/70, RR 18, O₂ saturation 100%

Take a detailed history. Discuss your differentials with the examiner. What investigations would be helpful?

Differentials:

- **Drug-related erectile dysfunction (ED)** – see Table 8.5 for a list of medications that may cause ED [8].
- ED caused by **diabetes mellitus** (diabetic neuropathy).
- **Psychogenic ED:** Anxiety and other psychiatric disorders.
- **Nerve and brain disorders:** Stroke, head injury, multiple sclerosis, Alzheimer’s disease, and Parkinson’s disease.
- **Surgery:** Procedures to treat prostate and bladder cancer.
- **Injury:** Pelvis, bladder, spinal cord, or penis injuries.
- **Chronic alcoholism.**
- **Hormone problems:** Pituitary gland tumors, related to kidney or liver disease, or hormone treatment for prostate cancer.
- **Peyronie’s disease:** Peyronie’s disease is the development of fibrous scar tissue inside the penis that causes curved, painful erections. Penises vary in shape and size, and having a curved erection is not necessarily a cause for concern. But Peyronie’s disease causes a significant bend or pain in some men. This can prevent you from having sex or might make it difficult to get or maintain an erection (erectile dysfunction) [9].
- **Leriche syndrome:** Aortoiliac occlusive disease, also known as Leriche syndrome, is a form of central artery disease involving the blockage of the abdominal aorta as it transitions into the common iliac arteries. In male

Table 8.5 Medications that may cause erectile dysfunction

Drug type	Name of drug
Antiarrhythmics	Disopyramide (Norpace)
	Amitriptyline (Elavil)
	Amoxapine (Asendin)
	Buspirone (Buspar)
	Chlordiazepoxide (Librium)
	Clomipramine (Anafranil)
	Clorazepate (Tranxene)
	Desipramine (Norpramin)
Antidepressants	Diazepam (Valium)
	Doxepin (Sinequan)
Antianxiety drugs	Fluoxetine (Prozac)
	Imipramine (Tofranil)
Antiepileptic drugs	Isocarboxazid (Marplan)
	Lorazepam (Ativan)
	Nortriptyline (Pamelor)
	Oxazepam (Serax)
	Phenelzine (Nardil)
	Phenytoin (Dilantin)
	Sertraline (Zoloft)
	Tranlycypromine (Parnate)
	Antihistamines
Diphenhydramine (Benadryl)	
Hydroxyzine (Vistaril)	
Meclizine (Antivert)	
Promethazine (Phenergan)	
Chemotherapy drugs	Busulfan (Myleran)
	Cyclophosphamide (Cytoxan)
High blood pressure drugs	Atenolol (Tenormin)
	Diuretics
	Bumetanide (Bumex)
	Beta-blockers
	Captopril (Capoten)
	Alpha-blockers
	Chlorthalidone (Hygroton)
	Clonidine (Catapres)
	Enalapril (Vasotec)
	Furosemide (Lasix)
	Guanfacine (Tenex)
	Hydralazine (Apresoline)
	Hydrochlorothiazide (HydroDIURIL,
	Hydropres, Inderide, Moduretic)
	Labetalol (Normodyne)
	Methyldopa (Aldomet)
	Metoprolol (Lopressor)
	Nifedipine (Adalat, Procardia)
	Phenoxybenzamine (Dibenzyline)
	Propranolol (Inderal)
Spiroolactone (Aldactone)	
Triamterene (Maxide, Dyazide)	
Verapamil (Calan, Isoptin, Verelan)	
Histamine H ₂ -receptor antagonists	Cimetidine (Tagamet)
	Nizatidine (Axid)
	Ranitidine (Zantac)
Muscle relaxants	Cyclobenzaprine (Flexeril)
	Orphenadrine (Norflex)

(continued)

Table 8.5 (continued)

Drug type	Name of drug
Nonsteroidal anti-inflammatory drugs (NSAIDs)	Indomethacin (Indocin)
	Naproxen (Anaprox, Naprelan, Naprosyn)
Parkinson's disease drugs	Benzotropine (Cogentin)
	Biperiden (Akineton)
	Bromocriptine (Parlodel)
	Levodopa (Sinemet)
	Procyclidine (Kemadrin)
Prostate cancer drugs	Trihexyphenidyl (Artane)
	Flutamide (Eulexin)
	Leuprolide (Lupron)

Modified from [8]

patients it presents as a triad of claudication of the buttocks and thighs, absent or decreased femoral pulses, and erectile dysfunction [10].

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient, and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Are you 41 years old? How can I help you today?”

The patient will tell about his ongoing problem of erectile dysfunction.

“Is it alright if I ask you a few questions about it? Then we can discuss a management plan.” Show empathy.

History of Present Illness:

- “Can you please describe a bit more about your problem?” Patient: *Not able to get erections for 3 months.*
- “When did it start?” *3 months back.*
- “How did it start? Sudden or progressive?” *It is gradual in onset.*
- “Is your problem continuous or intermittent?” *Continuous.*
- “Is it progressing?” *Yes.*
- “How is the severity of your problem?” *Getting worse.*
- “Do you have any problems of sexual desire?” *Desire for sex is present during the day.*
- “Do you have nighttime erections?” *Yes.*
- “Do you have any problem with ejaculation?” *No.*
- “Do you think anything is aggravating your problem?” *Aggravated by stress.*
- “Anything that relieves your problem?” *No relieving factors.*

- *No associated problems.*
- *No previous episodes of sexual dysfunction.*
- *No previous treatment/evaluation.*

Questions to Rule Out Differentials:

- “Do you have any pain in the legs (claudication)?” *No pain in the legs or thighs.*
- Screen out recent stress, anxiety, or depression:
 - **Mood Screening:** “How is your mood these days? Low or high?”
 - **Anxiety Screening:** “Are you the kind of a person who worries a lot?” (Excessive fear).
- Ask about thyroid problems.
- Ask about any recent trauma.
- Any new urinary symptoms.
- Any associated incontinence.
- Ask if the patient has any questions.

Past Medical History:

- “Do you have any other health issues?”
- Ask about hypertension, diabetes, high cholesterol, and atherosclerotic vascular disease.
- *He has diabetes and high blood pressure. Had generalized anxiety disorder for about 4 years and took buspirone. Discontinued buspirone a few months back.*

Past Hospitalization and Surgical History:

- “Have you had any previous hospitalization or surgeries?” *Prior prostate surgery.*
- History of recent UTI, STDs, pelvic irradiation, or any abdominal or pelvic surgery? *No.*

Medication History: “Are you taking any medication prescribed, over the counter, or herbal? If so, have there been any side effects?” *Atenolol and Metformin.*

Allergic History: “Do you have any known allergies?” *None.*

Social History:

- “Do you smoke? Or does anyone else in your home or close at work smoke?”
- “Do you drink alcohol?” If yes, then ask further questions: “How much? Daily? *Alcohol two to three beers/day for about 10 years.*”
- “Have you ever tried any recreational drugs? If yes, which ones? How long? When?” Specially ask about intravenous (IV) drug use. *None.*

Family History: Any family history of chronic diseases? *None.*

Occupational History: “What do you do for work?” *Works as a plumber.*

Relationships: “Are you sexually active? Do you have sex with men, women, or both?” *Yes, with wife and one other female sexual partner. Having problems with both of them.*

Wrap-Up:

Question: What do you next?

Answer:

- “I will check his blood sugar level, cholesterol, and fasting lipid profile.”
- “Blood tests to rule out kidney and liver disease.”
- “A urine dip test.”
- “I will do a general physical examination and blood pressure.”
- “I will examine cardiovascular system, genital and rectal exams.”
- “I will examine pulsations in lower limbs.”
- “I will also request for an electrocardiogram (ECG).”

Question: Can you please explain to the patient what is erectile dysfunction?

Answer: “ED means that one cannot get and/or maintain a proper erection. Most cases are due to narrowing of the arteries that supply blood to the penis. This is due to a build-up of fatty deposits in these arteries. The mechanism is the same in which the heart arteries are affected in patients with heart disease. In some patients, the penis does not become hard enough to have sex properly, and in some patients, there is no swelling or fullness of the penis at all.”

Question: What will you counsel the patient?

Answer:

- “I will explain the physical findings and diagnosis.”
- “I will explain further work-up.”
- “I will advise regarding home glucose monitoring.”
- “I will advise a strict diabetic diet.”
- “I will explain the importance of lifestyle modifications” [11]:
 - “Smoking: It increases your risk of hardening of the arteries. This reduces blood flow to the penis. It’s that blood flow that helps you get an erection.”
 - “Being overweight: Carrying extra pounds increases your risk of blood vessel disease, a cause of ED.”
 - “Inactive lifestyle: If you want to reduce your chance of getting ED, get off the couch. Regular exercise can help to make sure that when the time comes, you’re ready.”
 - “Poorly managed diabetes: Diabetes can affect blood flow to your penis. Maintain a healthy diet, get regular exercise, and take your medicine as prescribed.”
 - “High cholesterol: It can damage the linings of blood vessels, including those in the penis. It can also affect the arteries leading to your genitals. Eat right, exercise regularly, and take your meds.”

- “Alcohol: If you have more than two drinks a day, you could be hurting your ability to get an erection. Alcohol restricts blood flow to the penis and can hinder production of testosterone. Low testosterone can affect not only your performance but your desire, too.”
- “Illegal drug use: Marijuana, cocaine, and other recreational drugs can cause ED by damaging blood vessels. They can also restrict blood flow to the penis.”
- “Stress and anxiety: These are leading causes of temporary ED. If your mind’s too occupied, it’s hard to relax enough to be ‘in the mood’” [11].

Question: What are the treatment options?

Answer: “A specialist assessment may be required for patients with ED having hormonal problem and circulatory problems or if the symptoms have started after an injury. Most of the patient can be managed in the GP clinic.” “The most important aspect in treating ED is to find a cause; if there is an obvious cause, then the first step will be to start treating the underlying cause, for example, treating anxiety or depression, hormonal replacements, switching medications, lifestyle modifications, cutting back on drinking alcohol.”

“There are medical treatments available. These **medications** work by increasing the blood flow to the penis. They do this by affecting cGMP, the chemical involved in dilating the blood vessels when sexually aroused. These are sildenafil (Viagra), tadalafil (Cialis), vardenafil (Levitra), and avanafil (Spedra).”

“There are **creams** available, topical alprostadil. The cream comes with a plunger. The cream is applied to the tip of the penis and the surrounding skin. It should be used 5–30 min before you have sex.”

“There are also **injections** available. Patients are taught how to inject a medicine into the base of the penis. This causes increased blood flow, following which an erection usually develops within 15 min.”

“There are small urethral **pellets** available. The patient is taught to put a small pellet into the end of the tube that passes urine and opens at the end of the penis. The medicine is quickly absorbed into the penis to cause an erection, usually within 10–15 min.”

“There are different **vacuum devices**. Basically, you put your penis into a plastic container. A pump then sucks out the air from the container to create a vacuum. This causes blood to be drawn into the penis and cause an erection. When erect, a rubber band is placed at the base of the penis to maintain the erection. The plastic container is then taken off the penis, and the penis remains erect until the rubber band is removed, which must be removed within 30 min.”

“Sometimes a **penile prosthesis** may be required. A surgeon can insert a rod permanently into the penis. The most sophisticated ones can be inflated with an inbuilt pump to cause an erection. The more basic type has to be straightened by hand.”

History and Counseling: Burning Micturition/Urinary Tract Infection (UTI)

Candidate Information:

A 28-year-old male presents with a burning sensation during urination and urethral discharge. Please take a detailed history. Address the patient's concerns.

Vital Signs: HR, 86/min, regular; BP, 120/70 mm Hg; Temp, 36.8 °C; RR, 18/min; O₂ saturation 100%

No physical examination is required for this station.

Differentials:

- Urinary tract infection
- Lower urinary tract infection (cystitis, prostatitis, and urethritis)
- Sexually transmitted disease (chlamydia, genital herpes, and gonorrhea)
- Honeymoon cystitis
- Acute urinary retention
- Urethral obstruction/stricture/injury
- Bladder stones/tumors
- Renal stones
- Medication related
- Benign prostatic hyperplasia
- Cystocele
- Vulvovaginitis (females)
- Vaginal changes related to menopause (females)

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient, and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Are you 28 years old? How can I help you?”

History of Present Illness:

- Start with questions on burning micturition:
 - Onset
 - Course
 - Duration
 - Progression
 - Aggravating
 - Alleviating

- Associated symptoms:
 - Fever
 - Foul or stronger-smelling urine
 - Cloudy or bloody urine
 - Increased urinary frequency or urge to urinate
 - Flank pain
- Itching
- Burning
- Blisters or sore for genital herpes
- Abnormal discharge
- Ask questions about urethral discharge
 - Color
 - Amount
 - Pus in urine
 - Cloudiness
 - Consistency
- Any previous history of similar discharge?
- Did he get any previous treatment?

Constitutional Symptoms: Fatigue, malaise, night sweats, fever, and weight loss

Genitourinary Symptoms:

- “Difficulty in starting or initiating in passing urine?”
- “Do you have to strain/push hard to pass urine?”
- “Did you notice a change in stream? How full is the urinary stream?”
- “Did you notice any dribbling? Is there any terminal dribbling of micturition?”
- “After passing urine, do you still have the feeling/need to pass more urine?”
- “How many times do you go to the washroom?”
- “Do you need to rush/run to the washroom?”
- “Have you ever lost control?”
- “Do you have a burning sensation while passing urine or after finishing?”
- “Is there any hesitancy of micturition?”
- “Did you notice any change in *frequency* of passing urine? Increase in urination with or without increased urine output?”
- “Did you have any painful urination? In the start, during urination, or at the end?”
- “Do you feel you still want to void after you finish?”
- Ask about dysuria and possible exposure to sexually transmitted diseases. If the answer is yes, then explore further:
 - When was the last contact? And with whom?
 - Single or multiple partners?
 - Has the partner had any symptom?
 - Are there any other symptoms?

Systemic Review: Just ask a few questions from each system. This can pick any symptoms that patients may have not mentioned before in the presenting complaint. Some symp-

toms may be relevant to the diagnosis, such as how back-aches may be associated with kidney stones.

- **GI:** Nausea, vomiting, appetite, weight loss, abdominal pain, and bowel routine
- **Cardiovascular system:** Chest pain
- **Respiratory system:** Cough, shortness of breath, and chest pain
- **Musculoskeletal:** Bone point, joint pain, and muscular pain
- **Dermatology:** Rashes, ulcers, or lesions
- **Kidney disease:** Systemic symptoms of acute kidney injury or chronic kidney disease like anorexia, vomiting, fatigue, pruritus, and peripheral edema

Past Medical History:

- “Do you have any other health issues?”
- Ask about renal disease, renal stones, pyelonephritis, congenital structural abnormality of the genitourinary tract, recurrent cystitis, human papilloma virus (HPV), sexually transmitted infections (STI), human immunodeficiency virus (HIV), diabetes, hypertension, gout, and history of back injury.

Past Hospitalization and Surgical History: “Have you had any previous hospitalization or surgeries?”

Medication History: “Are you taking any medications prescribed, over the counter, or herbal? If so, have there been any side effects?”

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke? Or does anyone else in your home or close proximity at work smoke?”
- “Do you drink alcohol?” If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs? If yes, which ones? How long? When?” Specifically ask about intravenous (IV) drug use (red flag for back pain).

Family History: Marital status, number of children, any significant history in first-degree relatives. Any family history of chronic kidney or polycystic kidney disease?

Foreign Travel: Any recent foreign travel?

Relationships: “Are you sexually active? Do you have sex with men, women, or both? Do you have single or multiple partners? Do you use protection?”

Self-Care and Living Condition: “What do you do for a living? Working status and occupation? Educational status? Who lives with you?”

Support: “Do you have good support from your family and friends?”

Functional status or severity or impact on life activities.

If a teenager, then add these questions regarding: Home, education, employment, activities, drugs, and sexual activity

Wrap-Up:

Question:What will you do next?

Answer:

- “I would like to perform a physical examination.”
- “I will perform a genital examination.”
- “I will get a urine dip test.”
- “I will also send urine for analysis and culture.”
- “Gram stain and culture of urethral discharge – chlamydia and gonorrhea polymerase chain reaction (PCR).”

Questions: What are the various factors that can increase the chance of developing a UTI?

Answer:

- Advancing age
- Being a woman
- Pregnancy
- Diabetes

Question: How will you treat UTI?

Answer: “UTIs are usually treated effectively with antibiotics. We can start with the broad-spectrum antibiotics according to the regional guidelines and can be reviewed once the culture and sensitivity reports come back.”

Question: What is vesicoureteric reflux?

Answer: “The most common urinary system condition is vesicoureteric reflux. This means the valve between the bladder and ureter is not working properly and allows urine to flow back to the kidney, increasing the risk of a kidney infection.”

“Since this disorder tends to run in families, it is important to screen children as early as possible if a close relative is known to have the problem.”

“Vesicoureteric reflux and the associated infections can scar or permanently damage the kidney. It can also lead to:

- High blood pressure
- Toxemia in pregnancy (raised blood pressure, swelling, and protein in the urine of the mother)
- Kidney failure.”

Question: Are there preventive measures one can take?

Answer:

- “Exclusion from childcare, preschool, school, or work is not necessary.”
- “Drink lots of fluids to flush the urinary system. Water is best.”
- “Urinate as soon as you feel the need rather than holding on.”
- “For women and girls, wipe your bottom from front to back to prevent bacteria from around the anus entering the urethra.”
- “Urinate shortly after sex to flush away bacteria that might have entered your urethra during sex.”
- “Wear cotton underwear and loose-fitting clothes so that air can keep the area dry. Avoid tight-fitting clothes and nylon underwear, which trap moisture and can help bacteria grow.”
- “Using a diaphragm or spermicide for birth control can lead to UTIs (in women) by increasing bacteria growth. Unlubricated condoms or spermicidal condoms increase irritation, which may help bacteria grow. Consider switching to lubricated condoms without spermicide or using a non-spermicidal lubricant” [12].

Thank the patient and the examiner.

History and Physical Examination: Increase Frequency of Urination

Candidate Information:

A 47-year-old female presents in your clinic with low energy and increased frequency of urination.

Vital Signs: T 36.6 °C, HR 65, BP 120/70, RR 18, O₂ saturation 100%

Please take a detailed history and perform a relevant physical examination. Please do not perform rectal, genitourinary, or breast examinations.

Differential Diagnosis

- Diabetes mellitus
- Diabetes insipidus
- Psychogenic polydipsia
- Depression
- Chronic fatigue syndrome
- Urinary tract infection – cystitis
- Hyperthyroidism
- Diuretics and other drug intake

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID/
- Sit on the chair or stand on the right side of the patient, and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician. Are you...?”

History of Present Illness:

“I understand you are here because you have increased frequency of urination and low energy. Can you please tell me more about it?”

The patient will describe that she has not been feeling well for 2–3 months. She was feeling tired. She also noticed increased urination eight to ten times and increasing day by day. She has to pass urine each night two to three times. She also has increased volume of urine. She denies burning urination or urgency.

She has had increased thirst for about 1 month. She has been drinking a lot of water and eating a lot these days. She also has lost 12–14 lb weight over these 3 months.

Questions to Cover Increased Frequency of Urination: (Customize the list according to the details already provided by the patient as above.)

- Onset.
- Course.
- Duration.
- Progression.
- Aggravating.
- Alleviating.
- Associated symptoms:
 - Fever
 - Foul or stronger-smelling urine
 - Cloudy or bloody urine
 - Increased urinary frequency or urge to urinate
 - Flank pain
- Itching.
- Burning.
- Blisters or sore for genital herpes.
- Abnormal discharge.
- Ask about the thirst.
- Ask about daily water intake.
- Ask questions about urethral discharge:
 - Color
 - Amount

- Pus in urine
- Cloudiness
- Consistency
- Any previous history of similar discharge?
- Did she get any previous treatment?

Constitutional Symptoms: Fatigue, malaise, night sweats, fever, and weight loss

Genitourinary Symptoms:

- “Difficulty in starting or initiating in passing urine?”
- “Did you notice a change in the stream? How full is the urinary stream?”
- “Did you notice any dribbling? Is there any terminal dribbling of micturition?”
- “After passing urine, do you still have the feeling/need to pass more urine?”
- “How many times do you go to the washroom?”
- “Do you need to rush/run to the washroom?”
- “Have you ever lost control?”
- “Do you have a burning sensation while passing urine or after finishing?”
- “Is there any hesitancy of micturition?”
- “Did you notice any change in *frequency* of passing urine? Increase in urination with or without increased urine output?”
- “Did you have any painful urination? In the start, during urination, or at the end?”
- “Do you feel you still want to void after you finish?”
- Ask about **dysuria** and possible exposure to sexually transmitted diseases. If the answer is yes, then explore further:
 - When was the last contact? And with whom?
 - Single or multiple partners?
 - Has their partner had any symptom?
 - Are there any other symptoms?

A Few Questions About Mood:

“I am going to ask you some questions about your mood”:

- **Mood screening** – How is his mood these days?
- **Anxiety screening** – Is he kind of a person who worries a lot? Excessive fear.
- **Psychosis screening** – Does he see, hear, or smell things that others cannot? Does he sense things that are not actually there?
- **Screen for organic causes:** Illnesses, drugs, or alcohol use related.

Past Medical History:

“Do you have any other health issues?”

- Ask questions to rule out diagnosis:
 - Ask about the trauma to head.
 - Ask about the psychiatric problems.
 - Ask about the thyroid symptoms (heat/cold intolerance, hair loss, constipation/diarrhea, tremors, and sweating).
 - Ask about renal disease, sexually transmitted infections (STI), diabetes, and hypertension.

Past Hospitalization and Surgical History: “Do you have any previous hospitalization? Have you ever undergone any surgery in your past?”

Medication History: “Are you taking any medication?”

Allergic History: “Do you have any known allergies? Allergies to anesthetics or other drugs?”

Family History: “Any family history of chronic medical illnesses? Problems with anesthetics?”

Social History:

- “Do you smoke or does anyone else in your home or around you at work smoke? Do you drink alcohol?” If yes, then further ask: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs? If yes, which one? How long? When?”

Self-Care and Living Condition: “What is your living situation like? Who lives with you? Who will look after you after the surgery? Do you have good family and friends support? Do you need any help? (home services, meals on wheels, social worker).”

Physical Examination:

“I would like to perform a physical examination.”

These are the physical examination findings:

- Patient is in no acute distress.
- Vitals signs: Within normal limits.
- Respiratory: Clear breath sounds bilaterally with good air entry.
- Cardiovascular: Normal S1/S2; no murmurs.
- Inspect and palpate thyroid: Not palpable.
- Test muscle power in both upper and lower limbs: Intact.
- Test sensations in both upper and lower limbs: Intact.
- Test reflexes in both upper and lower limbs: Intact.
- Abdomen: Soft, nondistended, and nontender.
- No hepatosplenomegaly. No mass or hernia.
- No CVA tenderness.
- Extremities: No edema.

Wrap-Up:**Question: What investigations will you order?**

Answer: “I will order routine blood work-up. Routine tests should include CBC, electrolytes, liver panel, kidney function test, and urine analysis. I will also ask for thyroid profile.”

Wrap up according to the diagnosis and positive findings.

Follow-Up:

Tell the patient that she will need to come back for a follow-up once all the results will be back. Ask if she has any concerns or questions.

**History and Physical Examination:
Uterovaginal Prolapse and Urinary
Incontinence**
Candidate Information:

A 48-year-old female who has had four children presents in your clinic complaining of leakage of urine.

Vital Signs: T 36.6 °C, HR 65, BP 120/70, RR 18, O₂ saturation 100%

Please take a detailed history and perform a relevant physical examination. Please do not perform rectal, genitourinary, or breast examination.

Differential Diagnosis:

- Urinary tract infection
- Sphincter damage or weakness
- Delirium
- Atrophic urethritis/vaginitis
- Pharmacological
 - Diuretics
 - Antihypertensives/vasodilators: ACE inhibitors, prazosin, labetalol
 - Bladder relaxants: Anticholinergics, tricyclic antidepressants (TCAs)
 - Bladder stimulants: Cholinergics, caffeine
 - Sedatives: Antidepressants, antihistamines, antipsychotics, hypnotics, tranquilizers
 - Others: alcohol, loop diuretics, lithium
- Psychological
- Acute distress
- Endocrine
- Hypercalcemia
- Environmental
- Unfamiliar surrounding
- Restricted mobility
- Stool impaction

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand wash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient, and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician. Are you? Can you confirm your age please?”

History of Present Illness:

“I understand you are here because you have leakage of urine. Can you please tell me more about it?”

She will tell about her symptoms. She is leaking urine while coughing, running, and lifting weights. She needs to wear a diaper at all times. She has been recently avoiding attending any parties or functions.

Do not forget to show empathy: “It must be difficult for you to cope.”

- Start with questions on **incontinence:**
 - Onset: *After the birth of her fourth child a few years back*
 - Course: *Gradually progressing*
 - Duration
 - Aggravating: *Coughing, lifting weights, running*
 - Alleviating: *lying flat*
- **Do you see or feel a bulge in your vagina?**
- **Ask about the fourth child labor:**
 - Was it a difficult labor?
 - Was it an assisted labor?
 - Was it an assisted delivery?
 - Symptoms of menopause?
 - Did she have hot flushes?
 - Did she have painful intercourse?
 - Does she have recent mood swings?
 - When was the last Pap smear?
 - Did she have any previous history of STDs?
 - “Have you started with mammography?”
- **Associated symptoms:**
 - Fever
 - Foul or stronger-smelling urine
 - Cloudy or bloody urine
 - Increased urinary frequency or urge to urinate
 - Flank pain
 - Itching
 - Burning

- Blisters or sore for genital herpes
- Abnormal discharge
- Ask questions about urethral discharge:
 - Color
 - Amount
 - Pus in urine
 - Cloudiness
 - Consistency
 - Any previous history of similar discharge?
 - Did she get any previous treatment?
- Difficulty in starting or initiating in passing urine?
- “Do you have to strain/push hard to pass urine?”
- “Did you notice any dribbling? Is there any terminal dribbling of micturition?”
- “Do you need to rush/run to the washroom?”
- “Have you ever lost control?”
- “Do you have a burning sensation while passing urine or after finishing?”
- “Is there any hesitancy of micturition?”
- “Did you notice any change in *frequency* of passing urine? Increase in urination with or without increased urine output?”
- **Constitutional symptoms:** Fatigue, malaise, night sweats, weight loss
- **Systemic review:** Just ask a few questions relevant to patient history.
 - GI: Nausea, vomiting, appetite, abdominal pain, and bowel routine
 - Cardiovascular system: Chest pain
 - Respiratory system: Cough, shortness of breath, and chest pain
 - Kidney disease: Systemic symptoms of acute kidney injury or chronic kidney disease such as anorexia, vomiting, fatigue, pruritus, and peripheral edema

Past Medical History: “Do you have any previous health issues?” *None.*

Past Hospitalization and Surgical History: “Have you had any previous hospitalization? Have you ever undergone any surgery in your past?”

Medication History: “Are you taking any medication?”

Allergic History: “Do you have any known allergies? Allergies to anesthetics or other drugs?”

Family History: “Any family history of chronic medical illnesses? Problems with anesthetics?”

Social History:

- “Do you smoke or does anyone else in your home or around you at work smoke? Do you drink alcohol?” If yes, then further ask: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs? If yes, which one? How long? When?”

Self-Care and Living Condition: “What is your living situation like? Who lives with you? Who will look after you after the surgery? Do you have good family and friends support? Do you need any help? (home services, meals on wheels, social worker).”

Physical Examination:

“I would like to perform a physical examination.”

These are the physical examination findings:

- Patient is in no acute distress.
- Vitals signs: Within normal limits.
- Respiratory: Clear breath sounds bilaterally with good air entry.
- Cardiovascular: Normal S1/S2; no murmurs.
- Abdomen: Soft, nondistended, and nontender.
- No hepatosplenomegaly. No mass or hernia.
- No CVA tenderness.
- Extremities: No edema.

Tell the examiner that you need to perform a pelvic examination. The examiner will tell the pelvic examination finding: *Grade 4 uterine prolapse with stress incontinence.*

Wrap-Up:

Question: What investigations will you order?

Answer: “I will order routine blood work-up, ECG, and chest X-ray. Routine tests should include CBC, electrolytes, liver panel, and kidney function test. Urine analysis and send for cultures.”

Urodynamic Studies: Measure pressure in the bladder and urethra:

- Urge incontinence: Pressure in bladder increases very fast, reducing bladder capacity.
- Stress incontinence: Intravesical pressure does not increase when urine fills; bladder capacity is normal.

Question: What are the risk factors?

- UTI
- Obesity
- Smoking
- Caffeine
- Constipation
- Chronic cough

- Multiparity
- Menopause

Question: How will you counsel the patient?

Answer: “It looks like you have a condition called stress incontinence. Small amounts of urine involuntarily leaks during coughing, straining, and laughing. When the urethra (urine tube) is no longer in the pelvis and if there is an increase in intra-abdominal pressure, which affects both bladder and urethra increasing the bladder pressure more than the urethral pressure, it results in involuntary loss of urine. It may occur due to weakening of muscles in the pelvis.”

“There is another condition similar to it called urge incontinence in which large amounts of urine leaks through when one wants to go to bathroom but cannot control and hold. It is secondary to a problem with detrusor or nerves.”

“I need to make a **management plan** for you”:

- “Stress incontinence is highly associated with **UTI**, so I would like to order urine microscopy and culture.”
- “I would advise you to maintain a **bladder diary**.”
- “Avoid too much physical stress and lifestyle modification (weight reduction, smoking cessation, decrease caffeine intake) and avoid constipation and coughing.”
- “Start **pelvic floor exercises** – contract your pelvic muscles as if you are lifting your pelvis or holding urine 40–50 times daily for 3 months.”
- “I will also refer you to a gynecologist regarding vaginal **pessaries**. They may consider giving you HRT and urodynamic studies but that will be decided upon by the specialist.”
- “**Surgery** will only be indicated if conservative measures fail. Bladder neck suspension, suburethral rings, and local injection of collagen.”
- “For urge incontinence, bladder training and anticholinergic medications (e.g., oxybutynin) and further referral to a physiotherapist.”

Follow-Up:

Tell the patient that she will need to come back once all results will be with you. Ask if she has any concerns or questions.

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Mubashar Hussain Sherazi

History Overview: General Surgery

In most of the Objective Structured Clinical Examination (OSCE), general surgery topics are very important. One can expect at least one scenario related to general surgery. Many times case scenarios are combined with other systems. One common example is an abdominal pain scenario, usually combined with an abdominal examination. General surgery topics such as acute appendicitis, acute cholecystitis, acute diverticulitis, and management of a trauma patient are all very important and frequently repeated in many OSCEs.

It is also important to check with your regional and local guidelines about further investigations, management plans, and hospital admission protocols. I also like to recommend to attend Basic Life Support (BLS) and Advance Trauma Life Support (ATLS). These will be required in management of a trauma patient.

See Table 9.1 for an overview of the pattern of history taking required for general surgery. The remainder of the chapter covers common general surgery presentations.

Checklist: Physical Examination of the Abdomen

See Table 9.2 for a checklist that can be used as a quick review before the exam. (See also the Gastrointestinal chapter for details of the abdominal examination.)

History and Physical Examination: Preoperative Visit

Candidate Information:

A 65-year-old female is referred to the medical outpatient clinic; she has been booked for a surgical procedure next month. She is here for a complete preoperative checkup in order to assess her readiness for surgery.

The purpose of preoperative assessment is to:

- Identify important health-related problems.
- Optimize their treatment.
- Inform the patient about the risks associated with the surgery.
- Gather further information about hospital stay and postoperative care.
- Find out the social issues and make a plan for postoperative care.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your identification (ID).
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician. Are you...? Can you please confirm your age? How can I help you today?”

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Table 9.1 Pattern of history taking for general surgery stations

Introduction
Name and age
Chief complaint
In patient's own words
History of present illness
Analysis of chief complaint
Onset
Course
Duration
If pain
Nature
Intensity (1–10)
Location
Progression
Frequency
Quality
Radiation
Severity (1–10)
Timing
Contributing factors
Aggravating factors
Alleviating factors
Associated symptoms
Nausea, vomiting, diarrhea, constipation, change in bowel habits, reflux, appetite, blood in vomiting/feces/urine, jaundice
Predisposing factors
Aggravating and relieving factors
Red flags/risk factors
Constitutional symptoms
Anorexia, chills, night sweats, fever, and weight loss
Review of systems
Respiratory
Genitourinary
Cardiovascular
Neurology
Impact on body
Rule out differential diagnosis
Past medical history and surgical history
Medical illnesses
Any previous or recent medical issues
Cancers: breast, thyroid, prostate, kidney
History of previous surgery/operation , especially relevant to the area of concern
Any related anesthetic/surgical complication?
Hospitalization history or emergency admission history
Medications history
Current medications (prescribed, over-the-counter, and any herbal)
Allergic history/triggers
Any known allergies?
Family history
Family history of any long-term or specific medical illness
Home situation
Occupation history
What do you do for a living?

Table 9.1 (continued)

Social history
Smoking
Alcohol
Street drugs
Sexual history
If adult female
Menstrual history (last menstrual period [LMP])
Gynecology history
Obstetric history
If teen
Home
Education
Employment
Activities
Drugs
Sexual activity
If child
Birth history
Immunization
Nutrition
Development
Wrap-up
Describe the diagnosis
Management plan
Possible medical treatment
Duration of treatment and side effects
Red flags
Laboratory tests
Further information: websites/brochures/support groups or societies/toll-free numbers
Follow-up

Questions About the Surgery:

Patient will mention that she has been booked for (hernia repair/gall bladder removal/breast surgery/bowel resection) next month. The surgical department has referred her for a preoperative assessment.

“Is it alright if I ask you a few questions about your surgery?”

- “Who decided about the indication of surgery?”
- “How was the decision made?”
- “Any recent investigation performed? Blood tests, ultrasound scan (USS), computed tomography (CT) scans, electrocardiogram (ECG), X-rays?”
- “How are your symptoms now?”
- “Do you have any immediate concern about it? Requiring pain medication?”
- “How are you feeling about it?”
- “Has the consent being taken for surgery?”
- “Are you aware about the procedure and what to expect on the day of surgery? Where to go and whom to contact?”

Table 9.2 Checklist for the physical examination of the abdomen

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Now sit on the chair or stand on the right side of the patient and start the interview
Opening	Introduction, greet, explain, position, and exposure/drape
	Ask for vital signs – interpret the vital signs
General physical examination	Check for alert and orientation
	Look for any abnormal findings in the hands, face, neck, and chest
Abdominal examination	Inspection: Observe for skin, umbilicus, contour, movements, peristalsis, pulsation, scars, masses and cough reflex
	Auscultation: Bowel sounds and bruits
	Percussion: Shifting dullness and fluid thrill
	Liver and spleen span
	Palpation
	Superficial/light palpation
	Deep palpation
	Specific signs
	Rebound tenderness
	McBurney's point
	Rovsing's sign
	Psoas sign
	Obturator's sign
	Murphy's sign
	Courvoisier's sign
	Liver palpation
	Spleen palpation
Kidney palpation	
Costovertebral angle (CVA) tenderness	
Mention	"I will next palpate for hernias and groin lymph nodes and perform a digital rectal and vaginal examination"
	"I will also do a respiratory and cardiovascular examination"
	(The examiner will provide the findings)
Wrap-up	Thank the patient and ask the patient to cover up
	Wrap up your findings with the examiner or the patient

- "Do you seek further information regarding your procedure?" (risks of procedure/anesthesia)

"I am going to ask you a few questions about your general health."

Past Medical History:

"Do you have any previous health issues?"

• Cardiovascular:

- "Angina, coronary artery disease (CAD), arrhythmia, thrombolytic history, angioplasty history, coronary artery bypass grafting, congestive heart failure, peripheral vascular disease, or valvular heart disease?"
- "Have you ever had your blood pressure checked? Hypertension?"
- "High cholesterol?"

• Lungs:

- "Do you have any health issues related to your lungs?" (asthma, chronic obstructive pulmonary disease [COPD])
- "Sleep apnea?"
- "Recent upper or lower respiratory tract infection?"
- "Smoking history?"
- "Restrictive lung disease?" (pneumoconiosis)
- "Previous blood clots in legs or lungs?"

• Kidney:

- "Renal failure, infections, stones?"

• Nervous system:

- "Upper motor neuron disease, transient ischemic attack (TIA), cerebrovascular accident (CVA), seizures, migraine, headache, spinal or head injury, neuromuscular disorder?"

• Gastrointestinal:

- Reflux
- Hepatic disease
- Jaundice
- Peptic ulcer disease

• Endocrine:

- "Have you ever been screened for diabetes?"
- "Thyroid dysfunction?"

• Hematologic:

- "Previous blood transfusion?"
- "History of bleeding disorders?"
- "Anemia?"

• Musculoskeletal:

- Neck pain
- Thoracic pain
- Low back pain

• Dental:

- Loose teeth
- Use of dentures/permanent or fixed teeth

• General:

- "Recent diagnosis of cancer?"
- "Do your wounds heal slower as compared to others?"

Past Hospitalization and Surgical History:

- "Do you have any previous hospitalization?"
- "Have you ever undergone any surgery in your past?"

- “What surgery?”
- “How did it go?”
- “When was that?”
- “Any complication?” (intraoperative or postoperative)
- “Any problems related to anesthesia?”
- “Requiring prolonged hospital stay?”

Medication History:

“Are you taking any medication?” If she says no, then continue to the next question. Otherwise ask specifically for aspirin, nonsteroidal anti-inflammatory drugs (NSAIDs), steroids, medications for hypertension/diabetes, anticoagulant, over-the-counter or herbal. Ask about any side effects of these medications.

Allergic History:

“Do you have any known allergies? Allergies to anesthetics or other drugs?”

Family History:

“Any family history of chronic medical illnesses? Problems with anesthetics?”

Social History:

- “Do you smoke or does anyone else in your home or around you at work smoke? Do you drink alcohol?” If yes, then further question: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which one? How long? When?”

Self-Care and Living Condition

- “What is your living situation like? Who lives with you? Who will look after you after the surgery? Do you have good family and friends support?”
- “Do you need any help?” (home services, meals on wheels, social worker)

Physical Examination:

(Go through the examination part. Remember to leave 1–2 min for wrap-up.)

“Now, I will start the examination.”

- Comment on the vital sign findings if there are any mentionable findings; otherwise state that vitals are normal.
- Ask for patient height and weight with body mass index (BMI).
- Check level of consciousness, alertness, and orientation.

General Appearance:

- Head and neck exam:
 - Nose

- Mouth and throat (limitations to intubation)
- Cervical lymph nodes
- Skin:
 - Look for any rash
- Chest examination:
 - Inspection, auscultation, palpation, and percussion
- Cardiovascular examination:
 - Auscultation for heart sounds
- Abdominal examination:
 - Inspection and palpation

Wrap-Up:

- Comment on your findings.
- Thank the patient and tell the patient to cover up.
- Ask the patient if she has any questions or concerns.

Question: What investigations will you order? (Questions may be asked by the patient or the examiner.)

Answer: “I will order routine blood work-up, ECG, chest X-ray. Routine tests should include complete blood count (CBC), electrolytes, liver panel, kidney function test, and urine analysis.”

Counsel the patient about case-specific risk factors such as:

- **Recent myocardial infarction (MI):** Higher chances of heart-related complications during surgery, such as another heart attack, low blood pressure, and death
- **Coagulation problems:** Higher risk of bleeding
- **Diabetes and hypertension:** Intraoperative and postoperative complications
- **Smoking:** Should be stopped around 8 weeks before surgery
- **Deep vein thrombosis (DVT) prophylaxis:** According to nature of surgery
- **Preoperative medication to stop or adjust:** Insulin, oral diabetic medications, warfarin, and other anticoagulants

Follow-Up:

- Tell the patient that she will need to come back once all results will be with you.
- Ask if there are any concerns or questions.

History and Physical Examination: Postoperative Fever

Candidate Information:

You are working in a general surgery unit. The unit nurse called you to attend a 45-year-old female with **fever** who had a laparoscopic incisional hernia repair 2 days ago.

Please attend the patient. Please do not perform rectal, genitourinary, or breast examinations.

Differentials:

- **Postoperative days 0–2:**
 - Atelectasis
 - Aspiration pneumonia
 - Wound infection
 - Intra-abdominal surgical complications; i.e., bowel perforation
- **Postoperative day 3 or more:**
 - Urinary tract infection (UTI)
 - Wound infection
 - Intravenous (IV) site infection
 - Deep venous thrombosis (DVT)
 - Pulmonary embolism
 - Abscess

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening

Ask for a set of vitals. Comment on temperature.

Introduce yourself to the patient. “Good morning/good afternoon. I am Dr.... I am your attending physician. I was told by your nurse that you have a fever. I need to ask you a few questions and then I will do a relevant examination to find out the source of fever. Are you happy for me to begin?”

Questions About the Surgery:

- Ask about the surgery. *Abdominal incisional hernia repair*
- “Any operative complication?” (related to anesthesia, intraoperative or postoperative phase – in the recovery room)
- “How is your pain control? (0–10)”
- “Were you able to mobilize out of bed or to the toilet?”

Review of Systems

- **Pulmonary:**
 - Shortness of breath (Sitting/lying flat)
 - Chest pain
 - Cough (sputum/without sputum)
 - Hemoptysis
- **Wound:**
 - Pain

- Redness around wound margins
- Bleeding
- Discharge
- Stitch line hot and tender

• Urinary:

- Catheterization? When was the catheter inserted/removed?
- Change in frequency of urine
- Pain while passing urine
- Cloudy urine
- Blood in urine
- Suprapubic discomfort
- Previous history of urinary tract infection

• Deep Venous Thrombosis:

- Calf pain and tenderness
- History of DVT

“I am going to ask a few questions about your general health.”

Past Medical History:

“Do you have any previous health issues?”

Past Hospitalization and Surgical History:

“Do you have any previous hospitalization?”

Medication History:

“Are you taking any medication?” If she says no, then continue to the next question.

Allergic History:

“Do you have any known allergies? Allergies to anesthetics?”

Family History:

“Any family history of chronic medical illnesses?”

Social History:

- “Do you smoke? Do you drink alcohol?” If yes, then ask further questions: “About how much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which one? How long? When?”

Physical Examination:

(Go through the examination part. Remember to leave 1–2 min for wrap-up.)

“Now, I will start the examination.” Comment on the vital sign findings: Mention the high temperature if not done at the start of the interview. Comment on the rest if any other finding such as tachycardia or hypotension.

- Check level of consciousness, alertness, and orientation.
- General appearance: a very quick look at head and neck:

- Nose
- Mouth and throat
- Cervical lymph nodes
- Chest examination:
 - Inspection, auscultation, palpation, and percussion
- Cardiovascular examination:
 - Auscultation for heart sounds
- Abdominal examination:
 - Inspection, palpation, and auscultation for bowel sounds
 - Wound and stitch examination

Wrap-Up:

- Comment on your findings.
- Thank the patient and tell her to cover up.
- Ask the patient if she has any questions.

Question: What will you do first?

Answer: If there are no contraindications, I will ask the nurse to give her paracetamol (acetaminophen).

Question: What investigations you will order?

Answer: “I will check if any recent blood tests have been done. If not done in the postoperative phase, then I will order CBC, electrolytes, liver panel, kidney function test, blood cultures, urine analysis, and a chest X-ray.”

Question: On postoperative day 1, if the patient was found agitated and with decreased concentration, what will be your impression?

Answer: Delirium.

Question: What if the patient has a persistent spiking fever, diarrhea, and pelvic pain at around days 5–7, what will be your impression?

Answer: Pelvic abscess.

Question: How will you diagnose an abdominal or pelvic abscess?

Answer: CT scan.

Question: What is the treatment of pelvic abscess?

Answer: “Antibiotics and according to the size and location of the abscess possibly a percutaneous CT/US-guided aspiration and placement of drainage catheter.”

Question: What if the patient wants to go home as they were told before the surgery that they will likely go home on day 2?

Answer: Tell the patient about your finding and that you would like to keep the patient in the unit while you are trying to find out the cause of her fever.

Ask if she has any questions or concerns.

History and Physical Examination: Pain Right Lower Quadrant of the Abdomen – Acute Appendicitis**Candidate Information:**

A 22-year-old female presents in your clinic with right-sided lower abdominal pain for 24 h. She is nauseated and has vomited once.

Vital Signs: Temp, 37.9 °C; HR, 100; BP, 120/70; RR, 18; O₂ saturation, 98% on RA.

Please take a detailed history and perform a relevant physical examination. Please do not perform rectal, genitourinary, or breast examination.

Differential Diagnosis:

- Adults
 - Acute appendicitis
 - Urinary tract infection
 - Pyelonephritis
 - Inflammatory bowel disease
 - Pelvic inflammatory disease
 - Bowel obstruction
 - Diverticulitis
 - Malignancy
 - Cholecystitis
- Adult females
 - Ectopic pregnancy
 - Ovarian torsion/cyst rupture
- Children
 - Intussusceptions
 - Meckel’s diverticulitis
 - Gastroenteritis
 - Mesenteric lymphadenitis
 - Constipation

Starting the Interview:

- Knock on the door.
- Enter the station.

- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician. Are you Miss...? Are you 22 years old?”

History of Present Illness:

“I understand you are here because you have abdominal pain. I am going to ask you a few questions to find out what is going on. Should we start?”

- “When did this pain start?” *It started yesterday afternoon.*
- “Where did the pain start?” *Around the belly button.*
- “Has the pain radiated/changed in severity or location?” *Worsened and migrated to the right lower quadrant.*
- “What is the pain like?” *Dull pain.*
- “How did it come on?” *Started suddenly and progressively increased.*
- “Does the pain go anywhere?” *It started around the belly button and has moved to mostly right lower part of abdomen.*
- “How severe is the pain from 1 to 10? 1 being mild pain and 10 most severe.” *Now it is 7–8.*
- “Does anything aggravate the pain?” *Exacerbated by movement and breathing.*
- “Anything that relieves the pain?” *Sitting and lying flat.*
- “Have you ever had this pain before?” *No.*
- “Have you had any nausea, vomiting, or loss of appetite?” *Yes, vomited once.*
- “Are you passing gas?” *Yes.*
- “Have you noticed any changes in your bowel habits (blood in stool, diarrhea)?” *No.*
- “Any fevers, chills, or night sweats?” *Fever.*
- “Recent contact with sick people?” *No such contact.*
- “Recent travel?” *No.*

Past Medical History:

“Do you have any previous health issues?” *None.*

Past Hospitalization and Surgical History:

“Have you ever been hospitalized? Have you ever undergone any surgery? Any complications?” *None.*

Medication History:

“Are you taking any medication?” *No regular medication.*

Allergic History:

“Do you have any known allergies?” *No known allergies.*

Family History:

Noncontributory.

Social History:

Nonsmoker, does not drink, and no drug use.

Gynecology History:

- Last menstrual period (LMP): *2 weeks back*
- Vaginal discharge/bleeding: *None*

Sexually Active:

No.

Travel History:

None.

Physical Examination:

- Review vital signs with the examiner.
- **Exposure:** Stand on the right side of the bed, and tell the patient (indirectly to the examiner), “Miss... I am starting my examination now. During the examination if you feel uncomfortable at any point, please do let me know.”
- **Position:** Supine, arms on the side, legs uncrossed.
- **Observe:** Is the patient moving around comfortably? Look for posture, distress, and sweating.
- **Face:** Color of the face, pallor, jaundice, plethora, central cyanosis.
- **Mouth:** Moist tongue, ulcers, thrush, central cyanosis.

Abdominal Examination:

Inform the patient: “Now I am going to examine your abdomen.”

- **Inspection:** “Is it alright if I expose your abdomen from the ribs to the waist?” (Please do not expose the breasts or the inguinal area). Drape the patient appropriately for abdominal examination.
- **Observe for** contour, umbilicus, abdominal skin, surgical scars, obvious masses, hernias, movements with respiration, peristalsis, visible pulsation. Comment if any abnormal finding; otherwise move on.
- **Auscultation:** Then inform the patient, “I am going to listen to your bowel sounds with my stethoscope.” Auscultate in at least two quadrants but do not spend too much time on it. Comment on your finding and move on to palpation.

- **Palpation:** Warm up your hands. Then remember to examine the tender area at the end. (Keep a look at the patient's facial expressions while you are palpating.)
 - **Superficial/light palpation:** Gently palpate each quadrant. Make sure to go through all the areas.
 - **Deep palpation:** Again palpate for all four quadrants but this time with deeper palpation. Feel for any tenderness or a lump/mass. Start from area of least tenderness. Examine for areas of tenderness or guarding, paying particular attention to McBurney's point (located one-third of the distance along a line drawn from the anterior superior iliac spine to the umbilicus).
 - **Rebound tenderness:** Check for rebound tenderness in right lower quadrant (RLQ) – present in acute appendicitis
 - **Rovsing's sign:** Pain elicited in RLQ with palpation to left lower quadrant (LLQ) – may present in acute appendicitis
 - **Psoas sign:** Pain on extension of the right hip (retrocecal appendix) – may present in acute appendicitis
 - **Obturator sign:** Pain on internal rotation of hip (pelvic appendix) – may present in acute appendicitis
 - **Murphy's sign:** Not present
 - Feel for **costovertebral angle** tenderness

Inform the examiner that, "I will complete my examination by performing an examination for groin hernias, pelvic, digital rectal, cardiovascular, and respiratory system examinations."

Thank the patient and describe your findings to the examiner.

Wrap-Up:

Question: What would you like to do now?

Answer: "I will order:

- Some blood tests (CBC, electrolytes, creatinine, liver enzymes, C-reactive protein [CRP])
- Urinalysis dip, urine beta-human chorionic gonadotropin (B-hCG) for pregnancy test (very important to rule out pregnancy).
- CT scan or ultrasound (in children)"

Question: What is the diagnosis?

Answer: "Acute appendicitis."

Question: What is the appendix?

Answer: "The appendix is a small, worm-shaped pouch 90 mm long that hangs off the first part of the large bowel called the cecum. In our ancestors it was quite large and helped digest cellulose. However, in modern humans it has no particular use; but it can become diseased."

Question: What is appendicitis?

Answer: "Appendicitis is inflammation of the appendix. If it comes on suddenly and is very painful, it is called 'acute appendicitis.' If it develops slowly and simply hangs around, it is referred to as chronic appendicitis." I will draw a picture like this (Fig. 9.1) for patient ease.

Question: What is the cause?

Answer: "The inflammation is caused by an infection by bacteria that are normally present in the intestine and the appendix. It is believed to follow a blockage in the appendix such as from a lump of firm feces. The infected appendix gradually swells and becomes filled with pus."

Question: How common is the problem and who gets it?

Answer: "Each year about 1 in 500 people has an attack of appendicitis. It is the most common form of abdominal pain in young people requiring emergency surgery. It affects people of all ages but is rare in children under 2 years and in older people. It is most common between the ages of 15 and 25; with teenagers being the most commonly affected group" [1].

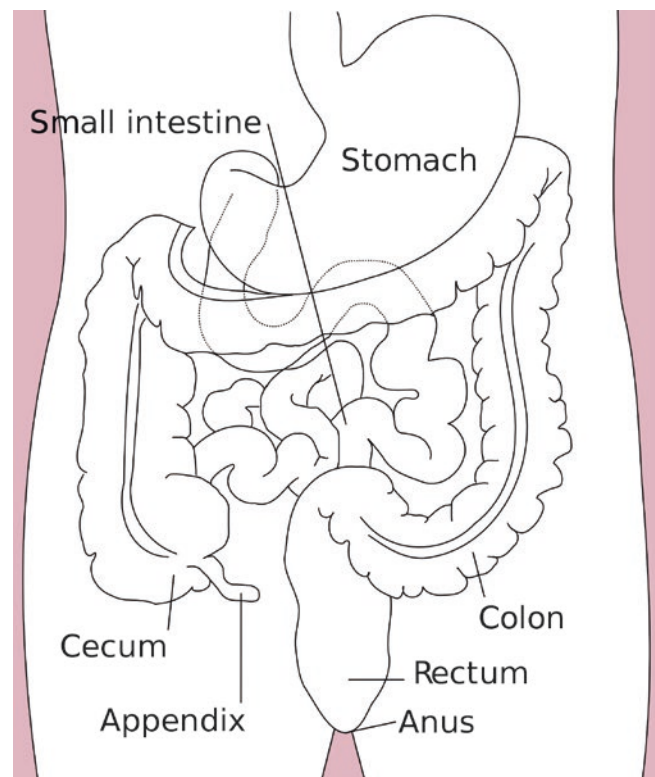


Fig. 9.1 Location of the appendix relative to other organs of the gastrointestinal system. (William Crohot (US PD picture.) [Public domain], via Wikimedia Commons)

Question: What is the treatment?

Answer: “Once we diagnose someone with acute appendicitis, we need to arrange early treatment. Because delaying the treatment may lead to a perforated appendix, which can make you very sick. I need to send you to the local hospital and a general surgeon needs to see you. You need to be admitted and your appendix needs to be surgically removed. The operation is called an appendectomy (or appendectomy). It is done as a laparoscopic procedure and is usually a straightforward surgery with little risk of complications. Antibiotics will usually be given for more severe cases with complications.”

History and Physical Examination: Pain Right Upper Abdomen – Acute Cholecystitis
Candidate Information:

A 42-year-old female presents in your clinic with right-sided upper abdominal pain for 4 h. She is nauseated and has vomited once.

Vital Signs: Temp, 38.1 °C; HR, 100; BP, 130/80; RR, 18; O₂ saturation, 98% RA.

Please take a detailed history and perform a relevant physical examination. Please do not perform rectal, genitourinary, or breast examination.

Differential Diagnosis:

- Acute cholecystitis
- Biliary colic
- Perforation of peptic ulcer
- Pancreatitis
- Appendicitis
- Pneumonia
- Acute hepatitis
- Rupture of aortic aneurysm
- Acute pyelonephritis
- Bowel obstruction
- Trauma to chest (rib fracture)

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr. . . . I am your attending physician. Are you Miss. . . ? Are you 42 years old?”

History of Present Illness:

“I understand you are here because you have abdominal pain. I am going to ask you few questions to find out what is going on. Should we start?”

- “When did this pain start?” *It started about 4 h back.*
- “Where did the pain start?” *Right side of upper abdomen, just below the ribs.*
- “What is the pain like?” *Sharp, stabbing type of pain and localized.*
- “How did it come on?” *Started suddenly and progressively increased. I came back from a party where I had a big meal.*
- “Does the pain radiate anywhere?” *To the back along the ribs and tip of right shoulder blade.*
- “How severe is the pain from 1 to 10? 1 being mild pain and 10 most severe.” *7–8.*
- “Does anything aggravate the pain?” *Exacerbated by movement and breathing.*
- “Does anything relieve the pain?” *Lying flat.*
- “Have you ever had this pain before?” *Yes, a few months back.*
- “What did you do at that time?” *I took pain medication and the pain settled.*
- “Have you had any nausea, vomiting, or loss of appetite?” *Yes, vomited twice – no blood.*
- “Are you passing gas?” *Yes.*
- “How are your bowel movements?” *Normal as usual. Last one was today in the morning.*
- “Any fevers, chills, or night sweats?” *I felt I had a fever but did not check.*
- “Did you notice any change in the color of your skin/eyes?” *No.*
- “Any cough/shortness of breath/urinary problems?” *None.*
- “Any other associated symptoms?” *None.*
- “Recent contact with sick people?” *No such contact.*

Past Medical History:

“Do you have any previous health issues?” *Yes, acid peptic disease – treated few years back. Gall stones diagnosed 5 months back.*

Past Hospitalization and Surgical History:

“Have you ever been hospitalized? Have you ever undergone any surgery? Any complications?” *No.*

Medication History:

“Are you taking any medication?” *No regular medication.*

Allergic History:

“Do you have any known allergies?” *No known allergies.*

Family History: *Noncontributory.*

Social History: *Nonsmoker, does not drink. No drug use. LMP was 2 weeks ago.*

Sexual History: *Active with husband. No previous history of sexually transmitted disease.*

Travel History: *None.*

Physical Examination:

- Review vital signs with the examiner. Vital Signs: T 38.1, HR 100, BP 130/80, RR 18, O₂ saturation 98% RA.
- **Exposure:** Stand on the right side of the bed, and tell the patient (indirectly to the examiner) “Miss... I am starting my examination now. During the examination if you feel uncomfortable at any point, please do let me know.”
- **Position:** Supine, arms on the side, legs uncrossed.
- **Observe:** Is the patient moving around comfortably? Look for posture, distress, and sweating.
- **Face:** Color of the face, pallor, jaundice, plethora, central cyanosis.
- **Mouth:** Moist tongue, ulcers, thrush, central cyanosis.

Abdominal Examination:

Inform the patient: “Now I am going to examine your abdomen.”

- **Inspection:** “Is it alright if I expose your abdomen from the ribs to the waist?” (Please do not expose the breasts or the inguinal area). Drape the patient appropriately for abdominal examination.
- **Observe for** contour, umbilicus, abdominal skin, surgical scars, obvious masses, hernias, movements with respiration, peristalsis, visible pulsation. Comment if any abnormal finding; otherwise move on.
- **Auscultation:** Then say, “I am going to listen to your bowel sounds with my stethoscope.” Auscultate in at least two quadrants but do not spend too much time on it. Comment on your finding and move on to palpation.
- **Palpation:** Warm up your hands. Then remember to examine the tender area at the end. (Keep an eye on the patient’s facial expressions while palpating.)
 - **Superficial/light palpation:** Gently palpate each quadrant. Make sure to go through all the areas.
 - **Deep palpation:** Again palpate for all four quadrants but this time with deeper palpation. Feel for any tenderness or a lump/mass. Start from area of least tenderness. Examine for areas of tenderness or guarding, paying particular attention to the right upper quadrant.
 - **Murphy’s sign:** It is performed by asking the patient to breathe out and then gently palpate the right subcos-

tal area and then ask the patient to inspire deeply. If the patient feels pain upon this maneuver and catches her breath, the sign is positive and is a sign of cholecystitis – *present.*

- **Boas’ sign:** Gall bladder pain radiates to the tip of the scapula; there may be an area of skin below the scapula, which is hypothetical. This is Boas’ sign – *may be present* [2].
- **Rebound tenderness:** Check for rebound tenderness in right upper quadrant (RUQ) – *none.*
- **Rovsing’s sign:** Pain elicited in RLQ with palpation to LLQ – *none.*
- **Psoas sign:** Pain on extension of the right hip (retrocecal appendix) – *none.*
- **Percuss** for liver span.
- Auscultate the lungs.

Inform the examiner that “I will complete my examination by performing examination for hernias, pelvic, digital rectal, cardiovascular, and respiratory system examination.”

Thank the patient and describe your findings to the examiner.

Wrap-Up:

Question: What would you like to do now?

Answer: “I will order:

- Some blood tests (CBC, electrolytes, creatinine, liver enzymes, and lipase)
- Urinalysis dip, urine B-hCG for pregnancy test (very important to rule out pregnancy)
- Ultrasound abdomen”

Question: What is the diagnosis?

Answer: “Acute cholecystitis.”

Question: What is the function of the gallbladder?

Answer: “The gallbladder functions to store and concentrate bile made by the liver during periods of fasting. In response to food, the gallbladder contracts and releases bile into the duodenum.”

Question: What is the difference between biliary colic and cholecystitis?

Answer: “Biliary colic is the transient obstruction of the cystic duct by gallstones leading to pain lasting for several hours. Cholecystitis is dilation and inflammation of the gallbladder that results from gallstones being impacted at the neck of the gallbladder, obstructing the cystic duct.”

Question: How common are gallstones?

Answer: “Gallstones are present in 10–40% of the general population. The majority of patients with gallstones remain

asymptomatic over their lifetime. Risk factors for gallstones include female sex, obesity, pregnancy, terminal ileal resection, gastric surgery, and Crohn's disease."

Question: What are signs of cholecystitis on ultrasound?

Answer: "Pericholecystic fluid, gallbladder wall thickening, stone impaction, gallbladder distension, sonographic Murphy's sign."

Question: What is the treatment?

Answer: "Once we diagnose someone with cholecystitis, IV antibiotics covering gram-negative aerobes and anaerobic bacteria should be started. Patient needs to be referred to general surgery for a laparoscopic cholecystectomy. It should be performed within 2–3 days of diagnosis."

History and Counseling: Pain Left Lower Quadrant – Acute Diverticulitis

Candidate Information:

A 65-year-old female presents to the emergency department with a history of left lower quadrant pain for 2 days. The pain is now getting worse. She feels nauseous but is not vomiting. She has had a fever and abdominal distension.

Vital Signs: Temp, 38.9 °C; HR, 105; BP, 150/85; RR, 18; O₂ saturation, 99%.

Please take a detailed history and perform a relevant physical examination. Please do not perform rectal, genitourinary, or breast examination.

Differential Diagnosis

- Diverticulitis
- Diverticular abscess
- Constipation with obstruction
- Perforated bowel
- Bowel obstruction (adhesion/volvulus/incarcerated hernia)
- Bowel cancer with obstruction/perforation
- Inflammatory bowel disease (Crohn's disease or ulcerative colitis)
- Mesenteric ischemia
- Aortic dissection
- Musculoskeletal injury
- Pelvic inflammatory disease
- Ovarian torsion/mass
- Uterine mass
- Renal colic

Starting the Interview:

- Knock on the door.

- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

"Good morning/good afternoon. I am Dr.... I am your attending physician. Are you ...? Are you 65 years old?"

History of Present Illness:

"I understand you are here because you have abdominal pain. I am going to ask you a few questions to find out what is going on. Should we start?"

"When did this pain start?" *It started about 2 days back.*

"Where did the pain start?" *Left side of lower abdomen.*

"Has the pain changed in severity or location?" *Worsened and progressively increasing in intensity.*

"What is the pain like?" *Sharp pain.*

"How did it come on?" *Started suddenly and progressively increasing.*

"Does the pain go anywhere?" *The pain is mostly in the left lower abdomen but it is going to all of the lower abdomen.*

"How severe is the pain from 1 to 10? 1 being mild pain and 10 most severe." *Now it is 9.*

"Does anything aggravate the pain?" *Exacerbated by movements.*

"Any relationship with food?" *None.*

"Does anything relieve the pain?" *Lying flat.*

"Have you ever had this pain before?" *No.*

"Have you had any nausea, vomiting, or loss of appetite?" *I have nausea but no vomiting.*

"Are you passing gas?" *Yes.*

"Have you noticed any changes in your bowel habits (blood in stool, diarrhea)?" *None but the abdomen felt distended.*

"Appetite?" *Poor.*

"Any fevers, chills, or night sweats?" *Fever, 39.2 yesterday. Today felt hot, feverish and sweaty.*

"Recent contact with sick people?" *No such contact.*

"Recent travel?" *No.*

"Any recent trauma?" *None.*

Past Medical History: "Do you have any previous health issues?" *None*

Past Hospitalization and Surgical History:

"Have you ever been hospitalized? Have you ever undergone any surgery? Any complication?" *None.*

Medication History:

"Are you taking any medication?" *No regular medication.*

Allergic History

“Do you have any known allergies?” *No known allergies.*

Family History:

Noncontributory.

Social History:

Nonsmoker, nondrinker, and no drug use.

Gynecology History:

- *Menopausal for 15 years. All Pap smears normal. Two children born via normal vaginal deliveries.*
- *Vaginal discharge/bleeding: None.*

Sexually Active: *Yes, with husband. Married for 35 years.*

Travel History: *None.*

Physical Examination:

- Review vital signs with the examiner. Mention patient has a fever of 38.9 °C and tachycardia 105.
- **Exposure:** Stand on the right side of the bed, and tell the patient (indirectly to the examiner), “Miss... I am starting my examination now. During the examination if you feel uncomfortable at any point, please do let me know.”
- **Position:** Supine, arms on the side, legs uncrossed.
- **Observe:** Is the patient moving around comfortably? Look for posture, distress, and sweating.
- **Face:** Color of the face, pallor, jaundice, plethora, central cyanosis.
- **Mouth:** Moist tongue, ulcers, thrush, central cyanosis.

Abdominal Examination:

Inform the patient: “Now I am going to examine your abdomen.”

- **Inspection:** “Is it alright if I expose your abdomen from the ribs to the waist?” (Please do not expose the breasts or the inguinal area). Drape the patient appropriately for abdominal examination.
- **Observe for** contour, umbilicus, abdominal skin, surgical scars, obvious masses, hernias, movements with respiration, peristalsis, visible pulsation. Comment if any abnormal finding; otherwise move on.
- **Auscultation:** Then say, “I am going to listen to your bowel sounds with my stethoscope.” Auscultate in at least two quadrants but do not spend too much time on it. Comment on your finding and move on to palpation.
- **Palpation:** Warm up your hands. Then remember to examine the tender area at the end. Keep an eye on the patient’s facial expressions as you palpate the abdomen.
 - **Superficial/light palpation:** Gently palpate each quadrant. Make sure to go through all the areas.

- **Deep palpation:** Again palpate for all four quadrants but this time with deeper palpation. Feel for any tenderness or lump/mass. Start from area of least tenderness (right side in this station). Examine for areas of tenderness or guarding, paying particular attention to the left lower abdomen.
- **Tenderness, guarding, and rigidity** – *present in LLQ.*
- **Rebound tenderness:** *Check for rebound tenderness in LLQ – present in acute diverticulitis*
- In some patients, on a careful palpation, a palpable tender **sausage-shaped mass** in the left iliac fossa may be felt.
- **Murphy’s sign:** *Not present*

Inform the examiner that “I will complete my examination by performing examination for hernias, pelvic, digital rectal, cardiovascular, and respiratory system examination.”

Thank the patient and describe your findings to the examiner.

Wrap-Up:

Question: What would you like to do now?

Answer: “I will order some blood tests (CBC, electrolytes, creatinine, liver enzymes, blood cultures, CRP) and urinalysis. CT scan abdomen and pelvis.”

Question: CT reported as acute diverticulitis, what is your next step of management?

Answer: “I will explain to the patient about the findings. I will place IV lines and will start IV antibiotics. I will call general surgery to come and review the patient for further management.”

Question: What is the difference between diverticulosis and diverticulitis?

Answer: “Diverticuli are fingerlike outpouching from the wall of the bowel—usually multiple. The etiology is unknown but most likely due to chronic constipation and low-fiber diet. Because of constipation, hard stools put pressure on the wall weakening it and leading to outpouching known as diverticuli. Mostly, they are asymptomatic, but sometimes the stools can get blocked in the pouches and become a good media for the bacteria leading to inflammation called diverticulitis. The symptoms are fever, abdominal pain, and rectal bleeding.”

Question: What are the complications of diverticulitis?

Answer: “There can be some complications like abscess, perforation, peritonitis, and fistula formation.”

Question: Can it cause cancer?

Answer: “Let me reassure you that it is not a pre-malignant condition.”

Question: What is the management plan for diverticulosis?**Answer:**

- Pain medication and sometimes antispasmodics are used.
- Stool softeners for constipation.
- High-fiber diet is recommended: fruits, vegetables, fluids, cereals, and bran.
- “You may experience bloating and discomfort, but your body will get used to it.”
- Screening colonoscopy after acute episode.

Question: Does the patient require surgery for diverticulosis?

Answer: “No. Surgery is only recommended when a patient presents with complications of diverticulitis such as bleeding, abscess (if not responding well to drainage and antibiotics), perforation, or severe bleeding.”

Management: Epigastric Pain (Perforated Peptic Ulcer/Pancreatitis)**Candidate Information:**

You are working in a busy emergency department. Your next patient is a middle-aged man who came in with sudden-onset severe epigastric pain for 3 h. He has been in good health apart from the history of taking ibuprofen 400 mg BD for back pain.

Please manage this patient. There will be a **nurse** at bedside to help you with any orders. The examiner will give you any findings if required during the management.

Differentials:

- Esophagitis
- Acute/chronic gastritis
- Peptic ulcer disease
- ***Perforated peptic ulcer**
- Gastroesophageal reflux disease
- ***Acute pancreatitis**
- Acute cholangitis
- Biliary colic
- ***Acute cholecystitis**
- Cholelithiasis
- Inflammatory bowel disease
- Viral hepatitis
- Acute coronary syndrome

**Important for this station.*

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? How old are you? What brings you here today?”

History of Present Illness:

The patient will briefly tell you about his sudden onset of severe epigastric pain and will be moaning with pain. It is extremely important to address the patient’s pain at this point. “I can see that you are in pain. I need to ask you a few questions to find out why you have this severe pain. It will also help me to give you appropriate pain medication. We have a nurse here; she will help me with your management. Is it alright if we start?”

- “When did this pain start?” *It started about 3 h back.*
- “Where did the pain start?” *Midline in the stomach area.*
- “Has the pain changed in severity or location?” *Worsened and progressively increasing in intensity.*
- “What is the pain like?” *Sharp pain.*
- “How did it come on?” *Started suddenly and it is progressively increasing.*
- “Does the pain go anywhere?” *It was going to my spine and now it has spread all over the abdomen.*
- “How severe is the pain from 1 to 10? 1 being mild pain and 10 most severe.” *Now it is 9.*
- “Does anything aggravate the pain?” *Exacerbated by movements.*
- “Any relationship with food?” *None.*
- “Does anything relieve the pain?” *Lying flat.*
- “Have you ever had this pain before?” *No.*
- “Have you had any nausea, vomiting, or loss of appetite?” *I have nausea, but no vomiting.*
- “Are you passing gas?” *Yes.*
- “Have you noticed any changes in your bowel habits (blood in stool, diarrhea)?” *None.*
- “Appetite?” *Poor.*
- “Any fevers, chills, or night sweats?” *None. Feel sweaty now.*
- “Any recent trauma?” *None.*

Questions to Rule Out Differentials:

- “Nausea and vomiting?”

- “Change in bowel habits?”
- “Have you lost weight recently?”
- “Melena (sticky, black, dark, tarry stools)? When was your last bowel movement? Color?”
- Explore about liver problems.
- Use of NSAIDs (ibuprofen): “How much? How long? Why? Who prescribed?”
- “Any blood thinners?”
- “Any long-term disease?”

Past Medical History:

“Peptic ulcer disease? Ever had a scope? Pancreatitis?”

Past Hospitalization and Surgical History:

“Have you had any previous hospitalization or previous surgery?”

Medication History:

“Are you taking any medication, over-the-counter or herbal, and are there any side effects?”

Allergic History:

“Do you have any known allergies?”

Family History:

“Any family history of significant health problems?”

Social History:

- “Do you smoke or does anyone else in your home or close proximity at work smoke? Do you drink alcohol?” If yes then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which one? How long? When?”

Physical Examination:

- Ask the nurse to give you a set of vitals. Blood pressure lying and standing to check for orthostatic changes. Review vital signs with the examiner. Vital Signs: T 38.1, HR 107, BP 100/70, RR 18, O₂ saturation 98%.
- **Exposure:** Stand on the right side of the bed, and tell the patient (indirectly to the examiner), “Mr... I am starting your examination now. During the examination if you feel uncomfortable at any point, please do let me know.”
- **Position:** Supine, arms on the side, legs uncrossed.
- **Observe:** Is the patient moving around comfortably? Look for posture, distress, and sweating.
- **Face:** Color of the face, pallor, jaundice, plethora, central cyanosis.
- **Mouth:** Tongue, ulcers, thrush, central cyanosis.

Abdominal Examination:

- **Inspection:** “Is it alright if I expose your abdomen from the ribs to the waist?” (Please do not expose the breasts or the inguinal area). Drape the patient appropriately for abdominal examination.

- **Observe for** contour, umbilicus, abdominal skin, surgical scars, obvious masses, hernias, movements with respiration, peristalsis, visible pulsation. Comment if any abnormal finding; otherwise move on.
- **Auscultation:** Then say. “I am going to listen to your bowel sounds with my stethoscope.” Auscultate in at least two quadrants but do not spend too much time on it. Comment on your finding and move on to palpation. *Bowel sounds absent or decreased.*
- **Palpation:** Warm up your hands. Then remember to examine the tender area at the end. Keep an eye on the patient’s facial expressions while you palpate.
 - **Superficial/light palpation:** Gently palpate each quadrant. Make sure to go through all the areas.
 - **Deep palpation:** Again palpate for all four quadrants but this time with deeper palpation. Feel for any tenderness or lump/mass. Start from area of LLQ, examine for areas of tenderness or guarding. Patient will be tender all over abdomen. There will be muscle guarding. *Patient may not let you elicit any abdominal examination signs due to generalized pain.*
- Examiner may give the findings: *Abdomen is distended, tender all over, and resonant note on percussion.*

“Mr... I am suspecting that you might have perforated an ulcer from your stomach. I am going to start the management now.”

- **Ask the nurse to put 2 × IV line and draw blood for:**
 - CBC
 - Urea and creatinine
 - Lipase
 - Electrolytes
 - Blood sugar
 - Cardiac enzymes
 - Venous blood gas
 - Blood for group and hold
- **Attach monitors**
- **Nothing to eat and drink**
- **Start IV fluids (normal saline 0.9%)**
- **IV morphine or fentanyl for pain**
- **?IV Pantoprazole infusion**

Order: X-ray erect abdomen/X-ray left lateral decubitus abdominal or CT abdomen if readily available.

Question: What will you be looking for in the X-ray?

Answer: “I shall be looking for air under the diaphragm.”

Question: Examiner may show an X-ray showing air under the diaphragm or verbally tell the findings. What will be your next step in management?

Answer: “I will inform the patient about my findings”:

“In my opinion, you have a condition called acute abdomen, which is most likely due to a perforated peptic ulcer due to a history of taking ibuprofen. The perforation occurs when the ulcer erodes through the wall of the stomach or duodenum. Gastric or duodenal contents spill out into the peritoneum and that can cause complications such as infection and peritonitis. I am going to consult general surgery. They will come and assess you. It looks like you are requiring an urgent surgery. The surgeon will decide whether to perform an open or keyhole (laparoscopic) surgery. Usually they use an omental patch to fix the perforation; they will give you more information. Do you want me to inform anyone on your behalf?”

Question: What if there is no air under the diaphragm and the serum lipase levels are high?

Answer: “Then my diagnosis will likely be acute pancreatitis.”

Question: What is the pancreas?

Answer: “The pancreas is an important organ that lies just behind the stomach and intestines in the abdomen. It produces digestive juices that digest carbohydrates, fats, and proteins in food. This process helps in absorption of food through the intestine. It also produces hormones such as insulin and glucagon, which regulate blood sugar in our bodies. A deficiency of insulin leads to diabetes.”

Question: What is acute pancreatitis?

Answer: “Pancreatitis is inflammation of the pancreas. Acute pancreatitis develops rapidly, and the patient presents with sudden onset of severe upper abdominal pain, radiating to the back, that is eased by sitting forward; it may be associated with repeated vomiting or retching. The patient may have a low-grade fever and tachycardia with hypotension. On examination the patient will have epigastric tenderness, guarding, and decreased or absent bowel sounds.”

Question: You just diagnosed your patient with acute pancreatitis, what will be your next steps in management?

Answer: I will ask about the **risk factors** including alcohol, gallstones, viruses (mumps), trauma, or recent ERCP (endoscopic retrograde cholangiopancreatography).

Initial management will be:

- IV lines, routine blood tests, blood gas analysis
- Fluid resuscitation

- Pain medication
- Nothing to eat and drink/NG tube in severe cases
- CT scan of the abdomen
- General surgery consultation and admission to hospital

“If secondary to gallstones, then removal of gallbladder once pancreatitis has settled down. Usually settles with no permanent pancreatic tissue damage.”

“At times it can make the patient very sick. If the inflammation persists, it may develop into **chronic pancreatitis** in which the patient will likely have recurrent episodes of pancreatitis and the pancreas will be scarred and damaged.”

“The patient may present with abdominal or back pain, often associated with meals. The pain is aching or dull. Some patients may not even have any pain. Other symptoms will be nausea and vomiting, mild jaundice, weight loss, and typical greasy bulky stools, which is called steatorrhea. Once the pancreas is unable to make insulin, diabetes develops. Treatment will be insulin by injection and oral pancreatic enzymes replacements.”

Management: Severe Abdominal Pain (Mesenteric Infarction)

Candidate Information:

You are working in an emergency department and are attending a 68-year-old man who came in with a sudden onset of severe generalized abdominal pain for 3 h. He has been having bloody diarrhea, nausea, and vomited a few times. He has a history of atrial fibrillation.

Please manage this patient. There will be a nurse at the bedside to help you with any orders. The examiner will give you any findings if required during the management.

Differentials:

- Mesenteric infarction/ischemia
- Small bowel obstruction (adhesions)
- Volvulus
- Acute diverticulitis
- Perforated peptic ulcer
- Acute pancreatitis
- Acute cholecystitis
- Inflammatory bowel disease
- Acute coronary syndrome

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.

- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Can you please confirm your age? What brings you here today?”

History of Present Illness:

The patient will briefly tell you about his sudden onset of severe generalized abdominal pain and will ask for pain medication. It is extremely important to address the patient’s pain here. “I can see that you are in pain, I need to ask you a few questions to find out why you have this severe pain. It will also help me to give you the appropriate pain medication. We have a nurse here; she will help me with your management. Is that alright?”

“When did this pain start?” *It started about 3 h back.*

“Where did the pain start?” *Midline around the belly button, but now all over the abdomen.*

“Has the pain changed in severity or location?” *Worsened and progressively increasing in intensity.*

“What is the pain like?” *Sharp cutting pain like a knife cutting through.*

“How did it come on?” *Started suddenly and is progressively increasing.*

“Does the pain go anywhere?” *It was going to my spine and now it has spread all over the abdomen.*

“How severe is the pain from 1 to 10? 1 being mild pain and 10 most severe.” *Now it is 9.*

“Does anything aggravate the pain?” *Exacerbated by movements.*

“Any relationship with food?” *None.*

“Does anything relieve the pain?” *Nothing, it is the same.*

“Have you ever had this pain before?” *No.*

“Have you had any nausea, vomiting, or loss of appetite?” *I had nausea and vomited three times, (just food contents, no blood).*

“Please tell me about your diarrhea.” *Three to four times, loose and with crampy abdominal pain. Fresh blood – about 50 ml in quantity. No black tarry, sticky stool.*

“Are you passing gas?” *Yes.*

“Have you noticed any changes in your bowel habits (blood in stool, diarrhea)?” *Fresh blood in stool.*

“Appetite?” *Poor.*

“Any fevers, chills, or night sweats?” *None. Feel sweaty now.*

“Any recent trauma?” *None.*

Questions to Rule Out Differentials:

- “Change in bowel habits?”
- “Have you lost weight recently?”
- Explore about liver problems.

- “Use of NSAIDs?”
- “Any long-term disease?”

Past Medical History:

“I understand that you have atrial fibrillation? How long have you been having AF? What medications are you taking for the AF? Have you been followed up by your family physician or the community coagulation clinic? Do you have any other condition apart from the AF?” *AF for 6–7 years.*

Past Hospitalization and Surgical History:

“Do you have any previous hospitalization or previous surgery?”

Medication History:

“Are you taking any medication, over-the-counter or herbal, and any side effects?” *Aspirin and digoxin.*

Allergic History:

“Do you have any known allergies?”

Family History:

“Any family history of significant health problems?”

Social History:

- “Do you smoke or does anyone else in your home or close proximity at work smoke? Do you drink alcohol?” If yes then ask further questions: “How much? Daily? How long?” *Smoker: ten cigarettes per day for 10 years.*
- “Have you ever tried any recreational drugs?” If yes, “Which one? How long? When?”

Physical Examination:

- Ask the nurse to give you a set of vitals. Blood pressure lying and standing to check for orthostatic changes. Review vital signs with the examiner. Vital Signs: Temp 37.3, HR 107, BP 120/70, RR 18, O2 saturation 98%.
- **Exposure:** Stand on the right side of the bed, and tell the patient (indirectly to the examiner) “Mr..., I am starting your examination now. During the examination if you feel uncomfortable at any point, please do let me know.”
- **Position:** Supine, arms on the side, legs uncrossed.
- **Observe:** Is the patient moving around comfortably? Look for posture, distress, and sweating.
- **Face:** Color of the face, pallor, jaundice, plethora, central cyanosis.
- **Mouth:** Tongue, ulcers, thrush, central cyanosis.

Abdominal Examination:

- **Inspection:** “Is it alright if I expose your abdomen from the ribs to the waist?” (Please do not expose the breasts or the inguinal area). Drape the patient appropriately for abdominal examination.

- **Observe for** contour, umbilicus, abdominal skin, surgical scars, obvious masses, hernias, movements with respiration, peristalsis, visible pulsation. Comment if any abnormal finding; otherwise move on.
- **Auscultation:** Then say, “I am going to listen to your bowel sounds with my stethoscope.” Auscultate in at least two quadrants but do not spend too much time on it. Comment on your finding and move on to palpation. (*Absent or decreased*)
- **Palpation:** Warm up your hands. Keep an eye on your patient’s facial expressions as you palpate the abdomen.
 - **Superficial/light palpation:** Gently palpate each quadrant. Make sure to go through all the areas.
 - **Deep palpation:** Again palpate for all four quadrants but this time with deeper palpation. Feel for any tenderness or lump/mass. Start from area of LLQ, examine for areas of tenderness or guarding. *Abdomen will be distended. There will be tenderness all over the abdomen more in the central abdomen. There will be muscle guarding. Patient may not let you elicit any abdominal test due to generalized tenderness.*
- Examiner may give the findings: *Abdomen is distended, tender all over. Absent bowel sounds. Fresh blood on digital rectal examination.*

“Mr..., I am suspecting that you might have a condition called mesenteric infarction. I am going to start the management now.”

Ask the nurse to put 2 × IV line and draw bloods for

- CBC
- Urea and creatinine
- S. lipase
- Electrolytes
- Blood sugar
- Cardiac enzymes
- Venous blood gas (check for lactate level)
- Blood for group and hold
- Attach monitors.
- Nothing to eat and drink
- Start IV fluids (normal saline 0.9%)
- IV morphine or fentanyl for pain
- X-ray erect abdomen (look for thumbprint sign)

Question: How will you counsel your patient about mesenteric infarction? What will be your next step in management?

Answer: “Mesenteric ischemia occurs when the blood supply of your bowel has been cut off due to the blockage of one of its arteries. This might have resulted from a clot that has traveled from the heart because of your atrial fibrillation. This is a medical emergency.

We need to admit you.”

“I will call general surgery to come and assess you. They may decide to do CT angiography of the mesenteric artery if they think they have enough time, but if they believe it is urgent, they might do surgery to open up the blockage as soon as possible to avoid infarction of the affected tissue. During the surgery, if they find that the part of the gut has been affected and no longer viable, they might remove that part.”

“Do you want me to inform anyone on your behalf?”

Management: Bowel Obstruction

Candidate Information:

You are working in a busy emergency department. The nurse has asked you to see a new patient who is a 68-year-old man. He has had generalized abdominal pain for 2 days. He has been having nausea and vomiting. He has not passed any bowel movement for 3 days.

Please manage this patient. The examiner may give you required information such as blood results.

Differentials:

- Small bowel obstruction
 - Adhesions
 - Hernias
 - Stricture
 - Small or large bowel tumors
 - Gallstone ileus
 - Volvulus
- Mesenteric infarction/ischemia
- Acute diverticulitis
- Perforated peptic ulcer
- Ogilvie’s syndrome
- Intussusception
- Acute pancreatitis
- Acute cholecystitis
- In female patients only: Endometriosis, ovarian or uterine tumors

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Can you confirm your age please? What brings you here today?”

History of Present Illness:

The patient will briefly tell you about his gradual onset generalized abdominal pain, nausea, and vomiting.

Please try to cover all three presenting symptoms (abdominal pain/vomiting/no bowel movement) with a minimum set of questions:

- “When did this pain start?” *It started about 2 days back.*
- “Where did the pain start?” *Midline around the belly button but now all over the abdomen.*
- “Has the pain changed in severity or location?” *Worsened and progressively increasing in intensity.*
- “What is the pain like?” *Dull and diffuse pain. Comes and goes and is burning in nature.*
- “How did it come on?” *Started gradually and is progressively increasing.*
- “Does the pain go anywhere?” *It was mostly in umbilical area. No particular radiation.*
- “How severe is the pain from 1 to 10? 1 being mild pain and 10 most severe.” *Now it is 7.*
- “Does anything aggravate the pain?” *Exacerbated by movements.*
- “Any relationship with food?” *None.*
- “Does anything relieve the pain?” *Nothing, it is the same.*
- “Have you ever had this pain before?” *No.*
- “Have you had any nausea, vomiting, or loss of appetite?” *I had nausea and vomited six times (last two vomit contain just bile – no blood).*
- “When was your last bowel movement?” *About 3 days back. Bowel moments were regular before that. No black tarry, sticky stool*
- “Are you passing gas?” *None (and felt that he was bloated).*
- “Appetite?” *Poor.*
- “Any fevers, chills, or night sweats?” *None. (May have low-grade fever)*
- “Any recent trauma?” *None.*

Questions to Rule Out Differentials:

- “Change in bowel habits?”
 - Constipation/obstipation
 - Change in frequency
 - Tenesmus
 - Caliber of stool
 - Flatulence
 - Melena
- “Have you lost weight recently?”
- “Any long-term disease?”

Past Medical History:

“Do you have any previous health issues?” *None.*

Past Hospitalization and Surgical History:

“Have you ever been hospitalized? Have you ever undergone any surgery?” *Yes, laparotomy and resection of bowel due to a tumor in the small intestine 2 years back. He was doing quite well since his surgery.*

Medication History:

“Are you taking any medication?” *No regular medication.*

Allergic History:

“Do you have any known allergies?” *No known allergies.*

Family History: *Noncontributory.*

Social History: *Nonsmoker, nondrinker, and no drug use.*

Physical Examination:

- Ask the examiner for a set of vitals. Blood pressure lying and standing to check for orthostatic changes. Review vital signs with the examiner. Vital Signs: T 37.3, HR 107, BP 120/70, RR 18, O₂ saturation 98%.
- **Exposure:** Stand on the right side of the bed, and tell the patient (indirectly to the examiner), “I am starting your examination now. During the examination if you feel uncomfortable at any point, please do let me know.”
- **Position:** Supine, arms on the side, legs uncrossed.
- **Observe:** Is the patient moving around comfortably? Look for posture, distress, and sweating.
- **Face:** Color of the face, pallor, jaundice, plethora, central cyanosis.
- **Mouth:** Tongue, ulcers, thrush, central cyanosis.

Abdominal Examination:

- **Inspection:** “Is it alright if I expose your abdomen from the ribs to the waist?” (Please do not expose the breasts or the inguinal area). Drape the patient appropriately for abdominal examination.
- **Observe for** contour, umbilicus, abdominal skin, surgical scars, obvious masses, hernias, movements with respiration, peristalsis, visible pulsation. Comment if any abnormal finding; otherwise move on.
- **Auscultation:** Then say “I am going to listen to your bowel sounds with my stethoscope.” Auscultate in at least two quadrants but do not spend too much time on it. Comment on your finding and move on to palpation. (*Absent or decreased*)
- **Palpation:** Warm up your hands. Keep an eye on the patient’s facial expressions while palpating.
 - **Superficial/light palpation:** Gently palpate each quadrant. Make sure to go through all the areas.

- **Deep palpation:** Again palpate for all four quadrants but this time with deeper palpation. Feel for any tenderness or lump/mass. Start from area of LLQ, examine for areas of tenderness or guarding. *Abdomen will be distended. There will be mild tenderness all over the abdomen more in the central abdomen. There will be muscle guarding. Patient may not let you elicit any abdominal test due to generalized tenderness.*
- *Tell the examiner what you will look for.*
- Examiner may give the findings: *Abdomen is distended, tender all over. Absent bowel sounds.*

“Mr..., I am suspecting that you might have a condition called a bowel obstruction. I am going to start the management now.”

- **Ask the nurse to put 2 × IV line and draw blood for:**
 - CBC
 - CRP
 - Urea and creatinine
 - S. lipase
 - Electrolytes
 - Blood sugar
 - Cardiac enzymes
 - Venous blood gas (check for lactate level)
 - Blood for group and hold
- Attach monitors.
- Nothing to eat and drink.
- Nasogastric tube
- Start IV fluids (normal saline 0.9%) and correct fluids/electrolyte balances.
- IV morphine or fentanyl for pain
- X-ray erect abdomen (dilated loops of small and or large bowel with air fluid levels sign)

Question: How will you counsel your patient about bowel obstruction? What will be your next step in management?

Answer: “This is a surgical emergency. We need to admit you. I will call general surgery to come and assess you. They may decide to do a CT scan of your abdomen and pelvis, and they might do surgery to open up the blockage as soon as possible to avoid infarction of the affected tissue. During the surgery, if they find that the part of the gut has been affected and no longer viable, they might remove that part.”

“Do you want me to inform anyone on your behalf?”

History and Examination: Breast Lump

Candidate Information:

A 45-year-old female comes in to your clinic. She noticed a small lump in her right breast a few days back while taking a shower. Please take a focused history and perform a relevant physical examination.

Differentials:

- Fibroadenoma of the breast
- Intraductal papilloma
- Mammary dysplasia
- Fat necrosis
- Fibrocystic disease
- Breast abscess
- Breast cancer

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you...? Can you please confirm your age? What brings you here today?

History of Present Illness:

- “When did you notice the lump?”
- “How did you notice it the first time?”
- “How many lumps?”
- “Was it present before that?”
- “Which part of breast is it?” (Quadrant, distance from nipple)
- Physical features: “What is the shape of lump?” (Round, oval)
- Consistency: “What does it feel like?” (Soft, rubbery, or hard)
- Border: “Does it have well-defined edges or ill defined?”
- Mobility: “Can you move it under the skin or is it fixed?”
- Delineation: “Discrete or fixed?”
- Relation to menstrual cycle: “Did you notice any change in size or shape of the lump during menstrual cycle? Any pain during menstrual cycle?”

- Pain and tenderness: “Was there any pain in the lump or breast? One breast or both breasts?”
- “Any history of breast trauma?”
- Nipple discharge: “Did you notice any nipple discharge?” (amount, color, smell)
- Nipple retraction: “Did you notice any nipple retraction?”
- Breast skin changes:
 - “Did you notice any change in skin over the swelling or in the breast?” (discoloration, induration, erythema, or dimpling)
 - Change in texture (peau d’orange)
 - Signs of inflammation on skin of breast (redness, pain, hot)
- “Any recent change in size of breast?”
- “Did you notice any lump or swelling in the axilla?”
- “Any swelling in the arms?”
- Constitutional symptoms: fatigue and malaise, night sweat, fever, and weight loss

Risk Factors:

- “Past history of breast cancer?”
- “Family history of breast cancer/ovarian cyst?”
- “Previous breast biopsy?”
- “Age of menarche?”
- “Last menstrual cycle?”
- “Nulliparity?”
- “Children?”
- “Age of firstborn?”
- “Radiation exposure?”

Signs of Metastasis:

- Brain: headache, vision changes, nausea, or vomiting
- Liver: jaundice
- Bone: pain
- Lungs: shortness of breath, cough, blood in sputum

“Did you ever have a mammogram? When was the last mammogram performed?”

Past Medical History:

“Do you have any previous health issues?”

Past Hospitalization and Surgical History:

“Have you ever been hospitalized? Have you ever undergone any surgery?”

Medication History:

“Are you taking any medication?”

Allergic History:

“Do you have any known allergies?”

Family History:

“Cancer (breast, colon, ovary)?”

Social History:

Smoking, alcohol intake, and illicit drug history

Menstrual, Gynecology, and Obstetric History:

- “When did you start your sexual activity?”
- “Are you sexually active now?”
- “Any Pap smears at all? Was it a normal smear last time?”
- “Any bleeding, itching, pain, discharge, previous sexually transmitted disease (STD), warts, ulcers, lumps, bumps?”
- “Have you ever been pregnant? How many times?”
- “Did you breast feed your children?”
- “When was your LMP?”
- “Was it regular? Period, cycle?”
- “Do you think that you are pregnant right now?”

Physical Examination:

Review vital signs with the examiner. Vital Signs: T 36.3, HR 75, BP 130/70, RR 16, O₂ saturation 98%.

Stand on the right side of the bed, and tell the patient (indirectly to the examiner), “I am starting your examination now. During the examination if you feel uncomfortable at any point, please do let me know.”

• **General:**

- Pallor, jaundice, cyanosis
- Hair, skin, and tongue changes
- Neck examination, lymph nodes, swellings, thyroid exam
- Hand and lower limb edema

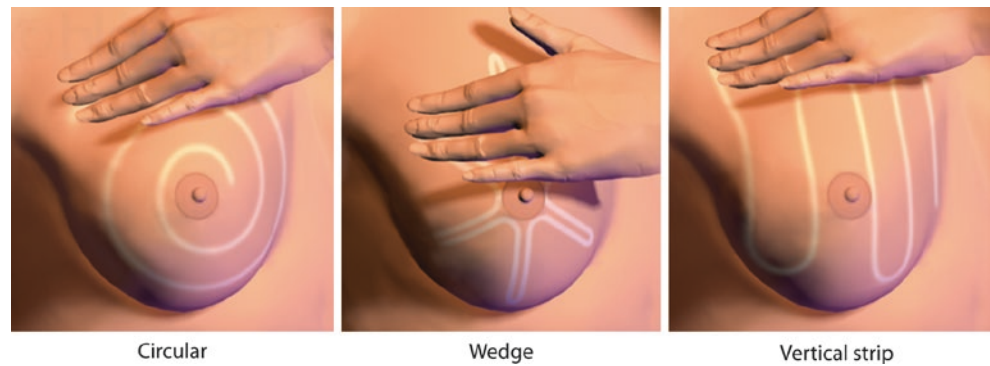
• **Exposure:** Lower the shirt from the neck to the waist.

• **Position:** Examine in four positions: (1) patient sitting with her arms at her sides, (2) in lap, (3) hands pressing over the waist/hips, and (4) leaning forward and hand over the head.

• **Inspection:** Inspect the entire breast including the periphery, nipple, areola, tail, and axilla:

- Size
- Symmetry
- Color
- Visible masses
- Shape change
- Skin retraction, dimpling, flattening, inversion
- Skin ulceration
- Erythema
- Peau d’orange
- Increased vascularity
- Nipple discharge (serous, bloody, milky, clear)
- Supernumerary nipple

Fig. 9.2 Breast examination patterns. (Source: Blausen Medical Communications, Inc. licensed under the Creative Commons Attribution 3.0 Unported license. <https://creativecommons.org/licenses/by/3.0/deed.en>)



• **Palpation:**

- Light palpation and deep palpation.
- Palpate entire breast including periphery, nipple, areola, and tail.
- Use vertical or radial strip method (Fig. 9.2).
- Keep fingers on the breast all the time.
- Feel for tenderness
- Feel for lump and look for its:
 - Location
 - Size
 - Shape
 - Consistency
 - Mobility
- Feel axilla for axillary lymph nodes (anterior, posterior, medial, lateral and apical groups) and then supraclavicular lymph nodes.

Wrap-Up:

- Mention that you will complete your examination by doing a respiratory, cardiovascular, and abdominal examination.
- Comment on your findings.
- Thank the patient and tell the patient to cover up.
- Ask the patient if she has any questions.

Question: What are the signs and symptoms of breast cancer?

Answer:

- Palpable mass
- Breast pain and swelling
- Skin dimpling, retraction, or ulceration
- Edema (arm or breast)
- Erythema
- Nipple retraction
- Prominent veins
- Palpable axillary or supraclavicular lymph nodes

Question: What are the risk factors for breast cancer?

Answer:

- Increasing age (over 40 years)
- Heredity – a strong family history
- Caucasian race
- Previous history of breast cancer
- Hormone replacement therapy, especially longer than 5 years
- Using the oral contraceptive pill
- Increased alcohol intake
- Obesity including heavy postmenopausal weight gain
- Early age of first period
- Later age of menopause (55 years or older)
- Childlessness or having children after 30
- Ionizing radiation exposure [3]

Question: What if it turns out to be a breast cancer, what will be the treatment?

Answer: “The treatment depends on various factors, which include the size, type, and nature of the cancer. The patient’s age, health, and her personal preference are also an important consideration. The usual treatment includes surgery, chemotherapy, radiotherapy, and hormone treatment. Most of the time, it will be a combination of two or more of these.”

“The first step in the treatment is surgery in order to remove the cancer and surrounding breast tissue as well as adjacent lymph glands. If the lump is small, the preferred method of surgery is a breast-conserving surgery in which either only the lump is removed or part of the breast with the lump is removed. For larger lumps the whole breast with lymph nodes in the axilla needs to be removed. Later, radiotherapy is given to this area. In most of the breast cancers, surgery and radiotherapy are combined with chemotherapy or antihormone therapy such as tamoxifen.”

Question: Can you please tell me more about fibrocystic disease of the breast?

Answer: “It is a very common breast condition. It is also known as mammary dysplasia, fibroadenosis, and cystic hyperplasia. It is hormone related. It can occur anytime between the first period to the last period. It is most commonly seen between 30 and 50 years of age. The patient’s main complaint will be breast pain and swelling. The breast may have a nodular feeling and sometimes an obvious lump is palpable. Breasts will be tender to touch. The symptoms tend to increase just before menstruation and resolve or improve after the period. The patients also notice some change in size of mass during each menstrual cycle. Treatment is usually according to the symptoms and clinical findings. For diffuse lumps a mammography is advised. For a small lump, a needle biopsy, and for cysts a needle aspiration is recommended. Pain medications are given. Surgery is not required and reserved for removal of undiagnosed lumps only.”

Question: The patient is diagnosed to have a fibroadenoma. How will you counsel your patient?

Answer: “A fibroadenoma is a smooth, discrete lump within breast tissue. The name implies that it has a fibrous component and an adenomatous part that consists of glandular tissue. The cause is unknown. These are seen in younger females – usually in their 20s. It is common from 15 to 35 years of age. It is a firm, mobile, smooth, and round lump. It is usually not painful. It appears to change its position; sometimes it is also called a ‘breast mouse.’ It will rarely change to cancer. The treatment includes an ultrasound and fine needle aspiration. Surgery is reserved if the lump enlarges or the woman wants to get rid of it.”

Question: How will you counsel your patient about a mammogram?

Answer: “A mammogram is a screening test for the early detection of breast cancer. Breast cancer is one of the leading causes of cancer mortality in women. There is significant reduction in deaths from breast cancer among women who are regularly screened. Mammograms can usually find lumps 2 or 3 years before a woman or her healthcare provider can feel them.”

“A mammogram is a special X-ray of the breast with low dose of radiation to see the breast from inside. There are two types of mammogram: screening and diagnostic.

Diagnostic mammogram is done in cases of breast mass or suspicion of breast cancer. Before the mammogram, you will be asked to undress from the waist up and change to a hospital gown. Each breast is X-rayed separately. The breast

is flattened between two mammogram panels. This might be a bit uncomfortable, but it will only take a few seconds. If possible, try to avoid scheduling your mammogram just before or during your menstrual period, when the breasts are more sensitive. Also, do not use underarm deodorant on the day of your test.”

“A radiologist will interpret the mammogram. Some women will need to have more images taken. Needing more images is common and does not usually mean that you have cancer. These extra images help the radiologist to have the most accurate and clear view of your breast tissue.”

“In general, screening mammograms are less effective in younger women because they tend to have denser breast tissue. Mammograms may lead to additional testing. I will provide you with brochures about mammograms.”

Question: What mammographic findings are suggestive of malignancy?

Answer:

- Microcalcification
- Irregular satellite or speculated mass
- Architectural distortion
- Increased vascularity
- Interval mammographic changes

Question: If the patient asks: Can you teach me how to self-examine the breast?

Answer: “Self-examination is not recommended and will increase the number of visits to the doctor’s office and may increase the number of unwanted biopsies. A physician will do your breast examination periodically.”

Checklist Assessment: Trauma Patient

Please read the regional protocols and guidelines for emergency management; there are often changes made to these guidelines. It is highly recommended to attend and keep your *Basic Life Support*, *Advance Cardiac Life Support*, *Pediatric Advance Life Support*, and *Advance Trauma Life Support* certificates updated.

Candidate Information:

While working in a peripheral hospital emergency department, a 28-year-old male was brought in by ambulance. He was hit by a truck while crossing the road.

Please perform a primary and secondary survey (Table 9.3a, 9.3b) [4]. Please do not perform rectal, genitourinary, or breast examination.

Table 9.3a Primary survey for trauma

Goals of primary assessment	Examine and identify life-threatening conditions
	Initiate supportive treatment and stabilize the patient
	Plan/provide definitive treatments and/or organize transfer for definitive treatments
Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner, nurse, and the patient
	Give stickers to the examiner if required or show your ID badge
Opening	Take a seat or stand on the right side of the patient and start the interview
	Introduction, greet, drape
	Ask for vital signs. Interpret the vital signs
Primary survey (mnemonic ABCDE)	
A: Airway maintenance with cervical spine protection	Mention "First of all I want to make sure my patient's airway is patent"
	Check response: Ask the patient: "Hi, what is your name? What happened?" or "How are you?"
	Assess ability to speak
	Assess ability to breath
	Are there any signs or symptoms of airway obstruction? Look for
	Apnea
	Noisy breathing
	Respiratory distress
	Failure to speak
	Foreign bodies
	(Facial or neck trauma) facial, mandibular, or laryngeal fractures
	Agitation
	Confusion
	Choking signs
	Assume C spine injury (immobilize with collar and sand bags)
	If you find airway compromise, mention that you need to secure the airway first:
	Simple suction and secretion control
	Chin lift or jaw thrust
	Nasopharyngeal airway
	Oropharyngeal airway
	Bag valve mask ventilation
	Intubation
	Surgical airway
	If patient presents with Glaucoma Coma Score (GCS) of less than 8, consider endotracheal intubation as the next step
	Appropriate response will confirm
	Patent airway
	Sufficient airway reserves to permit speech
Adequate perfusion	
Clear sensorium	
Mention here that the airway is clear but you will reassess it again	
B: Breathing and ventilation	Assess respiratory rate
	Put pulse oximetry probe and check O ₂ saturation
	Examine chest with adequate exposure and evaluate breathing:
	Look for chest movements, use of accessory muscles and color (cyanosis/pale)
	Auscultate for breath sounds, airway obstruction (stridor), and air entry symmetry
	Feel the chest. Palpate the trachea for its position or shift, chest wall crepitus, subcutaneous emphysema, flail segment, and sucking chest wall wounds
	Percuss: Both sides from the front and compare. Mention the findings
	Try to detect: tension pneumothorax, hemothorax, pneumothorax, and flail chest
	For further information on tension pneumothorax and hemothorax, see details in respiration system chapter
	If there is any breathing compromise or findings that the examiner provides, then manage accordingly. Assess for the need of immediate needle chest decompression or chest drain insertion. Also mention you may use nasal prongs, venturi mask, and bag-valve mask or can provide high-flow oxygen through a rebreather mask if not intubated and ventilated

(continued)

Table 9.3a (continued)

C: Circulation with hemorrhage control	Assess pulse rate
	Assess pulse quality (strength)
	Put cardiac monitors and blood pressure cuff
	Ask for BP and pulse pressure
	Assess capillary refill
	Assess skin color
	Look for any external obvious bleeding and take measures to stop it (pressure bandage):
	Direct manual pressure should be applied in trying to stop visible bleeding. Tourniquets are not used because of the risk of distal ischemia except for traumatic amputation. Transparent pneumatic splinting devices may control the bleeding and allow visual monitoring
	Surgery may be necessary if these measures fail to control hemorrhage
	Occult bleeding into the abdominal cavity, chest, retroperitoneum, or pelvis/long-bone fractures are all problematic. These should be suspected in a patient not responding to initial fluid resuscitation
	Insert two large-bore peripheral IV lines, or consider central venous catheterization if there is difficulty in getting peripheral lines
Get blood samples for baseline tests and for cross match with a group and hold	
IV fluids need to be given rapidly, usually as 250–500 ml warmed boluses (10–20 ml/kg in children). Often a total of 2–3 L of IV fluids is necessary (40 ml/kg in children), which will then need to be followed by a blood transfusion (O negative to begin with, if typed blood is not available). Ringer's lactate is the preferred initial crystalloid solution	
D: Disability and neurological status	Rapid neurological assessment should be done next. During the primary survey a basic neurological assessment is made, known by the mnemonic AVPU :
	Alert
	Verbal stimuli response
	Painful stimuli response
	Unresponsive
	Or by using GCS
	Pupils:
	Size, symmetry, and reaction
	Any lateralizing signs
	Level of any spinal cord injury (limb movements, spontaneous respiratory effort)
	Ask for a blood glucose level (finger prick)
Observe for causes that may affect level of consciousness; oxygenation, ventilation, drugs, alcohol, and hypoglycemia may all also affect the level of consciousness. If these are excluded, changes in the level of consciousness should be considered to be due to traumatic brain injury until proven otherwise	
Patients should be reassessed frequently as patients may deteriorate rapidly. Sometimes patients may be lucid after suffering from a head trauma, and these patients deteriorate very quickly. Observe for signs such as pupil asymmetry or dilation, absent light reflexes, and weakness/paralysis in limbs that may suggest an expanding intracranial hematoma or diffuse edema. These may require IV mannitol, ventilation, and an urgent neurosurgical referral	
E: Exposure/environmental control	Clothes may need to be cut off for proper exposure, but one needs to keep in mind the prevention of hypothermia
	After a quick examination, cover up the patient and prevent heat loss with warming devices, such as warmed blankets
Additional measures need to be done simultaneously while initial assessment and resuscitation are being performed	Continuous vital signs monitoring: Pulse oximetry should be attached on finger or ear lobe. Blood pressure cuff should be attached on arm. Pulse rate, blood pressure, respiratory rate, and body temperature should be continuously monitored
	Electrocardiograph (ECG) monitoring: This can guide resuscitation by diagnosing cardiac arrhythmia and ischemia
	Blood tests: Full blood count, Chem20, troponin, arterial blood gases/venous blood gases, group and hold, and coagulation screening (if required)
	X-rays: Portable if required on the bedside in the resuscitation room. If the patient is initially stable, they may be transferred to the radiology department for X-rays and or computed tomography (CT)
	X-ray chest
	Pelvic X-ray. It has been suggested that CT scans may be used in some stable patients
	Lateral cervical spine X-ray
	FAST scan (focused assessment with sonography for trauma): Very quick and useful tool to look for abdominal injuries; and/or CT scanning to detect occult bleeding
	Urinary output: May require insertion of a urinary catheter to measure urine output. Adequate output is 0.5–1 ml/kg/h. Urine output will determine fluid replacement. It is essential to rule out urethral injury before attempting catheterization. One must suspect urethral injury if there is blood at the meatus, pelvic fracture, scrotal blood, or perineal bruising. A digital rectal and genital examination are mandatory prior to catheter insertion
	Gastric catheter is inserted to reduce aspiration risk. Suction should be applied

Table 9.3b Secondary survey for trauma [4]

Secondary survey	
Once life-threatening conditions have been dealt with and ABCDE completed, then a secondary survey should be started. It includes a brief history, a head-to-toe examination, and a reassessment of progress	
History	Allergy: “Do you have any known allergies?”
	Medication: “Do you take any regular or prescribed medications?”
	Previous medical history: “Do you have any known medical conditions?”
	Last meal: “When was the last time you ate or drank something?”
	Event history: “What happened?”
	Try to get as much details as possible about how they feel
Head-to-toe examination	Ask questions about pain. Can they feel any pain? If yes, then explore pain
	Check for vital signs again
	Bleeding: Check the body from head-to-toe for any signs of bleeding
	Head and neck: Is there any bleeding, swelling, or dent in the scalp or on the face?
	Eyes: What size are their pupils? Response to light? Equal?
	Nose: Is there any blood or clear fluid coming from the nostrils?
	Mouth: Look for mouth injuries or burns in their mouth, loose dentures, and any foreign bodies
	Ears: Observe for an appropriate response when talking to patient. Do an ear examination. Is there any blood or clear fluid coming from either ear?
	Skin: Note the color and temperature of their skin
	Neck: Feel for trachea, neck, and cervical spine tenderness
	Chest: Observe the chest for rise and fall. Feel the rib cage to check for any deformity or sensitivity
	Collar bone, arms, and fingers: Feel all the way along the collar bones to the fingers for any swelling, sensitivity, or deformity. Check that they can move their elbows, wrists, and fingers. Look for any needle marks on the forearms
	Spine: Log roll: Need minimum of four people to complete it. One stabilizing the neck, two log rolling, and one palpating the spine. Palpate the entirety of the spine. Look at the back of the chest and back for any injuries. Also do a rectal exam
	Abdomen: Gently feel their abdomen to check for any signs of internal bleeding
	Hips and pelvis: Feel both hips and the pelvis for signs of a fracture. Check their clothing for any signs of incontinence, which may suggest a spinal injury or bladder injury
	Legs: Check the legs for any bleeding, swelling, deformity, or soreness. Ask them to raise one leg and then the other and to move their ankles and knees
	Toes: Check their movement and feeling in their toes. Compare both feet and note the color of the skin
Additional investigations with secondary survey	CT scans
	Ultrasound
	Contrast X-rays
	Angiography
Wrap-up	Thank the patient and ask the patient to cover up
	Wrap up your findings with the examiner or the patient

Vital Signs: Temp, 36.8 °C; HR, 100; BP, 130/80; RR, 18; O₂ saturation, 98% on RA.

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Further Readings



Musculoskeletal History Overview

In most of the objective structured clinical examinations (OSCE), there must be at least one and usually two stations from the musculoskeletal system. It can be either a brief history taking with focused physical examination station or a detailed physical examination station. It can be related to any joint. Practicing all the joints is equally important. It is very important to first memorize the sequence of various tests that need to be performed and, second, practice each test well. The examiner will be watching and it is very important to perform each test properly. Also take care of the patients. Inform them about what to expect and avoid using excessive force while assessing joints. Time management is also key to success in these stations. Customizing the history part and picking up only the most important and relevant tests will be essential. Sufficient time (about a minute) should be allocated for a wrap-up in the end.

This chapter outlines musculoskeletal system topics that are important for OSCE. An overview of the pattern of history taking is given in Table 10.1. Physical examination checklists are given for a quick review. Most of the tests are shown in pictures as well. Some important topics, such as ankylosing spondylitis, carpal tunnel syndrome, and ankle sprain, are also included.

Musculoskeletal History Details

Starting the Interview:

- Knock on the door.
- Enter the station.

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- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your identification (ID).
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Mr/Mrs...? Are you ...years old?”

Chief Complaint:

Chief complaint or the reason the patient is visiting the clinic. “What brings you in today?”

History of Present Illness:

Chief Complaint:

- Onset
 - If sudden onset, then ask what the patient was doing when it started.
 - Chronology (frequency, onset, duration, course)
 - Acute (<6 weeks) versus chronic (>6 weeks)
 - History of trauma
 - Mechanism of injury
- Course
- Duration
- Progression
- Severity of symptoms

Pain Questions:

- Onset
- Course
- Duration
- Progression
- Quality of pain

Table 10.1 Overview of musculoskeletal system history

Introduction:
Name and age
Chief complaint
In patient's own words
History of present illness
Analysis of chief complaint:
Onset
Course
Duration
Progression
Severity of symptoms
History of trauma
Mechanism of injury
Pain questions:
Onset
Course
Duration
Progression
Quality of pain
Radiation
Severity 1–10
Timing
Pain before
Mechanical:
Clicking
Locking
Unstable
Giveaway
Inflammatory:
Warm
Redness
Swelling
Tenderness
Morning stiffness
Joint instability
Weakness
Numbness
Gait/limp
Other joints involvement
Aggravating and relieving factors
Review of systems:
Common system review:
Gastrointestinal
Respiratory
Genitourinary
Cardiovascular
Neurology
Systemic diseases:
Skin (rheumatoid and psoriasis)
Eyes and difficulty urinating (Reiter's)
Mouth ulcers (Bechet's)
Diarrhea (inflammatory bowel disease [IBD])
Cardiovascular disease
IBD, gout, hemophilia, cancers: breast, thyroid, prostate, and kidney

Table 10.1 (continued)

Constitutional symptoms
Predisposing factors
Red flags/risk factors
Rule out differential diagnosis
Past medical and surgical history
Illnesses, any previous or recent surgeries
Hospitalization history or emergency admission history
Physiotherapy/acupuncture
Medication history
Current medications (prescribed, over the counter, and any herbals)
Allergic history/triggers
Any known allergies?
Family history
Family history of any long-term or specific medical illness
Occupation history
How do you support yourself?
Impact on life
Disability and adaptation
Effect on life
Daily activity
Getting up
Driving walking running
Shower
Brushing teeth or hair
Hand grip
Stairs
Squat
Effects on ability to work
Social history
Smoking
Alcohol
Recreational/illicit drug use
Sexual history (M/F/both)
If an adult female:
Menstrual history (last menstrual period)
Gyne history
Obstetrics history
If a teen:
Home
Education
Employment
Activities
Drugs
Sexual activity
Wrap-up
Describe the diagnosis
Laboratory tests
Duration of treatment and side effects
Management plan
Possible medical treatment
Red flags
Further information (websites/brochures/support groups or societies)
Follow-up

- Radiation
- Severity (scale of 1–10)
- Timing (time of the day)
- Pain before
- Most painful spot
- Aggravating/alleviating
- Associated symptoms

Mechanical:

- Clicking
- Locking
- Unstable
- Giveaway

Inflammatory:

- Morning stiffness (>30 min), better with use, constitutional symptoms
- Warmth
- Redness
- Swelling
- Tenderness
- Limitation of movement
- Joint instability
- Weakness
- Numbness
- Gait/limp
- Other joints involvement

Noninflammatory: Worse with use. Worse at the end of the day. Can have some stiffness/gelling but usually not prolonged.

Seropositive: Rheumatoid arthritis (RA), systemic lupus erythematosus (SLE), Sjögren's syndrome, scleroderma, inflammatory myositis

Seronegative: Ankylosing spondylitis (AS), psoriatic arthritis, enteropathic arthropathy, reactive arthritis

Pattern of Joint Involvement:

- Number of joints involved: monoarthritis, oligoarthritis (four or less), polyarthritis (five or more joints)
- Symmetric vs. asymmetric
- Small joints (hands/feet) versus large joints (hips, shoulders); peripheral joints versus axial involvement (spine, sacroiliac [SI] joints)

- Tendon involvement
- **Symmetrical small joints polyarthritis** (wrist, metacarpophalangeal [MCP], ankle, metatarsophalangeal [MTP])
- Seropositive, psoriatic, tophaceous gout
- **Symmetrical large joint polyarthritis** (shoulder, hip)
- RA, AS, polyarthritis rheumatic
- **Asymmetrical oligoarthritis** (knee, ankle, MTP)
- Seronegative, crystal-induced, infectious
- **Monoarthritis** (elbow, wrist, knee, ankle, MTP)
- Infectious, crystal-induced, traumatic, hemarthrosis, reactive arthritis, bacterial endocarditis

Constitutional Symptoms:

Fatigue and malaise, night sweats, fever, weight loss

Review of Systems and Extra-articular Features:

- **Skin:** Malar rash, nodules, panniculitis, telangiectasias, sclerodactyly, calcinosis, heliotrope rash, Gottron's papules, shawl sign, alopecia, periungual erythema psoriasis, nail pitting, onycholysis, oil spots, erythema nodosum, pyoderma gangrenosum
- **Eyes:** Ocular iritis, scleritis, conjunctivitis, dry eyes, iritis
- **Mouth:** Ulceration/erosion
- **Cardiovascular:** Pericarditis, pericardial effusion, conduction defects
- **Respiratory System:** Effusion, pleuritis, pulmonary fibrosis, pulmonary nodules, restrictive
- **Gastroenterology:** Gastroesophageal reflux disease (GERD), small bowel obstruction (SBO), malabsorption, bloody diarrhea
- **Neurology:** Mononeuritis multiplex, polyneuropathy, central nervous system (CNS)
- **Crystal Arthropathies:** Monoarthritis (red, hot) chronically can be polyarthritis: gout (tophi, ETOH history, renal failure, drugs)
- **Calcium Pyrophosphate Deposition (CPPD):** Hyperparathyroidism, hypomagnesemia, hypophosphatasia, ochronosis, hemochromatosis, Wilson's disease, hypothyroidism
- **Septic Arthritis:** Mostly monoarthritis, joint red/hot/tender, and associated with fever
- **Gonococcal Arthritis:** Migratory, with tenosynovitis and skin pustules

Impact on Life, Disability, and Adaptation:

- "How is this impacting your life?"
- "Has there been any effect on your daily activities?"
- "Do you have trouble getting up, driving, walking, running, showering, brushing your teeth or hair, stairs, or squatting?"

Past Medical History:

- “Have you heard any previous health issues?”
- “Have you had any health issues related to your lungs, heart, or kidneys?”
- “Have you ever been tested for tuberculosis?”

Past Hospitalization and Surgical History:

“Have you ever been hospitalized or undergone surgery?”

Medication History:

“Are you taking any prescribed, over-the-counter, or herbal medications? If so have there been any side effects?”

Allergic History:

“Do you have any known allergies?”

Family History:

“Has anyone in your family had similar symptoms or health problems?”

Social History:

- “Do you or does anyone close to you smoke? Do you drink alcohol?”
If yes: How Much? Daily? How Long?
- “Have you ever tried any recreational drugs?”
If yes: Which Ones? How Long? When?
Specially ask about intravenous (IV) drug use (red flag for back pain).

Relationships:

“Are you sexually active? Do you have sex with men, women, or both?”

Self-Care and Living Condition:

“What do you do for a living? Who lives with you?”

Support:

“Do you have good support from your family and friends?”

Functional Status:

“How is this impacting your day-to-day activities?”

If patient is a teenager, then add these questions Home, education, employment, activities, drugs, and sexual activity

If patient is an adult female, then add these questions Menstrual history (last menstrual period [LMP]), gynecology, and obstetrics history

If patients are more than 65 years old, then add these questions:

- “Do you have any problem with balance?”
- “Do you have any difficulty peeing/urinating?”
- “Do you have any trouble sleeping?”
- “Has there been any change in your vision or hearing?”
- “Have you had any recent change in your memory?”
- “Do you take any regular medication? Is it prescribed or over the counter?”

Wrap-Up:

- Describe the diagnosis.
- Laboratory tests.
- Management plan.
- Duration of treatment and side effects.
- Red flags.
- Further information: Websites/brochures/support groups or societies.
- Follow-up.

Musculoskeletal Physical Examination

The musculoskeletal system scenarios usually come as both a history and physical examination station. It is very important to practice taking a focused history and completing a relevant physical examination [1].

Equipment requirements:

- A measuring tape
- A goniometer
- A tendon hammer
- A disposable sharp point

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Stand on the right side of the patient and start the physical examination.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician. Are you Mr...? Are you ... years old? Is it alright, if I examine your ...? I will also do some tests during which I will ask you to perform some maneuvers. Please ask

me if you do not understand how to do these during the examination. During the examination, if you feel uncomfortable at any point, please let me know.”

Before starting, mention “I shall be performing the tests on your right side only (if right side is the troubling side) assuming that the left side is normal.”

Vitals:

Start with commenting on the vitals given at the door.

- It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.
- “Mr/Miss ... your vital signs are normal” (or mention any abnormal findings).

General Physical Examination:

“I need to ask you a couple of questions as a part of my examination.”*

- “What is the date today?”
- “Do you know where you are right now?”

*(You may skip these questions if it is a history and physical station)

Comment:

“Patient is oriented and alert.” or “Patient is in distress!” or “Patient is sitting comfortably and he/she is well oriented and alert.”

Look for any abnormal findings in the hands, face (eyes, nose, lips, mouth), and neck.

Ensure proper positioning and exposure of the joint you are examining. Drape the rest of the body properly.

Joint Inspection

General: Joint posture, any dressing/cast and any abnormal movement.

Inspect the joint from all possible views.

Compare to the other side and comment on symmetry of the joint and then verbalize:

- “I don’t see any swelling, erythema, atrophy, deformity, and skin changes/rash or scar marks (SEADS).”

Joint Palpation

Inform the patient again, “I am going to feel your ... If you feel pain, please let me know.”

Note and feel for tenderness, effusion, swelling, temperature, crepitus, and atrophy.

Range of Motion:

- **Active range of movements:** Check first for active range of motion (let the patient move a joint through its range of motion in a specific direction and assess the range).
- **Passive range of movements:** This is when you move a patient’s joint and observe the range of motion. Compare the active and passive range of movements to the normal joint.
- **Test power:** Check for power in the same movements as performed while testing for active range of movements.

Neurovascular Assessment:

Sensory

See Fig. 10.1 for dermatome map [2].

Motor

- “Shrug your shoulders.” – C4
- “Bend your elbow.” – C5
- “Pull your wrist back.” – C6
- “Straighten your arm.” – C7
- “Open and close your fingers.” – C8
- “Spread your fingers.” – T1
- “Flex your leg at the hip.” – L1, L2
- “Straighten your knee.” – L3
- “Pull your foot up.” – L4
- “Push your foot down.” – L5, S1

Grading Power

5: Normal power

4: Able to move the joint against a combination of gravity and some resistance

3: Active movement against gravity

2: Able to move with gravity eliminated

1: Trace contraction

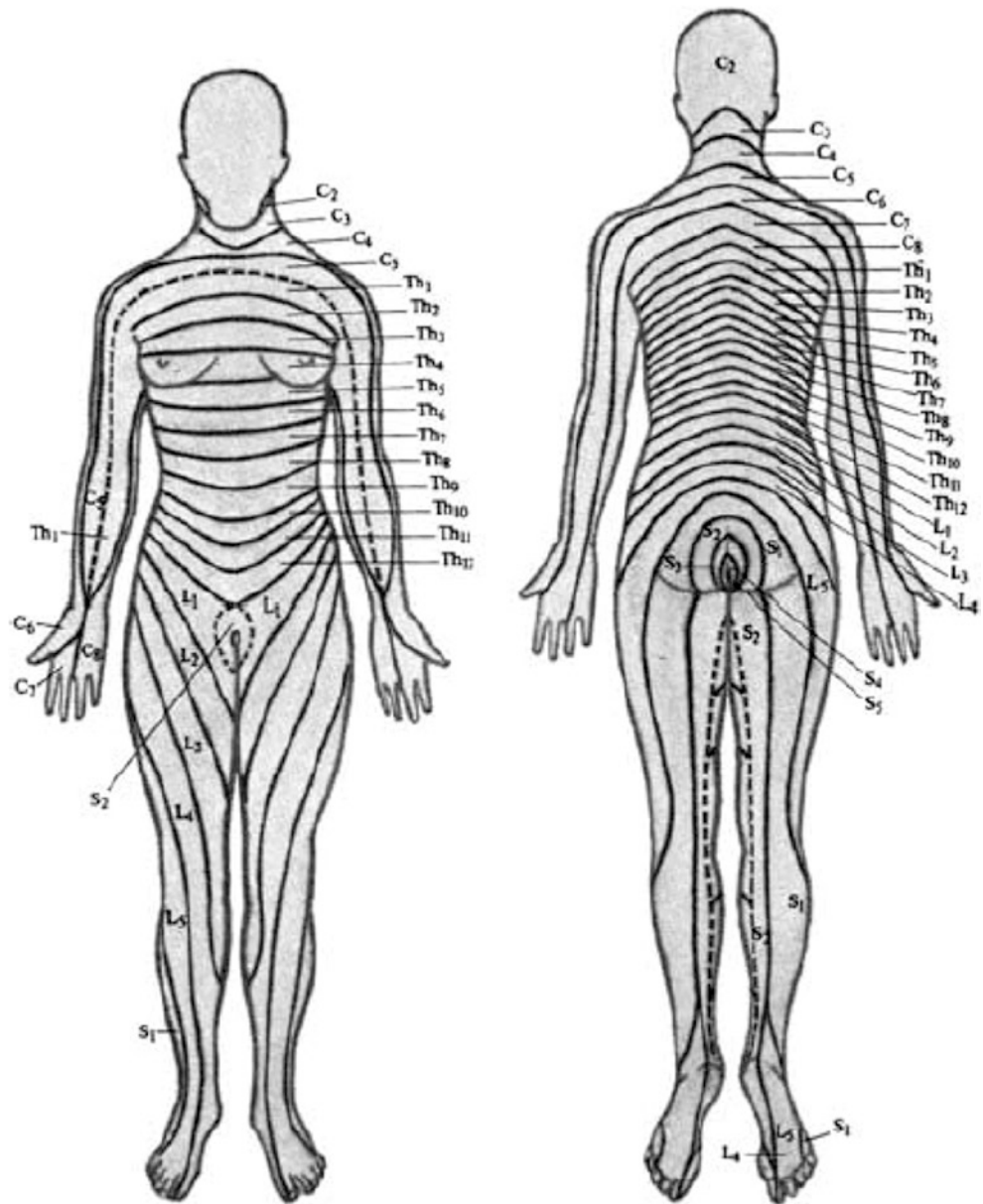
0: No contraction

Reflexes See Fig. 10.2 for clinical shorthand to summarize reflex findings.

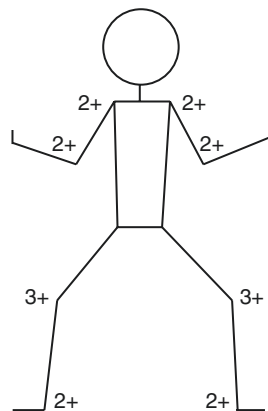
Deep Tendon Reflexes

- Biceps – C5/C6
- Brachioradialis – C6
- Triceps – C7
- Patellar – L4
- Achilles – S1
- **Plantar Response**

Fig. 10.1 Dermal segmentation (dermatomes). (Reprinted with permission from Keegan and Garrett [2])



Scale	
0	Absent
1+	Hypoactive
2+	Normal
3+	Hyperactive
4+	Hyperactive with clonus
5+	Sustained clonus



Reflexes Tested in Special Situations

- Spinal cord injury
- Frontal release signs
- Posturing

Pulse

See Fig. 10.3 for arterial pulse points.

Capillary Refill

Pressure is applied to the nail bed until it turns white (blanching) and the pressure is then removed. The time that it takes for the nail bed to turn pink again is the capillary refill. Blanch time of more than 2 s is a delayed response seen in dehydration, shock, peripheral vascular disease, and hypothermia.

Fig. 10.2 Example of how clinical shorthand is used to summarize the findings of reflex tests

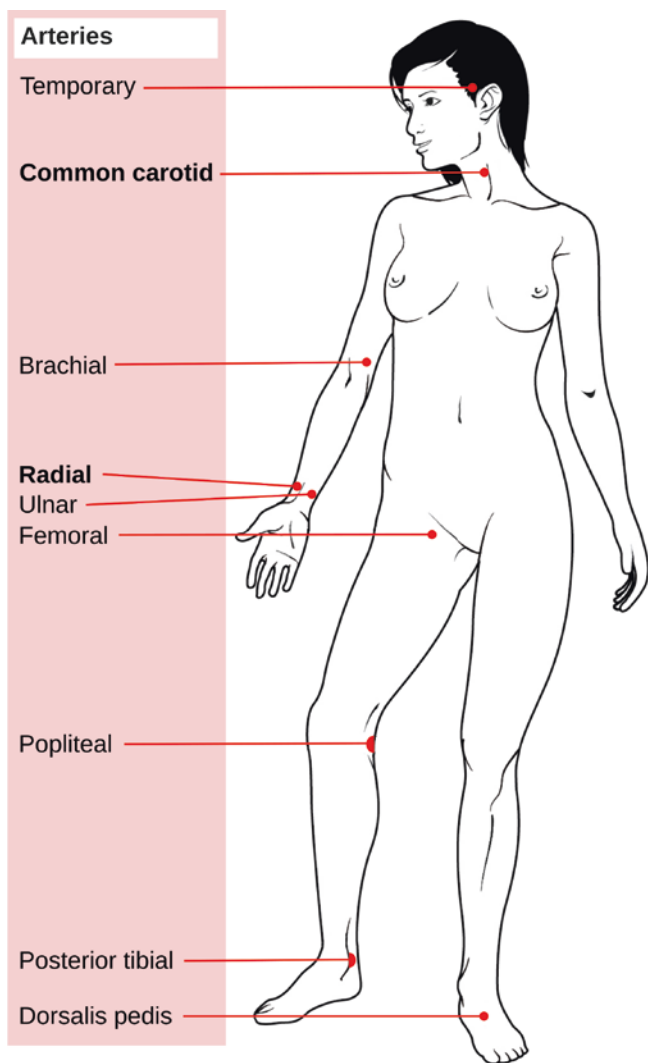


Fig. 10.3 Pulse sites. By Jmarchn. https://en.wikipedia.org/wiki/Pulse#/media/File:Pulse_sites-en.svg. (Reprinted under terms of Creative Commons Attribution-Share Alike 3.0. <https://creativecommons.org/licenses/by-sa/3.0/>)

Special Tests

These are specific for each joint and details are given in each joint examination.

- Mention that you will examine the joint above and below and will also compare it with the other side.
- Thank the patient. Tell them they can now cover up.
- Wrap up your findings and ask if the patient has any concerns.

Question: “What you will do next?”

Answer: “I will need to read the radiographs and will then arrange for further investigations.”

Checklist: Musculoskeletal Physical Examination

See Table 10.2 for a checklist that can be used as a quick review before the exam.

Table 10.2 Checklist for musculoskeletal physical examination

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Now sit on the chair or stand on the right side of the patient and start the interview
Opening	Introduction, greet, explain, position, and exposure/drape
	Ask for vital signs – interpret
	General physical examination (may skip these questions if it is a history and physical station)
Inspection	Check that patient is alert and oriented
	Look for abnormal findings in:
	Hands
	Face (eyes, nose, lips, mouth)
	Neck
	General:
	Joint posture
	Dressings/casts
	Abnormal movement
	Comment on symmetry of joint by comparing to other side.
	Verbalize findings, commenting on SEADS:
	Swelling
	Erythema
	Atrophy
Deformity	
Skin changes/rash or scar marks	
Inspect from all possible views	
Joint palpation	Inform the patient that you are going to feel the joint and to make you aware of any pain they may feel
	Feel for:
	Tenderness
	Effusion
	Swelling
	Temperature
	Crepitus
	Atrophy
Range of motion	Active range of movements
	Passive range of movements
	Comparison to normal joint
Neurovascular assessment	Sensory
	Motor
	Reflexes
	Pulse
	Capillary refill

(continued)

Table 10.2 (continued)

Special tests	Tell the patient that you will examine the joint above and below and will compare with the other side
Wrap-up	Thank the patient and tell them that they can cover up
	Ask the patient and examiner if they have any questions or concerns
	Wrap up your findings with the examiner or the patient

History and Physical Examination: Cervical Spine

Candidate Information:

A 39-year-old female constructor worker presents with a 3-month history of neck pain. She has some hand weakness.

Vital Signs:

Hear rate (HR), 76 beats/min, regular; blood pressure (BP), 120/65 mmHg; temp, 36.8 °C; respiratory rate (RR), 14/min; O₂ saturation, 97%

Please take a focused history and perform a relevant physical examination. Please do not perform rectal, genitourinary, or breast examinations.

Differentials:

- Cervical spondylosis (C5/6 or C6/7)
- Whiplash and extension injuries of the neck
- Ankylosing spondylitis
- Prolapsed intervertebral disc
- Spondylolisthesis
- Degenerative disc disease
- Vertical compression
- Hyperextension
- Shearing injury

Quick Review of the Neck Pain:

Cervical spine issues can be presented in three distinct ways: cervical radiculopathy, cervical myelopathy, and cervical spondylosis.

Cervical radiculopathy is a condition characterized by radiating pain to one upper extremity associated with hypoesthesia or paresthesia in dermatomal distribution. Cervical myelopathy is due to central pressure on the spinal cord causing lower extremity spastic weakness and a positive Lhermitte test. Cervical spondylosis may cause central

neck pain or pain that is felt mainly on the trapezius muscles. The presentation of cervical radiculopathy seems more appropriate for making an OSCE scenario for history-taking scenarios or performing physical examination. The other two do not have enough room for maneuvering of the test designers, but you need to add some simple related examination to show that you are aware of them. Therefore, whenever you see a case with the chief complaint being neck pain, ask about extremities regarding weakness, numbness, and tingling. And whenever you are asked about a case with upper extremity pain or numbness, you should check the cervical spine.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Miss...? Are you 39 years old? I know that you are suffering from neck pain; can you tell me more about this?”

History of Present Illness:

Wait until the patient answers before you start your closed-ended questioning.

- **Onset:** “How did your pain start?” A typical case will have a gradual onset.
- **Course and Duration:** “How long have you had the pain? Is it getting worse or better? Do you have the pain all the time or does it fluctuate?” Typical pain from cervical radiculopathy fluctuates widely and depends on activity and position. The patient may consider its general trend as worsening, improving, or staying the same.
- **“Can you show me with your hand where you feel the pain?”** A patient with cervical spondylosis will put his palm on his trapezius on the back of the neck. Those with cervical radiculopathy will try to demonstrate the radicular nature of their pain by dragging their other hand downward on the involved arm or in more subtle cases touching the cervical spine or trapezius. If a patient puts their palm on their deltoid, it could be a sign that you are dealing with a shoulder case not cervical spine case.

- **Quality:** “How would you describe the pain?” The pain can be described differently, and it is not practical to put much emphasis on it, but generally speaking at least for the sake of your exam, a burning pain is more typical for radiculopathy, and electrical shock-like pain down the spine for cervical myelopathy will be described, and it is worth asking the patient now.
- **Radiation:** “Does the pain shoot anywhere else? Down your arms or back?”
- **Severity:** “How would you rate your pain on scale of 1 to 10?”
- **Timing:** “At what time of the day is the pain worse?” Cervical pain will intensify with a prolonged upward position, especially sitting in a constant position like in front of a computer, so day time is worse compared to shoulder pain, which is worse at night with sleeping.
- **Alleviating and Aggravating Factors:** “Have you noticed anything that makes your pain worse? Anything that makes it better?” Typically rest, painkillers, or massage may be mentioned as the relievers. Work, writing, or typing usually aggregate the pain.
- **Associated Symptoms:** Constitutional symptoms are fever, weight loss, night sweats, weakness, and numbness.
- **Functional Status:** “How is this impacting your day-to-day activities?”

Complete the rest of the history as mentioned under history taking.

Cervical Spine and Related Examination

Mention here: “I am going to do an examination of your neck. Should we start?”

You are expected to do a focused physical exam if you have some elements of history. For example, you will put more emphasis on all the elements of neurological examination of upper extremities if the history is compatible with cervical radiculopathy, not wasting any time on a detailed lower extremity neurological exam.

Vitals:

Start by commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.)

“Vital signs are normal.” Or mention if there are any abnormal findings.

Inspection:

- **General:** Neck posture, any dressings, or abnormal movement.
- **Position:** Sitting. Expose from the head down to both shoulders and properly drape the rest of the body inspect

the neck from the anterior, lateral, and possibly posterior. Patient’s nose should be in line with manubrium and xiphoid process of the sternum. From the side, the patient’s ear lobe should be in line with acromion process [3].

Verbalize if you do not see any SEADS – swelling, erythema, atrophy (arms and forearm), deformity (torticollis), skin changes/rash/scar marks, loss of normal anterior/lateral curvature.

Joint Palpation:

Inform the patient again, “I am going to feel your neck; if you feel pain, please let me know.”

Palpate the spinous processes and facet joints of the cervical vertebra, external occipital protuberance, mastoid process, paracervical muscles, lymph nodes, supraclavicular fossa, and carotid arteries.

Feel for tenderness, effusion, swelling, temperature, crepitus, fluctuance, and atrophy.

Active Range of Movements:

Stand in front of the patient and ask them to copy your movements. Show them these movements: flexion, extension, lateral bending, and rotations. Expect some limitation and grimacing to comment on. Then, ask them to put both of their hands on the back of their neck and then on the upper back from behind as a rapid check for shoulder motion. In cervical spine cases, this should be normal and painless.

If there is any limitation of active movement, check the passive movement too; otherwise you may skip that.

Passive Range of Movements:

Check passive movements while you move patient’s neck in flexion, extension, lateral bending, and rotation.

Power Assessment:

Determine muscle power in the movements mentioned previously.

Neurological Examination:

Motor Exam

We need to check further for neurological weakness originating from the nerve roots in the cervical spine by testing the myotomes with the respective movements. There are many ways to perform a nerve root examination; however, for the sake of OSCE, this is a very timesaving approach:

- Neck flexion – C1–2
- Neck side flexion – C3

- Shoulder elevation – C4
- Shoulder abduction – C5
- Elbow flexion – C5, C6
- Elbow extension – C7
- Wrist extension – C6, C7
- Fingers flexion – C8
- Fingers abduction – T1

Sensory Exam

Take a piece of cotton, and tell the patient that you are going to touch their arm and hands with it. Show them how it feels by first touching it to their neck. Now ask the patient to close their eyes and tell you when they feel the cotton and whether the feeling is the same on both sides. You should touch these areas on both sides:

- Jaw angle – C2
- Shirt collar area – C4
- Lateral side of elbow – C5
- Dorsum of first web space (thumb) – C6 (radial)
- Palmar or dorsal aspect of the index finger – C7 (median)
- Dorsal aspect of distal phalanx of the middle finger – C7
- Palmar or dorsal aspect of the little finger – C8 (ulnar)
- Medial side of the elbow – T1

Deep Tendon Reflexes:

- Biceps – C5
- Triceps – C7
- Brachioradialis – C5, C6

Special Tests

Occipital Wall Distance:

Ask the patient to stand with their back against a wall and measure the occiput-to-wall distance. The occiput-to-wall distance should be zero. The inability to touch the occiput against the wall is abnormal. This measurement may be used to follow the progression of ankylosing spondylitis and can also be used as a part of the assessment for osteoporosis and associated chronic spinal fractures.

Spurling Test Guide the patient to simultaneously rotate and laterally flex the neck toward the affected side (Fig. 10.4). Reproduction of the radicular symptoms (Spurling's sign) is suggestive of cervical root impingement [4].

Compression Test While the patient is sitting, apply downward pressure on their head to exert an axial load (Fig. 10.5). Reproduction of radicular pain is suggestive of cervical nerve root impingement.

Lhermitte Sign Ask the patient to flex their neck and ask if they feel any electrical sensation on their back. This is a sign of cervical myelopathy. The sign may also be positive in B12 deficiency, multiple sclerosis, and cervical disc disease.

Finding In-Cord Injury in Spinal Trauma:

- Tenderness over spinous processes
- Paraspinous swelling
- Gap between spinous processes
- Neurological paradoxical breathing: seen in paralysis
- Flaccid limbs with no response to painful stimuli and no reflexes
- Painless urinary retention/priapism

Thank the patient and tell the patient that they can now cover up.

Ask patient and examiner if they have any questions or concerns.

Wrap up your findings with the examiner or the patient.



Fig. 10.4 Spurling test. The patient flexes the neck toward the affected side (red arrow)



Fig. 10.5 Compression test (red arrow shows radicular pain)

Wrap-Up:

Describe the diagnosis.

Question: “How will you investigate this patient?”

Answer: X-ray cervical spine, electromyography/nerve conduction velocity (EMG/NCV), magnetic resonance imaging (MRI) cervical spine

Question: “What is your management plan?”

Answer: “I will start patient pain medication such as NSAIDs (check for allergies and risk factors) and physiotherapy.”

Further information: Websites/brochures/support groups or societies.

Follow-up.

Checklist Cervical Spine Examination:

See Table 10.3 for a checklist that can be used as a quick review before the exam.

Table 10.3 Checklist for cervical spine examination

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Now sit on the chair or stand on the right side of the patient and start the interview
Opening	Introduction
	Greet, explain, position, and expose/drape
	Ask for vital signs – interpret
General physical examination (may skip these questions if it is a history and physical station)	Check for level of alertness and orientation
	Look for abnormal findings in:
	Hands
	Face (eyes, nose, lips, mouth)
Inspection	Neck
	Position
	Inspect the neck from anterior, lateral, and possibly the posterior angles
Joint palpation	Verbalize if you do not see any SEADS
	Tell the patient what to expect in the examination
	Palpate the spinous processes and facet joints of cervical vertebrae, external occipital protuberance, mastoid process, paracervical muscles, lymph nodes, supraclavicular fossa, and carotid arteries
	Feel for tenderness, effusion, swelling, temperature, crepitus, fluctuance, and atrophy
	Active range of movement (ROM)
Passive ROM	Check for passive movements in flexion, extension, lateral bending, and rotations
Neurovascular examination	Sensory
	Motor
	Reflexes
Special tests	Occipital-to-wall distance
	Spurling’s sign
	Compression test
	Lhermitte sign
Wrap-up	Thank the patient and tell them that they can now cover up
	Wrap up your findings and ask if the patient has any questions/concerns

History and Physical Examination: Lumbar Spine

Candidate Information:

A 54-year-old comes up to you complaining of low back pain having lasted 3 days.

Vital Signs: HR, 76/min, regular; BP, 120/65 mmHg; temp, 36.8; RR, 14/min; O2 saturation, 97%

Please take a focused history and perform a relevant physical examination. Please do not perform rectal, genitourinary, or breast examination.

Quick Review of the Low Back Pain:

Differential Diagnoses:

- **Simple lumbago:** A mechanical type back pain without nerve root irritation
- **Sciatica:** A mechanical back pain with nerve root irritation
- **Inflammatory spondyloarthropathies**
- **Spinal canal stenosis**
- **Others:** Infection, tumors, fractures

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Most of all the lower back pain cases are what we can refer to as mechanical low back pain. No matter what the exact origin of the pain, whether from muscles, ligaments, discs, or nerve roots, a range of similar symptoms can be presented in this common illness.

Classic mechanical back pain gets worse with physical activity and improves with rest; however, sitting is not comfortable. Its severity varies considerably throughout the day or day-to-day and usually responds at least partially to common pain killers. The pain is usually worse in the lumbar area at the midline or on the right or left side of the midline. It commonly radiates to one buttock and thigh but no lower than the knee.

There are some particular signs and symptoms that are indicative of nerve root irritation (sciatica) and a number of symptoms and clues in the history that are considered red flags as they should raise suspicion of alternative diagnoses. It is a good strategy to consider lumbago as your primary diagnosis and check all related symptoms and red flags.

Here is a list of clues that should be mentioned in the history:

1. **Age:** Most of the time, the age will be given at the doorway with patient information; however, it is worth considering its importance in our approach to low back pain. If the patient is very young (10–20) especially

younger than 15 years of age, consider spondylolysis and primary bone tumors as the cause. On the contrary, if the patient is over 50, that is a red flag for you to consider a compression fracture or metastasis.

2. **Onset of Pain:** “Can you please tell me how your pain started? Did it come on gradually or suddenly?” Typical mechanical low back pain usually starts suddenly at its peak level of pain and then goes down gradually and fluctuates. In contrast, inflammatory low back pain as well as canal stenosis pain builds up gradually. With a typical case of mechanical low back pain, the patient may clearly remember a physical activity, like pushing a car, as the causative factor for the pain. A trauma without a significant severity mechanism, such as falling from a ground level, should prompt thinking of pathologic fractures.
3. **Duration:** “How long have you had the pain?” Mechanical low back pain can present acutely or chronically, but you should expect an acute presentation for the OSCE. Compression fractures are acute, while spinal stenosis and inflammatory arthropathies are more insidious and chronic.
4. **Location:** “Can you show me where you feel the pain?” The patient will put his or her hand on their back. Bend forward or stand up to check the exact location. If the point is at the CV angle, think about various kidney pathologies such as pyelonephritis. Or nephrolithiasis.
5. **Radiation:** “Does the pain shoot anywhere else? Down one or both legs? How far down does it go?” If the pain shoots down the legs, then you must ask which one is more bothering for them: the leg pain or the back pain. In a case of lumbago, the pain can radiate to one or both buttocks and may go down to the knee but not lower than the knee, and the back pain is worse than thigh pain in severity. Sciatica pain goes down on one side as low as the ankle or toes, and the patient will complain more of leg pain rather than the back pain itself. The spondyloarthropathy and spinal stenosis pain are mainly in the lower back; however, it might also be felt first in the upper back and later in the buttocks and thighs. Bilateral radicular pain should make you think of cauda equina syndrome as an emergency situation.
6. **Severity:** “How bad is your pain on a scale of 1–10?” Mechanical low back pain can range from mild to excruciating, and, as mentioned before, it usually changes in severity widely. Spondyloarthropathies generally present with mild to moderate pain. Compression fracture pain might start at the upper part of the range and will gradually decrease in severity. Spinal stenosis is unique in its particular association with the type of activities that will be mentioned later.
7. **Nature of the Pain:** “How would you describe your pain? Sharp, dull, burning, shooting?” Sciatica is usually described as a sharp, shooting, or burning pain with associated elements of tingling that should be asked

about specifically. Pain of a fracture is sharp, while inflammatory arthropathies and spinal stenosis pain are more of a dull pain.

8. **Timings:** “At what time of day or night is your pain worse?” Mechanical low back pain is worse after physical activity or prolonged sitting and is usually at its peak in the afternoon or evening. Spondyloarthropathies, like ankylosing spondylitis, are worse in the early morning before getting out of bed. Remember also that tumors and infections are notoriously associated with night pain.
9. **Aggravating Factors:** “Can you tell me what makes the pain worse and what makes it better?” If the patient mentions bending forward or backward, sitting/driving, or standing still as the worsening factors, consider mechanical low back pain, i.e., lumbago, or sciatica as the cause.

If walking is mentioned as a causative factor and sitting and bending forward as a relieving factor, then go with spinal stenosis. Clarify more to reveal its characteristics and its prominent differential diagnosis, which is intermittent claudication.

“How far can you walk before the pain starts and how far can you keep going before the pain makes you stop?” While an exact distance of walking brings up the pain of vascular claudication every time, this distance widely varies for neurologic claudication-spinal stenosis.

“Is the pain worse on an upslope or downslope?” Climbing an upward slope is much easier for stenotic patients. The reverse is true for vascular cases.

10. **Relieving Factors:** “Can you get rid of pain by standing still or do you need to sit down?” Just standing for 10 min is enough to make a patient with vascular claudication ready to walk again, but the neurologic pain needs sitting for a relief.

“How long do you need to sit down for before being able to walk again without severe pain?” Twenty to 30 min is the usual required sitting time before waking again for the spinal stenotic cases.

“Does riding a bicycle bring on the pain?” No, so many of these patients substitute it for walking as the spinal flexion adapted for riding a bicycle is ideal for reducing pressure over the neural elements.

11. **Associated Symptoms:** “Besides this back pain, do you have any other symptoms like:
 - “Fever and night sweats?”
 - Red flags for infection – osteomyelitis, tuberculosis, brucellosis
 - “Weight loss?”
 - Red flag for infection and cancer
 - “Incontinence or difficulty peeing?”
 - Red flags for cauda equina syndrome
 - “Any numbness when you wipe yourself in the washroom?”
 - Saddle anesthesia: red flag for cauda equina syndrome

- “Any weakness or numbness in your legs? Which side?”
 - Unilateral: sciatica
 - Bilateral: red flag for cauda equina syndrome
- “Heel pain?”
 - Enthesopathy of spondyloarthropathies
- “Eye pain or red eye?”
 - Anterior uveitis associated with spondyloarthropathies
- “Joint pain in the knees or hips?”
 - Peripheral arthritis may present in various types of spondyloarthropathies, especially ankylosing spondylitis
- “Abdominal pain or diarrhea?”
 - Consider reactive arthritis as a type of spondyloarthropathy.
- “Skin rash?”
 - Consider psoriatic arthritis and reactive arthritis.

Red Flags:

Common and important red flags of low back pain with association of possible causes of pain are shown in Table 10.4 [5].

Table 10.4 Common red flags for low back pain

Red flags	Possible causes of pain
Long-term duration (>6 weeks)	Infection, tumor, or rheumatologic disorder
Younger age <18 years	Infection, congenital defect, tumor, spondylolysis, or spondylolisthesis
Older age >50 years	Infection, tumor, or intra-abdominal processes (e.g., abdominal aortic aneurysm)
Major trauma or minor trauma in the elderly	Fracture
Cancer	Tumor
Fever, chills, night sweats	Infection, tumor
Unexplained weight loss	Infection, tumor
Intravenous drug use	Infection
Immunocompromised	Infection
Gastrointestinal or genitourinary surgical procedure	Infection
Night-time pain	Infection, tumor
Constant pain, even when lying down	Infection, tumor, abdominal aortic aneurysm, or nephrolithiasis
Pain becomes worse when coughing, sitting, or Valsalva maneuver	Herniated disc
Pain that radiates below the knee	Herniated disc or nerve root compression below the L3 nerve root
Incontinence	Cauda equina syndrome, spinal cord compression
Saddle anesthesia	
Severe or rapidly progressive neurologic deficit	

Modified from Della-Giustina [5]

Past Medical History: Important to ask about skin diseases, abdominal diseases, and eye diseases. Also ask about cancer. A positive history of cancer, like breast cancer or lung cancer, will change your approach. You will request an X-ray and a bone scan.

Medicine History: “Have you ever been prescribed any steroids?” A positive history makes osteoporosis and compression fracture of the vertebrae more likely.

Social History: “How do you support yourself financially? Is it a job associated with heavy weight lifting? Do you smoke?” Smoking is associated with increased rate of mechanical low back pain and lung cancer that can metastasize to the spine.

“Have you ever used illicit drugs? If yes, any injections?” Associated with risk of vertebral osteomyelitis.

Complete the rest as mentioned in the history-taking details.

Lumbar Spine Examination:

“Now I am going to start examining your back. Is it alright to go ahead?”

Vitals: Start by commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.)

Comment on the vital signs findings, “Mr/Miss . . . vital signs are normal,” or mention if there are any abnormal findings.

Inspection and Palpation:

- **Position:** Inspect the back in standing, sitting, and then the supine position. Preferably the patient will be wearing a gown open in the back.

In case of acute injuries to the lumbar spine, examine only in the supine position. You should mention that you will

need two or more assistants to log roll the patient and then will be able to palpate the thoracolumbar spine and soft tissues. This will also minimize further spinal injury.

- **Walking:** Ask the patient to walk for a few steps. Look for any kind of limping or antalgic gait. Now ask your patient to walk on their heels. You are checking the power of ankle dorsiflexion or L4 and L5. Ask them to then walk on their toes to test the power of ankle plantar flexion or S1.
- **Standing:** First watch the back, and then verbalize if you do not see any SEADS (swelling, erythema, atrophy, deformity, and skin changes/rash/scar marks) on the back. Then palpate the spinous processes of the thoracic and lumbar vertebrae and paraspinal muscles. Note any step deformity that may indicate spondylolisthesis. Palpate for sacrum, coccyx, iliac crests, ischial tuberosities, and paravertebral muscles. Note for normal lumbar lordotic curve. Note any asymmetry of the iliac crests. Note any tenderness on posterior superior iliac spine and sacroiliac joints. While the patient is standing, also check if both iliac crests are level or not to reveal any limb length discrepancy (LLD).

Inform the patient that you are going to touch their hips, and check areas over and behind the greater trochanter for any tenderness as a sign for trochanteric bursitis.

- **Schober's Test:** This is done in the standing position. Stand behind the patient and tell them that you will be putting two small marks on their back. Identify the dimples of Venus (sacroiliac joints) and make a mark on the skin at the midline. Take your measuring tape out or find one in the station. Put a mark 10 cm above the previous line and the second mark at 5 cm distal to that. Now command the patient to bend forward. Measure the distance between the two lines again. It should be at least 20 cm (Fig. 10.6) [6]. It will be reduced in ankylosing spondylitis.

Fig. 10.6 Schober's test. (Adapted from [6])

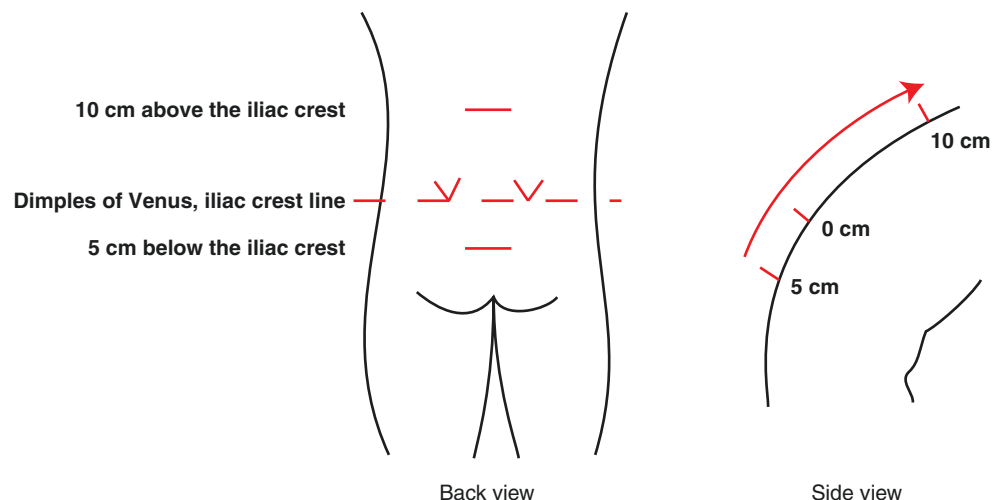




Fig. 10.7 Checking for costovertebral angle tenderness

- **Percussion:** Percuss each vertebra with the hypothernar aspect of your closed fist. Deep pain in response to percussion is nonspecific but may be an indication of degenerative disease, malignancy, or infection.
- **Active Range of Movements:**
- Ask the patient to stand and mimic your movements.
- Using your hands to fix the pelvis, ask the patient to bend forward (flexion), backward (extension), bend laterally (lateral flexion), and rotate side to side.
- Forward bending may cause pain in patients with radiculopathy. Watch for any scoliosis.
- Check backward bending. It may be restricted or painful in cases of facet joint involvement, especially if backward bending is mixed with lateral deviation.
- Check for **costovertebral angle** (CVA) tenderness on both sides (Fig. 10.7).

Flip Test: Ask the patient to sit at the edge of the bed. Ask the patient to extend their knees one by one. Complete extension is impossible for a patient with radiculopathy as this position equals straight leg raising to 90-degree of hip flexion. In a positive flip test, as the passive or active knee extension reaches 45° or more, the patient flips backward and will put their hands on the table behind their body for support (Fig. 10.8a, b). This test is especially helpful in malingering cases.

Neurovascular Assessment

- **Power assessment:**
- Check resisted great toe extension – L5
- Check resisted knee extension – L3 and L4
- Check resisted hip flexion – L2
- **Sensory test** with a piece of cotton on these spots:
- Medial side of the thigh – L2
- Medial femoral condyle – L3

- Medial malleolus – L4
- Dorsal surface of the third toe – L5
- Lateral surface of the heel – S1
- **Reflexes:** Knee jerk and ankle jerk
- **Pulse:** Dorsalis pedis, posterior tibial, and popliteal A

Special Tests: Ask the patient to lie down on the bed.

- **Straight Leg Raising (SLR):** With the patient lying supine with legs extended, the symptomatic leg is passively raised off the bed (keep knee extended) (Fig. 10.9). Worsening pain in the affected leg at hip flexion of <60–70° will indicate a positive test.
- **Crossed Straight Leg Raising Test:** Repeat the previous movements with the unaffected leg (Fig. 10.10). Reproduced symptoms at the affected leg is a positive result which is very specific for radiculopathy but limited sensitivity.
- **Femoral Stretch Test:** Used to illicit higher lumbar (L2–L4) radiculopathic pain. Ask the patient to lie in prone position and then passively flex the knee on the affected side.
- **Faber Test:** Put the patient’s leg in the figure-4 position (Fig. 10.11). Pain in the sacroiliac joint indicates a positive test.
- **Spinal Stenosis:** Patient back pain relieved by bending forward is a positive test.

Cauda Equina Syndrome:

This dreadful clinical condition should be suspected in any cases of low back pain with one of these features:

1. Saddle anesthesia
2. Decreased anal tone and reflex
3. Fecal incontinence (soil themselves)
4. Urinary retention with overflow incontinence or sudden onset of urge incontinence
5. Bilateral leg weakness or bilateral positive “Straight Leg Raise”

Thank the patient. Tell the patient that they can now cover up.

Wrap up your findings and ask the patient if they have any concerns.

Wrap-Up:

Question: How would you explain your possible diagnosis and plan to the patient?

Answer: “Based on our conversation and the results of the physical exam, it is highly possible that you have a herniated disc. Discs are structures that connect our vertebral bones, and they consist of an outer firm layer and an inner soft core.



Fig. 10.8 (a, b) Flip test

When the outer layer tears due to age-related changes or excessive pressure, the core moves out of place and puts pressure on the nearby spinal nerve. This causes sciatica or shooting pain down the legs.

Fortunately, most patients with sciatica will recover with some simple treatments such as rest, avoiding harmful movement, and some painkillers. However, there is a minority who needs surgery because of progressive weakness or intractable pain.”

“I will give you some medication to control your pain, and I would like you to come back again in 2 weeks to be sure about the course for your condition. If we cannot control

your pain in about 6 weeks or if we see any worrisome signs in your exam, such as progressive weakness or loss of reflexes, I will refer you to a neurosurgeon or orthopedics spine surgeon for possible surgery. Meanwhile, if you notice any loss of sensation around your buttock or difficulty urinating or controlling your bowel movements, you need to go to the hospital immediately.”

Checklist: Lumbar Spine Examination

See Table 10.5 for a checklist that can be used as a quick review before the exam.

Fig. 10.9 Straight leg raising

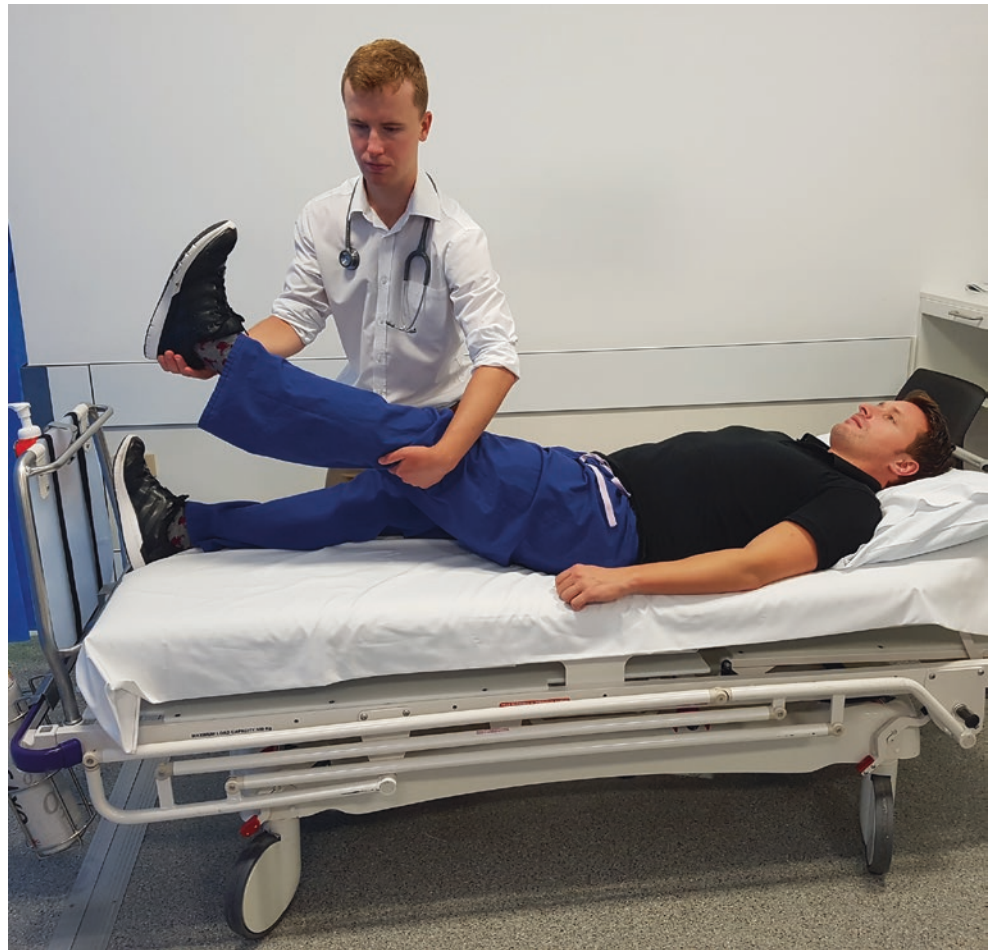
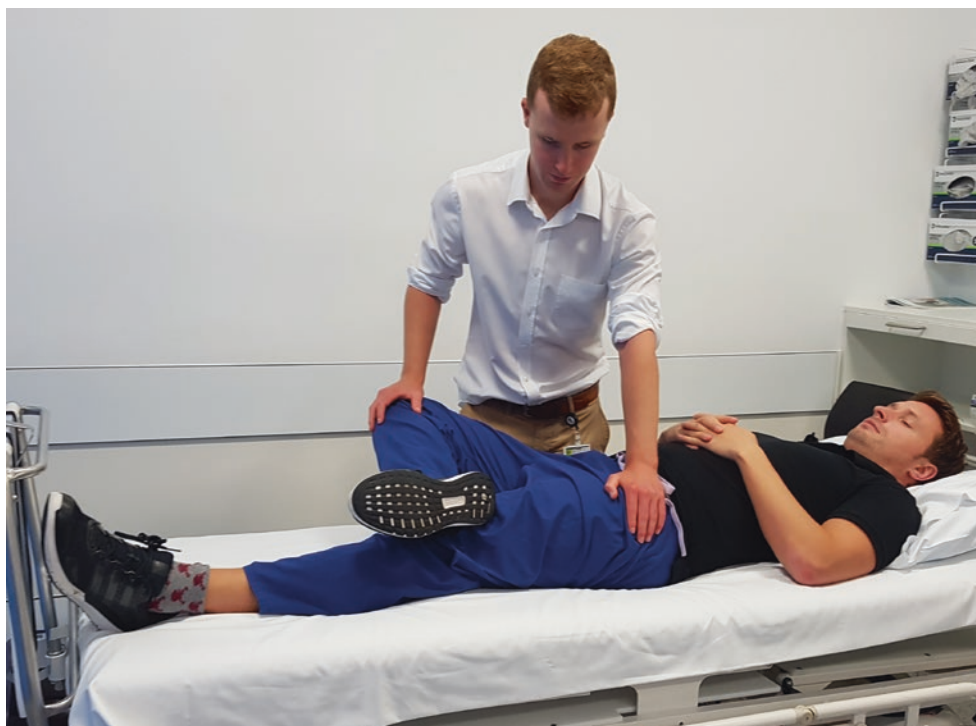


Fig. 10.10 Crossed straight leg raising test



Fig. 10.11 Faber test

History: Low Back Pain

Candidate Information:

A 64-year-old male presents with a 3-week history of low back pain. The pain started suddenly and is progressing in severity: now at 6/10. The pain radiates to the leg. The pain started after lifting heavy boxes at home. He has had an increase in the frequency of urination and constipation for 4 days.

Vital Signs: HR, 76/min, regular; BP, 120/65 mmHg; temp, 36.8 °C; RR, 14/min; O₂ saturation, 97%

Please take a detailed history; give your three differentials and a management plan. Please do not perform rectal, genitourinary, or breast examination.

Differentials:

- Cauda equina syndrome
- Disc herniation
- Back sprain
- Bone metastasis (prostate cancer)

Please complete the history as mentioned in the lumbar spine. In this particular case, you need to further add questions for prostate signs and symptoms and some questions about constipation. Red flags for back pain are also important and not to be missed.

Question: What you want to do next?

Answer: “I will do a digital rectal examination. I would also like to do cardiovascular and respiratory system examination.” DRE findings: prostate irregular with hard nodule.

Question: What you will do next?

Answer: “I will refer the patient to the hospital for investigation.”

Investigation

- **Blood work:** CBC differential, ESR, lytes, BUN, creatinine, Ca⁺, phosphate, alkaline phosphate, liver panel, PSA
- **Imaging Assessments:** X- ray of lumbar spine and pelvis, MRI of the lumbar spine.

History and Physical Examination Checklist: Ankylosing Spondylitis

See Table 10.6 for a checklist that can be used as a quick review before the exam.

Question: What investigations would you like to advise?

Answer:

- Blood tests: Complete blood examination, ESR, C-reactive protein (CRP), plasma viscosity (PV)
- RF (negative)
- HLA-B27: Most people with ankylosing spondylitis test positive for HLA-B27
- X-ray: Bamboo spine – widening of SI joint, square lumbar spine
- MRI: May show changes in the spine or sacroiliac joints at an earlier stage of the disease.

Table 10.5 Checklist for lumbar spine examination

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Now sit on the chair or stand on the right side of the patient and start the interview
Opening	Introduction
	Greet, explain, position, and expose/drape
	Ask for vital signs – interpret
General physical examination (may skip these questions if it is a history and physical station)	Check for level of alertness and orientation
	Look for abnormal findings in:
	Hands
	Face (eyes, nose, lips, mouth)
Inspection	Neck
	Inspect the back
	Verbalize if you do not see any SEADS
	Note normal lumbar lordotic curve
Joint palpation	Note symmetry of the iliac crests
	Palpate the spinous processes of the thoracic and lumbar vertebrae, paraspinal muscles, sacrum, coccyx, iliac crests, ischial tuberosities, paravertebral muscles, and posterior superior iliac spine and sacroiliac joints
	Feel for:
	Tenderness
	Effusion
	Swelling
	Temperature
	Crepitus
	Fluctuance
	Atrophy
	Percussion
Active range of movement (ROM)	Check forward flexion, lateral flexion, rotation, and extension
Passive ROM	Check forward flexion and extension
Neurovascular examination	Sensory
	Motor
	Reflexes
Special tests	Flip test
	Straight leg raising
	Crossed straight leg raising test
	Femoral Stretch test
	Schober’s test
Faber test	
Wrap-up	Thank the patient and tell them that they can now cover up
	Mention that you would do a hip and thoracic spine examination

Table 10.6 Checklist for ankylosing spondylitis examination

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Now sit on the chair or stand on the right side of the patient and start the interview
Opening	Introduction
	Greet, explain, position, and expose/drape
	Ask for vital signs – interpret
History	Focus on issues specific to ankylosing spondylitis (AS)
	Pain questions:
	“Is it worse in the morning or later in the day?”
	“Stiffness in the morning?”
	“Nocturnal pain?”
	Some questions about progression of the disease:
	“How do you sleep?” posture
	Systemic review:
	“Any anorexia, fever, chills, night sweats, weight loss?”
	Cutaneous: skin rashes, mouth ulcers
	Eyes: symptoms of photophobia/increased lacrimation, conjunctivitis, iritis, uveitis?
	Cardiovascular: chest pain, palpation, aortitis, aortic regurgitation
	Gastrointestinal (GI): diarrhea, abdominal pain
	Genitourinary (G): dysuria, urethritis, immunoglobulin G (IgG) nephropathy, amyloidosis
	Musculoskeletal: joint pain, asymmetric large joint involvement, lower limb involvement, dactylitis, Achilles’ tendonitis
Lymphatics: adenopathy	
Past medical history:	
History of infectious disease (tuberculosis), malignancy, intravenous (IV) drug abuse, recent GU procedures, metabolic bone disease (menopause, anorexia nervosa, steroids)	
Family history:	
HLA-B27 association	
General physical examination	Look for abnormal findings in:
	Hands
	Face (eyes for anterior uveitis and iridocyclitis, nose, lips, and mouth)
Inspection	Neck
	Inspect the neck and back. Note any spinal deformities (loss of lumbar lordosis and thoracic kyphosis)
	Verbalize if you do not observe any SEADS
	Swelling
	Erythema
	Atrophy (arms and forearm)
	Deformity (torticollis)
	Skin changes/rash/scars

(continued)

Table 10.6 (continued)

Joint palpation	Explain to the patient what they should expect in the examination
	Palpate spinous processes and facet joints of vertebra
	Feel for tenderness, swelling, temperature, crepitus, and atrophy
	Sacroiliac joint for tenderness (Faber maneuver)
Active range of movement (ROM)	Enthesitis: tenderness over tendinous insertions (over chest wall, iliac crests, patella, tibial tuberosity, patella, Achilles tendon, fascia near heel)
	Show the patient how to perform each movement:
	Flexion (most affected)
	Extension
Special tests	Lateral bending
	Rotations
	Occipital-to-wall distance
	Spurling's sign
	Schober's test
	Faber test
	Straight leg raising
	Crossed straight leg raising
	Lasègue's sign
	Further comment that you would perform a complete cardiovascular system examination. (Aortic regurgitation is the most common cardiac manifestation with AS. Conduction abnormalities, ascending aortitis, and pericarditis may also occur)
Wrap-up	Thank the patient and tell them that they can now cover up
	Wrap up your findings and ask if the patient has any concerns

- **Adduction** – From the previous abduction position, lower arm sideways and across the body as far as possible.
- **Internal Rotation** – From side position, flex elbow and move arm across the front of the body so that the palm of the hand rests flat against the opposite arm.
- **External Rotation** – With the elbow still flexed from the internal rotation position, swing arm outward from the body with the thumb pointing upward, and the arm is lateral to the head.
- **Circumduction** – Move the arm in a full circle.

Shoulder Anatomy:

- **Articular Surfaces:** Sternoclavicular, acromioclavicular, glenohumeral, and scapulothoracic.
- **Four Rotator Cuff Muscles:** Supraspinatus, infraspinatus, teres minor, and subscapularis.
- **Supraspinatus:** Performs abduction of shoulder.
- **Infraspinatus and Teres Minor:** These two muscles lie below the scapular spine and are the external rotators of the shoulder. The infraspinatus primarily acts while the arm is in a neutral position, and the teres minor muscle is more active when the shoulder is in 90° of abduction.
- **Subscapularis:** Internal rotator of the shoulder.
- **Deltoid:** Abducts the shoulder along with the supraspinatus.
- **Biceps:** Flex the elbow and supinate the forearm.
- **The Rotator Cuff Tendons** keep the humeral head opposed to the glenoid. Without their function, the humeral head would ride high (due to influence of deltoid) and hit the acromion.

History and Physical Examination: Shoulder

Candidate Information:

A 25-year-old male comes in with right-sided shoulder pain that has lasted for 2 weeks.

Vital Signs: HR, 71/min, regular; BP, 120/65 mmHg; temp, 36.8 °C; RR, 14/min; O₂ saturation, 98%

Please take a brief history and perform a focused shoulder examination and address patient concerns at the end. Please do not perform rectal, genitourinary, or breast examinations.

Shoulder Movements:

See Fig. 10.12 for shoulder movements:

- **Flexion** – Raise the arm forward in sagittal plane.
- **Extension** – Move the arm backwards in sagittal plane.
- **Abduction** – From side position, raise the arm sideways (keep the elbow straight) so it is parallel with shoulders with palm away from the head.

Differential Diagnosis of Shoulder Pain:

The most important clues are the **golden clues**, which need to be asked in the history:

- Age
- History of the trauma
- Duration

The silver clues:

- Associated symptoms: loss of motion, paresthesia, fever, and chills
- Timing: at night, with daytime usual activities, during sports such as swimming

Differential Diagnosis:

- **Impingement Syndrome** including subacromial bursitis, rotator cuff tendinitis, or a partial tear:
 - Silver clues: Pain is worse with overhead activities or at night while lying on the involved shoulder.

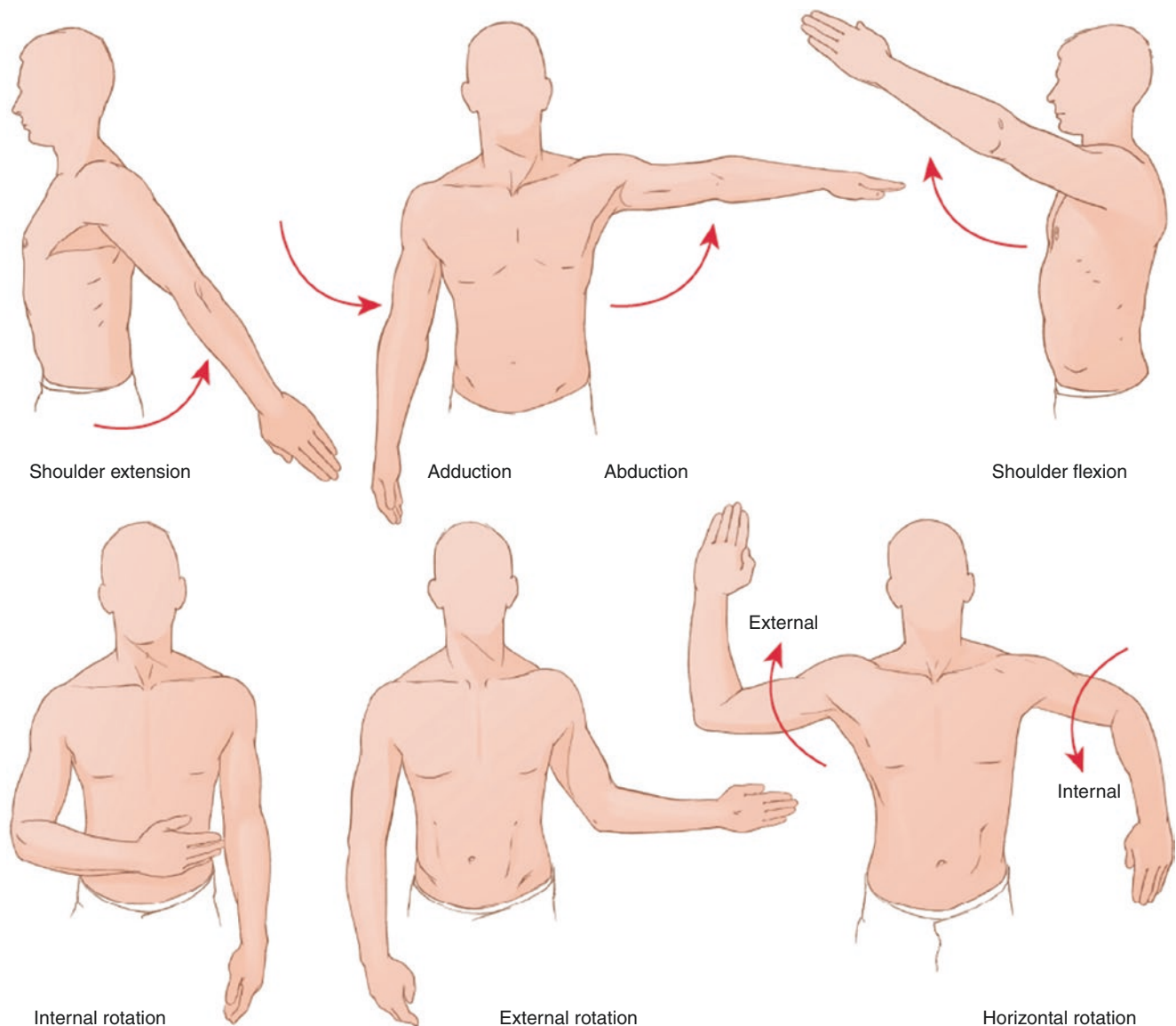


Fig. 10.12 Shoulder movements. (Reprinted with permission from Malik S, Piroette A. Ch 16. Shoulder. In: Sherman SC (ed). *Simon's Emergency Orthopedics*, 7e. McGraw-Hill Medical. 2015)

- **Frozen Shoulder** (adhesive capsulitis):
 - Silver clues: Previous trauma and immobilization, history of heart attack, history of chronic neck pain, and diabetes.
 - Note: The golden clue in the physical exam is the restriction of passive motion.
- **Shoulder Instability:**
 - Silver clues: Previous shoulder dislocation needing closed reduction, pain which is worse with some activities such as breast stroke swimming or putting on a jacket.
 - Note: Positive apprehension test, sulcus test, and signs of generalized joint laxity like hyperextension of elbows are important clues at the physical exam. They must all be present along with some positive gold or silver clues from the history.
- **Complete Tear of Rotator Cuff:**
 - Sudden loss of shoulder active motions after an injury – such as falling from standing height and sudden shoulder pain while pushing a heavy object – is indicative of this injury. Inability to move the shoulder after successful

closed reduction of a dislocated shoulder in a middle-aged to elderly patient will also lead to this diagnosis.

- There would be no limitation of passive motion unless complicated with secondary frozen shoulder. The specific tests for rotator cuff will have positive results. The chronic forms can be presented quite like impingement syndrome or osteoarthritis among the elderly.
- **Metastatic Lesions:**
 - The proximal humerus is one of the most common sites for metastatic tumors.
 - Silver clues: History of cancer or weight loss.
- **Biceps Tendinitis**
 - Silver clues: pain in front of shoulder, if it is the sole reason for the pain.
- **Acromioclavicular Joint Osteoarthritis**
 - Silver clues: pain mainly on top of shoulder, if it is the sole reason for the pain.
- **Glenohumeral Osteoarthritis:**
 - Among the elderly, associated with crepitation on passive movements. There is a chance of limited passive movements.
- **Uncommon (but Serious) Causes of Shoulder Pain:**
 - **Bone tumors:** Primary or metastatic
 - **Septic arthritis**

Specific age related causes of shoulder pain:

- Very young (first or second decade) with no trauma or insignificant trauma (hitting into another kid while running at the school yard) presents acutely:
 - Pathologic fracture:
 - Note: Proximal humerus is a common site for a unicameral bone cyst (UBC) or primary bone lesions such as an aneurysmal bone cyst (ABC).
 - Septic arthritis (silver clues of fever, malaise):
 - Not very common, but grave in prognosis if not treated early. The shoulder is a deep joint like the hip, so you cannot expect the local signs of infection to be present all the time.
- The elderly without significant trauma:
 - Glenohumeral osteoarthritis
 - Acromioclavicular osteoarthritis
 - Metastasis
 - Septic arthritis

History:

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.

- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician. Are you Miss...? Are you 25 years old?”

“Is it alright if I ask you a few questions about your shoulder pain? I would also like to do a relevant physical examination. It will involve watching and manipulating your shoulder and arm and performing some movements or tests that might be uncomfortable. Is that OK? At any point during the examination if you have severe pain, please let me know, and I will stop immediately. At the end of the examination, we will discuss the plan.”

Shoulder Pain:

First establish the location of the pain. It should be in the question stem; otherwise ask the patient: “Can you show me where you feel pain?”

Then go through the pain questions history as previously mentioned in the history details of this chapter.

Important clues in history:

- Although pain of impingement syndrome can start suddenly when there is a partial rotator cuff tear caused by trauma, but a gradual establishment of pain over days or weeks is more common.
- Pain caused by frozen shoulder starts insidiously after trauma and then decreases spontaneously when the stiffness becomes prominent over weeks to months.
- Pain of osteoarthritis of shoulder or acromioclavicular joint is gradually established.
- **Timing:** Pain caused by impingement syndrome, frozen shoulder, and bone tumors is worse at night.
- **Location of the Pain:** If the patient puts her palm over her deltoid muscle when asked about the location of her pain, that points toward impingement. If she puts her hand over her trapezius, think of the cervical spine. Putting her hand over the acromion might be a clue for acromioclavicular pathology. Indicating the anterior aspect of shoulder and humerus is indicative of biceps tendinitis.
- **Radiation:** The pain caused by impingement goes down to the deltoid insertion.
- **Aggravating Factors:** Pain caused by impingement gets worse with lying on the involved shoulder and by overhead activities. In severe cases, every attempt at active movement will increase the pain.
- **Constitutional symptoms:** Like fever, weight loss, fatigue.

Associated Symptoms:

- **Weakness:** Almost all shoulder disorders can be accompanied with some degree of subjective weakness with or without objective weakness on examination. Prominent weakness warrants careful neurological testing to rule out neuropathy.
- **Numbness:** If present, think of cervical spine pathology.
- **Stiffness:** “Have you noticed any limitation in your shoulder motion?”
 - The answer could be “yes” in cases of impingement and frozen shoulder.
 - Always consider “Polymyalgia Rheumatica” in patients over 50 years of age with bilateral shoulder pain and stiffness, especially if associated with morning stiffness. If you are suspicious, ask about hip pain and stiffness and symptoms that might be related to the associated temporal arthritis like jaw claudication, scalp tenderness, visual changes, and headache.

Past Medical History:

- **Adhesive Capsulitis:** Common for patients to have a history of cervical discopathy, diabetes, myocardial infarction, and shoulder trauma.
- **Impingement Syndrome:** Common for patients to have a history of mild to severe shoulder trauma.
- Never forget to ask about history of cancer especially from middle-aged or older patients, as the shoulder is a common location for metastasis.

Shoulder Examination:

“I am going to examine your shoulder now. Should we start?”

Vitals: Start by commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.)

Vital signs are normal or mention any abnormal findings.

Inspection:

Comment on:

- **Position:** Patient should be sitting with both shoulders exposed from their neck to their fingers. Properly drape the rest of the body. Inspect the joint from the anterior, lateral, and possibly from posterior angles. Compare to the other side and then comment on the presence of any SEADS:
 - “I don’t see any swelling, erythema, atrophy, deformity, skin changes/rash/scar marks, loss of normal anterior/lateral curvature (dislocation), and winging of scapula.”

Sample Findings Description:

“Both shoulders are at the same level and symmetric. There is no atrophy of the deltoid (axillary nerve injury), supraspinatus, and infraspinatus (long-lasting rotator cuff tears, impingement syndrome, or suprascapular nerve syndrome).”

Never forget to watch the hands and comment on any finding, as atrophy is a sign of a brachial plexus injury. Point your finger at those muscles or show the examiner with your head position that you are watching the correct spots and comparing with the normal side. “There are no deformities, swelling, or scars.”

Joint Palpation:

Inform the patient again: “I am going to feel your shoulder, if you feel pain let me know.”

Feel for tenderness, effusion, swelling, temperature, crepitus, fluctuance, and atrophy:

- Sternoclavicular joint
- Clavicle
- Acromioclavicular joint (acromioclavicular osteoarthritis)
- Acromion
- Subacromial space (impingement)
- Spine and body of the scapula
- Coracoclavicular joint
- Greater tubercle of the humerus
- Humeral head glenohumeral joint
- Supraspinatus, infraspinatus, deltoid, and biceps
- Bicipital groove (biceps tendinitis)
- Posterior shoulder (quadrilateral space syndrome)

Range of Motion:**Normal Range of Motion:**

- Abduction: 150°
- Forward flexion: 180°
- Extension: 45–60°
- Rotation: test with the elbow flexed to 90°
- External Rotation: 90°
- Internal rotation: 70–90°

Active Range of Movements:

- Ask the patient to stand and mimic your movement.
- Check active movements in abduction, forward flexion, extension, external rotation, and internal rotation (test with the elbow flexed at 90°).
- If there is any limitation of active movement, check the passive movement too; otherwise you may skip that.

Passive Range of Movements

Check passive movements while you are moving the shoulder through abduction, forward flexion, extension, external rotation, and internal rotation (test with the elbow flexed to 90°).

Muscle power: While the patient is performing the above movements, check for power.

A normal passive ROM with limited active motion can be due to a rotator cuff tear, nerve injuries, or severe impingement syndrome. Any limitation in passive ROM indicates mechanical blocks as seen in frozen shoulder with an unreduced shoulder dislocation, or advanced shoulder osteoarthritis.

Special Tests:

Impingement:

- **Painful Arc:** First check abduction with palms facing downward; then repeat with palms facing upward (Fig. 10.13). Note any increase in range of movement with less pain. Test will be positive with impingement. Pain should start after 60–90° and resolve after 120°.
- **Hawkins Test:** Performed with the patient in a relaxed sitting position. The examiner passively moves the arm to be tested such that the arm is in 90° of forward flexion and the elbow is flexed at 90°. In the starting position, the examiner forcefully moves the patient's shoulder into internal rotation to the end of range of motion or until reports of pain (Fig. 10.14a, b). The Hawkins test is considered positive if the patient experiences pain in the superior lateral aspect of the shoulder.

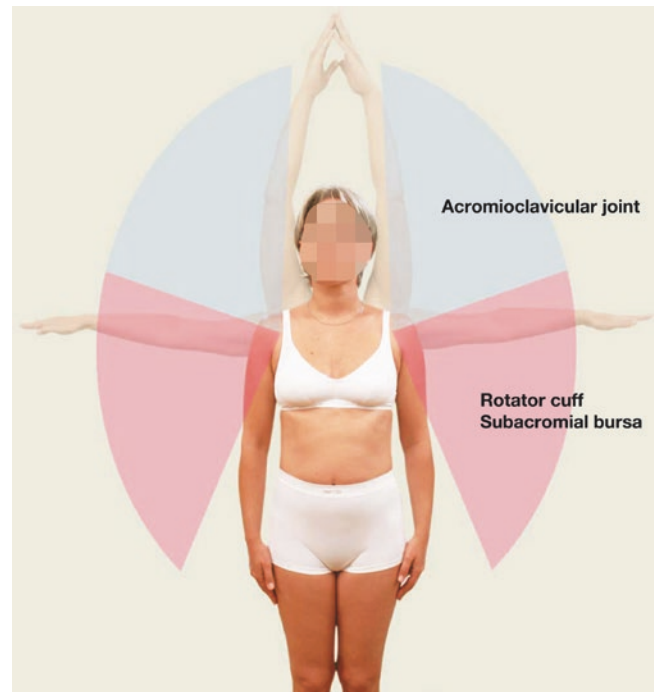


Fig. 10.13 Clinical examination of the shoulder region: active abduction. The shaded areas show typical painful arcs and their causes. (Reprinted with permission from da Silva JAP, Woolf AD. Regional Syndromes The Painful Shoulder. In: Rheumatology in Practice. Springer, London, UK: Springer. 2010; 81–94)

- **Neer Test:** The examiner performs maximal passive abduction in the scapula plane, with internal rotation, while stabilizing the scapula with his other hand (Fig. 10.15a, b). The Neer test is considered to be positive if the patient experiences pain in the subacromial space or on the anterior edge of the acromion.



Fig. 10.14 Hawkins test. (a) Starting position. (b) Internal rotation of shoulder



Fig. 10.15 (a, b) The Neer test

Complete Rotator Cuff Tear:

- **Drop Arm Test:** Performed with the patient standing or sitting. The examiner holds and supports the patient's arm to be tested and abducts it to 90°. The patient is asked to actively lower their arm from abduction to their side in a slow and controlled manner (Fig. 10.16a, b). The test is considered positive if the patient is unable to smoothly control the lowering of their arm or has the inability to hold their arm in 90° of abduction. There may or may not be pain reported. Pain alone is not a positive test.

Acromioclavicular Joint:

- **Scarf Test:** Performed with the arm to be tested in 90° of elbow flexion and 90° of shoulder flexion (forward

elevation). The patient then cross adducts/horizontally adducts, resting the hand on top of the opposite shoulder. The examiner pushes the arm into further horizontal adduction (Fig. 10.17). The position and movement mimic throwing a scarf over the shoulder, hence the name of the test. A positive test is indicated by localized pain over the acromioclavicular joint. A positive test commonly indicates a-c joint osteoarthritis or a-c joint ligament injury such as a ligament sprain or joint separation.

Biceps:

- **Yergason Test:** Patient sits, while the examiner stands in front of them. The patient's elbow is flexed to 90°, and the forearm is in a pronated position while holding the upper



Fig. 10.16 (a, b) Drop arm test



Fig. 10.17 Scarf test

arm at the side. Patient is instructed to supinate arm, while examiner concurrently resists forearm supination at the wrist (Fig. 10.18). Localized pain at the bicipital groove indicates a positive test.

- **Speeds Test:** The patient's arm is flexed to 90°, and then the patient is asked to resist an eccentric movement into extension, first with the arm supinated and then pronated. The test is considered to be positive if there is an increased tenderness in the bicipital groove, especially with the arm supinated.

Supraspinatus:

- **The Empty Can and Full Can Tests (Jobe Supraspinatus Test):** The examiner passively elevates the patient's shoulder to 90° of abduction with internal rotation (empty can) and pushes the arm down against the patient's resistance (Fig. 10.19). Provoked pain and demonstrated weakness are considered as positive result. The full can test is performed at the same position but with external rotation, which is a less painful posture for the patient allowing for the assessment of power.
- **Drop Arm Test:** Already described (see Fig. 10.16).

Infraspinatus and Teres Minor

External Rotation Resistance Test: Tries to verify the external rotation power of the shoulder. Shoulder is placed at 0° of abduction and 30° of external rotation with the elbow held in 90° of flexion. The examiner pushes the arms into internal rotation against the patient's resistance (Fig. 10.20). It can be performed on both sides simultaneously for comparison.

Subscapularis:

- **Lift-Off Test:** The examiner stands either beside or behind the patient. The patient stands and places the dorsum of the hand against their mid-lumbar spine. The patient then lifts his hand away from the back (Fig. 10.21). An inability to perform this action indi-



Fig. 10.18 Yergason test



Fig. 10.20 External rotation resistance test



Fig. 10.19 The empty can and full can tests (Jobe supraspinatus test)



Fig. 10.21 Lift-off test

cates a lesion of the subscapularis muscle. Abnormal motion of the scapula during the test may indicate scapular instability.

- **Belly-Press Test:** The examiner places a hand on the abdomen so that the he or she can feel how much pressure the patient is applying to the abdomen. The patient places his or her hand of the shoulder being tested on the examiner's hand and pushes as hard as he or she can into the stomach. The patient also attempts to bring the elbow forward in the scapular plane causing greater medial shoulder rotation

(Fig. 10.22). It is a positive test if the patient is unable to maintain the pressure on the examiner's hand while moving the elbow forward or if the patient extends the shoulder.

Tests for shoulder instability

- **Anterior Apprehension and Relocation:** The examiner stands either behind or at the involved side, grasps the wrist with one hand, and passively externally rotates the humerus to end range with the shoulder in 90° of

abduction. Forward pressure is then applied to the posterior aspect of the humeral head by the examiner or the table (if the patient is in supine) (Fig. 10.23a, b). A positive test for anterior instability is if apprehension is presented by the patient or if the patient reports pain. Then repeat the test by supporting the anterior aspect of the shoulder while increasing the external rotation. Now, the patient does not report any pain or apprehension.

Tell the patient that you will also examine the joint above and below and would also like to compare with the other side. If time permits, continue examining the elbow and hand motions rapidly by asking your patient to bend their elbows, make fists, and spread their fingers. These are



Fig. 10.22 Belly-press test

important as combined motion limitation in upper extremities usually originates from brachial plexus injuries.

- **Sulcus Sign:** An orthopedic evaluation test for glenohumeral instability of the shoulder. With the arm straight and relaxed to the side of the patient, the elbow is grasped by the examiner and traction is applied in an inferior direction (Fig. 10.24). With excessive inferior translation, a depression occurs just below the acromion indicating a positive test.

Neurovascular Assessment:

- **Sensory:** Check the sensation of the skin over the deltoid (axillary nerve), lateral elbow (C5), thumb (C6), middle finger (C7), little finger (C8), and medial elbow (T1).
- **Motor:** Resisted shoulder abduction, elbow flexion and extension, wrist extension, finger flexion, and abduction.
- **Reflexes:** Biceps and triceps reflexes.
- **Pulse:** Radial.

Tell the patient that you will also examine the joint above and below and would also like to compare with the other side. If the examiner asks what you will do next, say that you will check for referred pain or will do a hand examination.

Thank the patient and tell them that they can now cover up. Wrap up your findings with the examiner or the patient.

Wrap-Up

Question: Describe the diagnosis

Answer: Based on history and physical examination, the usual diagnoses for OSCE exams will be either:



Fig. 10.23 (a, b) Anterior apprehension and relocation

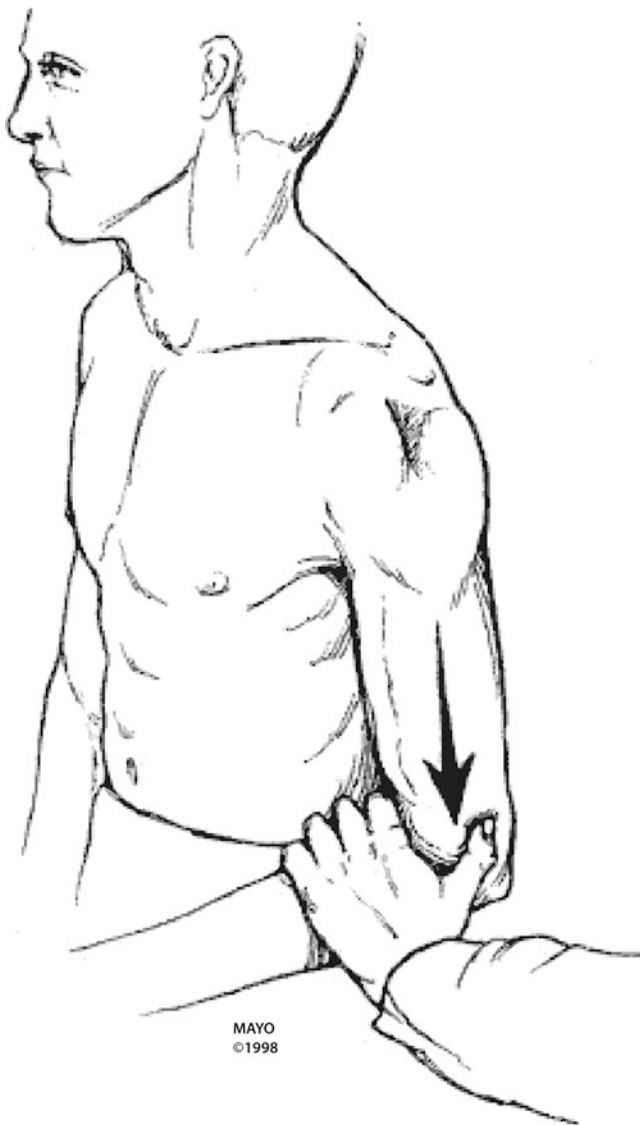


Fig. 10.24 Sulcus sign test. (Reprinted with permission from Steinfeld et al. [7]. © Mayo 1998)

- Impingement syndrome
- Rotator cuff rupture
- Frozen shoulder
- Shoulder instability

Question: What will you do next?

Answer:

- The usual first diagnostic step is a shoulder X-ray.
- MRI is the best diagnostic modality that should be used with an intra-articular injection of gadolinium (magnetic resonance angiogram [MRA]) for detecting labral injuries in patients with shoulder instability.

Question: What is your management plan?

Answer:

- The common conservative treatment for most shoulder pathologies consists of NSAIDs, local steroid injection, and physiotherapy. This is suitable for impingement syndrome and frozen shoulder. Physiotherapy is the main part of treatment for the subtle shoulder instability.
- Give the patient some information about your management plan, the pathology, the follow-up plan, or possible referral for surgery. Offer her some sources for further information. Referring the patient for surgery is indicated for failed conservative treatment, for recurrent gross shoulder dislocation, or for complete post-traumatic rotator cuff tears.

Checklist: Shoulder Examination

See Table 10.7 for a checklist that can be used as a quick review before the exam.

History and Physical Examination: Elbow

Candidate Information:

A 25-year-old male presents with right elbow pain for 2 weeks.

Vital Signs: HR, 71/min, regular; BP, 120/65 mmHg; temp, 36.8; RR, 14/min; O₂ saturation, 98%

Please take a brief history, perform a focused elbow examination, and address patient concerns at the end. Please do not perform rectal, genitourinary, or breast examination.

Differential Diagnoses

A) Lateral Elbow Pain: Lateral elbow pain is the hallmark of lateral epicondylitis or tennis elbow – one of the most common musculoskeletal disorders found in everyday practice. A typical scenario will be a middle-aged patient with a history of elbow pain for a few weeks, which gets worse with physical activities that involve repeated supination and pronation with an extended elbow (Fig. 10.25). Upon physical examination, the only positive findings will be point tenderness on the lateral epicondyle and pain with passive flexion of the wrist in full pronation or resisted dorsiflexion of the wrist.

Radial Tunnel Syndrome: This is caused by pressure on the deep radial nerve at around the radial head and must be considered in all presumed cases of lateral epicondylitis – especially recalcitrant cases. The clinical clues are the point of maximal tenderness, which will be

Table 10.7 Checklist for shoulder examination

Starting the station	Knock on the door	
	Enter the station	
	Hand-wash/alcohol rub	
	Greet the examiner and the patient	
	Give stickers to the examiner if required or show your ID badge	
	Now sit on the chair or stand on the right side of the patient and start the interview	
Opening	Introduction	
	Greet, explain, position, and expose/drape	
	Ask for vital signs – interpret	
General physical examination (may skip these questions if it is a history and physical station)	Check for alertness and orientation	
	Look for any abnormal findings in:	
	Hands	
	Face (eyes, nose, lips, and mouth)	
Inspection	Neck	
	Position and observe the anterior, posterior, and lateral aspects of the shoulder and compare to other side	
Joint palpation	Look for SEADS	
	Explain to the patient what to expect from the examination	
	Palpate the sternoclavicular joint, clavicle, acromioclavicular joint, acromion, spine and body of the scapula, coracoclavicular joint, greater tubercle of humerus, humeral head, glenohumeral joint, supraspinatus, infraspinatus, deltoid, and biceps	
	Note and feel for: tenderness, effusion, swelling, temperature, crepitus, and atrophy	
Active range of movement (ROM)	Check for flexion, extension, abduction, adduction, internal, and external rotation	
Passive ROM	Check for passive movements in flexion, extension, abduction, adduction, internal and external rotation	
Power	Check for power in all of the above movements	
Special tests	Impingement	
	Hawkins and Neer	
	AC joint	
	Scarf sign	
	Bicep	
	Yergason and speed test	
	Supraspinatus	
	Jobe and drop arm test	
	Infraspinatus and Teres Minor	
	External rotation resistance test	
	Subscapularis	
	Lift-off and belly-press test	
	Shoulder instability	
	Anterior apprehension test and Sulcus sign	
	Check neck for referred pain	
	Mention that you would examine the joint above and below and would also compare to the other side	
	Wrap-up	Thank the patient and tell them that they can now cover up
		Wrap up your findings and ask if the patient has any concerns

about 1 inch distal to the lateral epicondyle, and accentuation of the pain with resisted dorsiflexion of the middle finger. In chronic cases, weakness of finger dorsiflexion and radial deviation of the wrist after active dorsiflexion can be noticed.

Osteoarthritis of the Lateral Compartment of Elbow:

This condition is characterized by some limitation of motion and crepitation on passive movement. Comment on absence of these signs for ruling out this condition.

B) Lateral and medial elbow pain are the titles for two main groups of the elbow pain, please emphasize that by some changes in the font size or some number or letters, inside these group we have some differentials, for medial elbow pain, f.g, as you see we have cubical tunnel syndrome and osteoarthritis of elbow.

Medial Elbow Pain: Pain at the medial elbow is the chief complaint of patients suffering from medial epicondylitis or “golf elbow.” A typical scenario will be a middle-aged patient who presents with medial elbow pain that gets worse with physical activity. These patients have no positive findings at physical examination except for point tenderness on medial epicondyle and increasing pain with active resisted wrist flexion and pronation.

Cubital Tunnel Syndrome: This is an entrapment neuropathy caused by pressure on the ulnar nerve at or around the cubital tunnel. The patient usually presents with paresthesia in the ulnar nerve supply area – on the medial one and half digits and sometimes with medial elbow pain. It might be associated with elbow deformities, such as cubitus valgus, and in chronic established cases of motor deficits related to the ulnar nerve, such as clawing of the medial two digits or atrophy of the interosseous muscles. However, in early presentation, the only positive sign could be a Tinel’s sign over the cubital tunnel, which makes it an appealing case for an OSCE exam.

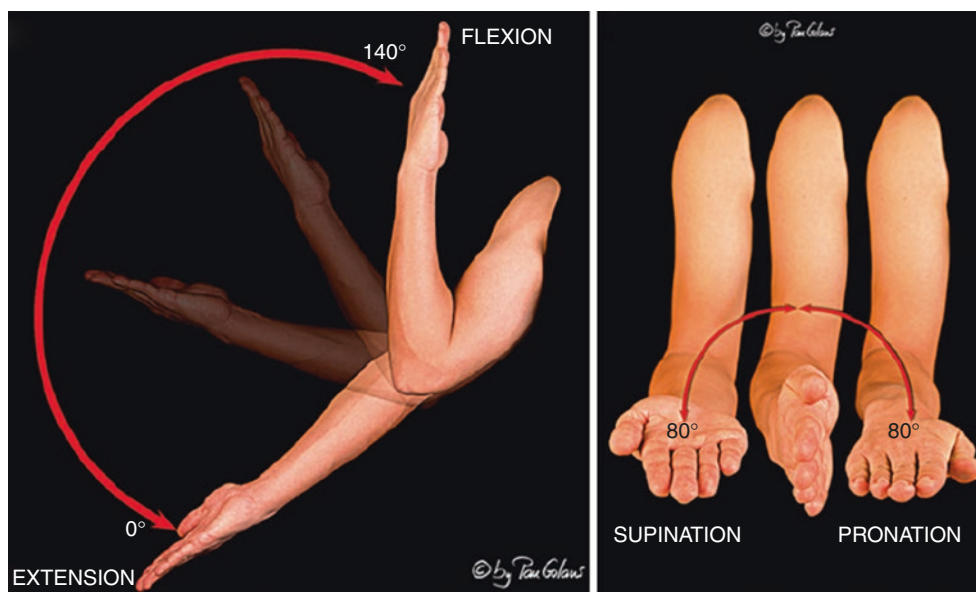
Osteoarthritis of the Elbow: This condition is characterized by limitation of motion, crepitation, and possibly remote history of trauma. Comment on the absence of these signs for ruling out this diagnosis.

History:

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Fig. 10.25 Range of motion of the elbow joint. (Reprinted with permission from Malagelada et al [8]. © Pau Golano)



Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician. Are you Mr...? Are you 25 years old?”

“Is it alright if I ask you few questions about your elbow pain? I would also like to do a relevant physical examination. It will involve manipulating and watching your elbows and arm as well as some movement or tests that might be uncomfortable. At any time if you have severe pain, please let me know and I will stop immediately. Once I’ve finished, we will discuss the plan.”

Elbow Pain

First establish the location of the pain. It should be in the question stem; otherwise ask the patient to show you where they feel the pain. Then, go through the pain questions and the rest of the history as outlined in the history details of this chapter.

Elbow Examination:

Vitals:

Start by commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.) “Mr ... vital signs are normal” or mention if there are any abnormal findings.

Inspection:

Comment on:

- **General:** Joint posture, any dressings or casts, and any abnormal movements.
- **Position:** Inspect the elbow in its resting position (the normal carrying angle is 5–20°) (Fig. 10.26). Expose both arms from shoulder to fingers. Properly drape the rest of the body.
- **Joint Inspection:** Inspect the joint from anterior and posterior angles. Compare to the other side, and then

verbalize if you do not see any swelling, erythema, atrophy, deformity, or skin changes/rash/scar marks (SEADS).

- **Palpation:** Inform the patient again that you are going to feel their elbow and to inform you if they feel any pain.
- Feel for: tenderness, effusion, swelling, temperature, crepitus, fluctuance, and atrophy.
- Palpate olecranon, medial, and lateral condyles of the humerus, extensor, and flexor surfaces of the forearm and the radial head (about 1 cm distal to lateral epicondyle).
- Palpate for elbow effusion in the elbow triangle radial head, lateral condyle, and olecranon.
- Palpate the ulnar nerve between the medial and lateral epicondyles.

Motion:

Active Range of Movements: Ask the patient to stand and mimic your movements. Check movements in flexion, extension, supination, and pronation.

Either show the movements and let the patient repeat these or ask the patient to bend their elbows until they can touch their shoulders (flexion). Then tell them to place their arms back down (extension). Ask the patient to keep their arms at their side with the elbow flexed and then to turn the palm up (supination) and down (pronation). Ask the patient to hold a pencil in their fist during these movements to help determine the range of movement in degrees.

Passive ROM: Check for passive movements in flexion, extension, supination, and pronation.

Test Power: While the patient is performing flexion, extension, supination, and pronation.



Fig. 10.26 Carrying angle

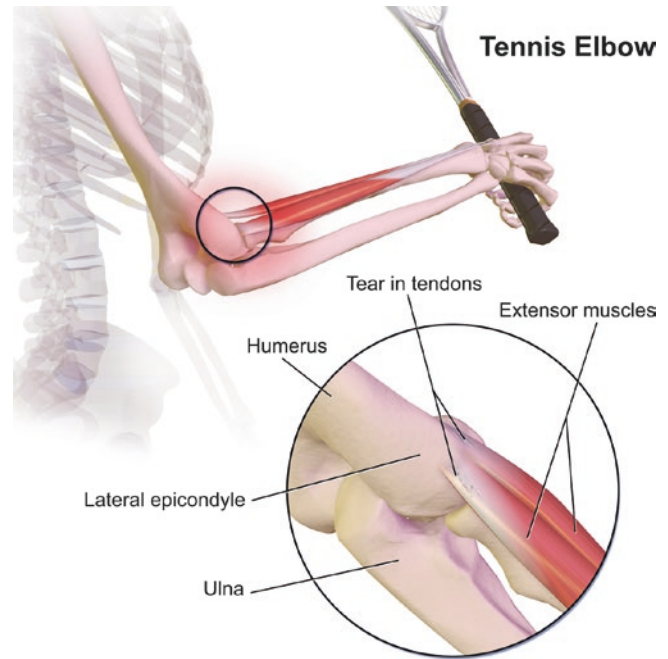


Fig. 10.27 Tennis elbow. By BruceBlaus – Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=44923322>

Special Tests:

- **Tennis Elbow:** Passively flex the patient's elbow to 90°, pronate it, and flex the wrist before passively extending the elbow. This maneuver stretches the wrist extensors causing pain. Check for tenderness over the common extensor insertion at the lateral epicondyle. Pain over lateral epicondyle is a positive test for tennis elbow (Fig. 10.27).
- **Golfer' Elbow:** Passively supinate the forearm and then extend the elbow and wrist. It may increase pain over the medial epicondyle. Check for tenderness over the common flexor insertion at the medial epicondyle. Pain over the medial epicondyle is a positive test for golfer's elbow.

Neurovascular Assessment:

- **Sensory:** Check the sensation of the skin over the deltoid (axillary nerve), lateral elbow (C5), thumb (C6), middle finger (C7), little finger (C8), and medial elbow (T1).
- **Motor:** Elbow movements already checked. Check wrist extension, finger flexion, and abduction.

- **Lateral Elbow Pain:** You need to test the posterior interosseous nerve and the deep motor branch of the radial nerve, which is trapped in radial tunnel syndrome. You should also test wrist and fingers in resisted extension.
- **For Medial Elbow Pain:** You need to do a sensory and motor test for the ulnar nerve to rule out cubital tunnel syndrome.
- **Reflexes:** Biceps, triceps, and brachioradialis.
- **Pulse:** Radial.

Tell the patient that you will also examine the joint above and below and will compare it with the other side.

Wrap-Up:

- Describe the diagnosis.
- Further laboratory and radiology tests: For a typical case, no further evaluation is needed. However, an X-ray would be helpful if you are suspicious of any structural abnormalities like osteoarthritis, and an EMG/NCV is indicated if you think entrapment neuropathies are possible.
- Management plan (pain medication, NSAIDs, and/or steroids), physiotherapy.
- Further information, Websites/brochures/support groups or societies.
- Follow-up.

Checklist: Elbow Examination

See Table 10.8 for a checklist that can be used as a quick review before the exam.

Table 10.8 Checklist for elbow examination

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
Opening	Now sit on the chair or stand on the right side of the patient and start the interview
	Introduction
	Greet, explain, position, and expose/drape
General physical examination (may skip these questions if it is a history and physical station)	Ask for vital signs – interpret
	Check for alertness and orientation
	Look for any abnormal findings in:
	Hands
Inspection	Face (eyes, nose, lips, and mouth)
	Neck
	Posture: Carrying angle 5–20° Position: Sitting with both elbows exposed shoulder downward
Joint palpation	Look for SEADS
	Explain to the patient what to expect from the examination
	Palpate olecranon, medial and lateral condyles of the humerus, the radial head, the forearm and humerus, elbow effusion, and the ulnar nerve
Active range of movement (ROM)	Note and feel for tenderness, effusion, swelling, temperature, crepitus, and atrophy
	Check for flexion, extension, abduction, adduction, pronation, and supination
Passive ROM	Check for passive movements in flexion, extension, abduction, adduction, pronation, and supination
Power	Check for power in all of the above movements
Neurovascular assessment	
Special tests	Forced wrist extension
	Tennis elbow, lateral epicondyle tenderness
	Forced wrist flexion
	Golfer's elbow, medial epicondyle tenderness
Wrap-up	Mention that you would examine the joint above and below and would also compare to the other side
	Thank the patient and tell them that they can now cover up
	Wrap up your findings and ask if the patient has any concerns

History and Physical Examination: Wrist and Hand

Candidate Information:

A 45-year-old female comes in with right hand pain and a tingling sensation that presented 3 weeks ago. She delivered a baby 2 months ago with no complications. She wakes at night due to her pain. She has noticed recently that things like glasses of water tend to fall from her hand.

Vital Signs: HR, 71/min, regular; BP, 120/65 mmHg; temp, 36.8; RR, 14/min; O₂ saturation, 98%

Please take a brief history and perform a focused right hand examination (Figs. 10.28a–e, considering the left hand to be the normal side, and address patient concerns at the end. Please do not perform a rectal, genitourinary, or breast examination.

Differential Diagnosis of Wrist and Hand Pain:

- **Carpal Tunnel Syndrome (CTS):** This is a classic scenario for carpal tunnel syndrome. The typical OSCE scenario for CTS is easy to recognize, so the lion share of the scores would probably go to considering differential diagnoses or in the physical exam (pregnancy, diabetes, rheumatoid arthritis, acromegaly, and hypothyroidism).
- **Pronator Syndrome:** This is quite similar to CTS and is caused by pressure on the median nerve in the proximal part of the forearm, probably due to muscle hypertrophy. The important clues are a history of heavy weight lifting, body building, or repetitive resisted pronation. Involvement of the palmar cutaneous branch of the median nerve is apparent by having symptoms on the palms and a positive compression test on the proximal volar forearm.
- **Scaphoid Nonunion:** Presents with mild to moderate pain on the radial side, no obvious swelling, history of old trauma, worse with activity, and tenderness on snuff box.
- **De Quervain Disease:** Found in middle-aged females who have severe pain on the radial side of their wrists. It is mostly developed postpartum, with maximum tenderness on the volar border of the snuff box showing a positive Finkelstein test.
- **Kienbock Disease:** Found in young men with dorsal wrist pain, probably with remote trauma and tenderness on the lunate bone. To find the lunate, you first need to touch the Lister tubercle. The area of the wrist joint distal to this is the scapholunate joint.
- **Trapeziometacarpal Joint Arthrosis:** Found in middle-to old-aged women with pain in the radial side of the wrist, associated with tenderness and swelling at the base of first metacarpal.



Fig. 10.28 Thumb movements. (a) Extension or reposition. (b) Flexion. (c) Opposition. (d) Adduction. (e) Abduction

History:

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr... I am your attending physician. Are you Miss...? Are you 45 years old?”

“Is it alright if I ask you few questions about your hand pain? I would also like to do a relevant physical examination. It will include manipulating and observing your hand and wrist and some movement or tests that might be uncomfortable. Is that OK? At any time if you have severe pain, please let me know, and I will stop immediately. In the end, we will discuss the plan.”

In hand and wrist scenarios, these are important questions that need to be asked:

1. “Are you right handed or left handed?”
2. “What do you do for living?”
3. “Do you often work with computers?”
4. “Have you recently given birth?” (CTS is very common during or after a recent pregnancy.)
5. “Do you feel cold all the time? Have you noticed excessive dryness and progressive thinning of your hair? How are your bowel movements?” (Considering hypothyroidism, especially for bilateral cases.)
6. Associated symptoms: “Have you noticed any weakness in your hand?”
7. “Have you noticed any changes in the size of your shoes or rings?” (acromegaly)
8. “Have you ever been diagnosed with kidney disease or a chronic infection?” (amyloidosis)
9. “Have you previously had multiple joint swelling or rheumatoid diseases?” (rheumatoid arthritis)
10. “Have you ever fractured this hand?” (You are covering CTS as a complication of a distal radius fracture.)
11. “Do you have neck pain too?” (You are showing the examiner that you are considering cervical radiculopathy in your differential diagnoses.)
12. “Have you had any work-related injuries recently?”
13. “How has this affected your daily activities?”

Some Clues About CTS

At first establish the location of the pain.

- “Can you show me where you feel the pain?” – Expect the patient to present the pain in three and a half radial digits. In practice, the second and third digits are mainly involved.
- Radiation of the pain – commonly up to the elbow and sometimes up to the shoulder.
- Nature of pain – usually burning and tingling.
- CTS can be presented with mild, moderate, or severe pain.
- “How did it start?” Sudden or gradual onset is a clue of CTS.
- “What time of the day does your pain feel the worst?” – typically at night.
- “Does it interfere with your sleep?” – it will in typical cases.
- “What tends to lessen your pain?” – rubbing, shaking, dangling, and pain medicines.

Please complete the history as mentioned in the history details of this chapter.

Hand and Wrist Examination:

Vitals:

- Start by commenting on the vitals given at the door. (This should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.)
- “Mrs ... vital signs are normal” or mention any abnormal findings.



Fig. 10.29 Hand and wrist inspection

Inspection:

Position: Patient should be sitting with both hands exposed up to their elbows. You can put both of their hands on a pillow (if available) (Fig. 10.29). Drape the rest of the body.

Inspect both the dorsal and volar aspects of the hands. Compare to the other side, and then verbalize if you do not see any swelling, erythema, atrophy (thenar and hypothenar), deformities, and skin changes/rash/scar marks.

Look for Mallet finger, Boutonniere, Swan neck deformity, Heberden’s nodes, and Bouchard’s nodes:

- **Mallet Finger/Thumb**
- **Flexed Distal Interphalangeal Joints:** Caused by damage to extensor tendon due to trauma or rheumatoid arthritis (RA).
- **Boutonniere:**
- Hyperextended distal interphalangeal and flexed proximal interphalangeal joint: caused by detachment of the central slip of the extensor tendon from the middle phalanx due to trauma or RA.
- **Swan Neck:**
- Flexed distal interphalangeal and hyperextended proximal interphalangeal joint: caused by RA and others.
- **Heberden’s Nodes:**
- Hard dorsolateral nodules of distal interphalangeal may associate with deviation of the distal phalanx: caused by osteoarthritis.
- **Bouchard’s Nodes:**
- Hard dorsolateral nodules of proximal interphalangeal joint may associate with deviation of the proximal interphalangeal joint: caused by osteoarthritis
- **Dupuytren’s contracture**
- Flexion deformity of the fingers at MCP and IPs with nodular thickening of the palm: caused by diabetes mellitus, epilepsy, alcoholism, hereditary causes, and repetitive trauma.

Palpation:

Inform the patient again that you are going to feel their hands and to let you know if they feel pain. Feel for tenderness, effusion, swelling, temperature, crepitus, fluctuance, and atrophy. Palpate using your thumb and index fingers. Palpate the distal radius, ulna, carpal bones, radial and ulnar styloid processes, distal radioulnar articulations, and anatomical snuff box.

1. Ask the patient to extend her thumb. The borders of the anatomical snuff box will become more apparent. The dorsal border is the tendon of the extensor pollicis longus (EPL), which is the third wrist extensor compartment. The volar border, which is the first wrist compartment, comprises the tendons of the abductor pollicis longus (APL) and the extensor pollicis brevis (EPB). Tenderness in this compartment at the proximal half of snuff box is a sign of de Quervain disease. Try to touch the elements of the snuff box floor from proximal to distal. Some ulnar deviation of the wrist will help you to distinguish these elements. Tenderness of:

- The styloid of radius is caused by a chauffeur fracture.
- The waist of the scaphoid is caused by a scaphoid fracture or nonunion.
- The trapezium.
- Trapeziometacarpal joint is caused by arthrosis.

2. Now try to find the Lister tubercle on the dorsum of the wrist. Ask the patient to extend their thumb, which makes the tendon of extensor pollicis longus (EPL) prominent. Follow the tendon of EPL with the pulp of your thumb to reach the distal radius. Now you can feel Lister tubercle. The importance of finding this tubercle is because of its relation to the scapholunate joint. If you slide your thumb distally from the Lister tubercle and place it distal to the dorsal border of the distal radius, you will find the scapholunate joint, the proximal pole of the scaphoid, and the lunate, which are the sites of ganglion cysts, scaphoid fractures, and Kienbock disease, respectively.

3. On the most ulnar side of the dorsum of the wrist, find the prominent ulnar head. Check the stability of the distal radioulnar joint by pushing over the ulnar head. Check the presence of tenderness on the soft spot distal to the ulnar head, which is compatible with injury to the triradiate fibrocartilage complex (TFCC).

4. On the volar aspect of the wrist, first find the wrist flexion crease. There are two touchable bony prominences on the radial and ulnar ends of this crease: the scaphoid tuberosity and the pisiform. They are the proximal attachments of the transverse carpal ligament; the distal attachments of this ligament are also palpable. On the ulnar side, slide your thumb 1.5–2 cm distally and a little radially to feel the hook

of hamate between the hypothenar muscles. On the radial side, move your thumb from the tuberosity of the scaphoid distally and radially to feel the trapezium. You can feel the firmness of the TCL under the skin between these 4 points.

Range of Motion:

Active Range of Movements: Quick assessment: Show the patient how to move both wrists in flexion, extension, ulnar, and radial deviations. Check both wrists and compare them to yours, allowing you to comment on abnormal restriction of movement without having to memorize the normal range.

Passive ROM: As usual, check passive movement if the reciprocal active movement is limited.

Power: While patient is performing the above movements.

Neurovascular Assessment:

Sensory: Median, ulnar, and radial nerves (Fig. 10.30). The test can be done with a piece of cotton. You are going to test lateral three and half digits to reveal hypoesthesia and lack of hypoesthesia on the fifth finger, over thenar and hypothenar prominences.

Reflexes: Biceps, triceps, and brachioradialis.

Pulse: Radial.

Special Tests:

- **Tinel's Sign:** Percuss the volar aspect of the wrist over the median nerve (Fig. 10.31). Numbness or paresthesia in the distribution of the median nerve is suggestive of carpal tunnel syndrome.
- **Finkelstein's Test:** Consider this test if you have found tenderness around the volar aspect of the snuff box. Have the patient place their thumb in the palm of their closed fist. Ask the patient to deviate the wrist in the ulnar direction (Fig. 10.32a, b). This test stretches the extensor pollicis brevis and abductor pollicis longus and produces pain in patients with de Quervain tenosynovitis. This test is not needed if your history has led you toward CTS. It is mostly helpful if the patient has located their pain on the lateral side of the wrist.
- **Phalen Test:** Have the patient bring the backs of both hands together in front of you, and let the hands hang down for about 60 s (Fig. 10.33). If they feel tingling, numbness, or pain in the fingers within 60 s, it may be due to carpal tunnel syndrome.

Examination for the Differential

- **RA:** Comment that there is no hand deformity or joint swelling indicative of RA.
- **Pronator Syndrome:** Put pressure on the proximal volar forearm, and ask the patient if they feel tingling in their hand, which is a sign of pronator syndrome.

Fig. 10.30 The cutaneous innervation of the right hand

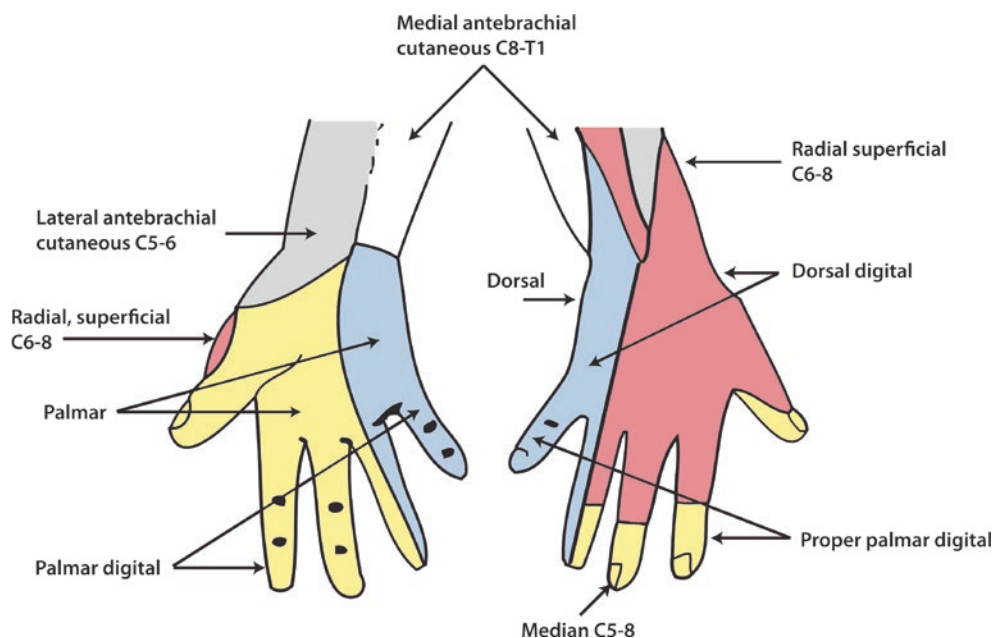


Fig. 10.31 Tinel's sign

- **Cervical Discopathy:** Spurling test, neurological test for the nerve roots.
- **Hypothyroidism:** Comment that there is no facial changes compatible with it and no goiter present.

Wrap-Up:

Question: What is your diagnosis?

Answer: "Carpel tunnel syndrome."

Question: Describe the diagnosis.

Answer: "It is a painful condition involving the hand. It can be in one or both hands and it is caused by pressure on the median nerve. This nerve passes through the wrist, under a tunnel. This tunnel is formed by a membrane sheet and is attached to the wrist bones. This tunnel keeps nerves,

arteries, veins, and tendons in place. If it becomes thickened, it can put pressure on nerves, thus resulting in symptoms."

Question: What is the management plan?

Answer: "I need to arrange to have some lab work done and then some investigations."

Question: What investigations will you order?

Answer: "Blood work to get a CBC differential, blood sugar, urea and electrolyte levels, and possibly TSH. I will also order nerve conduction studies."

Question: What is the treatment?

Answer: "The symptoms may resolve without any treatment. Pain medication gives temporary relief."

"In pregnancy, a wrist splint is advised to be worn during the night until the baby is born. The symptoms usually resolve after the baby is delivered. A night wrist splint is also useful for elderly patients. In some patients, liquid pills or a steroid injection into the tunnel gives relief of the symptoms."

Referral for Surgery: "In failure of conservative management or in cases of severe carpal tunnel syndrome, surgery is advised. The surgery will involve cutting through the tunnel membrane and relieving the pressure on the nerve by creating more space."

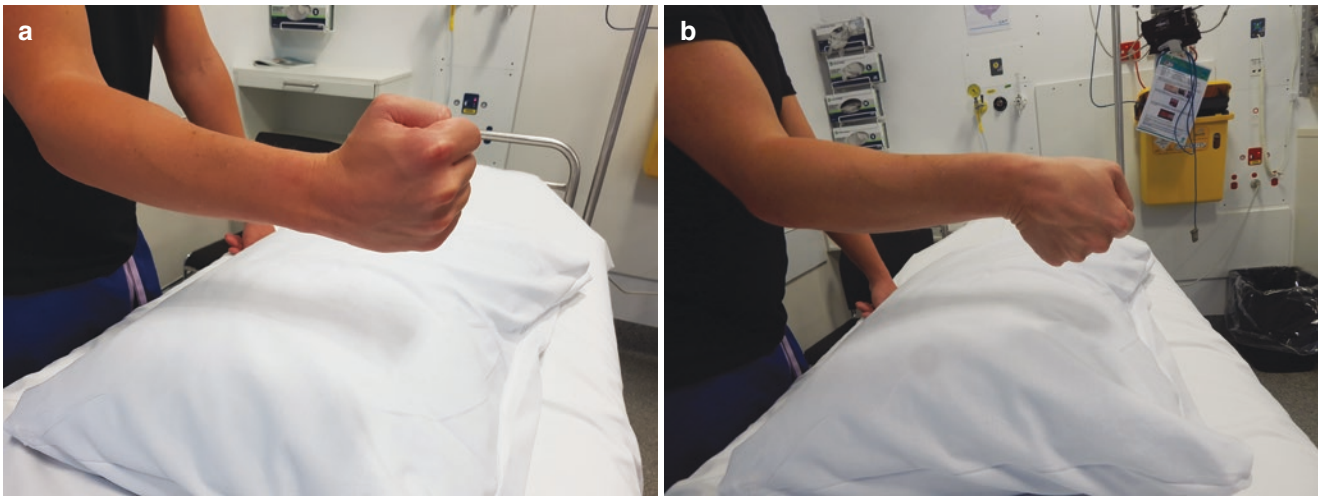


Fig. 10.32 Finkelstein's test for de Quervain tenosynovitis. (a) Patient places thumb inside closed fist. (b) Patient tilts hand down



Fig. 10.33 Phalen test for carpal tunnel syndrome

Checklist: Hand and Wrist Examination for Carpal Tunnel Syndrome

See Table 10.9 for a checklist that can be used as a quick review before the exam.

History and Physical Examination: Hip

Candidate Information:

A 63-year-old male comes in with right-sided hip pain, which has been bothering him for the last 8 weeks.

Vital Signs: HR, 71/min, regular; BP, 120/65 mmHg; temp, 36.8; RR, 14/min; O₂ saturation, 98%

Please take a brief history and perform a focused hip examination and address patient concerns at the end. Please do not perform a rectal, genitourinary, or breast examination.

Table 10.9 Checklist for carpal tunnel syndrome (CTS) examination

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Now sit on the chair or stand on the right side of the patient and start the interview
Opening	Introduction
	Greet, explain, position, and expose/drape
	Ask for vital signs – interpret
General physical examination (may skip these questions if it is a history and physical station)	Check for alertness and orientation
	Look for any abnormal findings in:
	Hands
	Face (eyes, nose, lips, and mouth)
	Neck
Inspection	Inspect the dorsal and palmar aspects of the hand
	Compare to the other side and comment if you see any SEADS
Joint palpation	Tell the patient that you are going to feel their hands and to tell you if they feel pain
	Try to locate a tender point
	No specific point: CTS
	Center of snuff box: scaphoid or nonunion fracture
	Proximal to the base of the first metacarpal bone (volar border of snuff box): de Quervain disease
Active range of movement (ROM)	Dorsum of the wrist distal to the Lister tubercle: scapholunate injuries, ganglion cysts, Kienbock disease
	Check at the wrist, MCP, PIP, and DIP (fingers) and at the thumb

Power	Check for power using the same movements as active ROM
Neurovascular assessment	Sensory: median, ulnar, and radial nerves
	Reflexes: biceps, triceps, and brachioradialis
	Pulse: radial
Special tests	Tinel's sign
	Phalen test
Wrap-up	Thank the patient and tell them that they can now cover up
	Wrap up your findings and ask if the patient has any concerns

Differential Diagnosis Hip Pain:

Hip cases are rarely adapted for the OSCE exam. However, be ready for the occasional appearance of a hip pain case requiring combined history taking and a physical exam.

The usual causes of hip pain in adults that must be considered are:

- Osteoarthritis
- Avascular necrosis (AVN)
- Septic arthritis
- Fractures
- Stress fracture
- Dislocations
- Trochanteric bursitis
- Bone tumors

In relatively younger patients:

- Slipped capital femoral epiphysis
- Developmental dysplasia of hip
- Legg-Calvé-Perthes disease

Considering the relative prevalence of these pathologies, it is logical to choose osteoarthritis as your main diagnosis for middle-aged or older patients and AVN among the younger patients. You may also need to rule out lumbar radiculopathies.

History:

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician. Are you Mr...? Are you 63 years old?”

“Is it alright if I ask you few questions about your hip pain? I would also like to do a relevant physical examination. It will involve watching and manipulating your hip as well as some tests that might be uncomfortable. Is that OK? At any time if you have severe pain, please let me know, and I will stop immediately. After this we will discuss the treatment plan.”

Hip Pain

First establish the location of the pain. It should be in the question stem; otherwise ask the patient.

- **Location:** “Can you show me where you feel the pain?” Then go through the pain questions and the rest of the history as mentioned in the history details of this chapter.
- **Onset:** “Can you tell me how this pain started?” Except for with septic arthritis, the pain of other hip disorders starts and worsens gradually.
- **Duration:** “How long have you had this pain?” Expect long duration for hip osteoarthritis, shorter course for tumors, AVN, and stress fractures and very acute presentation for septic arthritis.
- **Severity:** Ask about the quality or severity of the pain, although this will not help you in finding the cause of the hip pain.
- **Referred pain:** “Can you show me where exactly you feel this pain?” Pain originating from the hip is usually felt on the inguinal region and sometimes referred to as the anteromedial aspect of the knee. The pain of trochanteric bursitis is laterally located, and buttock pain may be due to gluteal bursitis or referred from the lumbar spine.

Radiation: “Does this pain shoot anywhere else? To your knee? To your ankle?”

Timing: “At what time of the day is your pain the worst?” Pain of osteoarthritis, AVN, stress fractures, and some kinds of pain related to tumors are activity related and are worse during the day. Pain of bone tumors is sometimes more bothersome at night.

Aggravating Factors: “What makes your pain worse and what makes it better?” Walking or resting?

Associated Symptoms: Ask about fever, night sweats, and weight loss. Tumors and infections.

Rheumatologic Disorders:

- Associated AVN of the proximal humerus and femoral condyles
- Heel pain, eye pain, and back pain or stiffness (spondyloarthropathies)
- Weakness and numbness (radiculopathies)

Past Medical History: It is extremely important in our evaluation. Past history for trauma (for OA and AVN), medications such as glucocorticoids (for AVN), diseases such as SLE, sickle cell anemia (ANN), diabetes, or any form of decreased immunity (for septic arthritis).

Please complete the history as mentioned in the history details of this chapter.

Hip Examination

“I am going to examine your hip now. I will be looking at the right side only (if right side is the troubling side) assuming that the left side is normal. Should we start?”

Vitals Start by commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.) “Mr ... vital signs are normal” or mention any abnormal findings.

Inspection:

- General: Joint posture, any dressings or casts, and any abnormal movement

Posture Standing and lying supine

Joint Inspection Inspect the joint from the anterior, lateral, and posterior angles. Compare to the other side, and then verbalize if you do not see any swelling, erythema, atrophy, deformity, and skin changes/rash/scar marks (SEADS).

Gait Always start with walking unless the patient is in acute pain, lying on the bed, and you are suspicious of septic arthritis or fractures. Ask your patient to walk a few steps and check for any limping and antalgic gait.

Trendelenburg Sign To detect weak hip abductors. Stand behind the patient and ask him to stand on one leg and then on the other (Fig. 10.34). Note any change in the level of the iliac crests or gluteal folds during this maneuver. If the iliac crest drops toward the non-weight-bearing side, it is indicative of weakness of the hip abductors in the weight-bearing limb.

Joint Palpation Inform the patient again, “I am going to feel your hip, if you feel pain, please let me know.” Feel for tenderness, swelling, temperature, crepitus, and atrophy. Palpate around the hip joint, pelvis, anterior superior iliac supine, posterior superior iliac supine, iliac crest, and greater trochanter of the femur. Palpate for tenderness over and posterior to the greater trochanter as a sign of trochanteric bursitis.

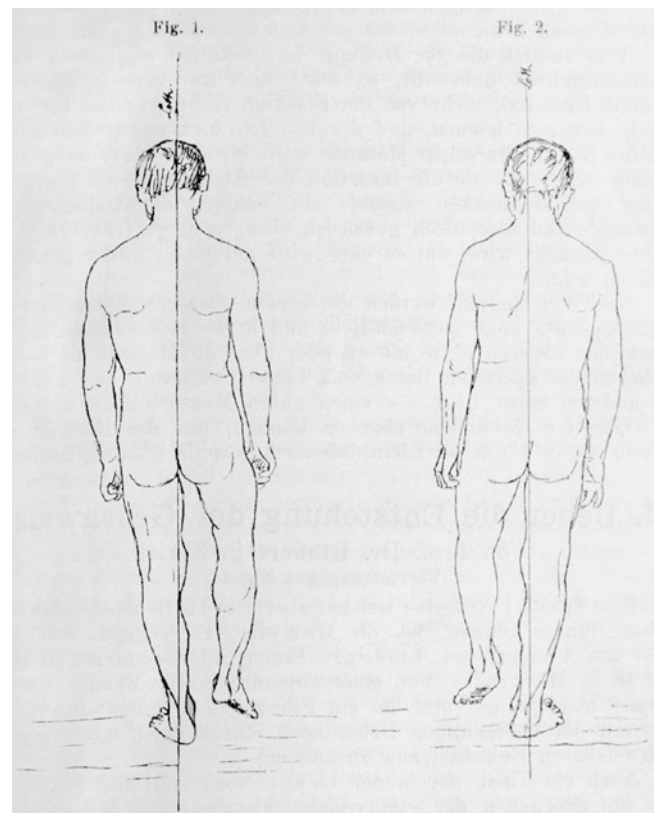


Fig. 10.34 Positive Trendelenburg's sign, as illustrated in the first description. (Source: H.-P.Haack https://commons.wikimedia.org/wiki/File:Erstaugaben_f%C3%BCr_Wikipedia_IV_002.jpg) (Reprinted under terms of Creative Commons Attribution-Share Alike 3.0 Unported license <https://creativecommons.org/licenses/by-sa/3.0/deed.en>)

Check for Leg Length Discrepancy

Ask the patient to lie down on the bed in a supine position. **An apparent leg length** can be measured with a measuring tape from the umbilicus to the medial malleoli of the ankle (usually medial malleolus) (Fig. 10.35). Discrepancies in length of the lower limbs are seen in pelvic tilt or adduction abnormalities.

A true leg length is measured from the anterior superior iliac spine to the medial malleolus seen in hip joint pathologies (Fig. 10.35).

Hip ROM can be checked in standing or lying (supine and prone) positions. If the patient seems to be strong and in no acute pain, you can check the active ROM rapidly in standing position after checking his gait, but in other cases check it on the table.

A good time-sparing strategy is this: When the patient is in supine position, ask him to bend his hip (active flexion). If the movement is limited, try to bend it yourself (passive hip flexion).

Now reduce the hip flexion to a little less than full active flexion, and ask the patient to bend it again against your resistance (checking the power).

Fig. 10.35 Methods for checking leg length discrepancy

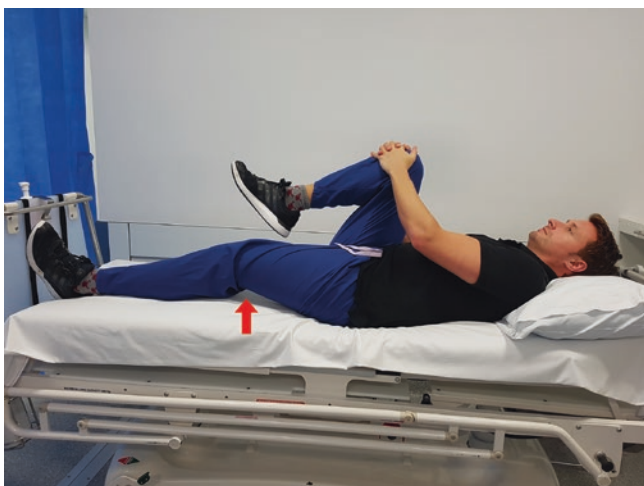
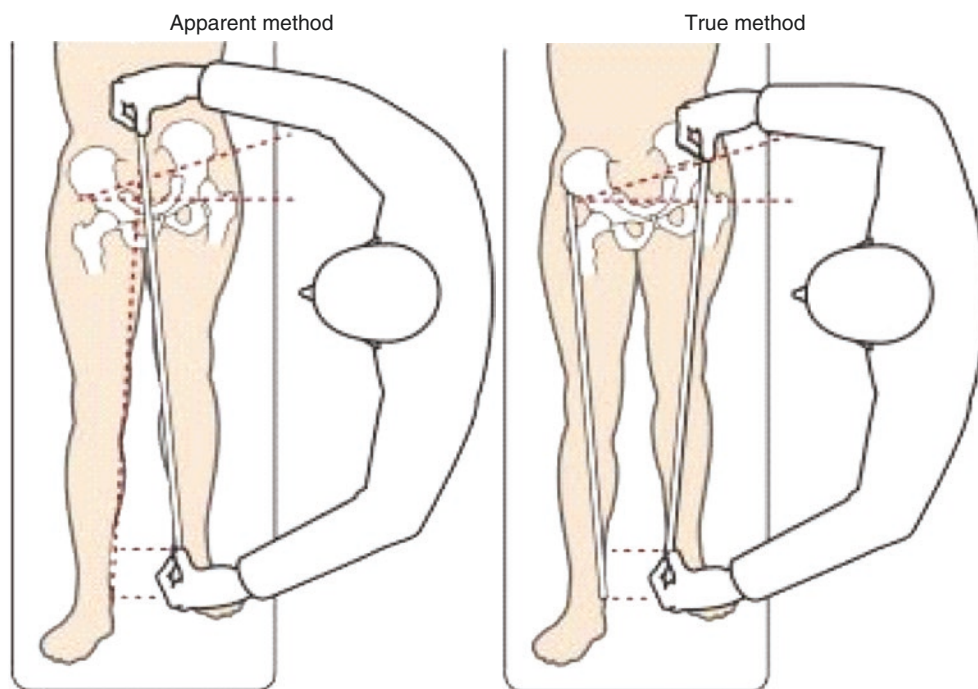


Fig. 10.36 Thomas test. Red arrow shows flexion contracture

When the hip is flexed as close to 90° as possible and the knee is flexed at 90°, ask the patient to rotate his hip internally and externally. Check the passive movement too, but be gentle as these movements are painful in most hip pathologies.

Now check the Thomas test to verify the presence of any flexion contracture.

Thomas Test: Ask the patient to bend the other healthy hip fully and hold it in that position with both hands (Fig. 10.36). That will eliminate any lumbar lordosis that can obscure hip flexion contractures. Check absence of

lumbar lordosis with your hand. Now measure the flexion of the diseased hip.

If there is no flexion contracture, you need to check the hip extension in the lateral decubitus position. Finally, ask the patient to lie on his stomach and check and compare internal and external rotation in hip extension.

Neurovascular Assessment:

- **Motor:** Hip flexion L2, knee extension L3-L4, ankle dorsiflexion L4-L5, great toe dorsiflexion L5, and ankle plantar flexion S1.
- **Sensory:** Check sensation on the medial side of the knee L3, medial malleoli L4, dorsum of the third toe L5, and lateral heel S1.

Reflexes: Achilles and patellar tendon reflexes, Babinski, and clonus

Pulse: Dorsalis pedis and posterior tibial (usually not done)

Straight Leg Raising: Already described in the back examination

Ask the Patient to Lie on His Side:

If the Thomas test was negative (no flexion contracture detected), you want to check the hip extension in this position (Fig. 10.37).

Ask Patient to Lie Prone:

Check for internal and external rotation in hip extension and compare it with the other side (Fig. 10.38).

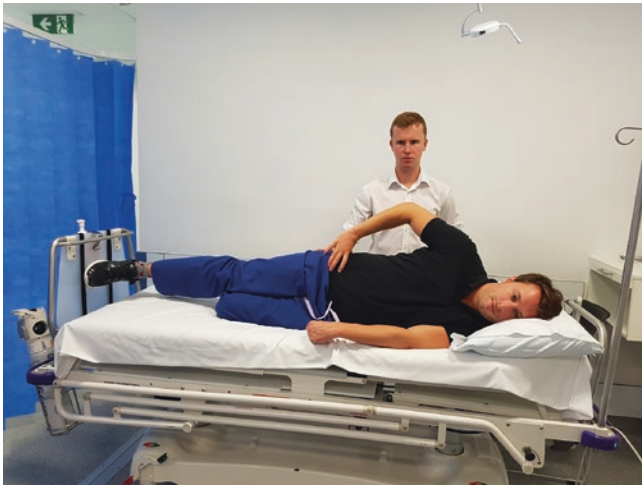


Fig. 10.37 If Thomas test is negative, check hip extension while patient lies on side

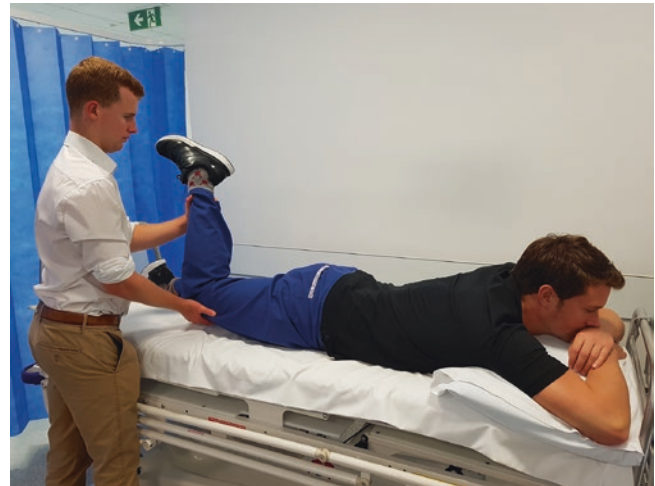


Fig. 10.39 Backward lift leg against resistance while patient lies prone

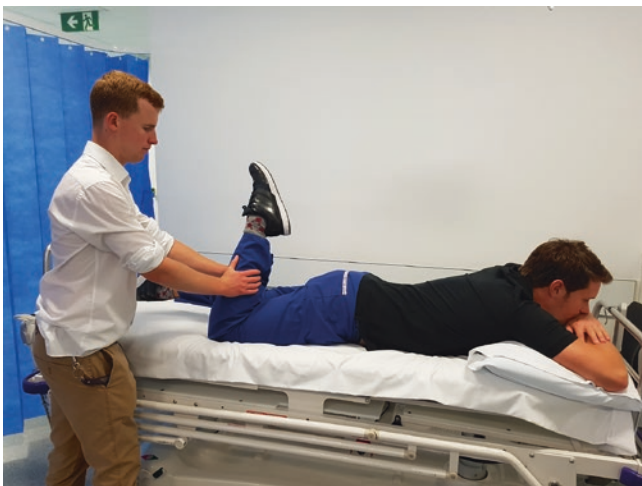


Fig. 10.38 Check internal and external rotation in hip extension while patient lies prone

Patient Prone:

- Femoral stretch L2 and L4, hip and knee in extension.
- Motor exam S1 – gluteus maximus, backward lift leg against resistance (Fig. 10.39).

Thank the patient and tell the patient that they can now cover up.

Wrap-Up:

Describe the diagnosis.

Question: What further tests will you order?

Answer: X-ray of the hip joint or possibly MRI.

Question: What will be your management plan?

Answer:

- Pain medication – NSAIDs, physiotherapy, referral for surgery
- Further information, Websites/brochures/support groups or societies
- Follow-up

Checklist: Hip Physical Examination

See Table 10.10 for a checklist that can be used as a quick review before the exam.

History and Physical Examination: Knee

Candidate Information:

A 21-year-old female comes in with right knee pain.

Vital Signs: HR 78/min, regular; BP, 120/65 mmHg; temp, 36; RR, 14/min; O₂ saturation, 98%

Please take a brief history and perform a focused knee examination. Give your differentials. Please do not perform rectal, genitourinary, or breast examination.

Knee Pain Overview:

We can classify knee pain cases into two broad groups based on the presence or absence of sport injuries.

Main Diagnosis:

Osteoarthritis (OA) is a common musculoskeletal disorder in general medical practice. The knee joint is the most

Table 10.10 Checklist for hip physical examination

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Now sit on the chair or stand on the right side of the patient and start the interview
Opening	Introduction
	Greet, explain, position, and expose/drape
	Ask for vital signs – interpret
General physical examination (may skip these questions if it is a history and physical station)	Check for alertness and orientation
	Look for any abnormal findings in:
	Hands
	Face (eyes, nose, lips, and mouth)
Inspection	Neck
	General: joint posture, dressings or casts, any abnormal movement
	Posture: standing
	Gait and Trendelenburg sign
Joint palpation	Look for SEADS
	Posture: supine. Explain to the patient what to expect from the examination
	Palpate for hip, pelvis, anterior superior iliac spine, posterior superior iliac spine, iliac crest, and greater trochanter of the femur
Active range of movement (ROM)	Check for leg length discrepancy
	Flexion, extension, abduction, adduction, external and internal rotation
Passive ROM	Flexion, extension, abduction, adduction, external and internal rotation
Power	Check power while the patient performs the above movements
Neurovascular assessment	Reflexes: Achilles and patellar tendon reflexes, Babinski, and clonus
Special tests	Thomas test
	Straight leg raising test
Wrap-up	Mention that you would examine the lumbar spine and the knee joint and would also compare to the other side
	Thank the patient and tell them that they can now cover up
	Wrap up your findings and ask if the patient has any concerns

common joint involved with osteoarthritis, and it is often chosen as the primary diagnosis for knee pain in older patients. In patients younger than 30 years of age, patellofemoral pain syndrome will be the top differential diagnosis.

For patients with a sports injury, consider meniscal or anterior cruciate ligament (ACL) tears as your main diagnoses and put osteoarthritis and patellofemoral pathologies in your list of secondary differentials. These patients may seek medical advice just after the injury, which makes the diagnostic process more straightforward. They may also come in later with residual symptoms. Sometimes the history of a sport injury is not related to current complaints, and we need to look at other differentials as discussed before.

Secondary Differentials:

- Knee arthritis
- Patellofemoral pain syndrome
- Tendinitis (quadriceps tendon or patellar tendon)
- Bursitis (prepatellar, subpatellar, pes anserinus)
- Bone tumors (primary or secondary)

History Clues for Knee Pain:

History of Trauma: It is important to ask about trauma early in the process of history taking, as the response will determine your differentials.

- “Have you ever fractured any bones around your knee? What kind of fracture? What kind of treatment did you have for that?”
- A history of an old fracture is compatible with development of osteoarthritis.
- “Are you participating in any kind of sports? Have you ever had any sports-related knee injuries?”
- If so: “What happened? Were you able to continue playing after it occurred? Did you notice any knee swelling after that? How long after that injury did your knee start swelling?”
- A history of sports injury raises suspicion for meniscal and ligamentous injuries, especially a rupture of the anterior cruciate ligaments.

Age: This is the most important piece of information for our thought process. It will usually be given in the question stem so you can build a structure in your mind before entering the room:

- An old patient with knee pain: knee osteoarthritis
- A young patient with knee pain: chondromalacia patella

Onset: “How did your pain start?”

Duration: “How long have you had this knee pain?” A sudden onset is not precluding OA as the cause of the pain. OA is a chronic condition that might force the patient to seek medical advice after an acute pain episode caused by sudden synovitis or simply due to more physical activity than usual. However, the course of the disease is fluctuating pain episodes with or without underlying daily pain. The same can

be said about chondromalacia patella: chronic disorders with acute presentation. In dealing with a hyper-acute knee with severe pain, you need to rule out septic arthritis and gout. Bone tumors have more indolent course unless complicated with a pathologic fracture.

Location: “Can you show me where you feel the pain?” OA pain can be centered behind the patella or medial or lateral joint line depending on the involved compartment. The pain related to a Baker’s cyst is felt on the posterior or posteromedial side of the knee. Anterior knee pain due to patellofemoral pain syndrome is behind the knee cap. Quadriceps tendinitis causes pain at the superior margin of the patella, while localized pain at the inferior margin of the patella or superior aspect of the tibial tubercle is due to patellar tendinitis.

Severity of Pain: “How would you rate your pain on scale of 1–10?” A very severe constant pain of the knee should raise suspicion for septic arthritis and gout. The other causes can be scored variably from mild to severe, based on the time and the pain tolerance of the patient.

Quality of Pain: “How would you describe the pain?” The quality of the pain is not very helpful for decision; however, very sharp pain might be due to a pathologic fracture.

Referred Pain: “Does the pain shoot anywhere else?” Knee pain itself might be a referral pain coming from the hip, but knee pain does not radiate anywhere.

Timings: “What time of the day is your pain the worst?” Morning pain brings rheumatologic disorder up on our list of differentials. OA pain is activity related, so it will be worse in the evening or afternoon. Night pain is notoriously associated with a bone tumor or bone infection.

Aggravating Factors: “What makes your pain worse and what makes it better?” Activities (which may provoke the pain) like walking, especially on a slope, and climbing up and down the stairs. The anterior knee pain of patellofemoral pain syndrome gets worse with prolonged sitting (movie sign). The pain of septic arthritis is so intense even at rest that the patient will refuse to bear weight or even range his or her knee.

Associated Symptoms: These associated symptoms are extremely important for diagnosing meniscal or ACL injuries and should be checked in all cases, especially those with a previous sports injury:

1. Giving way or sudden buckling
 - “Have you ever noticed your knee suddenly buckling? How often does this happen? What were you doing at that time?”
 - Giving way is not a specific symptom and can be seen in every condition associated with quadriceps weakness. Recurrent giving way is usually associated with meniscal injuries when the patient has a sudden change in direction during walking and with patellofemoral pain syndrome when going down stairs.

2. Locking
 - “Have you ever had an episode of locked knee – a condition that you couldn’t make your knee straight from a bent position?”
 - Locking is an uncommon but characteristic sign of a bucket handle tear of the menisci. Temporary locking episodes happen also in those knees with loose bodies.
3. Giving out or instability
 - “Have you ever felt that your knee goes out of its place?”
 - A significant complaint of instability is most commonly expressed by patients suffering from an ACL tear.
4. Swelling
 - “Have you noticed any swelling in your knee? When?”
 - It is crucially important to ask about the timing of swelling if there is a history of sports injury. A new effusion that develops in the first 2 h after trauma is hemarthrosis, and a hemarthrosis after a sports injury is caused by ACL injury in 70% of cases. Other causes of hemarthrosis, such as intra-articular fractures, usually have more acute presentations that make them unsuitable for the OSCE exam.
 - If effusion develops overnight after a knee injury, it is reactive effusion by the synovium, which usually heralds the presence of a meniscal injury.

Complete the rest of the history as described in the musculoskeletal history taking.

Knee Examination:

“I am going to examine your right knee now.” Mention here: “I will be examining the right side only (if right side is the troubling side) assuming that the left side is normal. Should we start?”

Vitals:

Start with commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature and O₂ saturation.)

“Miss ... vital signs are normal” or mention if there are any abnormal findings.

Inspection:

- **General:** Joint posture, any dressings or casts, and any abnormal movement.
- **Position:** Standing, then lying down on the bed. Expose both knees from mid-thigh to toes. Properly drape the rest of the body.

Ask the patient to walk a few steps and then walk back. Look for any limping.

Inspect the joint from the anterior, lateral, and posterior angles. Compare to the other side, and then verbalize if you

do not see any swelling, erythema, atrophy, and skin changes/rash/scar marks.

Check the general lower extremities alignment: genu varum, genu valgum, and genu recurvatum.

Check for varicose veins.

Comment on the presence or absence of quadriceps atrophy when the patient lies down on the bed. Do this by pointing out and comparing the prominence of vastus medialis muscles on both knees superomedial to the superior border of the patella.

Joint Palpation:

Inform the patient again, “I am going to feel your knee, if you feel pain, please let me know.”

Position: Lying down.

Feel for: Tenderness, effusion, swelling, temperature, and crepitus.

Palpate the patella, tibial tuberosity, tibial and femoral condyles, quadriceps, patella tendon, medial/lateral ligament, meniscus, and bursa (pre patellar bursa, anserine bursa, and semimembranosus bursa). Feel for swelling in the popliteal area (Baker’s cyst).

Search for Point Tenderness:

- **Superior pole of the patella:** Quadriceps tendinitis
- **Inferior pole of patella and tibial tubercle:** Patellar tendinitis
- **Medial and lateral joint lines:** Meniscal injuries or collateral ligaments injuries
- **Superior-medial aspect of tibia and posterior-medial to the tibial tubercle:** Pes anserinus tendinitis

Examine the Knee in Search of Effusion:

- **Bulge Sign:** Immobilize the patella with the thumb and index finger. Use the free hand to milk the medial aspect of knee (upward strokes). If a downward stroke is used on the lateral aspect of the knee, fluid will be displaced and may be visible as a medial bulge known as the bulge sign.
- **Patellar Ballottement Test:** It is complementary to the bulge sign. Just after milking the suprapatellar pouch and commenting on the presence or absence of a bulge around the patella, push the patella down and comment on the presence or absence of ballottement.

Range of Motion:

Active Range of Movements:

- Flexion – 150
- Extension – 0
- Check active movements in flexion and extension when the patient lies down on the table. If there is any limitation

of active movement, check the passive movement too; otherwise you may skip these.

- It is very important to compare both sides. Any limitation of extension must be commented on as it may be due to locking caused by displaced bucket handle meniscal tears or a massive knee effusion. Patients with severe osteoarthritis may also have some variable limitation in extension or flexion.

Passive Range of Movements: Check if the active motion is restricted.

Test Power: While the patient is performing the ROM movements, check for power.

Neurovascular Assessment:

- **Sensory:** Check the sensation of the skin over the thigh and leg.
- **Reflexes:** Knee and ankle jerk.
- **Pulses:** Dorsalis pedis and posterior tibial.

Special Tests:

- **Anterior Drawer Test:** The patient should lie supine. Flex the hip to 45° and then flex the knees 90° with the feet flat on the table (Fig. 10.40). You can position yourself by sitting on the examination bed in front of the knee you are examining. Grasp the tibia just below the joint line of the knee. Place your fingers in the patient’s popliteal fossa and your thumbs along the joint line on either side of the patellar tendon. Then pull the tibia forward. A positive palpable step formed with anterior force indicates a positive anterior draw test. It is indicative of either a sprain of the anteromedial bundle or complete tear of the ACL.
- **Posterior Sag Sign:** This test is performed in the same position used for the anterior drawer test. Before performing that test, check the position of the anterior border of the medial tibial plateau relative to the medial femoral condyle; it should be anterior. If these two structures lie at the same level or the latter is more anterior, that means there is posterior sagging of the tibia due to a torn posterior cruciate ligament (PCL).
- **Posterior Drawer Test:** This test is done in a same way as the anterior drawer test, but now you apply a backward force on the tibia (Fig. 10.41). A displacement of the tibia posteriorly is a positive posterior drawer test. It is indicative of a tear in the posterior cruciate ligament.
- **Lachman Test:** Ask the patient to lie supine on the bed. Place the patient’s knee in about 20–30° of flexion. Place one hand behind the tibia and the other on the patient’s thigh. Place your thumb on the tibial tuberosity. Pull the tibia anteriorly. An intact ACL should prevent forward translational movement of the tibia on the femur. Anterior

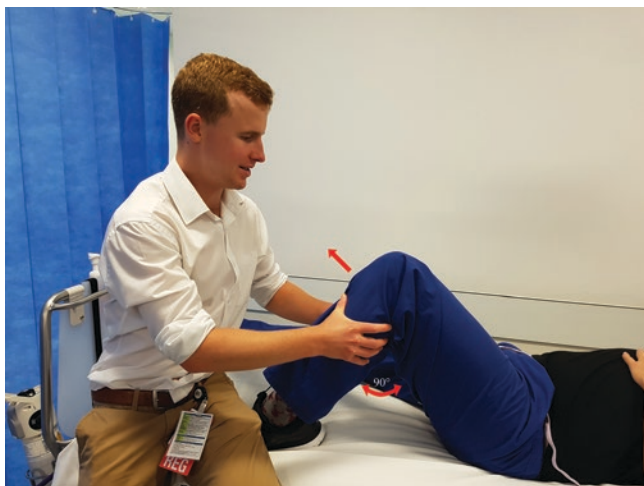


Fig. 10.40 Anterior drawer test

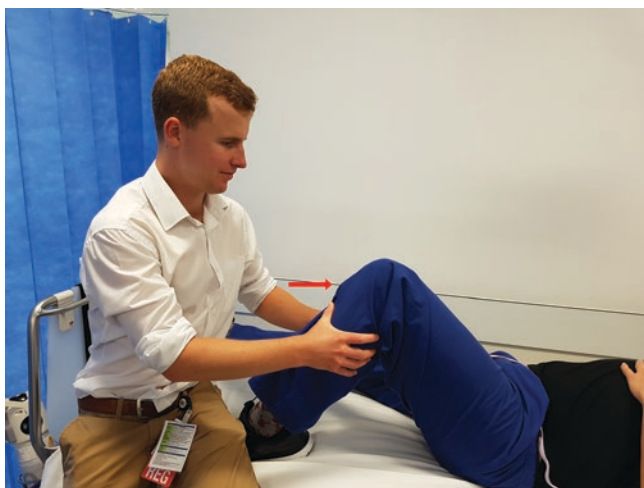


Fig. 10.41 Posterior drawer test

translation of the tibia associated with a soft or a mushy end-feel indicates a positive test.

- **Collateral Ligament Stress Test:** The patient is supine. The test is performed in two positions, knee extended and then flexed to 30° (Fig. 10.42a, b). You should palpate the medial joint line and then apply a valgus force to the patient's knee. A positive test occurs when pain or excessive gaping occurs. Next, a varus force is applied with the knee in a neutral (0° of flexion) position. A positive test occurs when pain or gaping is produced. There should be no gaping at 0°.

This same test is repeated with valgus force while observing the lateral joint line for excessive gaping or opening that will indicate lateral collateral ligament injury.

- **McMurray Test:** The patient should be in a supine position. The knee to be tested is fully flexed. You should hold the sole of the foot with one hand and palpate the medial or lateral aspect of the knee with your other hand. This test is used to

determine damage to either the lateral or medial meniscus. Then you palpate the side of the joint being tested.

First, check the medial meniscus by palpating the posteromedial aspect of the knee while simultaneously extending the knee and externally rotating the tibia (Fig. 10.43a). A valgus stress is also applied. The second step is to check the lateral meniscus (Fig. 10.43b). Palpate the posterolateral joint line and extend the knee while internally rotating the tibia. A varus stress is also applied. If pain is felt by the patient or a click is felt by you or the patient, the test is considered to be positive.

- **Apley Grinding Test:** Ask the patient to lie on her stomach (prone position). Flex the knee at 90° (Fig. 10.44). The patient's thigh is then held fixed to the examining table with the examiner's knee.

Rotate the tibia medially and laterally, first with distraction and then with applied compression. Note any restriction, excessive movement, or discomfort. The lesion will be ligamentous if there is more pain on rotation with distraction. It will be a meniscus injury if the rotation with compression is more painful.

Wrap-Up:

- Comment that you will also do the examination of the hip and ankle and would also like to compare with the other side.
- Thank the patient and tell the patient that they can now cover up.
- Wrap up your findings with the examiner or the patient.

Checklist: Knee Examination

See Table 10.11 for a checklist that can be used as a quick review before the exam.

History and Physical Examination: Ankle

Candidate Information

A 27-year-old male comes in with pain in the right ankle for the past 8 weeks.

Vital Signs: HR, 71/min, regular; BP, 120/65 mmHg; temp, 36.8; RR, 14/min; O₂ saturation, 98%

Please take a brief history, perform a focused ankle examination, and address patient concerns at the end. Please do not perform a rectal, genitourinary, or breast examination.

Differential Diagnosis Ankle Pain

Ankle cases are mostly presented in pure physical exam stations; however, a general knowledge of basic differential diagnoses of ankle pain is a necessity for arranging a focused physical exam.



Fig. 10.42 Collateral ligament stress test: (a) lateral stress, (b) medial stress

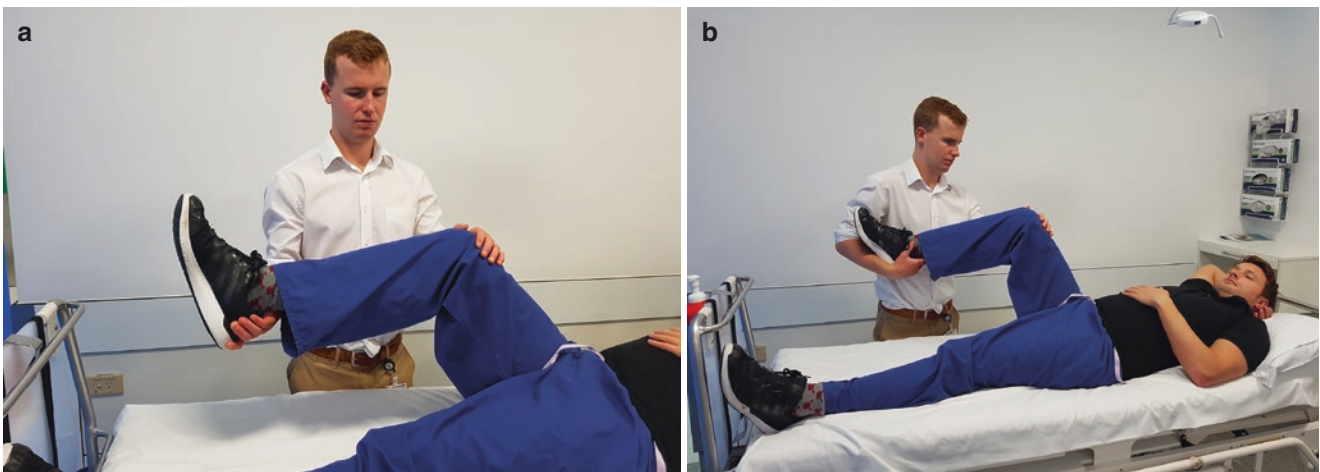


Fig. 10.43 McMurray test. (a) Check the medial meniscus. (b) Check the lateral meniscus

Acute Post-traumatic Ankle Pain: The main diagnosis is an ankle sprain, which usually involves some comments of lateral collateral ligaments. It presents with sudden swelling and pain on the lateral side of ankle after an inversion injury of ankle.

The differential diagnoses:

1. **Achilles' tendon rupture** – Clue: sudden onset of pain and swelling mainly at the back of the ankle after hearing a pop during sports. Upon physical examination, a palpable



Fig. 10.44 Apley grinding test. (Reprinted with permission from McHale et al. [9])

defect near the Achilles insertion, ecchymosis, and a positive Thompson squeeze test can be found (Fig. 10.45a–c).

A rapid test for an Achilles rupture is to ask the patient to stand on his toes. It will be impossible for them.

2. **Malleolar fractures** – The presence of any bony tenderness over the malleoli is indicative of a fracture making taking X-rays a mandatory next step.
3. **Jones fracture** – Tenderness over the base of fifth metatarsal is the clue for asking for foot X-rays.
4. **Fracture of the anterior process of the calcaneus** – Point tenderness about 1 cm distal and 1 cm anterior to the tip of the lateral malleoli.
5. **Osteochondral fracture of the talus** – Hard to diagnose with a physical exam. It should be considered especially in cases of continued pain after an ankle sprain.
6. **Rupture of the extensor digitorum brevis muscle** – Significant local swelling anterior to the tip of lateral malleoli with a negative stress test in a patient that can bear weight after an inversion injury
7. **Arthritis** – Widespread swelling around the ankle without history of trauma can be due to various types of arthritis, especially gout.
8. **Perineal tendon dislocation** – Similar to the usual ankle sprain but with a tenderness that is mainly posterior to the lateral malleoli and followed by recurrent popping of the dislocated tendon.

Table 10.11 Checklist for knee examination

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Now sit on the chair or stand on the right side of the patient and start the interview
Opening	Introduction
	Greet, explain, position, and expose/drape
	Ask for vital signs – interpret
General physical examination (may skip these questions if it is a history and physical station)	Check for alertness and orientation
	Look for any abnormal findings in:
	Hands
	Face (eyes, nose, lips, and mouth)
Inspection	Neck
	Position and observe the anterior, posterior and lateral aspects of the knee and compare to the other side
	Look for SEADS
Joint palpation	Tell the patient what to expect from the examination
	Note and feel for: patella, tibial tuberosity, tibial condyles, femoral condyles, patella tendon
	Feel for effusions (bulge sign)
Active range of movement (ROM)	Check for flexion and extension
Passive ROM	Check for passive movements in flexion and extension
Power	Check for power in the above movements
Neurovascular assessments	
Special tests	Anterior and posterior drawer tests
	Lachman test
	Collateral ligament stress test
	McMurray's test
	Apley grinding test
Wrap-up	Mention that you would also examine the hip and ankle joints and would also like to compare with the other side
	Thank the patient and tell them that they can now cover up
	Wrap up your findings and ask if the patient has any concerns

Chronic Ankle and Heel Pain:

1. **Peroneal tendinitis** – Findings: swelling and tenderness over the peroneal tendons especially posterior to the lateral malleoli.
2. **Tibialis posterior tendinitis** – Findings: swelling and tenderness over the course of the tibialis posterior tendon posterior and inferior to medial malleoli, with or without unilateral flat foot.



Fig. 10.45 (a) Finger points to a palpable gap consistent with a tear in the Achilles tendon in the right foot. Thompson squeeze test: (b) An intact Achilles tendon leads to plantarflexion of the unaffected left foot

on calf squeeze. (c) However, there is no plantar flexion on calf squeeze of the right foot due to a ruptured Achilles tendon. (Photos reprinted with permission from Mahmood and Maffulli [10])

3. **Achilles tendinitis** – Findings: tenderness over the Achilles tendon just superior to its insertion.
4. **Plantar fasciitis** – Clues: gradual onset of heel pain which is worse with the first steps after rest and improves gradually with walking is the pathognomonic feature of plantar fasciitis.

Findings: the only positive finding in a physical exam is point tenderness on the center of heel.

First take a focused history as mentioned in the start of this chapter. Then continue with the ankle examination.

Ankle Examination

Vitals:

Start by commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.)

“Mr ... vital signs are normal” or mention if there are any abnormal findings.

Inspection:

- Exposure: knees to toes. Drape the rest of the body.
- Patient posture: ask the patient to walk a few steps and to walk back. Is the patient able to bear weight or not? Then ask the patient to stand while bearing weight and then in sitting for examining sole of the foot and back of the ankle. Compare to the other side, and then verbalize if you do not see any swelling, erythema, atrophy, deformity, ecchymosis, and skin changes/rash/scar marks.
- Check the longitudinal arch for heel valgus or varus.
- Now ask the patient to stand on his toes. If he can, the Achilles tendon is intact.

Palpation:

- Inform the patient again, “I am going to feel your feet, if you feel pain, please let me know.”
- Feel for: tenderness, effusion, swelling, temperature, crepitus, and atrophy.
- Palpate: These spots must be touched one by one for tenderness: medial malleolus, lateral malleolus, base of the fifth metatarsal bone, navicular bone, anterior process of the calcaneus, Achilles tendon (for defect or tenderness), deltoid ligament, anterior talofibular ligament, calcaneofibular ligament, metatarsals, and MTP joints and toes.
- Evaluate for the **Ottawa ankle rule** if the case history suggests trauma:
- Bone tenderness along the distal 6 cm of the posterior edge of the tibia or tip of the medial malleolus
- Bone tenderness along the distal 6 cm of the posterior edge of the fibula or tip of the lateral malleolus
- Inability to bear weight both immediately and in the emergency department for four steps
- Evaluate for the **Ottawa foot rule** if the case history suggests trauma:
- Bone tenderness at the base of the fifth metatarsal
- Bone tenderness at the navicular bone
- Inability to bear weight both immediately and in the emergency department for four steps

Motion:

Active Range of Movements: in dorsiflexion, plantarflexion, inversion, eversion and flexion and extension of the big toe.

Passive ROM: in dorsiflexion, plantarflexion, inversion, eversion, flexion and extension of the big toe.

Power as in active range of movements.

Neurovascular Assessment:**Sensory Examination of the Foot:**

- Upper part of the upper leg – L2
- Lower-medial part of the upper leg – L3
- Medial lower leg – L4
- Lateral lower leg – L5
- Sole of the foot – S1

Special Tests:

- **Anterior Draw Test:** The test is performed in either a supine or sitting position. Stabilize the anterior side of distal leg with one hand and then grasp the patient’s heel and rear foot with the other hand. Place the patient’s foot into 10–15° of plantar flexion and push the rear foot anteriorly (Fig. 10.46). The test will be positive if the talus translates

forward. The positive tests are often graded on a scale of 0–3, with 0 indicating no laxity and 3 indicating gross laxity. This test primarily assesses the strength of the anterior talofibular ligament and the anteromedial capsule.

- **Inversion Stress Test (Lateral Stress):** The knee is flexed at 90°. The heel is held from below by one hand, while the other hand holds the lower leg. The hand on the heel is placed somewhat inferior and lateral and is used to push the calcaneus and talus into inversion. Meanwhile, the other hand grips the lower leg medially and pushes laterally (Fig. 10.47). Note an end point. It will test the calcaneofibular ligament and the anterior talofibular ligament.
- **Eversion Stress (Medial Stress):** Knee is flexed at 90°. The heel is held from below by one hand, while the other hand holds the lower leg. The hand on the heel is placed somewhat inferior and medial and is used to push the calcaneus and talus into eversion, while the other hand grips the lower leg laterally and pushes medially (Fig. 10.48). It is performed to test the deltoid ligament.
- **Squeeze Test:** This test is performed by squeezing the bones together firmly and slowly just above the anterior tibiofibular ligament, then holding, and quickly releasing (Fig. 10.49). If there is pain upon release at the area of the anterior tibiofibular ligament, then a sprain of that ligament is highly suspected.
- **External Rotation (Kleiger Test):** The foot is held in a neutral position with the lower leg stabilized. Then the foot is externally rotated. If this produces pain, it will indicate a tear of the anterior tibiofibular ligament. Depending on the severity, the interosseous membrane may be involved. Pain will be at the site of the anterior tibiofibular ligament.

Wrap-Up:

- Thank the patient and tell them that they can now cover up.
- Wrap up your findings and ask the patient if they have any concerns.

Quick Assessment: Ankle Sprain

A 20-year-old male sprained his right ankle. Please assess and manage.

Differential Diagnoses The differential diagnoses ankle traumatic injury:

1. Achilles tendon rupture
2. Malleolar fractures
3. Jones fracture
4. Fracture of the anterior process of the calcaneus
5. Osteochondral fracture of the talus
6. Rupture of the extensor digitorum brevis muscle
7. Perineal tendon dislocation



Fig. 10.46 Anterior draw test

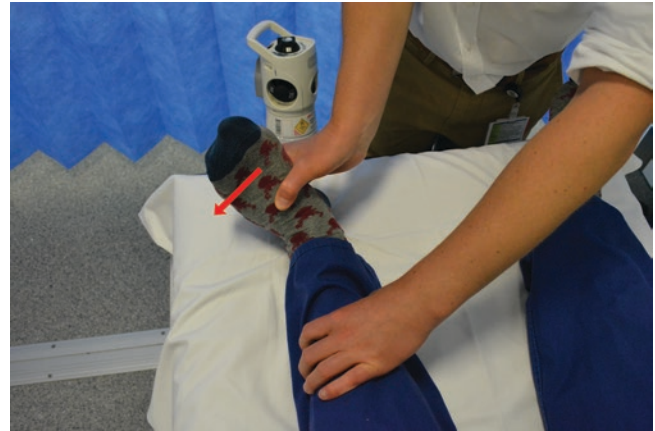


Fig. 10.48 Eversion stress test



Fig. 10.47 Inversion stress test



Fig. 10.49 Squeeze test

Show empathy and offer pain medicine before proceeding. Please complete the history as mentioned in the history details of this chapter. Focus on mechanism and duration of injury. Ask about the position of ankle and foot at the time of the trauma.

Ankle Assessment

Vitals: Start by commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O₂ saturation.)

“Mr ... vital signs are normal” or mention if there are any abnormal findings.

Inspection:

- **Exposure:** Knees to toes. Drape the rest of the body.
- **Patient posture:** Is the patient able to bear weight or not? Then standing while bearing weight and while sitting, examine the sole of the foot and the back of the ankle. Compare to the other side, and then verbalize if you do not see any swelling, erythema, atrophy, deformity, ecchymosis, and skin changes/rash/scar marks (SEADS).

ity, ecchymosis, and skin changes/rash/scar marks (SEADS).

Palpation (Very Important):

- Inform the patient again, “I am going to feel your feet; if you feel pain, please let me know.”
- **Feel for** tenderness, effusion, swelling, temperature, crepitus, fluctuance, and atrophy.
- **Palpate:** These spots must be touched one by one for tenderness: medial malleolus, lateral malleolus, base of the fifth metatarsal bone, navicular bone, anterior process of the calcaneus, Achilles tendon (for defect or tenderness), deltoid ligament, anterior talofibular ligament, calcaneofibular ligament, metatarsals, and MTP joints and toes.
- Evaluate for the **Ottawa ankle rule** if the case history suggests trauma:
 - Bone tenderness along the distal 6 cm of the posterior edge of the tibia or tip of the medial malleolus
 - Bone tenderness along the distal 6 cm of the posterior edge of the fibula or tip of the lateral malleolus

- Inability to bear weight both immediately and in the emergency department for four steps
- Evaluate for the **Ottawa foot rule** if the case history suggests trauma:
- Bone tenderness at the base of the fifth metatarsal
- Bone tenderness at the navicular bone
- Inability to bear weight both immediately and in the emergency department for four steps

Motion Make sure that the patient is not in acute pain. If the patient does not allow certain movements, skip it and move on. Mention to the examiner.

Active Range of Movements In dorsiflexion, plantarflexion, inversion, eversion, flexion, and extension of the big toe.

Passive ROM In dorsiflexion, plantarflexion, inversion, eversion, flexion, and extension of the big toe.

Power As in active range of movements.

Neurovascular Assessment:

Sensory Examination of the Foot:

- Upper part of the upper leg – L2
- Lower-medial part of the upper leg – L3
- Medial lower leg – L4
- Lateral lower leg – L5
- Sole of the foot – S1

Special Tests:

- Anterior draw test
- Inversion stress test
- Eversion stress (medial stress)
- Squeeze test
- External rotation (Kleiger test)

Wrap-Up:

- Thank the patient and tell them that they can now cover up.
- Wrap up your findings and ask the patient if they have any concerns.

Question: What you will do next?

Answer: X-ray: PA view, lateral and mortise

Severity of Ankle Sprain:

- **First degree:** stretching of ligament fibers
- **Second degree:** partial tear with pain and swelling
- **Third degree:** complete ligament separation

Control the Swelling First

Tell the patient, “Use an elastic bandage to attach an ice pack or immerse the foot in ice water for 15–20 min at a time. You can do this every 3–4 h as needed up to 72 h. When you’re awake, elevation of the foot may help.”

Offer analgesics.

First- and Second-Degree Ankle Sprain:

- Repeat ice pack – after 72 h and then change to hot soak.
- Elastic bandage for 1–2 weeks in a neutral/slight everted position.
- Partial weight-bearing using a crutch until no pain is present.
- Non-weight-bearing exercise started after 2–3 days including plantar flexion, dorsal flexion, toe flexion, inversion, and eversion.
- After pain and swelling subside, can bear weight with a sprain brace.

Third-Degree Ankle Sprain:

- Surgical repair.
- Cast immobilization for 4–8 weeks.
- Refer to orthopedics.

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Common Gynecology and Obstetric Symptoms for the Objective Structured Clinical Examination

- Bleeding between periods
- Bleeding lasting longer than 7 days
- Passing blood clots
- Bleeding after intercourse
- Painful, excessively heavy, or abnormal bleeding
- Spotting or bleeding between periods or after menopause
- Pain or pressure in the pelvis that differs from menstrual cramps
- Pelvic discomfort or pressure
- Abdominal tenderness or cramps
- Backache or pain
- Painful intercourse
- Feeling heaviness or pressure in the pelvis or constant abdominal pressure
- Infertility
- Swelling or bloating
- Feeling of pressure on the bladder or rectum
- Slipping or dropping of the vagina or uterus
- Frequent and urgent need to urinate or a burning sensation during urination
- Itching, burning, swelling, redness, or soreness in the vaginal area
- Sores or lumps in the genital area
- Vaginal discharge with an unpleasant or unusual odor or of an unusual color
- Increased vaginal discharge

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History Overview: Obstetrics and Gynecology

In the objective structured clinical examinations (OSCE), one can expect one station from gynecology and one from obstetrics. This is usually a history-taking station with counseling or discussing a management plan with the patient. You would not be asked to perform a pelvic, breast, rectal, or vaginal examination.

This chapter outlines a few common gynecology- and obstetric-related topics important for OSCEs. An overview of the history taking is given in Table 11.1.

Detailed History: Obstetrics and Gynecology

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your identification (ID).
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Miss/Mrs...? Are you ... years old?”

Chief Complaint:

Chief complaint or the reason the patient is visiting the clinic. “What brings you in today?” or “Tell me about your symptoms.” Listen to the patient, let her describe the chief complaint, and tailor your list of questions in your mind. In obstetrics and gynecology cases, the patient’s privacy is

Table 11.1 Quick review of history taking for obstetrics and gynecology

Introduction
Name and age
Chief complaint
In patient's own words
History of present illness
Analysis of chief complaint
Onset, course, duration
Contributing factors
Aggravating factors
Alleviating factors
Related symptoms (see common symptoms in detailed history)
Associated symptoms
Predisposing factors
Aggravating and relieving factors
Red flags/risk factors
Rule out differential diagnosis
Review of systems
Respiratory
Cardiovascular
Gastrointestinal
Neurology
Musculoskeletal
Constitutional symptoms
Anorexia, chills, night sweats, fever, and weight loss
Past medical history and surgical history
Medical illnesses
Any previous or recent medical issues
History of previous surgery/operation , especially relevant to the area of concern
Any related anesthetic/surgical complication
Hospitalization history or emergency admission history
Medications history
Current medications (prescribed, over the counter, and any herbal)
Vaccination (Gardasil)
Allergic history/triggers
Any known allergies
Family history
Family history of any long-term or specific medical illness
Home situation
Occupation history
What do you do for a living?
Social history
Smoking
Alcohol
Street drugs
Sexual history
If adult female:
Menstrual history (LMP)
Gynecology history
Obstetric history
If teen female:
Home
Education
Employment

Table 11.1 (continued)

Activities
Drugs
Sexual activity
Wrap-up
Describe the diagnosis
Management plan
Possible medical treatment
Duration of treatment and side effects
Red flags
Laboratory tests
Further information websites/brochures/support groups or societies/toll-free numbers
Follow-up

very important. Establish confidence and rapport. Offer a chaperon.

History of Present Illness:

Ask these questions for each symptom:

- *Onset*: "When did the symptom start? Was the onset acute or gradual?"
- *Course*: "Is the symptom worsening, improving, or continuing to fluctuate?"
- *Duration*: "How long has it been going on?"
- *Severity*: "How severe are the symptoms?" For example, if there is pain, then how severe on a scale of 1–10?
- *Intermittent or continuous?* "Are the symptoms present all the time or do they come and go?"
- *Precipitating factors*: "Are there any obvious triggers for the symptom?"
- *Relieving factors*: "Does anything appear to improve the symptoms?"
- *Associated features*: "Are there other symptoms that appear associated; e.g., fever/malaise?"
- *Previous episode*: "Have you experienced these symptoms before?"
- *Systemic review*: Just ask a few questions from each system. This can pick up any symptoms that the patient may have not mentioned before in the presenting complaint.
 - Gastrointestinal (GI): Nausea, vomiting, appetite, dysphagia, weight loss, abdominal pain, and bowel routine
 - Cardiovascular system: Chest pain, palpitations, dyspnea, syncope, orthopnea, and peripheral edema
 - Respiratory system: Cough, wheeze, sputum, hemoptysis, and chest pain
 - Central nervous system (CNS): Problems with vision, headache, motor or sensory loss, loss of consciousness, and confusion
 - Musculoskeletal: Bone point, joint pain, and muscular pain

- Dermatology: Rashes, ulcers, or lesions
- Kidney disease: Systemic symptoms of acute kidney injury or chronic kidney disease such as anorexia, vomiting, fatigue, pruritus, and peripheral edema
- *Constitutional symptoms*: Fatigue, malaise, night sweats, fever, and weight loss

History of the Current Pregnancy:

- Is this the first pregnancy?
- How was the pregnancy confirmed?
 - Home testing kit, human chorionic gonadotropin (hCG) blood test, or ultrasonography (USG) scan.
- Dating scan or anomaly scan.
- Growth of the fetus.
- Placental location.
- Last menstrual period (LMP): First day of the LMP.
- Was the patient using contraception? Oral pill, implant, or coil?
- Estimated date of delivery (EDD): If known, estimated by scan or via dates.
 - Calculating the due date (three steps) [1]:
 - Step 1 – determine the first day of the patient’s last menstrual period.
 - Step 2 – count back three calendar months from that date.
 - Step 3 – add 1 year and 7 days to that date. This will be the EDD.

Symptoms to Ask a Pregnant Patient:

- Nausea and vomiting
- Abdominal pain
- Vaginal bleeding
- Dysuria or urinary frequency
- Fatigue
- Preeclampsia: Headache, visual changes, or swelling
- *Fetal movements*: Usually experienced at around 18–20 weeks gestation
- *Labor pains*: More relevant in the third trimester
- *Planned method of delivery*: Vaginal or cesarean delivery
- *Medical illness during pregnancy*: If any hypertension, gestational diabetes, and vaginal bleeding

Previous Obstetric History:

Details of Each Pregnancy:

- Date of delivery?
- Length of pregnancy?
- Single, twins, or more?
- Mode of delivery?
- Spontaneous labor or induced?
- Weight of babies?
- Current health of babies?

- Complications of previous pregnancies:
 - Ectopic pregnancy?
 - Any miscarriages or terminations?
 - How many unsuccessful pregnancies?
 - Intrauterine growth retardation (IUGR), hyperemesis gravidarum, hypertension, preeclampsia, eclampsia, gestational diabetes, HELLP syndrome (*h*emolysis, *e*levated *l*iver enzymes, and *l*ow *p*latelet count).
 - Labor: Failure to progress, shoulder dystocia, perineal tears.
 - Postnatal: Postpartum hemorrhage, retained products of conception.

Gynecological History:

Menstrual History:

- Age at **menarche**?
- If there is any concern about abnormal puberty, need to consider precocious puberty or delayed puberty. Ask about the onset of other secondary sexual characteristics and the onset of breast development.
- Ask about the pattern of the menstrual cycle:
 - When was the last normal menstrual period?
 - When was the first day of last normal menstrual period?
 - How many days of blood loss?
 - The duration or length of the cycle?
 - Whether blood loss was heavy? If yes, then ask about the number of tampons and/or pads. Ask further about passing clots?
 - What form of contraception is being used?
 - Any other vaginal discharge other than the menses?
- The normal menstrual cycle:
 - Each cycle usually ranges between 21 and 35 days, with an average of 28.
 - Most healthy and fertile women have regular cycles with 1 or 2 days of variation.
 - Blood loss is 50–200 mls with an average of 70 mls.
- Passage of large clots suggests excessive bleeding.
- Different abnormal patterns of bleeding:
 - Polymenorrhea: Unusually frequent periods.
 - Oligomenorrhea: Unusually infrequent or scanty periods.
 - Menorrhagia: Unusually heavy periods.
 - Menometrorrhagia: Prolonged, excessive, and irregular uterine bleeding.
 - Intermenstrual bleeding: Bleeding between periods.
 - Breakthrough bleeding: Patient is on the pill.
- Diseases of the uterus and cervix:
 - Mucosal disorders.
 - Postcoital bleeding (usually local cervical or uterine disease).

- Postmenopausal bleeding: bleeding occurring more than 12 months after amenorrhea of menopause.
- Dysfunctional uterine bleeding: Abnormal bleeding that cannot be ascribed to pelvic pathology. Regular pattern will suggest that ovulation is occurring. Irregular pattern suggests no ovulation or anovulatory cycles.

Previous Gynecological Problems and Treatments:

- Sexually transmitted diseases (STDs)
- Pelvic inflammatory disease (PID)
- Vaginal discharge
- Ask about the vaginal discharge:
 - Color
 - Amount
 - Consistency
 - Odor
 - Presence of blood
 - Any itching, burning, or fever
 - Use of gels, douches, or perfumed bath additives
 - Any associated localized tenderness (Bartholinitis)
- Urethral discharge:
 - Color
 - Amount
 - Consistency
 - Odor
 - Presence of blood
 - Any itching or burning
- Amenorrhea
- Gynecological diseases: Polyps or cysts
- Previous cervical smear
- Current contraception: Oral contraceptive pill, Depot, implant or implanted uterine device

Sexual History:

Ask about sexual activity. Inform the patient that you need to ask few questions about her sexual history to make a diagnosis:

- The first question should be: “Are you sexually active?”
- If yes, then ask, “With whom do you live?”
- “How long have you been together?”
- Coital history: “How often do you have intercourse?”
- “Do you practice safe sex – using condoms?”
- “When did you start to be sexually active?”
- “How many partners have you had in the last years?”
- “What is your sexual preference?”
- “What type of sexual activity do you practice?”
- “Have you ever been diagnosed with PID?”
- “Any vaginal discharge?”
- “How about your partner? Does he have any symptoms?”

- “Have you ever been screened for human immunodeficiency virus (HIV)?”

Genital Ulcers:

Ask questions similar to those asked for sexually transmitted disease.

Dyspareunia:

- Determine if this is superficial (vaginismus or coming from an episiotomy scar), or if it is deep, then it can be uterine, cervical, or possibly an adnexal origin.
- Ask if it is intermittent/recurrent or always present.
- Ask if it occurs on penetration/preventing penetration or full intercourse.
- Note whether there is radiation of the pain.
- Discuss positional factors.
- Any relationship to menses.
- Ask if libido and foreplay are sufficient.
- Note whether the patient is postmenopausal.
- Ask if there is dryness/atrophy.
- Ask if there is any rash.
- Establish the degree of distress.
- Assess for any mood disorder.

Abnormal Vaginal Bleeding:

- Passing clots or flood of blood.
- Discuss relationship to menses – intermenstrual?
- Relationship to coitus – postcoital bleeding?
- Establish periodicity.
- Ask about possibility of pregnancy?

Past Medical History:

- “Do you have any other health issues?”
- Gestational diabetes: Tight blood sugar control is essential and risk of congenital defects. Risk of macrosomia with complications during labor.
- Thromboembolic disease: High risk for further events in following pregnancy.
- Epilepsy: Some antiepileptics are teratogenic – needs neurology input.
- Hypothyroidism: Thyroid function tests (TFTs) need close monitoring – risk of congenital hypothyroidism.
- Previous preeclampsia: Higher risk to develop it in the current pregnancy.

Past Hospitalization: “Have you had any previous hospitalization?”

Medication History:

- “Are you taking any medications prescribed, over the counter, or herbal? If so, have there been any side effects?”

- Pregnancy medications: Folic acid, iron, antiemetics, and antacids.
- Teratogenic drugs: Angiotensin-converting enzyme (ACE) inhibitors, sodium valproate, methotrexate, retinoids, and trimethoprim.
- Vaccination (Gardasil).
- Document all regular medications.

Surgical History: Previous abdominal and gynecological surgery of relevance

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke? Or does anyone else in your home or close proximity at work smoke?”
- “Do you drink alcohol?” If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs? If yes, which ones? How long? When?” Specifically ask about intravenous (IV) drug use.

Family History: Marital status, number of children, any significant history in first-degree relatives

Self-Care and Living Condition:

- “What do you do for a living?”
- “Working status and occupation?”
- “Educational status?”
- “Who lives with you?”
- Light duties or maternity leave

Support: “Do you have good support from your family and friends?”

Functional status or severity or impact on life activities.

If a Teenager, Then Add Questions Regarding: Home, education, employment, activities, drugs, and sexual activity

If the Patient Is More Than 65 Years Old, Add These Questions:

- “Any problem with balance?”
- “Any difficulty with peeing/urination?”
- “Any issues sleeping?”
- “Any change in vision/hearing?”
- “Any recent change in memory?”
- “Are you taking any regular medications? Do you have any prescribed medicine? Are you taking any over-the-counter medicine?”

Wrap-Up:

- Describe the diagnosis.
- Laboratory tests.
- Management plan.
- Duration of treatment and side effects.
- Red flags.
- Further information websites/brochures/support groups or societies.
- Follow-up.

Physical Examination: Female Genital Tract Examination

It is highly unlikely to be asked to perform a female pelvic examination. You must be familiar with the main steps and the how to verbalize these. The examiner may ask you to verbalize these steps or you may be asked to perform an examination on a manikin. Details of female genital tract physical examination are given in [Chap. 8: Genitourinary](#). A checklist is provided in [Table 11.2](#) as a quick review.

Table 11.2 Checklist for female genital tract examination

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Now sit on the chair or stand on the right side of the patient and start the interview
Opening	Introduction, greet, explain, position, and exposure/drape
	Introduce/offer chaperone
General physical examination	Ask for vital signs – interpret the vital signs
	Look for any abnormal findings in hands, face, neck, heart, chest, and abdomen
Pelvic examination	Positioning
	Inspection external genitalia: examine labia majora and labia minora, perineum, clitoris, and urethra
	Speculum examination: examine the vestibule, vagina, and cervix
	Palpation: internal examination of the uterus: uterus and adnexa
	Rectal examination
	Position: left lateral
	Look for pain, occult blood, masses, hemorrhoids, anal fissures, and sphincter tone
Wrap-up	Thank the patient
	Ask patient to dress
	Describe your findings to the examiner

History and Counseling: Primary Amenorrhea

Candidate Information:

You are seeing an 18-year-old woman with primary amenorrhea. Her secondary sexual characteristics have been present for the past 3 years. She wants to start a relationship. Please take a focused history and make a diagnostic and management plan for her.

Differential Diagnosis:

Primary amenorrhea is an absence of menses at the age of 15 years in the presence of normal growth and secondary sexual characteristics. The evaluation of primary amenorrhea should begin at age 13 years if no menses have occurred and there is a complete absence of secondary sexual characteristics. Some girls with secondary sexual characteristics may present before age 15 years with amenorrhea and cyclic pelvic pain. These girls should be evaluated for possible outflow tract obstruction.

Primary amenorrhea is usually the result of a genetic or anatomical abnormality. It is important to consider that all causes of secondary amenorrhea can also present as primary amenorrhea.

Secondary amenorrhea is considered to be present when a girl has previously had a menstrual cycle but stops having menstrual periods for three cycles in a row or for a time period of 6 months or more and is not pregnant.

Major Causes of Primary and Secondary Amenorrhea

See Tables 11.3 and 11.4 for causes of amenorrhea [2].

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Miss...?”

Presenting Complaint:

“What brings you in today?”

History of Presenting Illness:

Ensure confidentiality. Offer to bring in a chaperone.

Primary Versus Secondary Amenorrhea:

- New problem?

Table 11.3 Common causes of primary amenorrhea

Category	Approximate frequency (%)
Breast development	30
Müllerian agenesis	10
Androgen insensitivity	9
Vaginal septum	2
Imperforate hymen	1
Constitutional delay	8
No breast development: high FSH	40
46 XX	15
46 XY	5
Abnormal	20
No breast development: low FSH	30
Constitutional delay	10
Prolactinomas	5
Kallman syndrome	2
Other CNS	3
Stress, weight loss, anorexia	3
PCOS	3
Congenital adrenal hyperplasia	3
Other	1

Reprinted with permission from The Practice Committee of the American Society for Reproductive Medicine [2]

FSH follicle-stimulating hormone, *CNS* central nervous system, *PCOS* polycystic ovarian syndrome

Table 11.4 Common causes of secondary amenorrhea

Category	Approximate frequency (%)
Low or normal FSH	66
Weight loss/anorexia	
Non-specific hypothalamic	
Chronic anovulation including PCOS	
Hypothyroidism	
Cushing's syndrome	
Pituitary tumor, empty sella, Sheehan syndrome	
Gonadal failure: high FSH	12
46 XX	
Abnormal karyotype	
High prolactin	13
Anatomic	7
Asherman syndrome	
Hyperandrogenic states	2
Ovarian tumor	
Nonclassic CAH	
Undiagnosed	

Reprinted with permission from The Practice Committee of the American Society for Reproductive Medicine [2]

FSH follicle-stimulating hormone, *PCOS* polycystic ovarian syndrome, *CAH* congenital adrenal hyperplasia

- Confirm if she has ever had any menstrual flow.
- How is her health otherwise?
- Inform her that you need to ask about her body and sexual characteristics to come to a diagnosis.
- “How about your growth spurt (recently 2–3 years)?”

- “Do you think your breasts have developed?”
- “How about axillary and pubic hair?”
- “How is your height when you compare it to your friends?”
- Chronic illness?

Pregnancy:

- Sexual activity?
- Any breast tenderness?
- Early morning sickness?

Functional Hypothalamic Amenorrhea:

- “Are you on a special diet?”
- “Do you do excessive exercise?”
- “Do you take laxatives or induce vomiting?”
- “Do you consider yourself overweight?”
- “How do you feel when you look at yourself in the mirror?”
- “Psycho-social stress?”

Thyroid Disease:

- “Any change in your weight?”
- “Do you have any weather preferences? Temperature intolerance?”
- “Any lump in your neck or change in your voice?”
- “How about your bowel motion? Diarrhea? Constipation?”
- “Palpitations, tremor, depression, skin changes?”

Pituitary Tumor:

- Galactorrhea – “Have you noticed any milk secretions from your breast?”
- Significant headaches or vision changes?

Symptoms of Hormone Excess:

- Hirsutism, acne, polycystic ovarian syndrome (PCOS), ovarian or adrenal tumor, Cushing syndrome

Imperforate Hymen:

- “Do you experience cyclical abdominal pain every month?”

Constitutional Delay of Puberty:

- Family history of early or delayed menarche?

Chemotherapy or Radiation:

- Impairment of specific organ (brain, pituitary, ovary)?

Illicit or Prescription Drug Use:

- Consider effects on prolactin level.

Past Medical History: “Do you have any other health issues?”

Past Hospitalization: “Have you had any previous hospitalization?”

Medication History: “Are you taking any medications prescribed, over the counter, or herbal? If so, have there been any side effects?”

Surgical History: Previous abdominal and gynecological surgery of relevance

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke? Or does anyone else in your home or close proximity at work smoke?”
- “Do you drink alcohol?”
- If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs? If yes, which ones? How long? When?” Specifically ask about intravenous drug use (IVDU).

Adolescents (Patient 18 Years Old): HEEADSSS

- Home: “With whom do you live?”
- Education: Which grade? School performance? Grades? Recent changes in grades?
- Employment or future career aspirations?
- Activities, hobbies, exercise?
 - Hobbies: (in case of epilepsy – ask about risky activities)
- Diet: Any specific diet?
- Drugs and alcohol: “Do you smoke? Recreational drugs? IVDU?”
 - “A lot of people of your age might experiment with drugs? How about you?”
- Sexual activity or relationships.
- Suicidal ideation (“Have you tried hurting yourself?”) or mood?

Family History: It should include age at menarche and presence of chronic disease.

Self-Care and Living Condition: “What do you do for a living? Working status and occupation? Educational status? Who lives with you?”

Support: “Do you have good support from your family and friends?”

Functional status or severity or impact on life activities.

Wrap-Up

Question: “What will you do next?” (Questions may be asked by the patient or the examiner.)

Answer: “I will perform a thorough physical examination”:

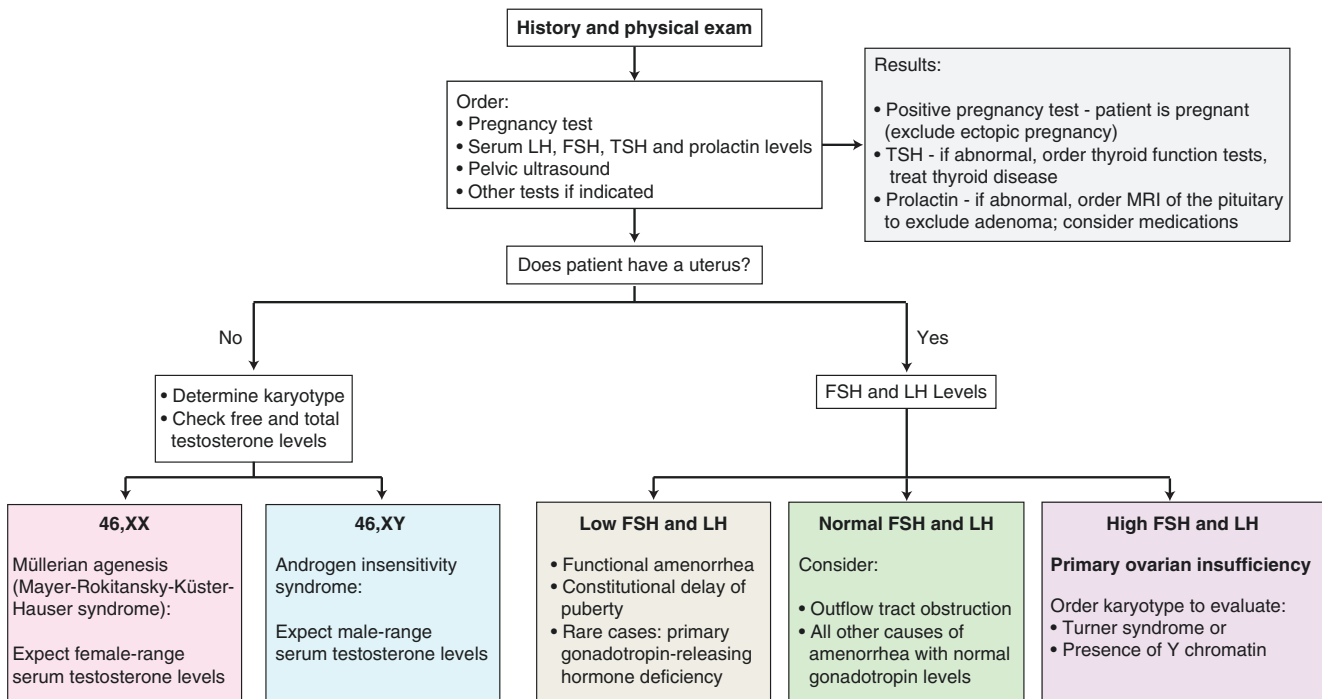


Fig. 11.1 Diagnosis of primary amenorrhea. LH – luteinizing hormone, FSH – follicle-stimulating hormone, TSH – thyroid-stimulating hormone, MRI – magnetic resonance imaging. (Adapted from [3])

- Vital signs
- Height, weight, and body mass index (BMI) (high in PCOS and low in functional hypothalamic amenorrhea)
- Skin examination
- **General Physical Examination:**
 - Evaluate body habitus.
 - Skin: Look for color, texture and moisture, male pattern baldness, increased facial hair, acne (hyperandrogenism, PCOS, ovarian or adrenal tumor, Cushing syndrome).
 - Hands: Feel the hands for any sweating.
 - Look for any tremors.
 - Head, eyes, ears, nose, and throat (HEENT): Thyroid swelling.
 - Dysmorphic features: Webbed neck, short stature, or low hairline may suggest Turner syndrome.
 - Breast: Breast development.
 - Look for axillary hair.
 - Chest and heart examination.
 - Abdomen: Suprapubic mass (imperforate hymen).
 - Pelvic exam:
 - Inspect external genitalia
 - Speculum examination: Look for imperforate hymen, presence of transverse vaginal septum (outflow tract obstruction).
 - Tanner staging.

Question: “What laboratory test will you consider?”

Answer: See Fig. 11.1 [3].

- Complete blood count and metabolic panel abnormalities
 - Chronic disease
- Pregnancy test
 - Positive in pregnancy and ectopic pregnancy
- Estradiol
 - Low, poor endogenous estrogen production (suggestive of poor ovarian function)
- Follicle-stimulating hormone (FSH) and luteinizing hormone (LH)
 - High in primary ovarian insufficiency, Turner syndrome
 - Low in functional hypothalamic amenorrhea
 - Normal in PCOS, Asherman syndrome, multiple others
- Free and total testosterone, dehydroepiandrosterone sulfate
 - High in hyperandrogenism, PCOS, ovarian or adrenal tumor, CAH, Cushing syndrome
- Prolactin
 - High in pituitary adenoma, medications, hypothyroidism, other neoplasms
- Thyroid-stimulating hormone
 - High: Hypothyroidism

- Low: Hyperthyroidism
- Karyotype
 - Abnormal in Turner syndrome, rare chromosomal disorders
- Diagnostic imaging
 - Magnetic resonance imaging (MRI) of the head
 - If a pituitary tumor is suspected (microadenoma)
 - Pelvic ultrasonography
 - To find out morphology of pelvic organs and the presence or absence of a uterus and can identify structural abnormalities of reproductive tract organs

Question: “What will be the treatment?”

Answer: “Treatment is determined by the cause. Treatment goals should be to relieve the symptoms secondary to hormonal imbalance, establish menstruation, prevent complications, and/or to achieve fertility:

- In anatomical abnormalities: Surgery may be recommended.
- Functional hypothalamic amenorrhea: Try to find the specific cause and then treat. Gaining weight. Reduction in intense exercise. Nutritional counseling may be of benefit.
- In premature ovarian failure: Hormone therapy.
- Polycystic ovary syndrome: Benefit from treatments that reduce the level or activity of male hormones, or androgens.
- Dopamine agonist medications: Bromocriptine can reduce elevated prolactin levels, which may be responsible for amenorrhea. Consequently, medication levels may be adjusted by the person’s physician if appropriate.
- Assisted reproductive technologies and the administration of gonadotropin medications that stimulate follicle maturation in the ovaries can be appropriate for women with some types of amenorrhea who wish to attempt to become pregnant.”

History and Counseling: Secondary Amenorrhea

Candidate Information:

You are seeing a 27-year-old female with a 2-year history of no menstruation. Please take a focused history and make a diagnostic and management plan for her.

Differentials:

(See list under previous heading, *History and Counseling: Primary Amenorrhea*.)

Secondary amenorrhea is the absence of menstrual bleeding in a woman who had been menstruating but later stops menstruating for 3 or more months in the absence of pregnancy, lactation, cycle suppression with systemic hormonal contraceptive pills, or menopause.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Miss...?”

Presenting Complaint:

“What brings you in today?”

History of Presenting Illness:

Ensure confidentiality. Offer to bring in a chaperone.

Primary Versus Secondary Amenorrhea:

- New problem?
- Confirm if she has ever had any menstrual flow.
- “Can you please tell me when was your last menstrual period?”
- “Did your period stop suddenly or gradually?”
- Menstrual periods: “Menarche? Were they regular? How long is the cycle? How long is the bleeding time? Did you have excessive bleeding or pain during periods? Spotting in between periods?”

“How is your health otherwise?” Inform her that you need to ask about her body and sexual characteristics to come to a diagnosis:

- “How about your growth spurt (recently 2–3 years)?”
- “Do you think your breasts have developed?”
- “How about axillary and pubic hair?”
- “How is your height when you compare it to your friends?”
- “Chronic illness?”

Pregnancy:

- Partner: “Are you sexually active? Are you in a stable relationship?”
- “Any breast tenderness or early morning sickness?”

Functional Hypothalamic Amenorrhea:

- “Are you on a special diet?”
- “Do you do excessive exercise?”
- “Do you take laxatives or induce vomiting?”
- “Do you consider yourself overweight?”
- “How do you feel when you look at yourself in the mirror?”
- “Psycho-social stress?”

Thyroid Disease:

- “Any change in your weight?”
- “Do you have any weather preferences? Temperature intolerance?”
- “Any lump in your neck or change in your voice?”
- “How about your bowel motion? Diarrhea? Constipation?”
- “Palpitations, tremor, depression, skin changes?”

Pituitary Tumor:

- Galactorrhea – “Have you noticed any milk secretions from your breast?”
- “Significant headaches or vision changes?”

Symptoms of Hormone Excess:

- Hirsutism, acne, polycystic ovarian syndrome (PCOS), ovarian or adrenal tumor, Cushing syndrome

Constitutional Delay of Puberty:

- Family history of early or delayed menarche

Chemotherapy or Radiation:

- Impairment of specific organ (brain, pituitary, ovary)

Illicit or Prescription Drug Use:

- Consider effect on prolactin.

Pills:

- “Do you use any form of contraception? Which type?”

Pap Smear:

- When? Results?

Menopausal Symptoms:

- “Hot flashes? Dryness of vagina? Is intercourse painful?”

Past Medical History: “Do you have any other health issues?”**Past Hospitalization:** “Have you had any previous hospitalization?”**Medication History:** “Are you taking any medications prescribed, over the counter, or herbal? If so, have there been any side effects?”**Surgical History:** Previous abdominal and gynecological surgery of relevance**Allergic History:** “Do you have any known allergies?”**Social History:**

- “Do you smoke? Or does anyone else in your home or close proximity at work smoke?”
- “Do you drink alcohol?” If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs? If yes, which ones? How long? When?” Specifically ask about IV drug use.

Family History: Presence of chronic disease**Self-Care and Living Condition:** “What do you do for a living? Working status and occupation? Educational status? Who lives with you?”**Support:** “Do you have good support from your family and friends?”

Functional status or severity or impact on life activities.

Wrap-Up**Question:** “What is the management plan?”

Answer: See Fig. 11.2 [3].

Question: “How will you deal with a patient with Asherman syndrome after miscarriage?”

Answer: “I will take a detailed history including history of pregnancy and miscarriage”:

- Detailed physical examination
- Order pregnancy test to exclude pregnancy
- Order FSH, LH, estradiol, prolactin, thyroid-stimulating hormone (TSH) to exclude different causes
- Pelvic USG

Counseling: If Asherman syndrome is confirmed, then I will give her more information about it: “According to your history you most likely have secondary amenorrhea due to Asherman syndrome. It is the formation of adhesion or scar tissues inside the uterus. It is a well-recognized complication of curettage. During the pregnancy the ability of the inner lining of the uterus to recover is reduced. The surgical procedure also contributes to the formation of scar tissue inside the uterus.”

“But there is treatment for this condition. I need to refer you to a gynecologist. The gynecologist will perform examination under anesthesia. The examination is called a hysteroscopy in which a small flexible optic tube is placed through the cervix into the uterine cavity. It helps to see intrauterine adhesions and cut these. Sometimes it is not possible to see

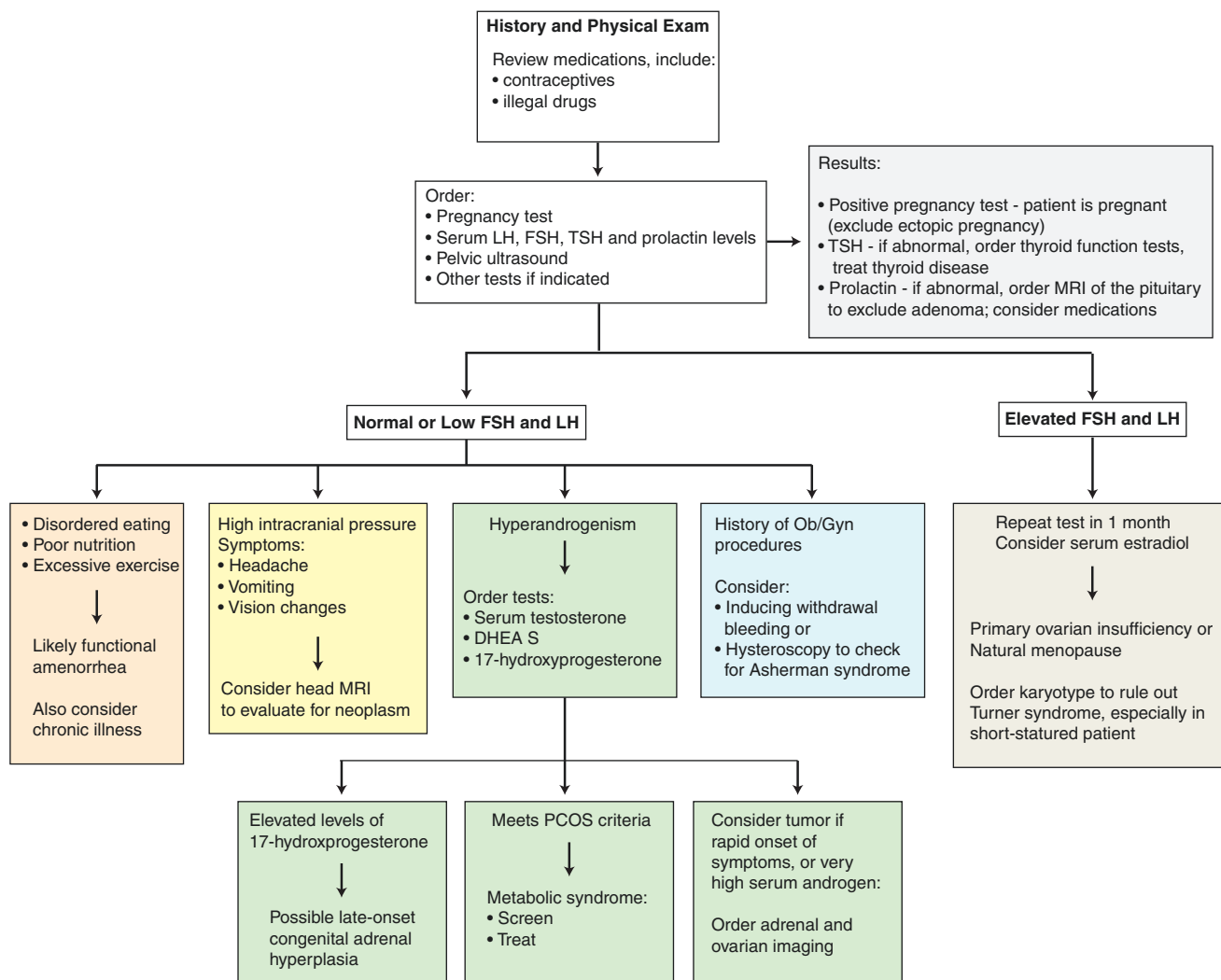


Fig. 11.2 Diagnosis of secondary amenorrhea. LH – luteinizing hormone, FSH – follicle-stimulating hormone, TSH – thyroid-stimulating hormone, MRI – magnetic resonance imaging, Ob/Gyn – obstetrics/gynecology, PCOS – polycystic ovary syndrome. (Adapted from [3])

inside the uterus, so a contrast may be required and X-ray will be taken to locate the uterine cavity and to define the scar tissues. After the procedure, the gynecologist will prescribe estrogen to increase the repair of the inner lining. As with any surgical procedure, hysteroscopy carries some risks. Complications are uncommon but it includes anesthesia risk, infection, bleeding, and, rarely, perforation.”

“It is an effective treatment and most likely you can get pregnant again. Success depends on the extent of the disease and how difficult is the treatment. Replacement of estrogen is also given in form of oral contraceptives (OCP) or hormone replacement therapy (HRT). These hormones will reduce your symptoms.”

Question: “How will you manage a patient with secondary amenorrhea due to polycystic ovarian syndrome?”

Answer: “I will take a detailed history”:

- Anovulatory cycles (prolonged >40 days and irregular).
- Detailed physical examination:

- General appearance, hirsutism, acne, and high BMI
- Vital signs
- Visual field, thyroid and breast exam
- Abdominal examination
- Pelvic exam: size of the uterus, adnexal masses, and tenderness
- Urine dipstick and urine PT
- Order pregnancy test to exclude pregnancy.
- Order FSH, LH, estradiol, prolactin, and TSH to exclude different causes.
 - Increased LH, increased androgen (androstenedione) converted to testosterone
 - Decreased FSH and increased insulin secretion
 - LH: FSH ratio = 3:1
- Pelvic USG for PCOS: Necklace appearance.

Counseling: If PCOS is confirmed, then I will counsel the patient: “You most likely have secondary amenorrhea second-

ary to polycystic ovarian syndrome. PCOS is a condition that causes irregular menstrual cycles because monthly ovulation is not occurring and levels of androgens or male hormones are elevated. It is a very common condition. The cause of PCOS is not yet completely understood. It is believed that abnormal levels of the pituitary hormone LH and high level of androgen interfere with normal function of the ovary. PCOS symptoms include absent or irregular periods, abnormal hair growth, scalp hair loss, acne, weight gain, and difficulty becoming pregnant. Although PCOS is not completely reversible, there are a number of treatments that can reduce symptoms:

- Periods and hirsutism:
 - Lifestyle modification such as healthy diet and regular exercise help.
 - Use oral contraceptives for 6 months.
 - Hair treatment such as laser therapy or electrolysis.
 - If these are not effective, then OCP plus antiandrogen (spironolactone or cyproterone acetate).
- Pregnancy:
 - Lifestyle modification.
 - Try to have a regular sexual life for 6 months.
 - If will not be successful, then refer to gynecologist for specific treatment:
 - Metformin (improves insulin resistance and weight loss)
 - Clomiphene citrate
 - FSH injection
 - In vitro fertilization (IVF)”

History and Counseling: Vaginal Discharge

Candidate Information:

A 34-year-old female presented in your practice with foul-smelling vaginal discharge, mild lower abdominal pain, and fever. Please take a detailed history and counsel the patient about the management plan.

Differentials:

Abdominal Pain:

- Acute appendicitis
- Pelvic inflammatory disease (PID)
- Ectopic pregnancy
- Ruptured ovarian cyst
- Torsion of ovary
- Urinary tract infection (UTI)

Vaginal Discharge:

- Infections not associated with sex: Group B streptococcal vaginitis, bacterial vaginosis, *Candida albicans* [4].

- Noninfectious causes: Hormonal contraception, physiological, cervical ectropion and cervical polyps, malignancy, foreign body (e.g., retained tampon), dermatitis, fistulae, allergic reaction, erosive lichen planus, desquamative inflammatory vaginitis, atrophic vaginitis in lactating and postmenopausal women [4].
- Sexually transmitted infections (STIs): *Chlamydia trachomatis*, *Mycoplasma genitalium*, *Neisseria gonorrhoea*, *Trichomonas vaginalis*, herpes simplex virus [4].

Common Causes of Vaginal Discharge with Symptoms:

See Table 11.5 for some of the common symptoms and causes of vaginitis [5–7].

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Miss...?”

Presenting Complaint:

“How can I help you today?”

Ensure confidentiality. Offer to bring in a chaperone.

History of Present Illness:

There are three presenting complaints: vaginal discharge, low abdominal pain, and fever. You must ask questions about each symptom:

Vaginal Discharge:

- *Onset*: When did this start? Was the onset acute or gradual?
- *Amount*: How much coming out? Pads? Just staining?
- *Course*: Is it worsening, improving, or continuing?
- *Duration*: How long has it been going on?
- *Intermittent or continuous?* Are the symptoms present all the time, or do they come and go?
- *Consistency*: Describe the consistency (sticky or watery)?
- *Color*: What is the color of the discharge?
- *Smell*: Is there any smell?
- *Blood*: Is it blood stained?
- *Precipitating factors*: Are there any obvious triggers for the symptom?

Table 11.5 Symptoms and causes of vaginitis [5–7]

Symptoms			Type of vaginitis	Cause
Pain	Discharge/appearance	Pruritus (itching)		
Burning on contact, soreness	Minimal discharge	More likely in allergic reactions	Contact irritation or allergic reaction	Irritant or allergic contact dermatitis
Not a primary symptom	Clear, white, or gray discharge	Not a primary symptom	Bacterial vaginosis	Bacteria:
	Malodorous/fishy smell			<i>Gardnerella vaginalis</i>
				<i>Mycoplasma hominis</i>
				<i>Prevotella</i> species
				<i>Mobiluncus</i> species
Burning, painful urination, painful intercourse	White, thick (“cottage cheese-like”), odorless discharge	Frequent	Candidiasis	Yeast:
				<i>Candida albicans</i>
				<i>Candida krusei</i>
				<i>Candida glabrata</i>
Painful intercourse, vaginal soreness, painful urination	Frothy yellow-green discharge	May be present, but not a primary symptom	Trichomoniasis	Protozoan parasite: <i>Trichomonas vaginalis</i>
	Malodorous			
	Vulvovaginal erythema			
	“Strawberry” cervix			
Vaginal dryness, painful intercourse	Yellow-green, odorless discharge	Rare	Atrophic vaginitis	Estrogen deficiency
Intense pain, painful intercourse, bleeding after intercourse	Gray or yellow discharge	Intense	Erosive lichen planus	Unknown cause

- **Associated features:** Are there other symptoms that appear associated, e.g., fever/malaise? Any itching, burning, or fever?
 - “How are your waterworks? Burning? Frequency on urination?”
 - Use of gels, douches, or perfumed bath additives?
 - Any associated localized tenderness (Bartholinitis)?
 - Any relation to periods?
 - **Relieving factors:** Does anything appear to improve the symptoms?
 - **Previous episode:** Have you experienced these symptoms before?
 - **Urethral discharge:** Any associated urethral discharge?
 - Color
 - Amount
 - Consistency
 - Odor
 - Presence of blood
 - **Fever:**
 - Onset
 - Severity
 - Continuous or intermittent
 - Any relieving factors?
 - **Abdominal pain:**
 - Onset
 - Course
 - Duration
 - Nature
 - Intensity (1–10)
 - Location
 - Progression
 - Radiation
 - Timing
 - **Constitutional symptoms:** Fatigue, malaise, night sweats, fever, and weight loss
- You should be able to identify to the examiner that you have tried to rule out appendicitis, cystitis, pregnancy, inflammatory bowel disease, and PID.
- Gynecological History:**
- Menstrual History**
- Age at menarche?
 - When was the last normal menstrual period?
 - How many days of blood loss?
 - The duration or length of the cycle?
 - Whether blood loss was heavy? If yes, then ask about number of tampons and/or pads. Ask further about passing clots.
- Previous Gynecological Problems and Treatments:**
- Sexually transmitted diseases (STDs)?
 - Pelvic inflammatory disease (PID)?
 - Previous cervical smear?
 - What form of contraception is being used?

- Current contraception: Oral contraceptive pill, depot, implant, or implanted uterine device?
- Coital history: “How often do you have intercourse?”

Sexual History:

(Important for this station)

Ask about sexual activity. Inform the patient that you need to ask a few questions about her sexual history to make a diagnosis:

- The first question should be: “Are you sexually active?”
- If yes, then, “With whom do you live?”
- “How long have you been together?”
- “Do you practice safe sex – using condoms?”
- “When did you start to be sexually active?”
- “How many partners you had last years?”
- “What is your sexual preference?”
- “How about your partner? Does he have any symptoms? Have you ever been screened for HIV?”
- *Dyspareunia* – only ask further questions if she mentions this. Otherwise skip.
- *Abnormal vaginal bleeding* – only ask if she mentions; otherwise skip this.

Past Medical History: “Do you have any other health issues?”

Past Hospitalization: “Have you had any previous hospitalization?”

Medication History: “Are you taking any medications prescribed, over the counter, or herbal? If so, have there been any side effects?” Previous use of antibiotics for PID.

Vaccination (Gardasil).

Surgical History: Previous abdominal and gynecological surgery of relevance

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke? Or does anyone else in your home or close proximity at work smoke?”
- “Do you drink alcohol?”
- If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which ones? How long? When?” Specifically ask about IV drug use.

Family History: Presence of chronic disease

Self-Care and Living Condition: “What do you do for a living? Working status and occupation? Educational status? Who lives with you?”

Support: “Do you have good support from your family and friends?”

Functional status or severity or impact on life activities.

Wrap-Up

Question: “What will you do next?”

Answer: “I will perform a detailed physical examination”:

- Vital signs.
- General appearance.
- Chest and heart auscultation.
- Abdominal examination:
 - Palpation: Tenderness or mass.
 - Rebound tenderness.
 - Examine the liver and spleen.
 - Digital rectal examination.
- Pelvic examination:
 - Inspection of the pelvic area: Bleeding, discharge (color, quantity, and smell), warts
 - Bimanual palpation:
 - Adnexal mass.
 - Cervical excitation.
 - Observe the size and position of the uterus and cervix.
- Sterile speculum examination:
 - Note for source of discharge from the cervix or vagina?
 - Take swabs and send for culture and wet mount.
- Get urine dipstick/finger BSL/PT.

Question: “Your patient has been diagnosed with trichomoniasis. Counsel her.”

Answer: “Most likely from the history and physical examination done today, it looks like you have a vaginal infection called trichomoniasis. It is a common STI. It is caused by a parasite called *Trichomonas vaginalis*. It is transmitted through sexual contact. Many females carry the organism without signs and symptoms. The common symptoms are itching, burning of urine, watery greenish discharge with a fishy smell. Most of the infected males are asymptomatic. Diagnosis is by visualizing the organism within the vaginal secretion under the microscope. I will give you a prescription of Metronidazole (confirm drug allergy).”

“When someone is diagnosed with one STI then there are higher chances of developing other STIs. So I would recommend that we should test you for other STIs as well.”

Recommend Precautions:

- Practice good genital hygiene, wash vaginal area before and after intercourse
- Do not share towels
- Remember to shower after swimming
- Practice safe sex with condoms
- Advise to bring partner for consultation and treatment

Question: What investigations will you order?**Answer:**

- Full blood count
- Urine for microscopy culture sensitivities (MCS)
- Blood sugar, urea, and electrolytes
- USG abdomen and pelvis
- STD screening
- Urine polymerase chain reaction (PCR) for chlamydia and herpes
- High vaginal swab for wet film preparation for *Trichomonas*
- Endocervical swab for *chlamydia* and *gonorrhoea*
- Syphilis with venereal disease research laboratory (VDRL) and rapid plasma reagin (RPR)
- Pap smear
- Hepatitis B serology
- HIV
- Throat swab or anorectal swab if indicated
- Urethral swab if indicated

Checklist: Oral Contraceptive Pill (OCP) Counseling
Candidate Information:

A 23-year-old female presents to your GP clinic. She is asking for an OCP prescription. Take a brief history and counsel the patient. No examination is required.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair and start the interview.

Opening:

“Good morning/good afternoon. I am Dr..., and you are ...? How can I help you today?” Ensure confidentiality. Offer to bring in a chaperone.

Reason:

Reason why she is asking for the pill.

Take Sexual History:

- How long sexually active?
- Is she practicing safe sex? Condoms?
- How many partners?
- Any previous STDs?
- What contraception used so far?
- Is this a new partner?

Gynecology History:

- Menarche
- Regularity of periods
- Amount of bleeding (number of day and pads)
- Any excessive bleeding or clots
- Regular periods or irregular
- Pain with periods
- Last menstrual period (LMP)
- Last Pap smear

Obstetrics History:

- Pregnancy before?
- How many?
- When was the last time she was pregnant?
- Any abortion?
- Premature baby?
- Term baby?
- Live children?

Ask Specifically About Contraindications for OCP:

- History of estrogen-dependent cancer: Breast, uterus, liver
- Any abnormal vaginal bleeding
- Cardiovascular disorder
- Clots in the lungs, vessels, legs
- High blood pressure
- Migraine headache
- Smoking
- Family history of breast, uterine, and liver cancers

The rest of the history should be very brief. Do not repeat the questions already asked.

Past Medical History: “Do you have any other health issues?”**Past Hospitalization:** “Have you had any previous hospitalization?”**Medication History:**

- “Are you taking any medications prescribed, over the counter, or herbal? If so, have there been any side effects?”
- Vaccination (Gardasil).

Surgical History: Previous abdominal and gynecological surgery of relevance

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke? Or does anyone else in your home or close proximity at work smoke?”
- “Do you drink alcohol?”
- If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which ones? How long? When?” Specifically ask about IV drug use.

Family History: Presence of chronic disease

Discuss About Benefits of OCPs:

- It will eliminate the pain during periods.
- There will be less blood loss during periods.
- It will prevent bone loss (osteoporosis).
- Their failure rate is very low.
- These also help to reduce the symptoms of premenstrual syndrome (PMS).

Warnings:

- OCP and smoking will increase heart attack.
- OCP cannot not protect from STDs (need to use condoms all the time).

Packages:

- 21-day pack
- 28-day pack

Agree to prescribe OCP if no contraindication.

Ask Her if She Wants to Know About the Mechanism of Action of OCP:

Standard preparations of OCP contain estrogen and progesterone or just progesterone. These prevent ovulation by interfering with feedback of hormone signals from the brain.

Progestin-containing contraceptives may also inhibit sperm penetration through the cervix into the uterus by decreasing the amount of and increasing the viscosity of the cervical mucus [8].

Symptoms to watch and when to seek immediate medical attention while on the pill:

- Headache
- Chest pain
- Shortness of breath
- Vision changes

Drug Interaction: “If you want to take any new medication while on the pill, always let your doctor know first.”

Wrap-Up:

- *Pap smear:* Encourage to get one done if not yet done or due.
- Answer any concerns or questions.
- Ensure confidentiality.

Checklist: Hormone Replacement Therapy (HRT) Counseling

Candidate Information:

A 52-year-old female presents to your GP clinic. She is asking for a prescription for hormone replacement therapy (HRT). Take a brief history and counsel the patient. No examination is required.

Starting the Interview:

- Knock the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair and start the interview.

Opening:

Good morning/good afternoon. I am Dr..., and you are...? How can I help you today?

Ensure confidentiality. Offer to bring in a chaperone.

Reason:

Reason why she is asking for HRT? Or how she heard about HRT?

Screen for *Symptoms of Menopause:*

- Urogenital symptoms: Irregular periods, vaginal dryness, soreness, superficial dyspareunia (pain in intercourse), urinary frequency, and urgency
- Vasomotor symptoms: Sweating, hot flushes, palpitation
- Neurological symptoms: Mood swings, sleep disturbances, depression, anxiety
- Skin thinning
- Duration of symptoms
- Bone pain and easy fracture (osteoporosis)

Screened for *Risk Factors for Osteoporosis:*

- Physical inactivity or immobilization
- Chronic steroids use
- Using heparin
- Low calcium diet
- High caffeine intake

- High alcohol
- Smoking

Gynecology History:

- Early menarche
- Regularity of periods
- Last menstrual period
- Late menopause
- Last Pap smear
- Current sexual activity

Obstetrics History:

- Pregnancy before?
- How many?
- Nullipara?
- Age of first and last pregnancy?
- Any abortion?
- OCP?
- No breastfeeding.

Past Medical History: “Do you have any other health issues? Ask about stroke, hypertension and heart problems.”

Past Hospitalization: “Have you had any previous hospitalization?”

Medication History: “Are you taking any medications prescribed, over the counter, or herbal? If so, have there been any side effects?”

Surgical History: Previous abdominal and gynecological surgery of relevance

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke? Or does anyone else in your home or close proximity at work smoke?”
- “Do you drink alcohol?” If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which ones? How long? When?”

Family History: Presence of chronic disease

Ask specifically about contraindications of HRT:

- Undiagnosed vaginal bleeding
- History of breast and endometrial cancers
- Thromboembolic disease (clots in the lungs, vessels, legs)
- Acute liver disease
- Uncontrolled hypertension
- Diabetes mellitus

- Obesity
- Migraine headache

Discuss about benefits of HRT:

- It will keep your bones strong.
- It will reduce menopausal symptoms.
- It will help with vaginal dryness.
- Reduce pain during sex.

Discuss about side effects of HRT:

- Nausea and vomiting
- Fluid retention
- Weight gain
- Abnormal vaginal bleeding
- Breast tenderness
- Will increase the risk of heart attack
- Increase risk of stroke
- Increase risk of clots
- Heartburn in the first few days
- Mood swings

Advise of *lifestyle modifications*:

- Drink milk
- Regular exercise

Required *baseline investigations*:

- Full blood count
- Urinalysis
- Blood sugar, electrolytes and urea
- ECG
- Pap test
- USG for endometrial thickness and ovarian volume
- Mammography

If she is a good candidate to receive HRT, then agree to give her a prescription, but let her decide if she still wants HRT after today’s discussion.

Wrap-Up:

- Inform her that you will perform a physical examination.
- Discuss and encourage to get a Pap smear and mammogram.
- Any concerns or questions.

Checklist: Breastfeeding Counseling**Candidate Information:**

A 27-year-old female presents to your GP clinic. She is asking to get information about breastfeeding. She is 36/40

pregnant. Her pregnancy-related visits are all up to date and seem to be without any complication. Take a brief history and counsel the patient. No examination required.

Starting the Interview:

- Knock the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair and start the interview.

Opening:

“Good morning/good afternoon. I am Dr...? Are you Miss...? How can I help you today?”

Ensure confidentiality. Offer to bring in a chaperone.

Congratulate her on her pregnancy.

Encourage her that it was her good decision to come in today, and discuss about breastfeeding.

Ask her if she wants to get general information about breastfeeding or if she has some specific concerns.

Say to her, “Before we proceed further, I will like to make sure that if *you are a good candidate* for breastfeeding. I need to ask you a few questions about your current pregnancy and general health. Should we start?”

- “Have you ever been pregnant before?”
- “Have you ever breastfed before?”
- “How is your pregnancy?”
- “When was your last pregnancy follow-up?”
- “When is your due date?”

Past Medical History:

- “Do you have any other health issues?”
- “Do you have any long-term diseases?”
- Endocrinopathies.
- Psychiatric problems.
- “Have you been screened for tuberculosis (TB) or HIV?”
- “Do you plan chemotherapy or radiation therapy?”

Past Hospitalization: “Have you had any previous hospitalization?”

Medication History:

- “Are you taking any medications prescribed, over the counter, or herbal? If so, have there been any side effects?”
- Vaccination (Gardasil).

Surgical History: Previous abdominal and gynecological surgery of relevance

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke? Or does anyone else in your home or close proximity at work smoke?”
- “Do you drink alcohol?” If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which ones? How long? When?”

If she shows her concerns and asks, “Will there be **pain while breastfeeding?**”

Address this here: “There should not be pain while breastfeeding. It is a natural physiological process. However, sometimes it might cause some discomfort. Difficulties with breastfeeding are common, especially in the first week after birth. It is common for the breasts to become engorged early on. In some women, a few days after delivery, the milk supply comes on so quickly that the breasts become swollen, hard, and sore. This is called **engorgement**. There is an increased supply of blood and other fluids in the breast as well as milk. It can be easily managed at home, the lactation nurse/breastfeeding clinic will guide you.”

“If there is **pain** then we should find out the cause. Most of those causes are treatable:

- Cracks and fissures in the nipples. These are caused because of not proper care of the nipple. You have to make sure that they are moist, clean them, and do not use soap.
- Retracted nipple and inflammation of the breast (mastitis) you can still continue to breastfeed.
- Localized condition, such as abscess, we still recommend to continue to feed from the breast on the other side.”

Encourage the pregnant mother to initiate and continue the breastfeeding relationship at least through the first 12 months of age.

Compare between breast milk and formula milk:

- “The reason we recommend breastfeeding is that we cannot match it with formulas. Supplemental feedings of water or infant formula are unnecessary as breast milk provides ideal nourishment for the infant.”
- “A mother’s breast milk has the perfect combination of nutrients needed for her infant’s growth and development. The first 24 h secretion is called *colostrum*, which is a special kind of milk. It has a lot of protective immunoglobulin and essential amino acids.”
- “With time the milk becomes more mature and suits the needs of your baby. It has the right amount of carbohydrates and fat. The quality of the fat is better. It has more whey relative to casein. The iron is less than cow’s milk but is more available.”

- “There is less load on the kidneys.”
- “It develops an emotional connection between the mother and the infant, which is important to both of you.”
- “Babies who are breastfed have less chances of having allergies, less ear infections, less chance of having diarrhea, and less chance of being obese.”
- “There are some **benefits for you (the mother)**”:
 - “It helps to lessen the postpartum bleeding.”
 - “Helps you to regain the figure you had prior to pregnancy.”
 - “It is clean and readily available.”
 - “It is always at the right temperature.”
 - “It is economical and you do not have to pay for it.”
 - “It is one of the most important things you can give your child.”

At the beginning the breastfeeding is on demand.

- “With time it regulates and you may need to breastfeed about 8–12 h in 1 day.”
- At least 10 min from each breast.
- Monitor weight gain to ensure that the baby is adequately fed.
- Occasionally the baby may be jaundiced and sometimes stool may be loose.
- “If you choose to breastfeed you need to be careful whenever you take medications or alcohol.”

If she shows concern about *going back to work*:

- “You can go back to work, after the maternity leave.”
- Breastfeeding can be continued.
- “You can use special pumps to pump the milk and store it properly to be used later. Make sure you keep the pumps always clean. Don’t put it in the microwave for heating.”

What about *contraception*?:

- “Breastfeeding is not reliable method of contraception. I will prescribe you a mini pill or you can use barrier method.”

If she chooses to breastfeed:

- “I will send you to a lactation clinic, breastfeeding clinic, or lactation nurse, who will teach you and guide you about breastfeeding.”
- Provide educational materials on breastfeeding.
- Give further information about breast pumps, breast shells, or nursing supplementers.
- Help support the initiation and continuation of breastfeeding.

Checklist: Antenatal Counseling

Candidate Information:

A 26-year-old female presents to your GP clinic. She has missed her period for 4 weeks and a home pregnancy test was positive. Take a detailed history and give her necessary advice about her pregnancy. No physical examination is required.

Starting the Interview:

- Knock the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... Are you 26 years old? How can I help you today?”

(Please read your regional guidelines.)

She has missed her period for about 4 weeks, and a home urine pregnancy test was positive. Start with questions about *pregnancy*:

- “Was this a planned pregnancy?”
- “What is your feeling about it?”
- “How is your partner feeling about it?”

If she looks happy, then offer congratulations on becoming an expectant parent. Encourage her by saying, “This is a very exciting time in everyone’s life. Pregnancy is a normal event in the lifecycle and usually goes smoothly. We are here to help you and provide you with regular medical care for yourself and your baby.”

Start with symptoms related to *pregnancy*:

- “Do you have nausea or have you vomited?”
- “Do you have any breast tenderness?”
- “Do you have abdominal pain?”
- “How is your water work?”
- “Do you have regular bowel function?”
- “Do you have unusual vaginal discharge or bleeding?”
- “Do you feel tired?”

Ask about LMP and calculate the expected date of delivery. Nagele’s rule:

LMP – 3 months +7 days +1 year.

If She Shows Concern About Why She Has to Come for Regular Antenatal Checkups:

Tell her, “It is important to have regular checkups during pregnancy. There are many problems that can potentially harm you or your baby during pregnancy. Most of these problems need to be detected early and can be treated. One of these problems is pregnancy-induced hypertension, which can lead to a serious condition called preeclampsia or toxemia of pregnancy. It can cause weight gain, high blood pressure, and proteins in the urine. This will require urgent treatment.”

What other things can cause problems during pregnancy?

- Infections such as rubella, varicella, and genital herpes
- Diabetes
- High blood pressure
- Smoking (retards fetus growth)
- Alcohol – causes abnormalities, including mental retardation
- Continue with a *brief medical history*:
- “Because this is your first visit, I will need to ask you a few questions about your general health.”

Obstetrics History:

- Pregnancy before?
- How many?
- When was the last time she was pregnant?
- Any abortion?
- Premature baby?
- Term baby?
- Live children?

Gynecology History:

- Menarche
- Regular periods or irregular
- Last Pap smear

Take Sexual History (Not Usually Asked for This Station):

- How long sexually active?
- Is she practicing safe sex? Condoms?
- Any previous STDs?

Past Medical History:

- “Do you have any other health issues?”
- Hypertension, diabetes, kidney disease, heart disease, exposure to chicken pox as a child, hepatitis B virus (HBV), HIV, and blood group and Rh group.

Past Hospitalization: “Have you had any previous hospitalization?”

Medication History:

- “Are you taking any medications prescribed, over the counter, or herbal? If so, have there been any side effects?”
- Vaccination (Gardasil).

Surgical History: Previous abdominal and gynecological surgery of relevance

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke? Or does anyone else in your home or close proximity at work smoke?”
- “Do you drink alcohol?” If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?” If yes, “Which ones? How long? When?” Specifically ask about IV drug use.

Family History: Presence of chronic disease. Family history of complicated pregnancies, abortions, genetic, or congenital abnormalities.

Pregnancy Plan:

- Complete the pregnancy-related health chart (electronic or paper).
- Document today’s visit.

Visits:

“I need to see you on scheduled visits every 4 weeks till the 28th week, then every 2 weeks till the 36th week and then every week thereafter until delivery.”

“Today we will do a physical examination including **pelvic examination.**”

“We need to order some routine **lab tests** to identify any current issue that needs immediate attention and for a healthy outcome of your pregnancy”:

- *Full blood count* to exclude anemia.
- *Iron* levels.
- *Lytes.*
- *Urea and creatinine.*
- *VDRL (syphilis).*
- *Blood group* – “If you are Rh-ve then we need to give you anti-D immunoglobulin prophylactically to prevent problems in future pregnancy. We will also need to repeat the antibody test in 26 weeks.”
- *Rubella antibodies* status if you are not immunized to rubella, I recommend you receive rubella vaccination after delivery (contraindication during the pregnancy).
- We will also do *Hepatitis B and C and HIV screening.*

Table 11.6 Risk of child born with Down syndrome based on mother's age [9]

Mother's age	Frequency of Down syndrome per births
20	1/2000
21	1/1700
22	1/1500
23	1/1400
24	1/1300
25	1/1200
26	1/1100
27	1/1050
28	1/1000
29	1/950
30	1/900
31	1/800
32	1/720
33	1/600
34	1/450
35	1/350
36	1/300
37	1/250
38	1/200
39	1/150
40	1/100
41	1/80
42	1/70
43	1/50
44	1/40
45	1/30
46	1/25
47	1/20
48	1/15
49	1/10

- *Vitamin D level.*
- *Midstream urine* to check urinary tract infection. Sometimes it can be asymptomatic but needs to be treated in pregnancy; 30% of asymptomatic UTI can become symptomatic.
- *Down syndrome screening test:* See Table 11.6 for the risk of Down syndrome [9].
 - “We recommend Integrated Prenatal Screening (IPS), which is a series of tests that are done during pregnancy. These tests tell you what the chances are that the baby will have a birth defect such as Down syndrome or spina bifida. Would you like to do it?”
 - First trimester (IPS I 11–14 weeks): PAPP-A, beta human chorionic gonadotropin (hCG), ultrasound (USG for nuchal translucency at 12 weeks)
 - Second trimester Quad Test (15–18 weeks): Beta hCG, alpha-fetoprotein (AFP), estradiol, inhibin A

“Then if required the results can be confirmed with amniocentesis”:

- *Amniocentesis:* USG-guided transabdominal extraction of amniotic fluid for identification of genetic anomalies at 15–16 weeks. Poses a 0.5% risk of spontaneous abortion and risk of fetal limb injury.
- *Anatomy USG* – at 20 weeks mid-pregnancy ultrasound to make sure baby develops properly and to look for position of the placenta.
- At 28 weeks we screen for *gestational diabetes:* Sweet drink test/glucose challenge test.
- At 36 weeks you will need to be advised to do a low vaginal swab to check for a bacterial infection called *Group B streptococcus (GBS)*. If found, you will be given antibiotics prophylactically during delivery.

“You need to eat a well-balanced diet. Your diet is important; it should include foods rich in protein, dairy, starch, and plenty of fruits and vegetables. Best avoid a lot of sugary, salty, and fatty foods. Food such as uncooked meat, egg, soft cheese, shellfish, sugar, refined carbohydrates (sweets, cakes, biscuits, soft drinks), polyunsaturated margarine, butter, oil, and cream should be avoided. I will give you printed guidelines about your diet in pregnancy.”

“You need to take **follic acid** 0.4–5 mg for the first 3 months of pregnancy because it decreases the occurrence of neural tube defects.”

“Moderate **exercise** is good for you because it improves cardiovascular and muscle strength. The best exercises are low-impact aerobics, swimming, walking, and yoga. No contact sports because of the risk of trauma.”

“**Weight gain** should be around 11–16 kg during pregnancy. But it all depends on your pre-pregnancy state.”

“Avoid smoking, alcohol, and drugs.”

If the patient asks, “What about my **sexual life**?” Tell her, “A sexual life is acceptable and normal during pregnancy. Just follow your normal desires.”

Breastfeeding is highly recommended. Contact a local lactation or breastfeeding mothers' group guidance.

Traveling: Avoid standing in trains. Avoid international air travel after 28 weeks.

Immediate seek *medical attention* if:

- Unusual abdominal pain or cramps.
- Bleeding or large amount of fluid loss from the vagina before the baby is due.
- If the baby is less active than usual.

Wrap-Up:

- Ask if she has any questions or concerns.
- Offer brochures; connect to support groups and classes for pregnant women.

History and Counseling: First Trimester Vaginal Bleeding

Candidate Information:

A 28-year-old female, known to be 10-week pregnant, presents to the emergency department with lower abdominal cramps and pain with vaginal bleeding. Take a detailed history. No physical examination is required.

Differentials:

Abdominal Pain:

- Acute appendicitis
- Pelvic inflammatory disease
- Ruptured ovarian cyst
- Torsion of ovary
- Urinary tract infection

Vaginal Bleeding:

- Some amount of light bleeding or spotting during pregnancy occurs in about 20% of pregnancies, and most of these women go on to have healthy pregnancies.
- Spontaneous abortion (Table 11.7) [10].
- Complete abortion, incomplete abortion, inevitable abortion, or septic abortion.
- Threatened miscarriage.
- Ectopic pregnancy (Table 11.8) [11].
- Subchorionic hemorrhage.
- Vanishing twin.
- Molar pregnancy.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... Are you 28 years old? How can I help you today?”

Chief Complaint:

Abdominal Pain:

- Onset
- Course
- Duration
- Nature

Table 11.7 Risk factors for spontaneous abortion [10]

Advanced maternal age
Alcohol, tobacco, illicit drug use
Chronic maternal diseases: thyroid disease, diabetes, autoimmune diseases (antiphospholipid syndrome, lupus)
Exposure to radiation
Exposure to toxins – e.g., arsenic, lead, ethylene glycol, carbon disulfide, polyurethane, heavy metals, organic solvents
Genetic aneuploidy
History of previous miscarriage
Intrauterine device
Maternal infections – e.g., chlamydia, gonorrhea, herpes, listeria, mycoplasma, syphilis, toxoplasmosis, etc.
Medications
Multiple previous elective abortions
Uterine – congenital anomalies

Table 11.8 Risk factors for ectopic pregnancy [11]

History of genital infection – e.g., pelvic inflammatory disease, chlamydia, or gonorrhea
History of in utero exposure to diethylstilbestrol
In vitro fertilization
Infertility
Intrauterine device
Previous ectopic pregnancy
Tobacco use
Tubal surgery – tubal ligation or re-anastomosis of tubes

- Intensity (1–10)
- Location
- Progression
- Radiation
- Timing
 - Abdominal cramps
 - Uterine contractions
 - Signs of peritonitis

Estimate Blood Loss:

- How much?
- Color?
- Number of pads soaked?
- Any clots?
- Presence of any tissue?
- Heavier than normal menstrual period?

Associated Symptoms:

- Fever, chills, and rigors (sepsis)
- Presyncope, shortness of breath, palpitation
- Syncope, feeling dizzy while standing (hemorrhagic shock)
- Abdominal size too big for gestational age (molar pregnancy)

- Other sites of bleeding (bleeding disorder)
- Urinary symptoms
- Bowel symptoms
- Vaginal intercourse or penetration (local trauma)

Obstetrics History:

- LMP?
- Was she under an obstetrician so far?
- Pregnancy before?
- How many?
- Any abortion?
- Premature baby?
- Term baby?
- Live children?
- Route of delivery (vaginal or cesarean delivery)

Past Medical History:

“Do you have any other health issues?”

- Ectopic pregnancy?
- PID?
- Intrauterine device?
- Fertility treatment?
- Hypertension?
- Diabetes?
- Kidney disease?
- Heart disease?
- Bleeding disorder?
- Ovarian cyst?
- Endometriosis?

Past Hospitalization: “Have you had any previous hospitalization?”

Medication History:

- “Are you taking any medications prescribed, over the counter, or herbal? If so, have there been any side effects?”
- Aspirin or blood thinners?

Surgical History: Previous abdominal and gynecological surgery of relevance

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke? Or does anyone else in your home or close proximity at work smoke?”
- “Do you drink alcohol?”
- If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?”
- If yes, “Which ones? How long? When?”
- Specifically ask about IV drug use.

Family History:

- Presence of chronic disease
- Family history of complicated pregnancies, abortions, and genetic and congenital abnormalities

Management Plan

Question: “What will you do next?”

Answer: “I will do a physical examination with pelvic and speculum examination”:

- General appearance
- Vital signs (postural drop)
- *Abdominal examination:* Distention, tenderness especially on the right iliac fossa (RIF) and left iliac fossa (LIF). Any mass or hernia.
- *Pelvic examination:* Amount of bleeding, color of blood, clots, discharge or signs of trauma
- *Speculum examination*
 - Check *os* – whether open or closed
 - Product of conception
 - Any mass or lesion over the cervix
 - Bimanual examination checking for size, shape, and position of the uterus, adnexal tenderness or mass, and cervical excitation.

Order: Urine dipstick and pregnancy test, hCG, blood sugar

Differential Diagnosis

- Ectopic pregnancy: per vaginal (PV) bleeding + b-hCG (positive) + *os* closed + empty uterus
- Threatened miscarriage: PV bleeding + b-hCG (positive) + *os* closed + intrauterine pregnancy
- Incomplete abortion: b-hCG (positive) + *os* open + intrauterine pregnancy + POC on examination

Question: “How will you counsel for threatened abortion?”

Answer: If the most likely diagnosis is threatened abortion, then counsel the patient as: “Your pregnancy test is positive and you are having bleeding. We need to admit you to the hospital to do some further blood tests including blood group. We also need to get an ultrasound of the pelvis to look for the presence of a fetal sac within the uterus and to check for cardiac activity. I will consult the obstetrician and, depending upon the results, they might advise you to take rest. Sometimes, because of the attachment of the placenta to the womb, some bleeding can happen. In a majority of cases (90–95%), this bleeding is quite harmless. It will stop on its own within a few days. Your pregnancy will continue without any problems, but you need to avoid stress, anxiety, and rigorous physical activity for the rest of your pregnancy. We do not need to give you any medications as it has not shown to alter the outcome in any way. If the bleeding continues, we

will repeat serial ultrasound to check for fetal viability, but you will need to stay in the hospital until the bleeding stops.”

Question: How will you counsel for incomplete abortion?

Answer:

- Refer to obstetrics and gynecology unit.
- Patient needs to be admitted under obstetrics.
- Start IV fluids.
- Take blood for routine tests and grouping and cross matching
- Inform the patient: “Based on the history and examination, I am sorry to say that this is a miscarriage. Most of the miscarriages occur without any obvious reason. Most likely in the first 14 weeks, the reason of miscarriage is due to chromosomal abnormalities. I have admitted you, informed the registrar, and sent all the bloods for necessary investigations. They will probably take you to the theater and do a procedure called ‘curettage.’ They will empty whatever is left in the uterus to prevent any complications. We will wait for your blood group report to come and if it is negative, we will give you an injection called anti-D.”
- Show empathy. “I know it is a very hard time for you. Do you want me to call anyone for you?”

History and Counseling: Third Trimester Vaginal Bleeding

Candidate Information:

A 28-year-old female, known to be 36-week pregnant, presents to the emergency department with painless bleeding. Take a detailed history. No physical examination is required. Make a management plan for the patient.

Differentials:

- Placenta previa
- Vasa previa
- Placenta abruption
- Trauma or lesion of the external genitalia
- Cervical polyp
- Cervical malignancy

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... Are you Miss/Mrs..., and are you 28 years old? How can I help you today?”

Chief Complaint:

- Estimate blood loss:
 - How much? (Vasa previa: If it is fetal blood then it can be catastrophic.)
 - Color?
 - Number of pads soaked?
 - Any clots?
 - Presence of any tissue?
 - Heavier than normal menstrual period?
- “Have you had previous bleeding that stopped spontaneously with no abdominal pain or tenderness?” (Placenta previa)
- “Have you had abdominal pain and tenderness along with dark blood?” (Placenta abruption)

Associated Symptoms:

- Abdominal cramps or uterine contractions (frequency and length) (labor)?
- Broken water bag? “Did you have water gush” (premature rupture of membranes)?
- Change in fetal movement?
- Hand or face swelling?
- Headache?
- Fever, chills, and rigors (sepsis)?
- Presyncope, shortness of breath, palpitation?
- Syncope, feeling dizzy while standing (hemorrhagic shock)?
- Abdominal size too big for gestational age (molar pregnancy)?
- Other sites of bleeding (bleeding disorder)?
- Vaginal intercourse or penetration (local trauma)?
- Is there anything that slows the bleeding?
- Does anything make the bleeding worse?

Obstetrics History:

- LMP?
- Was she under an obstetrician so far?
- “Did you have an ultrasound examination during this pregnancy?”
- Pregnancy before?
- How many?
- Any abortion?
- Premature baby?
- Term baby?
- Live children?
- Route of delivery (vaginal or cesarean section)?
- Any complication with previous pregnancies?

Past Medical History:

- “Do you have any other health issues?”
- “What is your blood group?”
- Hypertension?
- Liver disease?
- Urogenital malignancy?
- Abnormal Pap smear?
- Bleeding disorder?

Past Hospitalization: “Have you had any previous hospitalization?”

Medication History:

- “Are you taking any medications prescribed, over the counter, or herbal? If so, have there been any side effects?”
- Aspirin or blood thinners.

Surgical History: Previous abdominal and gynecological surgery of relevance

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke?”
- “Do you drink alcohol?”
- If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?”
- If yes, “Which ones? How long? When?”
- Specifically ask about IV drug use.

Family History:

- Presence of chronic disease
- Family history of complicated pregnancies, abortions, and genetic and congenital abnormalities

Management Plan

Question: “What will you do next?”

Answer: “I will do a physical examination with pelvic and speculum examination”:

- General appearance.
- Vital signs (postural drop).
- Check capillary refill.
- *Obstetric vitals:* Fetal heart rate and its trends (beat-to-beat variability and accelerations).
- Listen to the lungs and heart.
- *Abdominal examination:* Distention, tenderness especially on the RIF and LIF. Any mass or hernia. At 36 weeks the uterus occupies nearly all of the palpable abdomen. In placental abruption the uterus is exquisitely tender.

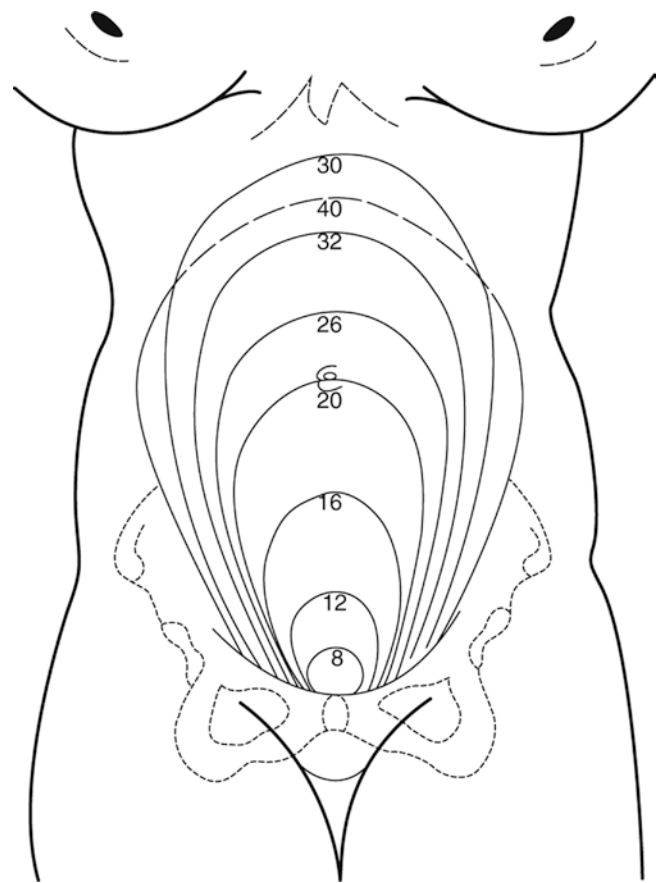


Fig. 11.3 The height of the fundus at comparable gestational dates varies greatly from patient to patient. Those shown are the most common. A convenient rule of thumb is that at 5-month gestation, the fundus is usually at or slightly above the umbilicus. (Reprinted with permission from Augustin G. Acute appendicitis. In: Acute Abdomen During Pregnancy. Cham, Switzerland: Springer. 2014;3–43)

- *Pelvic examination:* Measure the fundal height from the pubic symphysis (Fig. 11.3).
- Use the Leopold maneuvers to determine the position, presentation, and lie of infant (Fig. 11.4)[12, 13].
- In placenta previa, the presenting part is high riding and not engaged in the pelvis.
- *Speculum examination:* Check *os* whether open or closed, amount of bleeding or any discharge, color of blood, clots, or signs of trauma. Observe for any lesions, product of conception, or any mass. Discuss with obstetrics before doing a vaginal examination because this may cause severe bleeding if placenta previa or vasa previa is present.

Question: “What will be your management plan for placenta previa?”

Answer:

- Total placenta previa: Completely obstructs the cervical *os* (Fig. 11.5 stage IV) [14]

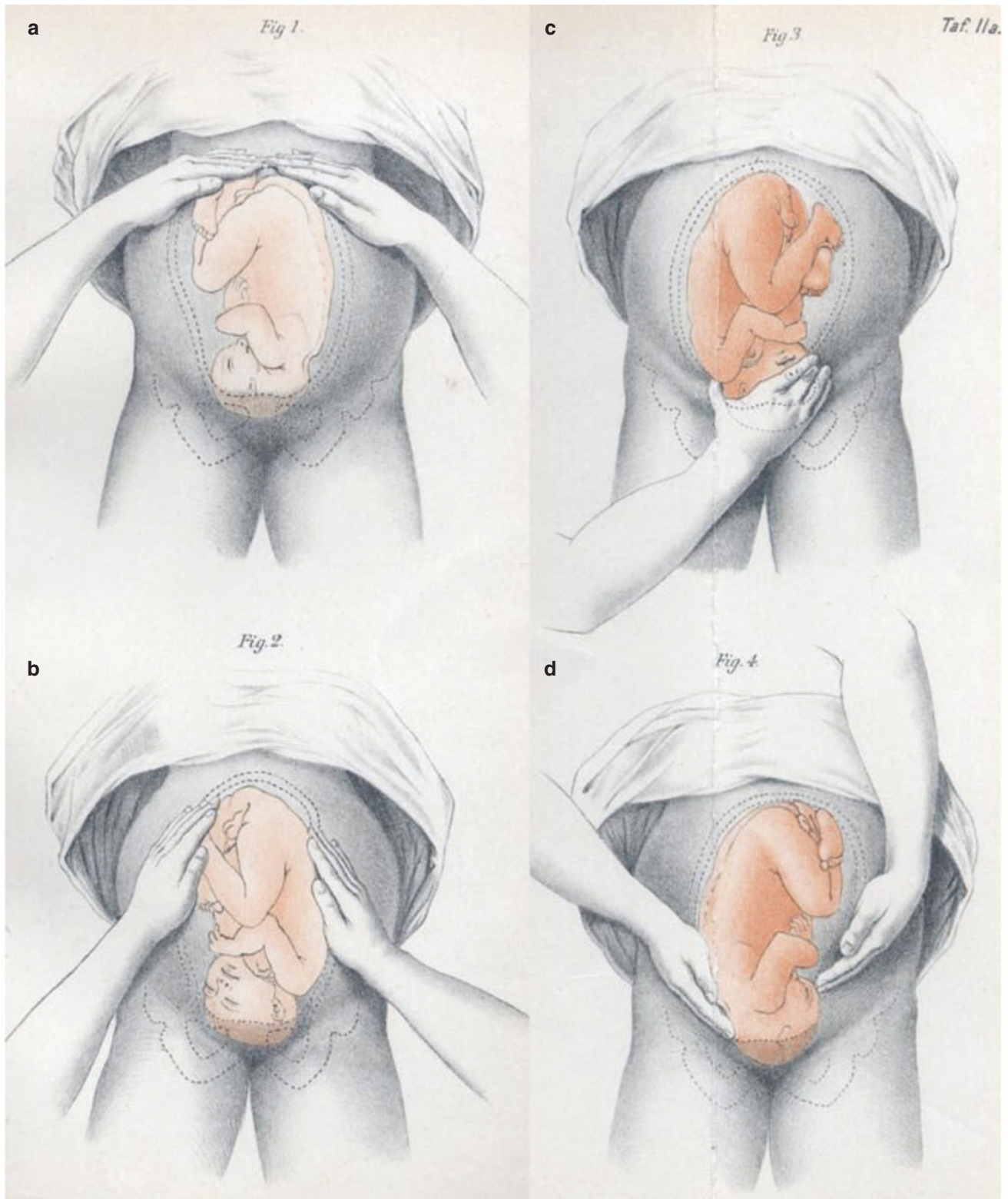


Fig. 11.4 Leopold maneuvers. (a) First maneuver: fundal grip. Palpate the upper abdomen with both hands to determine the size, consistency, shape, and mobility of the fetus. (b) Second maneuver: umbilical grip. Palpate to determine the location of the fetal back. (c) Third maneuver: first pelvic grip. Determine the part of the fetus at the inlet. (d) Fourth maneuver: second pelvic grip. Determine the location of the fetus' brow

and degree of fetal extension into the pelvis. (Reprinted with permission from Ludwig H. Christian Gerhard Leopold (1846–1911): Nicht nur der Lehrmeister der Geburtshilfe. In: *Der Gynäkologe*. 2004;37(10): 961. (Illustrations originally from: Leopold CG, Spörlin N. Die Leitung der regelmäßigen Geburt nur durch äußere Untersuchung. *Arch Gynäkol*. 1894; 45: 337–368))

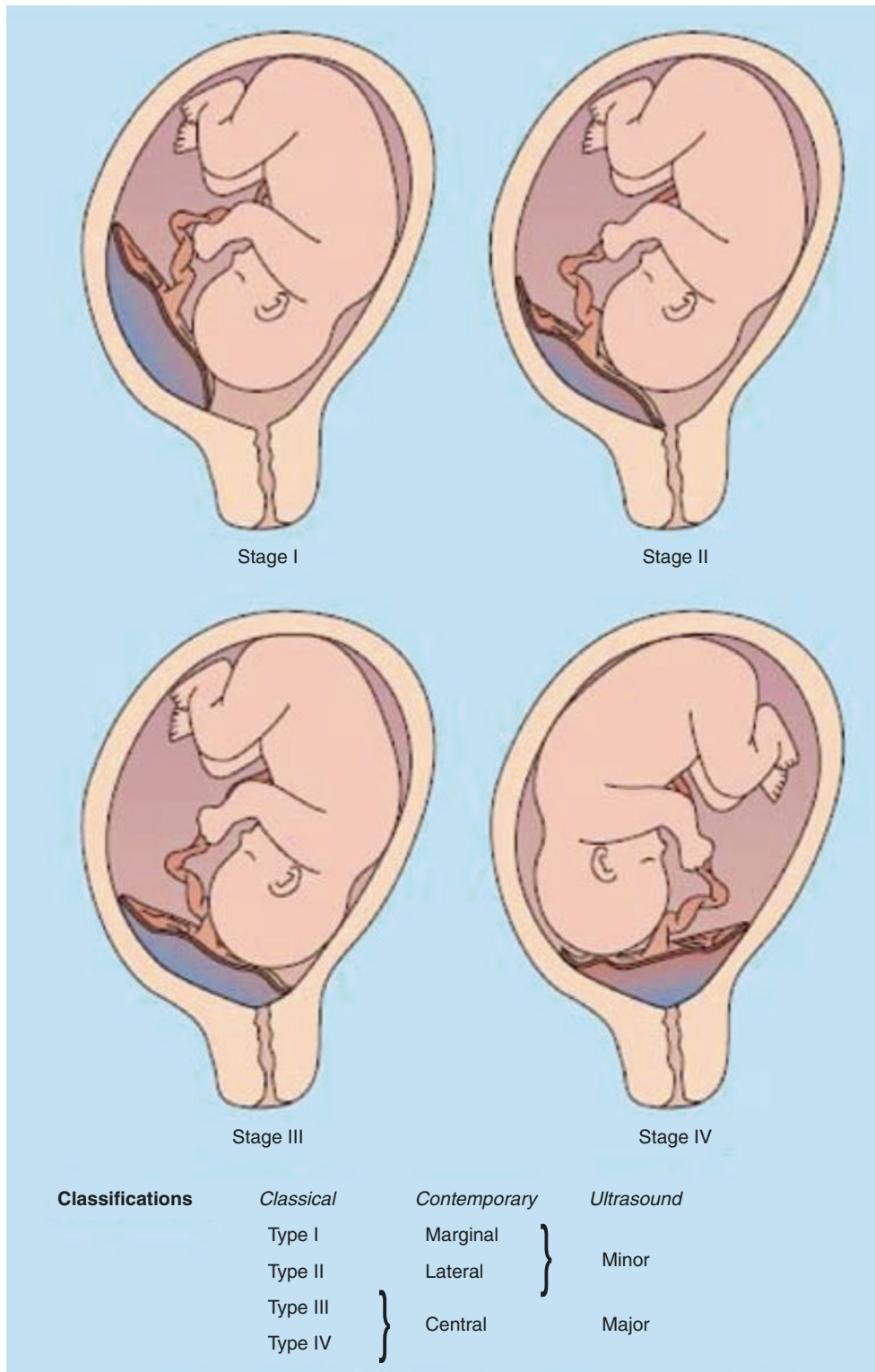


Fig. 11.5 Placenta previa. (Reprinted with permission from Calleja-Agius et al. [14])

- Partial placenta previa: Partially obstructing the cervical os (Fig. 11.5 stage III) [14]
- Marginal: Just at the beginning of the os (Fig. 11.5 stage II) [14]
- Low-lying placenta (Fig. 11.5 stage I) [14]

Risk Factors:

- Smoking
- Previous placenta previa
- Previous cesarean section
- Multiparity
- Advanced maternal age

Management:

- IV lines.
- Admit to the hospital.
- Take blood for routine, blood grouping and cross matching, and coagulation profile.
- Urgent obstetrics and gynecology consult.
- Cardiotocography (CTG) monitoring and check the status of the baby.
- Arrange an urgent USG to see the position of the placenta.
- Reassure the patient.

Counsel the Patient About Placenta Previa:

According to the Victoria State Government's Better Health Channel, "During pregnancy, the placenta provides the growing baby with oxygen and nutrients from the mother's bloodstream. Placenta previa means the placenta has implanted at the bottom of the uterus, covering the cervix. When a baby is ready to be born, the cervix (neck of the womb) dilates (opens) to allow the baby to move out of the uterus and into the vagina. When a woman has placenta previa (the placenta has implanted at the bottom of the uterus, over the cervix or close by), the baby can't be born vaginally. 'Partial placenta previa' means the cervix is partly blocked, while 'complete placenta previa' means the entire cervix is obstructed" [15].

Possible Complications:

Placenta previa is an obstetric complication that occurs in the second half of pregnancy. It can cause serious complications in both the mother and fetus [15]:

- Major hemorrhage for the mother
- Shock from blood loss
- Fetal distress from lack of oxygen
- Premature labor or delivery
- Health risks to the baby, if born prematurely
- Emergency cesarean delivery
- Hysterectomy, if the placenta fails to come away from the uterine lining
- Fetal blood loss
- Death

Further Management:

- Total or partial placenta previa: Admit under obstetrics and stay until delivery and most cases deliver via cesarean section.
- Marginal or low-lying placenta previa, with minor bleeding and bleeding has stopped: Discharge home but needs to stay close to the hospital. Specialist needs to decide whether to book a cesarean delivery.
- Placenta previa with severe bleeding and fetal compromise: Immediate cesarean delivery.

Question: "How will you counsel patient on placenta abruption?" (Patient is in emergency department and you are an emergency physician.)

Answer: "I will inform the patient about placenta abruption and immediate management plan":

"Unfortunately, it looks like you came in with a serious condition called placental abruption. In placenta abruption, a part of the placenta starts detaching from the wall of the womb. The exact cause is unknown. There are certain known risk factors such as trauma, smoking, high blood pressure in the mom, diabetes, previous history of placental abruption, high parity, poor nutrition, and sometimes it is unexplained.

This condition can be quite serious as there is a high risk of fetal demise, preterm rupture of membranes, maternal shock, acute renal failure, and sometimes can cause mother or fetal death."

"I will consult an Obstetrician to come and examine you. We will put IV lines and take blood for cross matching. If required, we may need to transfuse you. Will you be alright with that? I will discuss with you a blood transfusion consent form soon. We need to prepare for possible premature delivery. I will inform the theater to prepare for emergency cesarean section. We will give you steroids to help with the maturation of baby's lungs. If the baby is non-viable, if you are stable, we will induce and deliver the baby. But if not, emergency cesarean section is performed."

Ask if she wants to inform someone. Ask if she has any questions or concerns.

History and Counseling: Dysfunctional Uterine Bleeding

Candidate Information:

A 45-year-old female presents with painless heavy menstrual bleeding for the last 5 months. She has four children. Take a detailed history. No physical examination is required.

Differentials:

Dysfunctional uterine bleeding (DUB) is defined as excessively heavy, prolonged, or frequent bleeding of uterine origin that is not due to pregnancy or any recognizable pelvic or

systemic disease. It is, therefore, a diagnosis of exclusion. The mechanisms for DUB are largely unknown.

Uterine Causes:

- Endometrial polyps
- Hyperplasia
- Endometrial carcinoma (may also cause intermenstrual bleeding)
- Uterine fibroids
- Adenomyosis
- Endometriosis
- Intrauterine device (IUD)
- Miscarriage and ectopic pregnancy

Systemic Causes:

- Hypothyroidism
- Coagulopathy
- Drugs (anticoagulants, estrogen-containing preparations)
- Trauma

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... Are you 45 years old? How can I help you today?”

Chief Complaint:

Estimate Blood Loss:

- Since when?
- How much?
- Color?
- Number of pads soaked?
- Any clots?
- Presence of any tissue?
- Heavier than normal menstrual period?

Gynecology History:

- Menarche
- Regularity of periods
- Last menstrual period
- Last Pap smear
- Current sexual activity
- Any spotting or bleeding in between periods
- Any pain during periods

Associated Symptoms:

- The presence of signs of anemia or iron deficiency (pallor, fatigue, shortness of breath).
- “Do you have symptoms such as nausea, vomiting, headache, irritability, swelling of your body before periods?”
- Pre-syncope, shortness of breath, palpitation.
- Syncope, feeling dizzy while standing (hemorrhagic shock).
- Other sites of bleeding (bleeding disorder).
- Urinary symptoms.
- Bowel symptoms.
- Vaginal intercourse or penetration (local trauma).

Sexual History:

- “Are you sexually active?”
- “Are you in a stable relationship?”
- “May I ask, do you have any problems related to intercourse such as pain or bleeding?”
- “What contraception do you use?”
- “What type and since when?”
- “Have you used an intrauterine contraceptive device (IUCD)?”
- “Have you ever been diagnosed with STIs or other pelvic infections?”

Obstetrics History:

- LMP
- Number of pregnancies
- Any abortion
- Premature baby
- Term baby
- Live children
- Route of delivery (vaginal or cesarean delivery)

Past Medical History:

- “Do you have any other health issues?”
- Bleeding disorder?
- PID?
- Intrauterine device?
- Hypothyroidism?
- Diabetes?
- Kidney disease?
- Endometriosis?

Past Hospitalization: “Have you had any previous hospitalization?”

Medication History:

- “Are you taking any medications prescribed, over the counter, or herbal? If so, have there been any side effects?”
- Aspirin or blood thinners.

Surgical History: Previous abdominal and gynecological surgery of relevance

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke? Or does anyone else in your home or close proximity at work smoke?”
- “Do you drink alcohol?”
- If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?”
- If yes, “Which ones? How long? When?”
- Specifically ask about IV drug use.

Family History: Presence of chronic disease

Wrap-Up:

Question: “What will you do next?”

Answer: “I will do a physical examination with pelvic and speculum examination”:

- General appearance: Pallor, jaundice, dehydration, BMI.
- Skin: Bruises or purpura.
- Vital signs (postural drop).
- Perform a thyroid examination.
- Abdominal examination: Distention, tenderness especially on the RIF and LIF. Any mass or hernia.
- Pelvic examination: Amount of bleeding, color of blood, clots, discharge, or signs of trauma?
- Speculum examination: Look for any signs of trauma, ulceration, lesions, and polyps. Take swabs from the vagina and cervix. Perform a bimanual examination checking for size, shape, and position of the uterus, adnexal tenderness or mass, and cervical excitation.

Question: “What investigations will you order?”

Answer:

- Full blood examination
- Serum ferritin
- Urea, creatinine, and electrolytes
- Coagulation profile such as von Willebrand disease
- Blood grouping
- Liver function test
- Thyroid function tests
- b-hCG
- Pap smear
- Transvaginal ultrasound
- Referral to gynecology and obstetrics

Counseling:

If DUB is confirmed, then I will counsel my patient: “From your history, physical examination and other investigations it

looks like that you have a condition called DUB. In DUB the patient has bleeding without an apparent cause in spite of all the investigations. It is a very common condition with an unknown cause. It is suggested that disturbances of the normal brain axis leads to hormonal changes or there is a problem within the lining of the uterus (there is reduced vasoconstriction of endometrial vessels and increased prostaglandin E1 and prostacyclin). It is a diagnosis of exclusion. We offer a step-ladder approach. We will start with medical management.”

Medical Treatment:

- Give iron supplements
- Nonsteroidal anti-inflammatory drugs (NSAIDs) or anti-prostaglandins reduce prostaglandin (mefenamic acid)
- Tranexamic acid
- Progestogen-releasing intrauterine device
- Combined oral contraceptive pill
- Progestogens
- Other therapies
- Danazol
- Gestrinone
- Gonadotropin-releasing hormone (GnRH) agonists

Surgical Treatment:

- Surgical treatment is reserved for resistant cases.
- Dilation and curettage with hysteroscopy are a diagnostic investigation, not a treatment for DUB.
- Endometrial ablation or resection is a procedure to destroy the endometrium by either a form of diathermy or removal. First-generation techniques (including laser ablation, roller ball diathermy, or resection) and second-generation techniques including microwave ablation are all very effective when performed.

History and Counseling: Bleeding After Menopause

Candidate Information:

A 55-year-old female presents in the GP practice with vaginal bleeding. It started as brownish staining of her underpants a week ago, and she came to get a checkup. She has had painless heavy menstrual bleeding for the last 5 months. She has four children. Take a detailed history. No physical examination is required.

Differentials:

Bleeding After Menopause:

In about 90% of cases, the cause of bleeding after menopause remains unknown. According to The Royal Women’s Hospital, Victoria, Australia, “Most of the time, postmenopausal bleeding is caused by:

- Inflammation and thinning of the lining of your vagina (called atrophic vaginitis)
- Thinning of the lining of your uterus
- Growths in the cervix or uterus (called polyps) which are usually not cancerous
- Thickened endometrium (called endometrial hyperplasia) often because of hormone replacement therapy (HRT)
- Abnormalities in the cervix or uterus

“These are generally not serious problems and can be cured relatively easily.

However, about 10% of the time, post-menopausal bleeding is linked to cancer of the cervix or uterus and so it is very important to have it investigated.” [16]

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... Are you 55 years old? How can I help you today?”

Chief Complaint:

Estimate Blood Loss:

- Since when?
- How much?
- Color?
- Number of pads soaked?
- Any clots
- Presence of any tissue?

Gynecology History:

- Menarche? What age?
- Last menstrual period?
- Vaginal discharge?
- Last Pap smear?
- Current sexual activity?
- Vaginal intercourse or penetration (local trauma)?
- Intercourse at early age?
- HPV?
- Multiple partners?

Associated Symptoms:

- The presence of signs of anemia or iron deficiency (pallor, fatigue, shortness of breath)

- Symptoms of menopause: Hot flushes, mood swings, vaginal dryness.
- Easy bruising.
- Other sites of bleeding (bleeding disorder).
- Pelvic pain.
- Presyncope, shortness of breath, palpitation.
- Urinary symptoms.
- Bowel symptoms.
- “May I ask, do you have any problems related to intercourse such as pain or bleeding?”
- “Have you ever been diagnosed with STIs or other pelvic infections?”
- Vaginal discharge?
- Fever, chills, or weight loss?

Obstetrics History:

- Number of pregnancies?
- Any abortion?
- Live children?
- Route of delivery (vaginal or cesarean delivery)

Past Medical History:

- “Do you have any other health issues?”
- Bleeding disorder?
- PID?
- Hypothyroidism?
- Diabetes?
- Kidney disease?
- Endometriosis?
- Pelvic instrumentation?
- History of cervix, uterine, or vaginal cancer?

Past Hospitalization: “Have you had any previous hospitalization?”

Medication History:

- “Are you taking any medications prescribed, over the counter, or herbal? If so, have there been any side effects?”
- Aspirin or blood thinners?

Surgical History: Previous abdominal and gynecological surgery of relevance

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke? Or does anyone else in your home or close proximity at work smoke?”
- “Do you drink alcohol?”
- If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?”

Family History:

- Presence of chronic disease?
- Family history of cervical/uterine or vaginal cancer?
- Family history of premature menopause?

Wrap-Up:**Question: “What will you do next?”**

Answer: “I will do a physical examination with pelvic and speculum examination”:

- General appearance: Pallor, jaundice, dehydration, BMI
- Skin: Bruises or purpura
- Vital signs (postural drop)
- Perform a thyroid examination
- Abdominal examination: Distention, tenderness especially on the RIF and LIF. Any mass or hernia.
- Pelvic examination: Amount of bleeding, color of blood, clots, discharge, or signs of trauma?
- Speculum examination: Look for any signs of trauma, ulceration, polyps, discharge, lesions, warts, scratch, and atrophic change. Take swabs from the vagina and cervix. Perform a bimanual examination checking for size, shape, and position of the uterus, adnexal tenderness or mass, and cervical excitation.

Question: “What investigations will you order?”**Answer:**

- Full blood examination
- Urea, creatinine, and electrolytes
- Coagulation profile
- Liver function test
- Thyroid function tests
- Pap smear
- USG pelvis and transvaginal ultrasound

Book a follow-up visit.

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Common Pediatric Symptoms for the Objective Structured Clinical Examination

Common symptoms in pediatrics:

- Fevers
- Funny turns
- Cough
- Dehydration
- Irritable
- Rash
- Crying baby
- Vomiting and diarrhea
- Painful ear
- Painful abdomen
- Child “not their usual self”
- Injuries/head injuries
- Jaundice
- Anaphylaxis
- Not gaining weight/failure to thrive
- Behavioral issues
- Not meeting developmental milestones

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History Overview: Pediatrics

In the objective structured clinical examinations (OSCE), you are likely to get at least one and often two stations, on a pediatric case scenario. This will include a detailed history, possibly a discussion of an examination (the need to examine a child in the OSCE setting is unlikely), and likely to end in counseling and/or discussing a management plan with the child’s parents. Pediatric cases can be highly varied, and this chapter will aim to cover the most common topics.

You will most likely be taking a history from the child’s parents (role player) and may need to discuss a physical examination with the examiner in the room. In most cases, the station will be approximately 10 minutes; one should try to keep the history and examination discussion to 5 minutes, leaving 5 minutes to counsel and discuss a plan with the parents.

This chapter outlines common pediatric-related topics important for an OSCE. There is an overview of the history taking required for pediatric stations (Table 12.1), followed by several common and important pediatric presentations with detailed histories and counseling discussions. In pediatric cases, it is important to develop skills in communication to be able to counsel and reassure the child’s parents.

Detailed History: Pediatrics

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your identification (ID) badge.
- Sit on the chair or stand on the right side and start the interview.

Table 12.1 Quick review of history taking for pediatric stations

Introduction
(Identify the historian: parent or relative?)
Child's name and age
Confirm the historian's relationship to the child
Chief complaint
Presenting complaint/parent's concern
History of present illness
When was the child (last well)?
What happened and when?
Analysis of chief complaint
Onset/course/duration
Predisposing factors
Aggravating and relieving factors
Red flags/risk factors
Constitutional symptoms
Rule out differential diagnosis
Associated symptoms: nausea, vomiting, diarrhea, constipation, smell to urine, jaundice, sweating, fever, weight loss/gain
Review of systems
Respiratory
Genitourinary
Cardiovascular
Neurology
Gastroenterology
Past medical and surgical history
Baby health visits
Medical illnesses
Any previous or recent surgery
Hospitalization history or emergency visits, accidents, frequent trauma
Medications/allergic history/triggers
If a child
Birth history
Immunization
Nutrition
Development
Emergency room visits
Home situation
With whom does the child live?
If an adolescent (HEEADS)
Home
Education
Employment
Activities
Drugs
Sexual activity
Family history
Family history of same symptoms; or any other conditions
Social history
Ask for parent's socioeconomic status, marriage, job, ethnic background
Wrap-up
Describe the diagnosis
Management plan
Possible medical treatment
Duration of treatment and side effects

Table 12.1 (continued)

Red flags
Laboratory tests
Further information: websites/brochures/support groups or societies/toll-free numbers
Counseling, safety netting, and follow-up

Introduction:

- Identify the historian: parent or relative?
- Child's name and age.

Opening:

"Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of...? And he/she is... years old?"

Chief Complaint:

Chief complaint or the reason the patient is visiting the clinic. "What has brought your child/the child in today?" or "Tell me about their symptoms or your main concern."

Allow the historian to answer, while trying not to interrupt or direct the conversation. Try to facilitate the historian to expand on the presenting complaint if required. For example: "So tell me more about that."

During a pediatric history and examination, remember to remain vigilant to discrepancies between histories as well as between a history and an examination. These discrepancies are red flags for child safety concerns and should always be kept in mind.

History of Presenting Illness:

- When was the child (last well)?
- What happened and when?
- Analysis of the chief complaint:
 - Onset.
 - Course.
 - Duration.
 - Predisposing factors.
 - Aggravating and relieving factors.
 - Red flags/risk factors.
 - Impact on body.
 - Constitutional symptoms.
 - Rule out differential diagnosis.
 - Management/treatment so far.
- **Associated symptoms:** nausea, vomiting, diarrhea, constipation, urinary, jaundice, sweating, fever, weight loss/gain.

Review of Systems:

- Respiratory
- Genitourinary (GU)
- Cardiovascular

- Neurology
- Gastroenterology
- Hydration status (tears, wet nappies/diapers, oral intake, lethargy)

Past Medical and Surgical History:

- Baby health visits, medical illnesses, any previous or recent surgery
- Hospitalization history or emergency visits, accidents, frequent trauma

Medications/Allergic History/Triggers:

- Current medications that the child is taking including prescribed medications, over the counter (OTC) medication, herbal remedies, and vitamins.
- Does the child have any allergies to any medications or any other general allergies?
- Any specific triggers known to cause certain symptoms.

Child (BINDES):

- Birth history
- Immunizations
- Nutrition
- Development
- Environment
- Social

Birth History:

Birth history includes prenatal, natal, and postnatal histories. You need to tailor the prenatal, natal, and postnatal questions according to context. If the birth history is not relevant to the presentation of the child, then one general question will be sufficient such as “Any issues with the pregnancy/birth of the child?”

- **Prenatal:**
 - “Was it a planned pregnancy?”
 - “Did you have any regular follow-up?”
 - “Did you have any ultrasonography (USG) scans? Was it normal or not?”
 - “During your pregnancy did you have any fevers or skin rash?”
 - “Any contact with sick person or cats?”
 - “Any medication/smoking/drugs/alcohol?”
 - “Screened for human immunodeficiency virus (HIV), syphilis, Group B Streptococcus (GBS), hepatitis B? Blood group?”
- **Natal (delivery):**
 - “Term baby or not?”
 - “What was the route? Cesarean section (C/S), spontaneous vaginal delivery (SVD), or assisted vacuum delivery (AVD)?”
 - “How long was the labor/delivery?” (18 h is normal for primi, 12 h for multi)

- “Early gush of water?” (Premature rupture of membranes)
- “Any need for augmentation/induction?”
- “What was the Apgar score?” (1 and 5 min)
- “Did the baby cry immediately?”
- “Did your baby need any special attention or admission to special care?”
- “Any bulging or bruising on the baby’s body?”
- “When were you sent home?” (C/S 3 days, SVD 1 day)
- “After delivery did you have any fever/vaginal discharge/on any medication?”
- “Were you told that your baby had any congenital deformity?”
- **Natal (birth):**
 - Vaginal or CS?
 - Spontaneous or assisted labor (i.e., forceps delivery)?
 - Premature rupture of membranes (PROM) or fever?
 - Baby: full term/preterm, weight at birth, Apgar score if known
 - Did the child need any resuscitation at birth?
- **Postnatal or newborn period:**
 - Mom: fever, bleeding, or any other complication
 - Baby: jaundice, screening tests, congenital anomalies, suckling, and weight gain

Immunization:

If they state that the child is not immunized, you need to inquire for the reason. If the child is not vaccinated due to a reason that points toward neglect, then look for child abuse red flags. Inquire further about weight gain and developmental milestones.

If it is due to religious beliefs, you do not have to inquire further. Otherwise, move onto nutrition.

Nutrition:

- Mom’s medications
- Complications during pregnancy such as diabetes, bleeding, hypertension
- Multiple pregnancy
- Infections such as TORCH: toxoplasmosis, other (syphilis, varicella-zoster, parvovirus B19), rubella, cytomegalovirus (CMV), and herpes
- Mom’s age
- Planned or unplanned pregnancy
- Weight
 - What is the current weight?
 - Birth weight
 - Maximal weight
- Is the child breastfed? Or bottle-fed?
 - Frequency, amount, supplement, formula fortified, weaning,
 - and if formula, then ask about type/brand.
- Growth charts (height/weight/head circumference)

- Feeding
 - Formula
 - When did you start the formula?
 - Was baby ever breastfed? If yes, then why stopped?
 - Did you consider breastfeeding?
 - What type of formula do you use?
 - “Has there been any changes in the feeding? Did you add any solid food or supplements (any fortified serials or iron)?”
 - If any diarrhea, when did it start (before the solid food or after)?

Development History:

- Gross motor, fine motor, vision, hearing/speech, and social
- Are they developing according to their milestones? For example:
 - 6 months: head control, grasp a toy, generalized reactions, smiles, and babbles
 - 18 months: sitting without support, walking/running, good fine motor control (swapping objects/turning pages), 1–15 words, and have self-awareness
 - 30 months: jump, go up/down stairs without assistance, symbolic thought
- Are they growing along growth centiles?
- How do they compare to their siblings?
- Any comments from their teachers at school or daycare?

Environment:

- “With whom does the child live at home?”
- “Any other children?”
- “Relation between your child and others?”
- “Who spends most of the time with the child?”
- “Financially how do you support yourself?”
- “Do you live in your own house?”
- “Anyone at home drinks or uses drugs?”
- Building
- Basement (mold)
- Old house (lead poisoning)

Children Attending School:

- School performance: comparing the grades between now and previous

Adolescents (HEEADDSS):

- **Home:** “With whom do you live?”
- **Education:** which grade? School performance? Grades? Recent changes in grades?
- **Employment/future career aspirations?**
- **Activities, hobbies, exercise?**
 - Hobbies (in case of epilepsy – ask for the risky activities)
- **Diet** – any specific diet?

- **Drugs and alcohol** – “Do you smoke? Recreational drugs? Intravenous drug use (IVDU)?”
 - “A lot of people of your age might experiment with drugs. How about you?”
- **Sexual activity/relationships**
- **Suicidal ideation** (“Have you tried hurting yourself?)/mood?

Social History:

- Smoking
- Alcohol
- Street drugs
- Sexual history (male, female, both)

Family History:

- Family history of the same/similar symptoms. Any other family history?
- Family tree (genetic conditions)
- Consanguinity

Wrap-Up:

- Describe the diagnosis/condition.
- Management plan.
- Possible medical treatment.
- Duration of treatment and side effects.
- Red flags.
- Laboratory tests.
- Further information websites/brochures/support groups or societies/toll-free numbers.
- Parental counseling/reassurance/safety net/follow-up.

History and Counseling: Fever

Candidate Information

A 3-year-old boy is brought into the emergency department (ED) by his parents due to having a fever and feeling unwell. Take a detailed history from the parents and counsel the parents on fevers in children. No physical examination is required for this station.

Differential Diagnosis:

- Respiratory tract infections
- Viral illness
- Ear infections
- Exanthematous diseases
- Meningitis
- Urinary tract infections
- Gastroenteritis

Fever is one of the most common reasons for children to present to a doctor and often causes great concern for parents.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your identification (ID) badge.
- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of...? And he is ... years old?”

Presenting Complaint:

“What brings you to the ED today?”

History of Presenting Illness:

- When was the child last well?
- Fever: onset, course, and duration.
- Predisposing factors (unwell contacts), aggravating and relieving factors.
- Rule out differential diagnosis (with systems review).
- Management/treatment so far.
- Any seizures?

Associated Symptoms:

- Ask about any cough, ear discharge, nasal discharge, or pain anywhere.
- Ask about vomiting.
- Ask about urine and bowel problems.
- Ask about any exposure to infected individuals. Any history of travel?
- Ask about rashes. Neck stiffness?
- Ask about oral intake. Feeding? Fluids? Wet nappies? Urinary output? Lethargy?

Past Medical and Surgical History:

- Baby health visits
- Medical illnesses
- Any previous or recent surgery
- Hospitalization history or emergency visits, accidents, frequent trauma
- Past ear infections, convulsions, urinary tract infections, respiratory infections

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, over the counter, herbal/vitamins)

Child (BINDES):

- Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment, and social history

Family History:

- Anyone else in the family having similar symptoms?
- Any conditions that run in the family?

Wrap-Up:

Mention that once you complete the history, you would then examine the child.

Question: “How will you counsel the parents?”

(Questions may be asked by the patient or the examiner.)

Answer: “Fever is very common among children and is not harmful within themselves but rather show that the child’s immune system is fighting an infection. There is a small chance (1 in 25) that the febrile child may have a seizure, which within itself is short lived and does no long-term harm.” (Febrile convulsions are discussed in more detail in the next section.)

“It is best to treat the discomfort rather than the fever itself. If the child is irritable with a fever, one may try paracetamol or ibuprofen to bring down the fever.”

“Fever is usually caused by viral infections; however, it is important to rule out more serious bacterial causes. A child with a fever often needs to take in more fluid than usual; and it is important to keep an eye on their hydration status. If at any point, your child looks sick enough to cause a level of concern, then you should bring them in to the doctors.”

“It is important to return to the hospital if your child looks very sick (lethargic, poorly responsive), has a stiff neck, has a rash, is in respiratory distress, having difficulty swallowing, decreased urine output/wet nappies, has a limp/not using a limb, has severe abdominal pain, any redness/swelling on their body or if they have a seizure.”

Questions: “How to assess hydration status?”

Answer: Vitals (heart rate, respiratory rate), mucus membranes, urine output, skin turgor, sunken eyes, fontanelles, tears, capillary refill, irritable/lethargy/reduced consciousness level

- As per the Royal Children’s Hospital Melbourne clinical guidelines [1]:
 - Mild (<4%) dehydration – may have no clinical signs
 - Moderate (4–6%) – delayed capillary refill, increased respiratory rate (RR), mild decreased tissue turgor
 - Severe (≥7%) – very delayed capillary refill, signs of shock (tachycardia, irritable, reduced conscious level, hypotension), deep (acidotic) breathing, decreased tissue turgor

Question: “When would you recommend that the parents bring the child back to hospital?”

Answer: “If the child looks very sick (lethargic, poorly responsive), has a stiff neck, has a rash, is in respiratory distress, having difficulty swallowing, decreased urine output/wet nappies, has a limp/not using a limb, has severe abdominal pain, any redness/swelling on their body, or if they have a seizure.”

History and Counseling: Febrile Convulsion

Candidate Information:

A 2-year-old girl is brought into the ED by her parents due to having an episode of body stiffening followed by sharp jerky movements of the arms and legs. This is on a background of having a runny nose and a cough. Take a detailed history from the parents and counsel the parents on this condition. No physical examination is required for this station.

Differential Diagnosis:

- Epileptic seizure
- Generalized seizure
- Breath holding spell
- Febrile convulsion
- Differential for cause of fever:
 - Respiratory tract infections, ear infections, exanthematous diseases, meningitis, urinary tract infections, gastroenteritis, or viral illness

In a presentation of a febrile convulsion, one needs to deal with the convulsion as well as to find the foci of infection causing the fever. Febrile convulsions are seizures that occur in children between 6 months and 5 years of age, within a setting of a fever. They are normally associated with simple viral illnesses and are benign. Most often the convulsion occurs at the onset of an illness, when there is the greatest increase in temperature.

Simple versus complex febrile seizures [2, 3]:

- Simple: generalized, tonic-clonic convulsions lasting less than 15 min and that do not reoccur within the same febrile illness
- Complex: one or more of the following: focal features with the seizure, >15 min, reoccurrence of the seizure within the same illness, and incomplete recovery within 1 h

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your ID.

- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of...? And she is ... years old?”

Presenting Complaint:

“What brings you in to the ED today?”

History of Presenting Illness:

- When was the child last well?
- Was this a witnessed episode/seizure?
- Whole body shaking? Tongue biting? Wet themselves? Eyes rolling?
- Any neurological signs before/after the seizure?
- How long did it last?
- Did it stop on its own or did it require medical intervention?
- Has this happened before?
- Immunization status? Recent sick contacts?
- Fever: onset, course, and duration.
- Predisposing factors (unwell contacts), aggravating and relieving factors.
- Rule out differential diagnosis (with systems review).
- Management/treatment so far.

Associated Symptoms:

- Ask about any cough, ear discharge, nasal discharge, or pain anywhere.
- Ask about vomiting.
- Ask about urine and bowel problems.
- Ask about any exposure to infected individuals. Any history of travel?
- Ask about rashes. Neck stiffness?
- Ask about oral intake. Feeding? Fluids? Wet nappies? Urinary output? Lethargy?

Past Medical and Surgical History:

- Baby health visits
- Medical illnesses
- Any previous or recent surgery
- Hospitalization history or emergency visits, accidents, frequent trauma
- Past convulsions, urinary tract infections, respiratory infections, ear infections

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, OTC, herbal/vitamins)

Child (BINDES):

- Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment, and social history

Family History:

- Anyone else in the family having similar symptoms?
- Any conditions that run in the family? Any epilepsy? Seizures? Febrile seizures?

Wrap-Up:

Mention that once you complete the history, you would then examine the child.

Question: “How will you counsel the patient/parents?”

Answer: “Most children who have a simple febrile convulsion do not have any long-term sequelae; however, if your child is having repeated or complex febrile convulsions, it is advisable to follow-up with a pediatrician. It is important to find the cause of the fever and to rule out serious infections such as meningitis or sepsis.”

“Treatment of a fever, with paracetamol or ibuprofen, does not necessarily prevent a febrile seizure; in fact, nothing can be done to prevent a febrile convulsion. It can be very scary for parents who experience this; however, they can be reassured that there are no long-term health effects. If there is a focus of infection found on examination, no further investigations are required.”

“Your child can be discharged and return to a normal routine, and no medications are required on discharge. After a simple febrile convulsion, no further follow-up or investigations are required. However, in the case of a complex febrile convulsion, consider observation in hospital as well as possible outpatient pediatrician follow-up.”

“If your child has another convulsion at home, you should be up to date with basic first aid procedures. This includes firstly ensuring the child is safe (will not fall off a bed/around dangerous objects); roll them on to their side and call for help. Parents should be up to date with first aid and cardiopulmonary resuscitation (CPR) certification.”

History and Counseling: Respiratory Tract Infection

Candidate Information:

An 8-month-old boy is brought into the ED by his parents due to being in respiratory distress (intercostal recession, nasal flaring, and grunting) with a decreased oral intake on a background cough of 1 week.

Differential Diagnosis:

- Reactive airway disease/wheeze/asthma
- Bronchiolitis
- Pneumonia
- Pharyngitis/tonsillitis
- Acute otitis media
- Croup
- Whooping cough (Pertussis)
- Cystic fibrosis

1. **Productive:** bronchiectasis, bronchitis, abscess, bacterial pneumonia, tuberculosis (TB)
2. **Nonproductive:** viral infections, interstitial lung disease, anxiety, allergy
3. **Wheezy:** suggests bronchospasm, asthma, allergy
4. **Nocturnal:** asthma, congestive heart failure (CHF), post-nasal drip, gastroesophageal reflux disease (GORD or GERD), or aspiration
5. **Barking:** epiglottal disease (croup)
6. **Positional:** abscess, tumor

Respiratory conditions account for a majority of acute pediatric presentations and can be broken down into conditions that compromise the airway vs. conditions that compromise the parenchyma.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your ID badge.
- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of...? And he is... years old?”

Presenting Complaint:

“What brings you in to the ED today?”

History of Presenting Illness:

- When was the child last well?
- Start with questions related to the cough
 - Onset of cough?
 - Nature of cough?
 - Chronicity?
 - Time of day/night of cough?

- Duration?
- Contributing factors?
- What makes the cough worse/better? Any treatment so far?
- Productive cough? Color and quantity of sputum?
- Prodromal illness? Fever/malaise/lethargy? Rhinorrhea? Shortness of breath?
- Any triggers for the cough (allergies/dust/pollution/cold/smoke/exercise)?
- Allergies? Allergic symptoms (red eyes/itching)?
- Immunizations up to date? Predisposing factors (sick contacts)?
- Does the child go to school or daycare?
- Management/treatment so far?

Associated Symptoms:

- Ask about any ear discharge, nasal discharge, or pain anywhere.
- Ask about vomiting.
- Ask about urine and bowel problems.
- Ask about any exposure to infected individuals. Any history of travel?
- Ask about rashes. Neck stiffness?
- Ask about oral intake. Feeding? Fluids? Wet nappies? Urinary output? Lethargy?

Past Medical and Surgical History:

- Baby health visits
- Medical illnesses
- Any previous or recent surgery
- Hospitalization history or emergency visits, accidents, frequent trauma
- Past respiratory infections, ear infections

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, OTC, herbal/vitamins)

Child (BINDES):

- Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment, and social history

Family History:

- Anyone else in the family having similar symptoms?
- Any conditions that run in the family? Asthma? Respiratory conditions?

Wrap-Up:

Mention that once you complete the history, you would then examine the child.

Question: “How will you counsel the parents?”

Answer: “A very common condition in children under 2 years of age is bronchiolitis. It is a condition of the small airways that is caused by a virus – the most common being respiratory syncytial virus. It often starts with general cold-like symptoms, and over a few days, they may worsen in terms of their cough, and you may hear a wheeze. The child may appear to be in respiratory discomfort and often will begin to have difficulty feeding due to the labored breathing.”

“Bronchiolitis is a viral infection and thus your child will not need antibiotics. It usually peaks at 2–4 days of the onset of symptoms and then gradually improves. Most children are back to their normal selves in 7–10 days. The two reasons why we might choose to admit your baby to hospital is if (1) the baby is requiring oxygen therapy and (2) the baby is not able to feed and thus will require nasogastric tube feeds or intravenous fluid. It is advised to the parents to cease smoking around the child.”

Question: The parents ask you if they should use Ventolin.

Answer: “Ventolin may be tried for older children as it can be quite difficult to tell the difference between bronchiolitis and reactive airways disease.” See reactive airway disease/wheeze action plan (Fig. 12.1) [4].

History and Counseling: Ear Pain

Candidate Information:

An 18-month-old girl is brought into the GP clinic by her parents due to having fevers and constantly pulling at her ears.

Differential Diagnosis:

- Acute otitis media
- Otitis media with effusion
- Mastoiditis
- Otitis externa
- Hearing loss
- Foreign body

Acute otitis media is a very common problem in childhood, with at least 90% of children having at least one episode prior to going to school. Viral causes account for 25% of cases, whereas bacterial sources account for the majority of cases (*Streptococcus pneumoniae*, 35%; *Haemophilus influenzae*, 25%; and *Moraxella catarrhalis*, 15%) [5].

Wheeze action plan

EMERGENCY INSTRUCTIONS - Severe or life threatening wheeze

Even children who usually have mild or moderate asthma or wheeze can have life-threatening attacks.

If your child is unable to speak, has blue lips, has severe difficulty breathing, is very unwell, or you are unsure, **TREAT THIS AS AN EMERGENCY**. Give salbutamol immediately.

CALL THE AMBULANCE by dialing "000".

After five minutes, if the same symptoms are still present give a further dose of salbutamol and continue giving salbutamol every 5 minutes until the ambulance arrives.

Details

Patient name	Completing doctor name	UR number
<input type="text"/>	<input type="text"/>	<input type="text"/>
Treating Facility	Date	
<input type="text"/>	<input type="text"/>	

Reliever medication

Salbutamol dose

This medication should only be used when your child has symptoms such as wheeze, cough, breathing quickly or shortness of breath. Always use a spacer. Use a mask (generally for toddlers and younger children) if you have been given one.

FOLLOWING DISCHARGE

Initial management

Salbutamol (reliever medication, blue puffer) should be given regularly for at least 3 days. Give 6 puffs every 3-4 hours. Use the spacer provided.

If improving

Decrease the salbutamol to every 6-8 hours.

If continuing to improve...

Decrease the dose of salbutamol to 2 puffs.

If worsening

If your child's symptoms are worsening e.g. struggling to breathe, labored breathing or difficulty speaking, give the salbutamol more frequently.

Salbutamol is safe to be given as often as required e.g. every 15 minutes.

Return to the emergency department if salbutamol is required more frequently than every 3 hours or if they are not responding to treatment.



Fig. 12.1 Wheeze action plan (Reprinted under terms of Creative Commons Attribution 4.0 International license (CC BY 4.0) from Queensland Government Children's Health Queensland Hospital and

Health Service. <https://www.childrens.health.qld.gov.au/wp-content/uploads/PDF/wheeze-action-plan.pdf> [4])

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your identification (ID) badge.
- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of...? And she is... years old?”

Presenting Complaint:

“What brings you in today?”

History of Presenting Illness:

- When was the child last well?
- Is the child complaining of a painful ear?
- Onset? Nature? Location? Duration?
- Aggravating and alleviating factors?
- Any treatment so far?
- Any discharge? Color? Smell?
- Fevers? Lethargy? Irritability?
- Any concerns with hearing?
- Any previous history of ear infections?

Associated Symptoms:

- Ask about any nasal discharge or pain anywhere.
- Ask about vomiting.
- Ask about urine and bowel problems.
- Ask about any exposure to infected individuals. Any history of travel?
- Ask about rashes. Neck stiffness?
- Ask about oral intake. Feeding? Fluids? Wet nappies? Urinary output? Lethargy?

Past Medical and Surgical History:

- Baby health visits
- Medical illnesses
- Any previous or recent surgery
- Hospitalization history or emergency visits, accidents, frequent trauma
- Past respiratory infections, ear infections

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, OTC, herbal/vitamins)

Child (BINDES):

- Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment, and social history

Family History:

- Anyone else in the family having similar symptoms?
- Any conditions that run in the family? Asthma? Respiratory conditions?

Wrap-Up:

Mention that once you complete the history, you would then examine the child.

Question: “How will you counsel the parents?”

Answer: “It is very common for children to have ear infections. In fact, 90% of children will have at least one episode before going to school. It is common to occur after a viral respiratory tract infection. Hearing loss is noticeable at the time of infection, especially if bilateral; however, it should self-resolve. If concerns for ongoing hearing loss after infection resolves, a review with the GP should occur.”

“There are a number of measures to prevent recurring episodes of acute otitis media including limiting exposure to viral infections (daycares, etc.) and reducing exposure to cigarette smoke. If episodes continue to occur, a referral can be made to an ear, nose, and throat (ENT) clinic to consider an insertion of a grommet. Grommets are small tubes that are inserted into the eardrum to allow air into the middle ear and thus prevent a fluid build-up.”

History and Counseling: Rash**Candidate Information:**

A 6-year-old girl is brought into the ED by her parents due to having fevers with an associated rash on the face.

Differential Diagnosis [6]:

- Impetigo
- Scarlet fever
- Chickenpox
- Virus (coxsackieviruses and enteroviruses)
- Meningococemia
- Lyme disease
- Kawasaki disease
- Toxic shock syndrome

There are many causes for rashes in children, including but not limited to reaction to skin irritants, drug reactions, infections, or an allergic reaction. Rashes can represent a benign viral

infection or could be a sign of a life-threatening emergency. The key to an accurate diagnosis is a very careful and detailed history followed by a judicious examination of the rash.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your ID badge.
- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of...? And she is... years old?”

Presenting Complaint:

“What brings you in to the ED today?”

History of Presenting Illness:

- When was the child last well?
- When did the rash start?
- Where is the rash? Is it generalized or localized?
- Has the rash changed over time? Does the rash look the same now or how it did initially?
- Has the child had this rash before?
- Is it getting worse? Is there anything that makes the rash better or worse?
- Is the rash itchy?
- Is there any pain or abnormal sensations?
- Any treatment so far (tried any ointments or creams)?
- Any fevers?
- Any infective symptoms (cough/runny nose/sore throat/vomiting/diarrhea)?
- Any sick contacts? Daycare?
- Any recent travel out of the country?
- Has the child started any new medications recently?
- Recent immunizations?
- Any skin products changed at home recently (soaps/shampoos/washing detergents/lotions etc.)?

Associated Symptoms:

- Ask about any ear discharge, nasal discharge, or pain anywhere.
- Ask about vomiting.
- Ask about urine and bowel problems.
- Ask about any exposure to infected individuals. Any history of travel?
- Ask about rashes. Neck stiffness?

- Ask about oral intake. Feeding? Fluids? Wet nappies? Urinary output? Lethargy?

Past Medical and Surgical History:

- Baby health visits
- Medical illnesses
- Any previous or recent surgery
- Hospitalization history or emergency visits, accidents, frequent trauma
- Past ear infections, convulsions, urinary tract infections, respiratory infections, asthma, allergies

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, OTC, herbal/vitamins)

Child (BINDES):

- Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment, and social history

Family History:

- Anyone else in the family having similar symptoms?
- Any conditions that run in the family?
- Anyone in the family with asthma or atopy?

Wrap-Up:

Mention that once you complete the history, you would then examine the child (including a thorough examination of the rash).

Question: “How will you counsel the parents?”

Answer: “The most important thing to do is to reassure the parents that the rash is not sinister or a sign of a serious disease. If the child is not lethargic, peripherally cold, and tachycardic/tachypneic, is alert and interactive, has a blanching rash, and does not look clinically sick, then it is unlikely that the rash is serious.”

“The rash associated with a fever, with no obvious focal signs of infection, is most likely due to a viral illness. Viral infections are common in children and often present with a low-grade fever and a rash. These rashes are harmless and will go away on their own. There are some viral rashes that have very distinctive appearances (viral exanthems) including hand, foot, and mouth disease, roseola infantum, and slapped cheek syndrome.”

“Rashes can have very different appearances and present in many different ways. The viruses are usually spread by direct contact. The rash and fever will often coincide; however, the fever will either present before the rash, before the illness, or at the same time as the rash.”

“If your child becomes quite unwell, lethargic, unable to tolerate oral intake, or unable to produce adequate urine and/or has a rash that does not turn white (blanch) when pushed, then return to the hospital.”

History and Counseling: Anaphylaxis and EpiPen Counseling

Candidate Information:

A 10-year-old girl is brought into the ED by ambulance due to severe facial and tongue swelling, respiratory distress with associated stridor, and vomiting after ingesting peanuts in school.

Differential Diagnosis:

- Anaphylaxis
- Angioedema
- Asthma exacerbation
- Ingestion of foreign body
- Panic attack
- Excess histamine syndromes

Anaphylaxis is a life-threatening condition and is treated as an emergency unlike a generalized allergic reaction. Anaphylaxis is a rapidly evolving generalized multi-system allergic reaction that is characterized by symptoms/signs of respiratory and cardiovascular involvement and may also include symptoms/signs of other systems such as the gastrointestinal tract and/or skin. The clinical manifestations of anaphylaxis may include hypotension, bronchospasm, and upper airway obstruction [7].

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your ID badge.
- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of.....? And she is... years old?”

Presenting Complaint:

“What brings you in to the ED today?”

History of Presenting Illness:

- When was the child last well?
- What happened? Events?

- Any known triggers? Have triggers been removed?
- Was she eating something at the onset of symptoms? New medication commenced?
- Known to have anaphylaxis?
- What symptoms occurred and how have they progressed?
- Has she had any treatment yet?
- Any cough? Wheeze? Swelling around tongue and lips? Change in voice? Trouble swallowing?
- Any palpitations?
- Was there any loss of consciousness?
- Headache? Dizzy? Confusion?
- Nausea? Vomiting? Diarrhea? Abdominal pain?
- Rashes?
- Any foreign bodies ingested?
- Any history of asthma?
- Any fevers?

Past Medical and Surgical History:

- Baby health visits
- Medical illnesses
- Any previous or recent surgery?
- Hospitalization history or emergency visits, accidents, frequent trauma
- Known anaphylactic triggers? Allergies? Asthma? Atopy?

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, OTC, herbal/vitamins)

Child (BINDES):

- Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment, and social history

Family History:

- Anyone else in the family having similar symptoms?
- Any conditions that run in the family?
- Anyone in the family with asthma or atopy?

Wrap-Up:

Mention that once you complete the history, you would then examine the child.

Question: “How will you counsel the parents?”

Answer: “Anaphylaxis is basically a hypersensitivity or severe allergic reaction. It is a multi-system allergic reaction characterized by a sudden onset development of symptoms typically including skin features plus respiratory, cardiovascular, and/or gastrointestinal symptoms. Usual triggers to anaphylaxis may be food, medications, or chemicals – in this case being peanuts.”

Fig. 12.2 EpiPen®. Source: Tokyogirl79. https://en.wikipedia.org/wiki/Epinephrine_autoinjector. (Reprinted under terms of Attribution-ShareAlike 4.0 International (CC BY-SA 4.0))



“At a certain stage, the immune system starts to interact with elements of the peanut, called antigens. From now on, when your daughter will be exposed to the same antigens (peanuts), it will lead to a release of chemicals that will affect the skin and will widen the blood vessels causing them to become leaky. This will result in swelling around the body and especially can become serious if there is swelling around the neck, which can obstruct the airway.”

“The best treatment for this condition is future prevention. You will need to be careful and check the ingredients of all foods to ensure they are peanut free. It will be best to ensure that the child’s siblings are made aware of this condition as well as her friends and school environment.”

“She will now need to carry what is called an EpiPen with her as treatment if she is to be exposed to peanuts and has a similar reaction in the future. The EpiPen is a special pen with a needle on it that is capped and only activated once applied with pressure to the thigh for 10 seconds (Figs. 12.2 and 12.3) [8, 9]. This pen contains adrenaline, which is the treatment for anaphylaxis.”

“This will maintain the blood pressure for about 20 minutes longer, and thus she will still need to present herself to the emergency department. You should get a prescription for two pens at a time, one to be kept at home and one to be carried daily to school. I will also do a referral to an allergy specialist for you.”

History and Counseling: Vomiting

Candidate Information:

A 5-week-old girl is brought into the ED by her parents due to recurrent projectile vomits shortly after feeding. She has inadequate weight gain for her age.

Differential Diagnosis:

- Sepsis/infection (meningitis, pneumonia, urinary tract infection, necrotizing enterocolitis)
- Obstruction (malrotation, volvulus, intestinal atresia, incarcerated hernia)
- Hiatal hernia
- Pyloric stenosis
- GORD
- Neurologic (increased intracranial pressure secondary to hydrocephalus, hemorrhage, tumor, or trauma)

- Renal
- Metabolic
- Milk/soy protein allergy
- Overfeeding

Vomiting is a very common symptom in children and is most often due to gastroenteritis; however, it may also be an initial symptom of a more sinister medical condition that would require further work-up and investigation to rule out. It is a symptom that is often mistaken due to a baby “spitting up” shortly after a feed. The major concerns with a child vomiting are, firstly, whether it is a presentation of a sinister condition; secondly, whether the child is dehydrated; and, lastly, if any electrolyte disturbances have occurred secondary to the vomiting.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your ID badge.
- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of...? And she is... weeks old?”


Presenting Complaint:

“What brings you in to the ED today?”

History of Presenting Illness:

- When was the child last well?
- Age of onset of vomiting?
- Duration? Severity?
- Association of vomiting with feeding? Certain body positions?
- Description of force of vomiting?
- Volume of vomitus? Color? Composition (bilious, fecal, blood, regurgitant)?
- Is it getting worse or better?
- Is the child still hungry after she vomits? Or does she settle down?

Fig. 12.3 How to administer an adrenaline autoinjector (EpiPen®) (Reprinted with permission from Allergy & Anaphylaxis Australia. <https://allergyfacts.org.au/allergy-management/risk/change-to-instructions-on-epipen-administration>)




Allergy & Anaphylaxis Australia
Your trusted charity for allergy support

HOW TO ADMINISTER AN ADRENALINE AUTOINJECTOR


ADRENALINE IS LIFE-SAVING FOR SOMEONE SUFFERING ANAPHYLAXIS BUT MUST BE USED PROMPTLY.

HOW TO GIVE EPIPEN®


- 1



LAY THE PERSON FLAT.
- 2

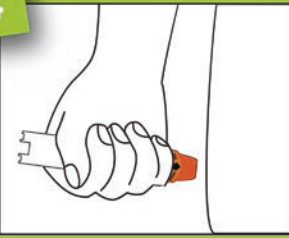


IF BREATHING IS DIFFICULT
ALLOW TO SIT (BUT DON'T
ALLOW TO STAND
OR WALK)
- 3

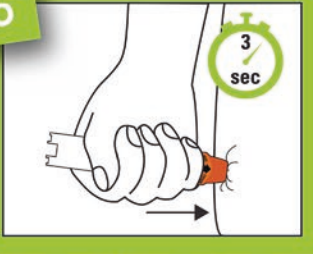


FORM FIST AROUND EPIPEN AND
PULL OFF BLUE SAFETY RELEASE.


BLUE TO THE SKY,
ORANGE TO THE THIGH
- 4



PLACE ORANGE END AGAINST OUTER
MID-THIGH (WITH OR WITHOUT CLOTHING).
- 5






PUSH DOWN HARD UNTIL A CLICK IS
HEARD (OR FELT) AND HOLD IN PLACE
FOR 3 SECONDS.
- 6



TRIPLE
ZERO

CALL AN AMBULANCE.

 AnaphylaxisAustralia
  AAAaust
  allergicaustralia

#BeAwareShowYouCare #FoodAllergyWeek

- Does she cough or gag while feeding?
- Any associated diarrhea or constipation?
- Fevers? Weight loss? Lethargy?
- Abdominal distension?
- Any other sick contacts?
- Any recent trauma/head injury?

Associated Symptoms:

- Ask about any ear discharge, nasal discharge, coughs.
- Ask about vomiting.
- Ask about urine and bowel problems.
- Ask about any exposure to infected individuals. Any history of travel?
- Ask about rashes. Neck stiffness?
- Ask about oral intake. Feeding? Fluids? Wet nappies? Urinary output? Lethargy?

Developmental History:

- Age and weight normograms
- Feeding history: quantity, frequency, breast vs. bottle (which formula?)
- Colic? Feeding issues?

Past Medical and Surgical History:

- Baby health visits
- Medical illnesses
- Any previous or recent surgery
- Hospitalization history or emergency visits, accidents, frequent trauma

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, OTC, herbal/vitamins)

Child (BINDES):

- Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment, and social history

Family History:

- Anyone else in the family having similar symptoms?
- Any conditions that run in the family?

Wrap-Up:

Mention that once you complete the history, you would then examine the child.

Question: “How will you counsel the patient/parents?”

Answer: “Pyloric stenosis is a thickening of the gastric outlet, which ultimately results in the obstruction of the gastric outlet (Fig. 12.4). The cause is unclear; however, there is a possible genetic link. It is common to present between 2 and 6 weeks of age. There is a concern for metabolic complications with this condition due to vomiting resulting in a loss of gastric fluid. Babies with pyloric stenosis will need careful rehydration to prevent complications such as cerebral edema and hypernatremia” [10].

“A referral to the surgical team will be done; however, pyloric stenosis is not a surgical emergency, and the focus is on the careful correction of the dehydration. Surgery will be performed once the baby is safely rehydrated and there are no coexisting biochemical/electrolyte abnormalities.”

“The surgeon will further discuss the surgery with you. At 6 h post surgery, small feeds will be commenced. Your baby may still have small vomits; however, this should start to resolve. Once your baby is adequately feeding, they will be able to be safely discharged home.”

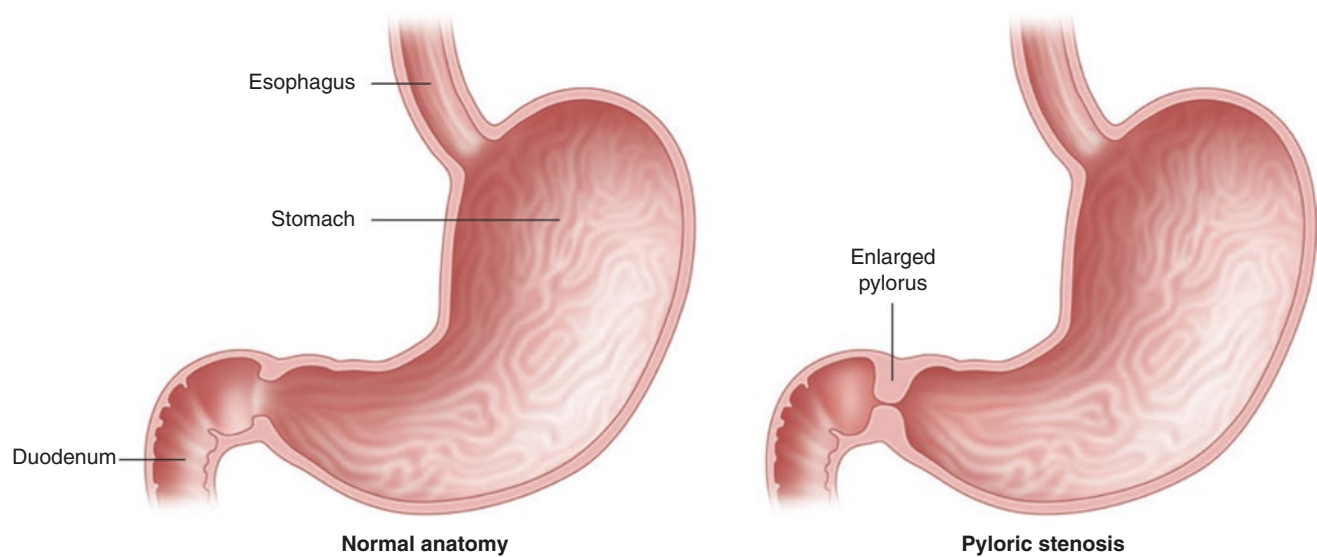


Fig. 12.4 Pyloric stenosis (Reprinted with permission from Yemen and Stemland [22])

“If the baby is still having ongoing vomiting at home, and not gaining adequate weight, she will need to be brought back to the emergency department.”

History and Counseling: Diarrhea

Candidate Information:

A 2-year-old boy is brought into the ED by his parents due to a number of episodes of diarrhea over 2 days, associated with vomiting, fevers, and lethargy. His older brother and sister have similar symptoms.

Differential Diagnosis:

- Enteral infections: bacterial/viral/parasitic gastroenteritis, hemolytic uremic syndrome, pseudomembranous colitis (antibiotic associated)
- Parenteral infections: UTI, otitis media, pneumonia, sepsis, etc.
- Inflammatory: allergy (cow’s milk, soy, etc.), inflammatory bowel disease, necrotizing enterocolitis
- Malabsorption: lactase deficiency, celiac disease, pancreatic insufficiency (CF), bile deficiency (biliary atresia, etc.), short gut syndrome
- Feed related (overfeeding)
- Immune deficiency related
- Toxin related: antibiotics, toxin ingestion, chemotherapy, radiotherapy
- Surgical: intussusception, malrotation, bowel obstruction, appendicitis
- Endocrine and neoplastic

Diarrhea is a very common symptom in children and is most often due to gastroenteritis or food intolerance. However, it may also be an initial symptom of a more sinister medical condition that would require further work-up and investigation to rule out. There are many causes of diarrhea, which can be broadly grouped by their causes: osmotic, secretory, inflammatory, and diarrhea due to motility disorders. One of the major concerns of diarrhea in children is dehydration and electrolyte disturbances.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your ID badge.
- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of...? And he is... years old?”

Presenting Complaint:

“What brings you in to the ED today?”

History of Presenting Illness:

- When was the child last well?
- When did the diarrhea start? How many bowel movements per day?
- What is the normal pattern for this child?
- Are there normal bowel movements between the episodes of diarrhea?
- Has the child ever had this before?
- What is the child’s dietary history? Did he eat anything before that could have been off?
- What is the consistency of the stool?
- What is the volume of the stool the child is passing?
- Is there blood, pus, or mucus within the stool?
- Is it very foul smelling?
- Does it contain “oil droplets”?
- Does the child have a fever?
- Is there associated vomiting? Any abdominal pain?
- What is the urine output? How many wet nappies?
- Are they eating and drinking as per normal?
- What is the child’s weight today compared to last measured?
- Anyone else sick who the child has been exposed to?
- Any recent overseas travel?
- Any recent use of antibiotics?

Associated Symptoms:

- Ask about any ear discharge, nasal discharge, coughs.
- Ask about vomiting.
- Ask about urine and bowel problems.
- Ask about any exposure to infected individuals. Any history of travel?
- Ask about rashes. Neck stiffness?
- Ask about oral intake. Feeding? Fluids? Wet nappies? Urinary output? Lethargy?

Past Medical and Surgical History:

- Baby health visits
- Medical illnesses
- Any previous or recent surgery
- Hospitalization history or emergency visits, accidents, frequent trauma
- Past ear infections, convulsions, urinary tract infections, respiratory infections, asthma, allergies

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, OTC, herbal/vitamins)

Child (BINDES):

- Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment, and social history

Family History:

- Anyone else in the family having similar symptoms?
- Any conditions that run in the family?

Wrap-Up:

Mention that once you complete the history, you would then examine the child.

Question: “How will you counsel the patient/parents?”

Answer: “Gastroenteritis is an illness caused by an infectious agent in the stomach/bowels and may include a virus, bacteria, or parasite. Gastroenteritis causes diarrhea and may also be associated with vomiting, fevers, abdominal pain, and cramps. It is usually self-limiting and resolves on its own after a few days; however, the child will remain infectious so long as they have diarrhea and vomiting.”

“Treatment for gastroenteritis is largely conservative with fluid and electrolyte replacement as well as paracetamol being used if fevers are a source of discomfort. Antibiotics and antiemetics are rarely of use. If the history and symptoms point toward a bacterial source, then antibiotics may be of use. However, this is often commenced upon a positive stool microscopy growing a certain bacterial organism.”

“The main concerns and principles of management for gastroenteritis in a child are rehydration and electrolyte disturbances caused by both diarrhea and vomiting. Early reintroduction of normal diet is advised as soon as the dehydration is corrected.”

“Firstly, a trial of oral rehydration will be commenced; and if that fails, then consideration will be given to nasogastric or intravenous rehydration.”

Question: “What are ways to prevent this from happening in the future?”

Answer: “Good hand-washing techniques and frequent hand-washing are important for everyone in the family. It is important for all to wash hands thoroughly after going to the bathroom, after changing a diaper or helping the child go to the bathroom and before preparing and eating food. It will be important to disinfect the toys, bathrooms, and any surfaces

that the child may have been in contact with. Lastly, it will be important to keep the child with gastroenteritis out of school or daycare until the symptoms resolve.”

History and Counseling: Anemia**Candidate Information:**

A 2-year-old girl is referred to the ED by her GP for having a low hemoglobin (Hb) level associated with fatigue, pallor, and inadequate weight gain over the last few months.

Differential Diagnosis:

- Microcytic
 - Iron deficiency
 - Thalassemia
 - Lead poisoning
 - Sideroblastic anemia
- Normocytic
 - Anemia of chronic disease
 - Acute blood loss/hemorrhage
 - Hemolysis
 - Transient erythroblastopenia of childhood
 - Mixture of nutritional (iron and B12 deficiency)
 - Aplastic anemia/marrow infiltration
- Macrocytic
 - Drugs
 - Thyroid disease
 - Myelodysplasia/Fanconi’s anemia
 - B12/folate anemia
 - B12:
 - Maternal B12 deficiency: autoimmune gastritis, vegetarian (dietary), inflammatory bowel disease (IBD), ileal resection, *Helicobacter pylori*, drugs
 - Malabsorption (terminal ileal disease, Crohn’s disease)
 - Metabolic (inborn errors of metabolism)
 - Genetic

Anemia is defined as having a hemoglobin level that is less than the lower limit of the normal range for the specific age. There are three main mechanisms for a low hemoglobin level. These include inadequate production, excessive destruction, and, lastly, excessive blood loss. Inadequate production of red blood cells may cause anemia either from a lack of stimulation of production or from a loss of precursor availability (bone marrow level). Excessive or premature red cell destruction may be caused by hemolysis (red cell breakdown) prior to their normal turnover. Lastly, excessive blood loss may occur due to hemorrhage or trauma.

Anemia is classified as either microcytic, normocytic, or macrocytic and is based on the mean corpuscular volume (MCV). Anemia in children is most commonly due to nutritional deficiency followed by primary hematologic processes. The most common nutritional deficiency causing anemia is an iron deficiency causing a microcytic anemia.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your ID badge.
- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of...? And she is... years old?”

Presenting Complaint:

“What brings you in to the ED today?”

History of Presenting Illness:

- “When was the child last well?”
- “What symptoms have you noticed?”
- “Any pallor? Lethargy? Weakness? Fast heart rate?”
- “Is the child losing interest in her normal activities?”
- “What is the child’s diet like?”
- “Is she eating iron-containing foods? Which foods and how much?”
- “What does the child drink? What kind of milk and how much?”
- “How was the child fed in the first year of life? Breast milk vs. formula?”
- “Timing of the introduction of solids? Timing of transition from breast milk/formula to milk?”
- “Does your child get the desire to eat non-food items such as dirt, clay, or ice?”
- “Does the child have any chronic medical conditions?”
- “What is the child’s growth pattern? Weight and height normograms?”
- “Is the child on any regular medications or any exposure to possible toxins such as lead or radiation?”
- “Does the child have any fevers, unexplained weight loss, or night sweats?”
- “Is the child prone to bruising and bleeding?”
- “Does the child get severe or frequent infections?”
- “Any recent illness with infective symptoms such as coughs and colds, rashes, vomiting, or diarrhea?”
- “Urine output?”

- “Any recent transfusions?”
- “Is there any recent travel history, specifically to malaria endemic countries?”
- “Family history of anemia?”
- “Any obvious blood loss or trauma?”
- “Any blood in stool or black, tarry melaena?”
- “Any mucosal bleeding (gums/nose bleeds)?”

Past Medical and Surgical History:

- Baby health visits
- Medical illnesses
- Any previous or recent surgery
- Hospitalization history or emergency visits, accidents, frequent trauma

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, OTC, herbal/vitamins)

Child (BINDES):

- Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment, and social history
- Detailed dietary history

Family History:

- Anyone else in the family having similar symptoms?
- Any conditions that run in the family?

Wrap-Up:

Mention that once you complete the history, you would then examine the child.

Question: “How will you counsel the parents?”

Answer: “Iron deficiency is the most common cause of anemia in children. In children, iron deficiency is most often nutritional in nature including but not limited to insufficient red meat, fish, chicken, green vegetables, or excessive cow’s milk. It is rarely due to other causes such as malabsorption or gastrointestinal bleeding. Iron is one of the important building blocks for hemoglobin, and a lack of it causes insufficient production of red blood cells (Fig. 12.5) [11].”

“Risk factors for iron deficiency include prematurity, low birth weight, multiple pregnancy, excessive breastfeeding after 6 months, and excessive cow’s milk, as well as a low socioeconomic status. At birth, children generally have adequate iron stores, and they are able to live exclusively on breast milk and/or formula without developing iron deficiency. Beyond these 6 months, stores begin to run out, and it is important to include iron-rich foods into the diet. Often these are the children who drink excessive amounts of milk or are picky eaters.”

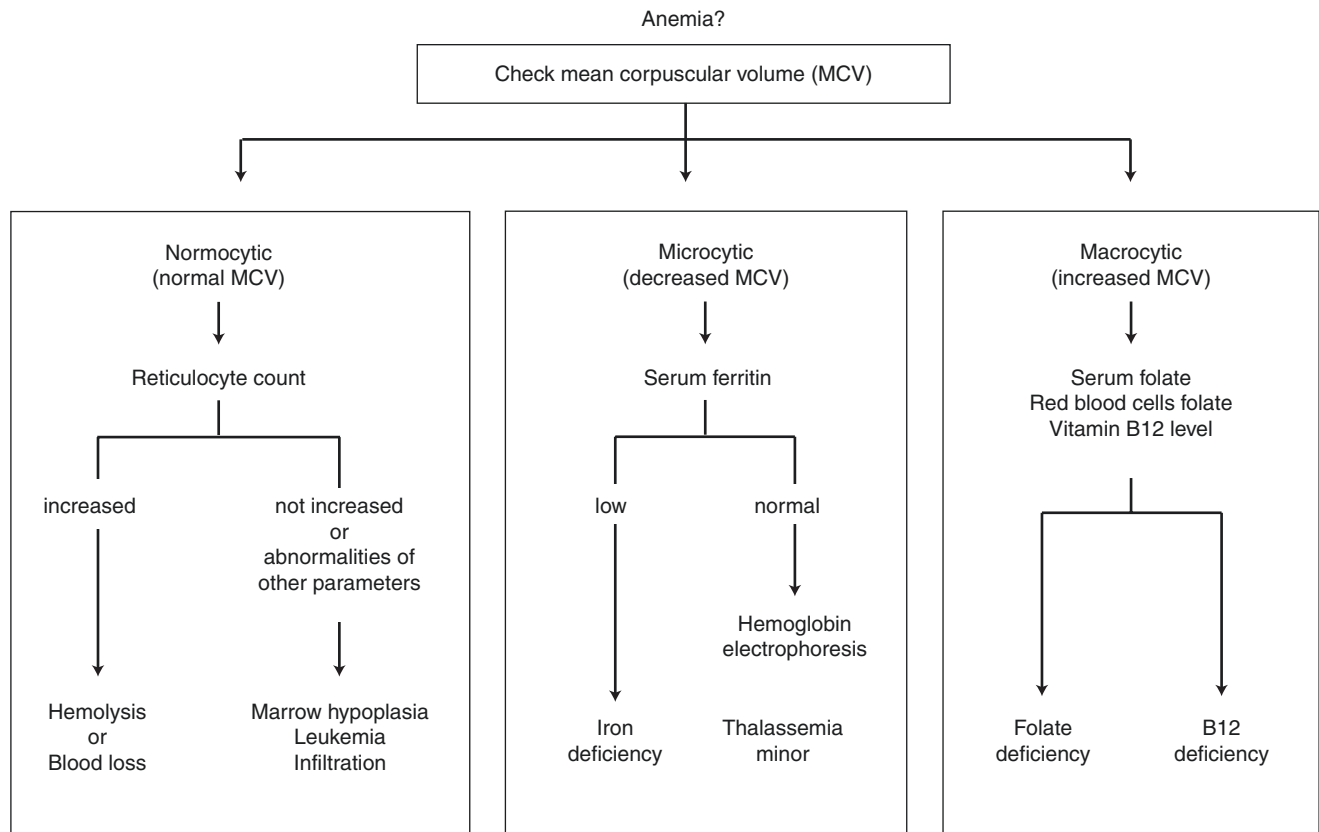


Fig. 12.5 Anemia algorithm. MCV mean corpuscular volume, RBC red blood cell, Hb hemoglobin (Adapted from The Royal Children’s Hospital [11])

“Iron deficiency anemia is quite simple to manage. We can start the child on oral iron supplementation. We can empirically treat and then test the blood again in a few weeks, and if we see an increase in hemoglobin, then we know that the cause of anemia is iron deficiency.”

“Even if the hemoglobin increases to the normal range, it is important to continue iron supplementation for 3 months in order to replenish iron stores. Iron deficiency in the absence of an anemia may lead to reduced cognitive and psychomotor performance.”

“The decision for a transfusion will be based on the severity, the symptoms, the cause, and lastly whether it is an acute or chronic anemia. If the hemoglobin levels do not increase with iron supplementation, we will then need to investigate for other causes and treat accordingly” [11].

History and Counseling: Short Stature

Candidate Information:

An 11-year-old boy has been brought in to the GP clinic by his parents due to concerns of growth. He is otherwise well, but his parents state, “He is much shorter than everyone else in his class at school.”

Differential Diagnosis:

- Constitutional delay of growth and puberty
- Familial short stature
- Intrauterine
 - Placental insufficiency, Russell-Silver syndrome
- Skeletal
 - Bone dysplasia, spinal irradiation
- Nutritional
 - Malabsorption (celiac, short gut), rickets, protein-calorie malnutrition
- Chronic illness
 - Renal failure, IBD, cystic fibrosis (CF), inborn errors of metabolism
- Iatrogenic
 - Long-term corticosteroid therapy
- Chromosomal/Genetic
 - Turner, Down, Noonan, Cornelia de Lange
- Endocrine
 - Hypothyroidism, growth hormone deficiency, Cushing syndrome/disease, pubertal delay/arrest, pseudohypoparathyroidism
- Psychosocial deprivation/child protection concerns

Short stature describes a height that is significantly below the average height for a person’s age, sex, ethnicity, and

family background. Short stature may be a normal variant or genetically linked; however, it may also be a sign of an organic medical condition. Stature must be assessed within the context of parental heights and the child's pubertal status and bone age. Apart from average height, growth velocity must also be compared to average for age, sex, and ethnicity. There are several factors that affect longitudinal growth, including but not limited to familial growth patterns, nutritional status, general medical health, bone health, and several endocrine-related conditions including the growth hormone axis, adrenal function, thyroid status, and the individual effects of insulin and sex steroids.

When assessing a child brought in due to concerns of short stature, there are two questions you need to keep in mind: (1) is the child short in relation to other children of the same age and (2) is the child unexpectedly short for the family?

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your ID badge.
- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of...? And he is... years old?”

Presenting Complaint:

“What brings you in to the office today?”

History of Presenting Illness:

- Who is mainly concerned that there is a problem with the child's height (child themselves, parents, and/or others)?
- Is there a family history of growth problems?
- What are the heights of the child's parents and siblings?
- Are the parents related to each other?
- What was the child's birth weight and height?
- What has their pattern of growth been throughout life?
- At what gestational age was the child born?
- Were there any issues during the pregnancy or delivery?
 - Mode of delivery?
 - Did the child require any time in special care?
 - Any major physical issues after delivery?
- Did the child breast or bottle-feed? Were there any difficulties with feeding?
- Detailed dietary history? Do they consume a normal varied diet?

- Any symptoms suggestive of an eating disorder?
- Do they take any special supplements?
- Did the child meet all their normal developmental milestones?
- Does the child go to school? How are they coping at school?
- Has the child shown signs of the start of puberty?

Systems Review:

- Any problems with breathing/issues with their lungs?
- Any bowel issues? Constipation or diarrhea? Abdominal pain?
- Does the patient have a normal sense of smell (Kallmann's syndrome)?
- Any dental problems?
- Any problems with the kidney?
- Any symptoms of history of thyroid dysfunctions [12]?
- Any history of vascular abnormalities?
- Any hearing problems?
- Any learning difficulties? Or mental health issues?
- Has the child lost or gained weight? Any changes in body shape?
- Has he had any testicular surgery, testicular torsion/trauma, mumps, or maldescent of the testis?
- Any symptoms of pituitary hormone deficiency [13]?
- Any cardiac problems? Any liver problems?
- Any infections? Fevers? Night sweats? Lethargy?

Past Medical and Surgical History:

- Baby health visits
- Medical illnesses
- Any previous or recent surgery
- Hospitalization history or emergency visits, accidents, frequent trauma

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, OTC, herbal/vitamins)
- Length of time been taking any regular medications?

Child (BINDES):

- Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment, and social history
- Detailed dietary history
- Growth pattern history

Family History:

- Anyone else in the family having similar symptoms?
- Any conditions that run in the family?
- Any family members who have had late or absent puberty, infertility, or never had children?

- Any family members with dental or palatal problems, kidney abnormalities, or anosmia?

Wrap-Up:

Mention that once you complete the history, you would then examine the child.

Question: “How will you counsel the parents?”

Answer: “Management of the condition largely depends on the cause for the short stature. Constitutional growth delay is the most common cause of short stature and pubertal delay. Children who have constitutional growth delay will often have had slowed linear growth within the first 3 years of life. Their growth then resumes at a normal rate; these children will grow along the lower growth percentiles at a normal velocity for the prepubertal years. Consequently, at the expected time of puberty, the height of children with constitutional delay will begin to drift further from the growth curve due to a delay in the pubertal growth spurt. There is reassurance with constitutional delay of growth in that there will be a delayed onset of puberty and growth spurt; however, there will be normal growth to a normal adult. Constitutional delay of growth is a transient state of hypogonadotropic hypogonadism. This diagnosis of constitutional delay in growth can only be made after excluding other causes that cause hypogonadotropic hypogonadism, which unfortunately cannot be diagnosed till late.”

“You can be referred to an endocrinologist who can discuss with you further in regard to treatment options for constitutional delay in growth as well as investigations that can be done to exclude other causes.”

“The most common drug used to treat this condition is depot testosterone injections. The use of testosterone will need to be done carefully to induce puberty and optimize skeletal growth without inducing premature fusion of the growth plate and without adversely affecting fertility. Another option is growth hormone replacement.”

Question: “What are some further investigations that might be done with the endocrinologist?”

Answer: “The investigations that are done will largely be based on the history and examination findings, but the following will be considered:

- Full blood count
- Erythrocyte sedimentation rate (ESR)
- Thyroid function tests
- Renal function tests
- Serum calcium/phosphate/alkaline phosphatase (ALP)
- Celiac antibodies

- Karyotypes for various genetic syndromes
- Skeletal survey

“Depending on the history, further investigations for the assessment of the growth hormone axis may need to be done, including insulin-like growth factor 1 (IGF1), luteinizing hormone, and follicle-stimulating hormone. Lastly, a magnetic resonance imaging (MRI) of the pituitary gland may be considered.”

History and Counseling: Jaundice

Candidate Information:

A 2-day-old baby has been brought to your attention due to having a yellow tinge to the skin and conjunctiva. The baby has otherwise been well but has a serum bilirubin 220 μ (mol/L) (ref. Max 200 μ [mol/L]).

Differential Diagnosis:

- Unconjugated
 - Physiological neonatal jaundice
 - Hemolytic
 - ABO Rh incompatibility
 - Neonatal sepsis
 - Splenomegaly
 - Hereditary spherocytosis
 - G6PD
 - Nonhemolytic
 - Breast milk jaundice
 - Breakdown of cephalohematoma
 - Polycythemia
 - Sepsis
 - Gilberts syndrome
 - Crigler-Najjar syndrome
 - Hypothyroidism
- Conjugated
 - Bowel obstruction
 - Bile duct obstruction/biliary atresia/choledochal cyst
 - Neonatal hepatitis
 - Galactosemia
 - Drug-induced

Jaundice is quite common in the newborn period and is almost always caused by unconjugated hyperbilirubinemia. Almost 60% of term and 80% of preterm babies develop jaundice in the first week of life [14].

Jaundice is a sign of elevated levels of bilirubin in the blood; and the baby presents with a yellowish appearance of the skin, mucus membranes, and then conjunctiva.

Hyperbilirubinemia occurs when there is an imbalance between bilirubin production, conjugation, and elimination. The breakdown of red blood cells (RBC) and hemoglobin

cause unconjugated bilirubin to accumulate in the blood. Unconjugated bilirubin binds to albumin and is transported to the liver where it is converted to conjugated bilirubin. Conjugated bilirubin is water soluble and able to be eliminated via urine and feces. Unbound unconjugated bilirubin is lipid soluble and can cross the blood-brain barrier [14].

Jaundice needs to be taken seriously because the consequence of an untreated high bilirubin level may lead to brain damage (kernicterus).

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your ID badge.
- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of...? And he is...days old?”

Presenting Complaint:

“What seems to be the problem?”

- A yellow tinge to the skin and conjunctiva

History of Presenting Illness:

When did the mom notice it? *If it is early in the second day, is it pathological?*

Make sure that the baby is stable:

- “Where did you notice it first?”
- “Is it spreading to the whole body?”
- “Did it reach the legs?”
- “Is it getting darker with time?”
- “Did you notice any darker urine?”
- “Is he passing pale/gray stools?” (In biliary atresia, pale stool from the beginning)

Ask about **associated symptoms**:

- Fever
- Cough
- Discharge from eyes/ears
- Diarrhea
- Vomiting
- Foul smelling urine
- Rash
- Irritability or lethargy
- Dehydration: how many diapers? Any tears?

Ask about these three **red flags**:

- High-pitched cry
- Poor feeding and poor sucking
- Floppy baby

If these three signs are present, tell the mom that you need to examine the newborn and will need a pediatric review and likely admission.

Maternal/Obstetric History:

- GTPAL (number of gestations, term pregnancies, premature births, abortions, live children)?
- History of previous pregnancies (neonatal jaundice)?
- Maternal medical history (including liver disease, illness during pregnancy, diabetes, preeclampsia, rubella, toxoplasmosis, herpes, cytomegalovirus (CMV), medication use during pregnancy)?
- Any drugs, medications, or alcohol used during pregnancy?
- Maternal blood type?
- Any complications of the current pregnancy? Gestational hypertension? Gestational diabetes? Hyper-/hypothyroidism? Hypercoagulation?
- Family history of neonatal jaundice? Liver problems?
- Group B strep status? Any swab done?
- Any fevers during delivery?

Newborn History:

- Gestational age at birth?
- Cesarean delivery versus spontaneous vaginal delivery?
- Prolonged rupture of membranes? Artificial rupture of membranes?
- Any fetal distress post-delivery?
- Forceps or vacuum delivery?
- Meconium present?
- What were the Apgar scores at 1 minute and 5 minutes?
- Was there any resuscitation required? Any admission to special care required for any reason?
- Any initial blood work done? For what reason? What were results?
- Is the baby breastfeeding? How often? And how well?
- What was the color of the first stool? Color of the urine?

Past Medical and Surgical History:

- Baby check
- Any medical/surgical issues post-delivery
- Hospitalization history or emergency visits

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, OTC, herbal/vitamins)

Child (BINDES):

- Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment, and social history

Family History:

- Anyone else in the family having similar symptoms?
- Any conditions that run in the family?
- Any family history of neonatal jaundice?
- Any family history of liver issues?

Wrap-Up:

Mention that once you complete the history, you would then examine the child.

Question: “How will you counsel the patient/parents?”

Answer: “One of the most common causes of jaundice in a baby presenting after 24 h and resolving early is physiological neonatal jaundice. Physiological jaundice is transient and a mild unconjugated hyperbilirubinemia. It is often caused due to an immature liver with reduced enzyme activity as well as there are increased bilirubin levels secondary to an increase in the amount of red blood cells and a decrease in their life span. It will usually resolve within the first week of life. If it is prolonged, we will then need to investigate for other causes.”

“We can be reassured that the jaundice is physiological if the jaundice appeared on day 2–4, the baby is well (no signs of sepsis/infection and feeding well), the baby is passing normal-colored stools and urine, and there are no other abnormalities.”

“It usually requires no treatment, but if the bilirubin levels are above the treatment threshold, then the baby may require phototherapy. The aim of treatment is to decrease bilirubin and prevent kernicterus. Kernicterus is the deposition of bilirubin in the brain stem and basal ganglia, which may lead to intellectual disability, cerebral palsy, hearing loss, and paralysis of upward gaze.”

“We can reassure the parents that physiological jaundice is self-limiting and resolves by day 7–10 and usually requires no treatment. If there are any other symptoms or jaundice does not resolve after 10 days, then further investigations will need to be done to search for underlying disease.”

History and Management: Failure to Thrive**Candidate Information:**

A 12-month-old baby has been referred to your clinic by the GP due to a weight-for-age decline from the 30th percentile to the 10th centile.

Differential Diagnosis:

- Poor intake:
 - Inadequate nutrition (breast milk/formula and/or food)
 - Breastfeeding difficulties
 - Restricted diet
 - Structural causes of poor feeding (cleft palate)
 - Persistent vomiting
 - Early (<4 months) or delayed introduction of solids
- Inadequate absorption:
 - Celiac disease
 - Chronic liver disease
 - Pancreatic insufficiency (cystic fibrosis)
 - Chronic diarrhea
 - Cow’s milk protein intolerance
- Excessive caloric utilization:
 - Chronic illness
 - UTI
 - Chronic respiratory disease (cystic fibrosis)
 - Congenital heart disease
 - Diabetes mellitus
 - Hyperthyroidism
- Psychosocial factors:
 - Parental depression, anxiety, or other mood disorders
 - Parent/parents substance abuse
 - Attachment difficulties
 - Disability/chronic illness of parent/parents
 - Coercive feeding
 - Difficulties at meal times
 - Poverty
 - Behavioral disorders
 - Poor social support
 - Poor carer understanding
 - Exposure to traumatic incident/family violence
 - Neglect
 - Current or past child protection involvement

Failure to thrive (FTT) is a condition that indicates insufficient weight gain or inappropriate weight loss. A slight weight loss, up to 10% of birth weight, after birth is normal, and most babies return to their birth weight over about 3 weeks. FTT is a vague term that is not a disorder within itself, but rather a sign of undernourishment; however, it can be a sign of a serious underlying disorder.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your ID badge.
- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of...? And he is... old?”

Presenting Complaint:

“What brings you in today?”

History of Presenting Illness:

- When was the child last well?
- What is the current weight and height? What was the birth weight and height?
- Breastfeeding:
 - Any difficulties? Timing of feeds? Number and volume of feeds per day? Duration of feeds?
 - Is the baby “settled” with breastfeeds?
 - Any vomits after feeds?
 - Breast milk supply?
 - Time taken to feed?
 - Mother’s perception of the breast milk supply?
- Formula feeding:
 - Is the formula made up correctly? Correct dilution?
 - Volumes? Any recent changes to formula brands?
 - Any vomiting or diarrhea associated with feeds?
- Solids:
 - When were solids introduced? What types have been given?
- What is the interaction between baby and parent when feeding?
- “Do you ever feel like you need to force feed?”
- Are feeding times pleasant or unpleasant?
- Does the infant accept solids readily?
- Age when three meals and two snacks per day has been achieved?
- Composition and quantity of meals?
- What does a meal encompass of? Variety in food groups?
- Any behavioral issues or fussing around at meal times?
- What is the meal time routine?
- What is the total milk volume over 24 h?
- Detailed birth history:
 - Any antenatal complications?
 - Maternal health issues?
 - Birth weight/height and head circumference?

Systems Review:

- Any significant intercurrent illnesses coinciding with onset of poor growth?
- Any vomiting and diarrhea? Frequency? Volume? Consistency? Any blood/bile?
- Abdominal pain?
- Recurrent ear infections?
- Urine output: number of wet nappies? Urinary tract infections?

- Developmental delay, regression, or syndromal features?
- Fevers? Lethargy? Irritability?

Past Medical and Surgical History:

- Baby health visits
- Medical illnesses
- Any previous or recent surgery
- Chronic and current illness
- Hospitalization history or emergency visits, accidents, frequent trauma

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, OTC, herbal/ vitamins)

Child (BINDES):

- Birth/pregnancy history, immunization status, nutrition/ weight gain, developmental history/meeting milestones, environment, and social history
- Detailed dietary history
- Growth pattern history

Family History:

- Anyone else in the family having similar symptoms?
- Any conditions that run in the family?

Social History:

- “Is there a lack of financial resources for food requirements?”
- “Where do you live? And how many people are in the household?”
- “How many siblings does the baby have?”
- “Do you have extended family in the area whom you are close with?”
- “Have you recently immigrated from overseas? What is your ethnic background?”
- “Any mental health problems in the family?”
- “Do you see the GP regularly for the baby?”
- “Are you engaging with community services?”
- “Any previous involvement with child protection for any reason?”

Wrap-Up:

Mention that once you complete the history, you would then examine the child.

Question: “How will you manage the case?”

Answer: “Ultimately, the management of the child will depend on the cause for the FTT. However, the child will require admission to hospital if any of the following exist: severe under nutrition/dehydration, failed outpatient management, there is

suspicion or confirmed child neglect or abuse, psychosocial concerns, and, lastly, if there is extreme parental anxiety or depression. In all the preceding reasons, admission will allow us to further assess feeding techniques and routines, the interaction between the parents and the child, as well as allow a holistic approach with a multidisciplinary team.”

“While in hospital, it will be important to ensure there are no organic causes for the failure to thrive. At the same time, if there are any feeding concerns, a lactation consultant and a dietician can be involved. If there are any concerns for child neglect, it will be appropriate to involve a social worker who may also be able to comment on the interaction between the parent and the child.”

“In the majority of cases, further investigations are not required.”

“However, depending on the history and physical examination, one may consider to order the following investigations: full blood count, erythrocyte sedimentation rate (ESR), electrolytes, liver function tests, iron studies, calcium/phosphate, thyroid function tests, blood glucose, urine microscopy/culture, celiac screen (if on solids and containing gluten), stool microscopy and culture, and, lastly, to look at the stool for fat globules and fatty acid crystals.”

“A clear follow-up plan should be made at the time of discharge. The timing and frequency of follow-up will largely depend on the child’s weight, weight gain/velocity, age, and psychosocial situation. There should be close communication with the general practitioner, the community health nurse for the baby, and the pediatrician. If outpatient appointments are consistently being missed, then there should be a strong suspicion for child neglect, and a referral should be made to child protection.”

History and Counseling: Vaccination

Candidate Information:

A young mother presented with her 8-week-old baby. The woman has recently immigrated from Kenya and English is her second language. She was referred to you for her child’s 2-month vaccinations and is unsure whether she should have her child vaccinated and would like to discuss it with you.

General Principles of Counseling in This Case:

- Firstly, to be aware of communication barriers such as language difficulties and cultural differences. You need to understand the patient’s fears, concerns, and preconceptions and to respond and deal with these in an empathetic, nonjudgmental way. You need to transmit information in a way that is consistent with the patient’s expectations and in a way that is understandable to them. Always remember to encourage questions and feedback from the patient. This is an important case to practice closed-loop communication.

- Immunization from an early age is highly recommended for all children. This helps to protect them from the most serious childhood infections, some of which can be life-threatening. Routine childhood immunizations help to protect the child against diphtheria, tetanus, whooping cough (pertussis), polio, meningococcal C disease, pneumococcal disease, hepatitis B, *Haemophilus influenzae*, rotavirus, chickenpox, measles, mumps, and rubella.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your ID badge.
- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of...? And he/she is... old?”

Presenting Complaint:

“What brings you in today?” Ask the mother if she would prefer someone to translate (family member or an official translator).

History of Presenting Illness:

- Ask if the child has been well.
- Does she have any current concerns about the child’s physical health?
- Any rashes?
- Coughs?
- Abdominal pain?
- Vomiting?
- Diarrhea?
- Fevers?
- Lethargy?
- Feeding well?
- Wet nappies?
- What are her concerns with vaccinations?
- What would she like to know and why?
- Has the child had any prior vaccines? Any reactions?
- If yes, which ones?
- If no, why not?

Systems Review:

- Any fevers?
- Lethargy?
- Night sweats?
- Any allergies?

- Received any blood products in the past?
- Any chronic illness?

Past Medical and Surgical History:

- Baby health visits
- Medical illnesses
- Any previous or recent surgery
- Chronic and current illnesses that may lower immunity (leukemia, cancer, human immunodeficiency virus [HIV], acquired immunodeficiency syndrome [AIDS]) or treatment that may lower immunity (oral steroid therapy, radio-/chemotherapy)
- Hospitalization history or emergency visits, accidents, frequent trauma

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, OTC, herbal/vitamins)

Child (BINDES):

- Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment, and social history

Family History:

- Anyone in the family with a disease or is having treatment that causes lower immunity (leukemia, cancer, HIV, AIDS, oral steroid medication, radiotherapy, or chemotherapy)?

Social History:

- Financial resources to support the family?
- “Where do you live? And how many people are in the household?”
- “How many siblings does the baby have? Have they been vaccinated?”
- “Do you have extended family in the area whom you are close with?”
- “Have you recently immigrated from overseas? What is your ethnic background?”
- “Do you see the GP regularly for the baby?”
- “Are you engaging with community services?”
- “Any previous involvement with child protection for any reason?”

Wrap-Up:

Question: “How will you counsel the parents?”

Answer: Empathize and be nonjudgmental while addressing the patient’s concerns and pick up on their cues. Try to further explore their beliefs.

Begin counseling the patient by explaining the **benefits versus risks** of vaccinations: “There are many benefits of immunizing your child, and this includes preventing serious

diseases that may have severe and life-threatening consequences. These severe diseases that are largely preventable include diphtheria, tetanus, whooping cough (pertussis), polio, meningococcal C disease, pneumococcal disease, hepatitis B, *Haemophilus influenzae*, rotavirus, chickenpox, measles, mumps, and rubella. Another benefit of immunization is to maintain the eradication of these diseases that can kill and disable millions of children if an outbreak is to occur. It is ultimately much safer to have the vaccines than not to have them. Vaccines are very safe and undergo many safety procedures in the labs prior to being used. However, as with all medications used to treat diseases, vaccines can have side effects. However, these side effects are rarely serious and generally last short term. Some of the side effects include local effects such as swelling, redness, a lump, fever, an allergic reaction, and, rarely, anaphylaxis.”

Discuss some of the **contraindications to vaccination**: “There are some circumstances where we would either postpone a vaccination or recommend that it is not safe for a child to have a vaccination. This includes if your child is unwell or has a fever, the vaccine should be postponed. If the child is immunocompromised (has a disease such as leukemia, cancer, HIV/AIDS, or is being treated with oral steroids, radiotherapy, or chemotherapy), we would recommend avoiding live vaccines such as MMR (measles, mumps, and rubella) and BCG (Bacillus Calmette-Guérin/tuberculosis). If there is a known anaphylaxis reaction to a certain ingredient within the vaccine, it would be advisable to avoid it.”

Explain the **national immunization program** and the process of vaccination to the parent. For example: “There is a national immunization program that is used Australia-wide and provides an outline of what vaccinations should be administered at specific ages. Here is a copy of the schedule for your information (see Figs. 12.6, 12.7a, b, 12.8a, b and Table 12.2) [15–18]. At the current age of 8 weeks, it would be recommended for baby to have the diphtheria/tetanus/pertussis, hepatitis B, pneumococcal, and rotavirus vaccinations.”

“The vaccination will be given as an injection, usually in the thigh. It is normal for the baby to be a bit upset and cry at the time. The child might be irritable for a couple days after the vaccination and may also have a low-grade fever. The child may also have a sore arm, with some redness or a lump around the injection site. The low-grade fever and sore arm may both be treated by some Panadol (paracetamol/acetaminophen) and/or ibuprofen. If any more serious reactions develop, then you will need to bring the child back to the doctor.”

Summary The reason for the vaccinations is both to benefit the baby and reduce any risk of contracting a life-threatening disease, as well as in the interest of public health to reduce the spread of disease and protect those that are unable to be vaccinated. Vaccines are generally safe and may have some minor side effects.

Age at Vaccination	DTaP-IPV	Hib	MMR	Var	HB	Pneu-C-7	Men-C	Tdap	Inf
Birth									
2 months	⊖	✦			★ Infancy 3 doses	⊗	⊙		
4 months	⊖	✦				⊗	(⊙)		
6 months	⊖	✦				⊗	⊙ or ⊙		6-23 months
12 months			■	●	or	⊗ 12-15 months	if not yet given		ⓘ
18 months	⊖	✦	■ or ■		Pre-teen/ teen 2-3 doses				1-2 doses
4-6 years	⊖		■						

- () Symbols with brackets around them imply that these doses may not be required, depending upon the age of the child or adult.
- ⊖ Diphtheria, tetanus, acellular pertussis and inactivated polio virus vaccine (DTaP-IPV): DTaP-IPV(± Hib) vaccine is the preferred vaccine for all doses in the vaccination series, including completion of the series in children who have received one or more doses of DPT (whole cell) vaccine (eg, recent immigrants). The 4- to 6-year dose can be omitted if the fourth dose was given after the fourth birthday.
- ✦ Haemophilus influenzae type b conjugate vaccine (Hib): the Hib schedule shown is for the Haemophilus b capsular polysaccharide - polyribosylribitol phosphate (PRP) conjugated to tetanus toxoid (PRP-T). For catch up, the number of doses depends on the age at which the schedule is begun. Not usually required past the age of 5.
- Measles, mumps and rubella vaccine (MMR): a second dose of MMR is recommended for children at least one month after the first dose for the purpose of better measles protection. For convenience, options include giving it with the next scheduled vaccination at 18 months of age or at school entry (4 to 6 years of age) (depending on the provincial/territorial policy) or at any intervening age that is practical. In the catch-up schedule, the first dose should not be given until the child is ≥ 12 months old.
- Varicella vaccine (Var): children aged 12 months to 12 years should receive 1 dose of varicella vaccine.
- ★ Hepatitis B vaccine (HB): hepatitis B vaccine can be routinely given to infants or pre-adolescents, depending on the provincial/territorial policy. For infants born to chronic carrier mothers, the first dose should be given at birth (with hepatitis B immunoglobulin), otherwise the first dose can be given at 2 months of age to fit more conveniently with other routine infant immunization visits. The second dose should be administered at least 1 month after the first dose, and the third at least 2 months after the second dose, but these may fit more conveniently into the 4- and 6-month immunization visits.
- ⊗ Pneumococcal conjugate vaccine - 7-valent (Pneu-C-7): recommended for all children under 2 years of age. The recommended schedule depends on the age of the child when vaccination is begun.
- ⊙ Meningococcal C conjugate vaccine (Men-C): recommended for children under the age of 5, adolescents and young adults. The recommended schedule depends on the age of the individual and the conjugate vaccine used. At least 1 dose in the primary infant series should be given after 5 months of age. If the provincial/territorial policy is to give Men-C to persons ≥ 12 months of age, 1 dose is sufficient.
- ⓘ Influenza vaccine (Inf): recommended for all children 6 to 23 months of age and all persons ≥ 65 years of age. Previously unvaccinated children < 9 years of age require 2 doses of the current season's vaccine with an interval of at least 4 weeks. The second dose within the same season is not required if the child received 1 or more doses of Influenza vaccine during the previous Influenza season.

Fig. 12.6 Canada's routine immunization schedule for infants and children. <https://www.canada.ca/en/public-health/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/report-on-state-public-health-canada-2009/appendix-b.html>. © All rights reserved.

The Chief Public Health Officer's Report on the State of Public Health in Canada, 2009 – Routine Immunization Schedule for Infants and Children – Appendix B. Public Health Agency of Canada, 2009 (Adapted and reproduced with permission from the Minister of Health 2018)

History and Counseling: Enuresis

Candidate Information:

The parents of a 6-year-old boy have brought him into the practice due to concerns of his night-time bedwetting. He has never had a period of consistent night-time dryness. He has no other symptoms.

Differential Diagnosis:

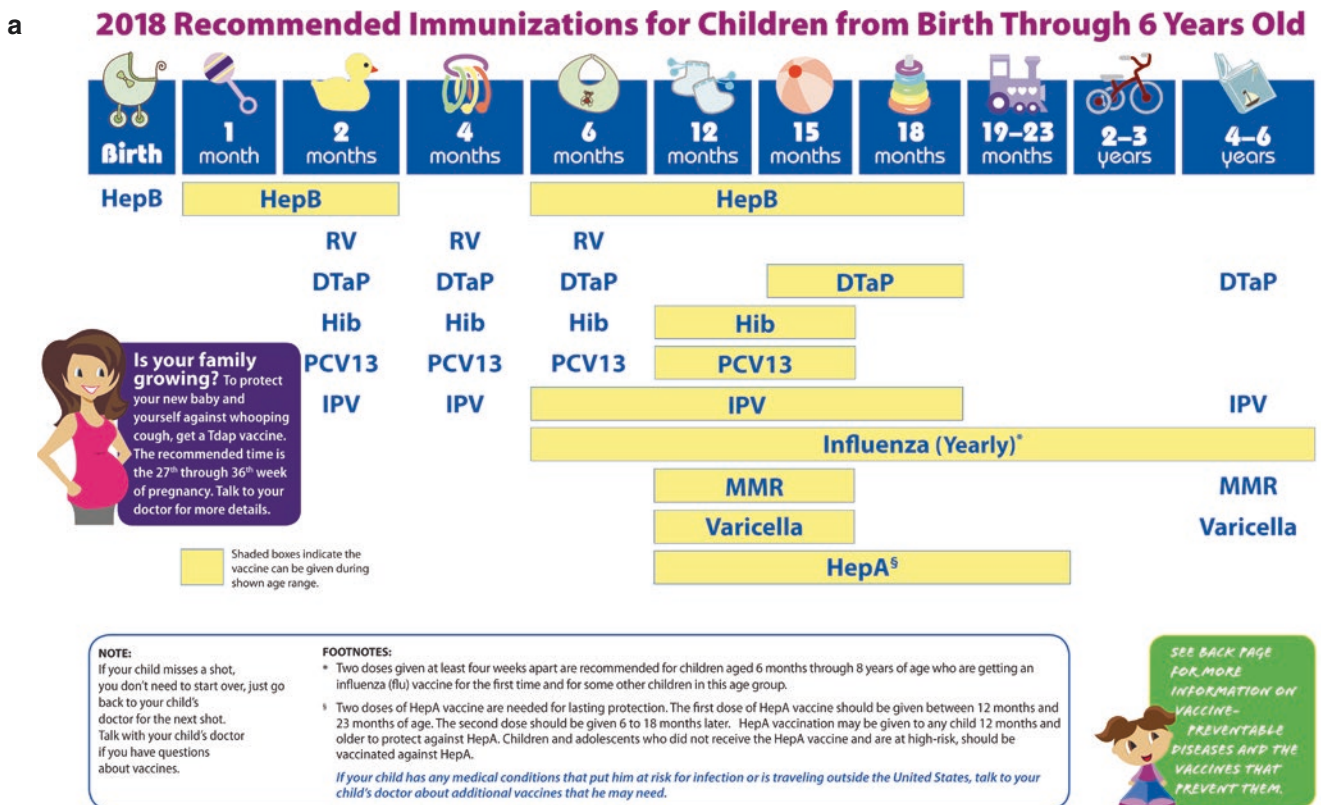
- Constipation
- Diabetes
- Congenital abnormality of the urinary tract
 - Ectopic ureter, ureterocele, and urethral valves
- Detrusor overactivity
- Detrusor areflexia
- Emotional disturbances
- Neurological disorder leading to voiding dysfunction
 - Spina bifida, epilepsy
- Urinary tract infection

Bedwetting is a problem for many school-aged children and their families. Nocturnal enuresis affects 20% of 5-year-olds, 5% of 10-year-olds, and 1% of those over 18 years old [19].

Enuresis can be divided into primary versus secondary enuresis, and monosymptomatic versus nonmonosymptomatic enuresis. Primary enuresis is when a child has never achieved 6 months of continuous dry nights, whereas secondary enuresis is when a child has previously attained at least 6 months of night-time dryness but who has relapsed. Monosymptomatic enuresis refers to enuresis where the only symptom present is nighttime bedwetting. Nonmonosymptomatic enuresis refers to enuresis alongside daytime lower urinary tract symptoms such as urgency, frequency, dribbling, incomplete emptying and often daytime incontinence, dysuria, and a display of various holding maneuvers.

Starting the Interview:

- Knock on the door.
- Enter the station.



For more information, call toll free **1-800-CDC-INFO** (1-800-232-4636) or visit www.cdc.gov/vaccines/parents



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention



Fig. 12.7 (a, b) U.S. Centers for Disease Control and Prevention: 2018 recommended immunization schedules for children from birth through 6 years old (Reprinted from US Centers for Disease Control

and Prevention. <https://www.cdc.gov/vaccines/schedules/easy-to-read/index.html> [16])

b Vaccine-Preventable Diseases and the Vaccines that Prevent Them

Disease	Vaccine	Disease spread by	Disease symptoms	Disease complications
Chickenpox	Varicella vaccine protects against chickenpox.	Air, direct contact	Rash, tiredness, headache, fever	Infected blisters, bleeding disorders, encephalitis (brain swelling), pneumonia (infection in the lungs)
Diphtheria	DTaP* vaccine protects against diphtheria.	Air, direct contact	Sore throat, mild fever, weakness, swollen glands in neck	Swelling of the heart muscle, heart failure, coma, paralysis, death
Hib	Hib vaccine protects against <i>Haemophilus influenzae</i> type b.	Air, direct contact	May be no symptoms unless bacteria enter the blood	Meningitis (infection of the covering around the brain and spinal cord), intellectual disability, epiglottitis (life-threatening infection that can block the windpipe and lead to serious breathing problems), pneumonia (infection in the lungs), death
Hepatitis A	HepA vaccine protects against hepatitis A.	Direct contact, contaminated food or water	May be no symptoms, fever, stomach pain, loss of appetite, fatigue, vomiting, jaundice (yellowing of skin and eyes), dark urine	Liver failure, arthralgia (joint pain), kidney, pancreatic, and blood disorders
Hepatitis B	HepB vaccine protects against hepatitis B.	Contact with blood or body fluids	May be no symptoms, fever, headache, weakness, vomiting, jaundice (yellowing of skin and eyes), joint pain	Chronic liver infection, liver failure, liver cancer
Influenza (Flu)	Flu vaccine protects against influenza.	Air, direct contact	Fever, muscle pain, sore throat, cough, extreme fatigue	Pneumonia (infection in the lungs)
Measles	MMR** vaccine protects against measles.	Air, direct contact	Rash, fever, cough, runny nose, pinkeye	Encephalitis (brain swelling), pneumonia (infection in the lungs), death
Mumps	MMR** vaccine protects against mumps.	Air, direct contact	Swollen salivary glands (under the jaw), fever, headache, tiredness, muscle pain	Meningitis (infection of the covering around the brain and spinal cord), encephalitis (brain swelling), inflammation of testicles or ovaries, deafness
Pertussis	DTaP* vaccine protects against pertussis (whooping cough).	Air, direct contact	Severe cough, runny nose, apnea (a pause in breathing in infants)	Pneumonia (infection in the lungs), death
Polio	IPV vaccine protects against polio.	Air, direct contact, through the mouth	May be no symptoms, sore throat, fever, nausea, headache	Paralysis, death
Pneumococcal	PCV13 vaccine protects against pneumococcus.	Air, direct contact	May be no symptoms, pneumonia (infection in the lungs)	Bacteremia (blood infection), meningitis (infection of the covering around the brain and spinal cord), death
Rotavirus	RV vaccine protects against rotavirus.	Through the mouth	Diarrhea, fever, vomiting	Severe diarrhea, dehydration
Rubella	MMR** vaccine protects against rubella.	Air, direct contact	Children infected with rubella virus sometimes have a rash, fever, swollen lymph nodes	Very serious in pregnant women—can lead to miscarriage, stillbirth, premature delivery, birth defects
Tetanus	DTaP* vaccine protects against tetanus.	Exposure through cuts in skin	Stiffness in neck and abdominal muscles, difficulty swallowing, muscle spasms, fever	Broken bones, breathing difficulty, death

* DTaP combines protection against diphtheria, tetanus, and pertussis.

** MMR combines protection against measles, mumps, and rubella.

Last updated December 2017 • CS272886-E

Fig. 12.7 (continued)

- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your ID badge.
- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of...? And he is... old?”

Presenting Complaint:

“What seems to be the problem?”

History of Presenting Illness:

- Is the child bothered by the bedwetting?
- Onset of bedwetting? How long has it been going on for?
- Has the child previously been dry at night without assistance for 6 months? Or has this been an ongoing issue?
- Has any treatment or therapies been tried before?
- What is the frequency of the enuresis (days per week and episodes per night)?
- When during the night, do the episodes occur?
- What is the quantity of urine? Are pants soaked?
- Does the child have a large first-morning void despite enuresis?
- What are the child’s daytime drinking habits? Especially in the afternoon and evening?
- Are there any daytime symptoms (incontinence, urgency, frequency, dribbling, incomplete emptying, straining, weak stream, leakage)?
- Are there any holding maneuvers (crossing legs, tiptoeing, etc.)?
- How many times during the day does the child void?
- Any dysuria (pain on urinating)?
- Does the child have a history of urinary tract infections?
- Does the child have behavioral problems?
- Does the child have daytime somnolence? Does the child snore?
- Any history of motor or learning difficulties? Delayed development?

- Any psychosocial concerns? Any recent stressors? Recent events in their life?

Systems Review:

- Does the child have constipation? Fecal incontinence?
- Does the child have polydipsia, polyuria, or weight loss?
- Fevers? Night sweats? Rigors?
- Vomiting? Nausea? Diarrhea? Abdominal pain?

Past Medical and Surgical History:

- Baby health visits
- Medical illnesses
- Any previous or recent surgery
- Chronic and current illness
- Hospitalization history or emergency visits, accidents, frequent trauma

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, OTC, herbal/vitamins)

Child (BINDES):

- Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment, and social history
- Home environment, siblings, school environment, and performance

Family History:

- Anyone else in the family having similar symptoms?
- Any conditions that run in the family?

Social History:

- “Where do you live? And how many people are in the household?”
- “How many siblings does the child have?”
- “Any mental health problems in the family?”
- “Any stressors in the child’s life?”
- Assess the family dynamic and whether the family has been supportive in any past treatments.
- School environment. Does the child enjoy going to school? School performance?

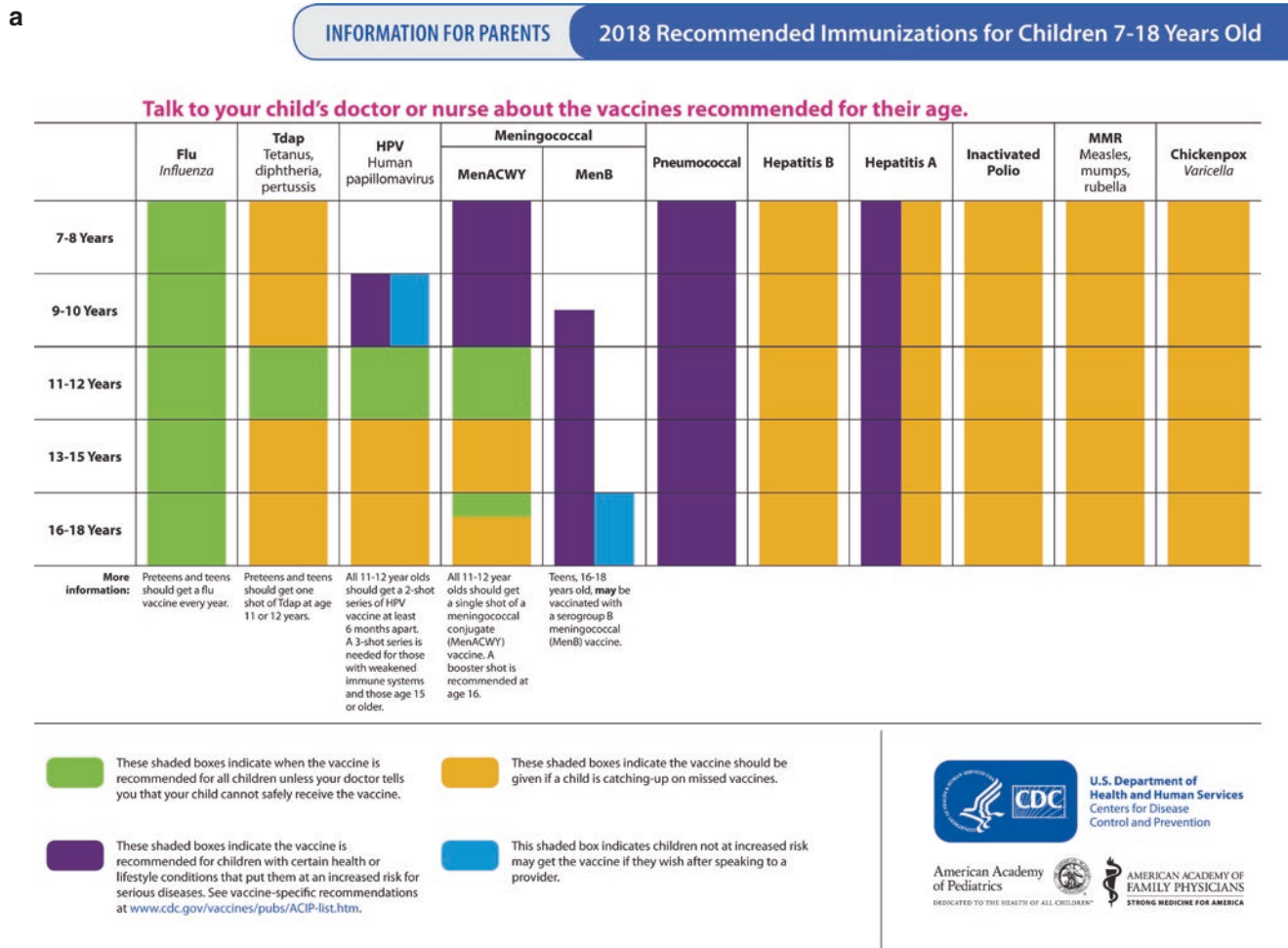


Fig. 12.8 (a, b) US Centers for Disease Control and Prevention: 2018 recommended immunization schedules for children 7–19 years old (Reprinted from US Centers for Disease Control and Prevention. <https://www.cdc.gov/vaccines/schedules/easy-to-read/index.html> [17])

b Vaccine-Preventable Diseases and the Vaccines that Prevent Them

Diphtheria (Can be prevented by Tdap vaccination)

Diphtheria is a very contagious bacterial disease that affects the respiratory system, including the lungs. Diphtheria bacteria can be spread from person to person by direct contact with droplets from an infected person's cough or sneeze. When people are infected, the bacteria can produce a toxin (poison) in the body that can cause a thick coating in the back of the nose or throat that makes it hard to breathe or swallow. Effects from this toxin can also lead to swelling of the heart muscle and, in some cases, heart failure. In serious cases, the illness can cause coma, paralysis, or even death.

Hepatitis A (Can be prevented by HepA vaccination)

Hepatitis A is an infection in the liver caused by hepatitis A virus. The virus is spread primarily person-to-person through the fecal-oral route. In other words, the virus is taken in by mouth from contact with objects, food, or drinks contaminated by the feces (stool) of an infected person. Symptoms can include fever, tiredness, poor appetite, vomiting, stomach pain, and sometimes jaundice (when skin and eyes turn yellow). An infected person may have no symptoms, may have mild illness for a week or two, may have severe illness for several months, or may rarely develop liver failure and die from the infection. In the U.S., about 100 people a year die from hepatitis A.

Hepatitis B (Can be prevented by HepB vaccination)

Hepatitis B causes a flu-like illness with loss of appetite, nausea, vomiting, rashes, joint pain, and jaundice. Symptoms of acute hepatitis B include fever, fatigue, loss of appetite, nausea, vomiting, pain in joints and stomach, dark urine, grey-colored stools, and jaundice (when skin and eyes turn yellow).

Human Papillomavirus (Can be prevented by HPV vaccination)

Human papillomavirus is a common virus. HPV is most common in people in their teens and early 20s. About 14 million people, including teens, become infected with HPV each year. HPV infection can cause cervical, vaginal, and vulvar cancers in women and penile cancer in men. HPV can also cause anal cancer, oropharyngeal cancer (back of the throat), and genital warts in both men and women.

Influenza (Can be prevented by annual flu vaccination)

Influenza is a highly contagious viral infection of the nose, throat, and lungs. The virus spreads easily through droplets when an infected person coughs or sneezes and can cause mild to severe illness. Typical symptoms include a sudden high fever, chills, a dry cough, headache, runny nose, sore throat, and muscle and joint pain. Extreme fatigue can last from several days to weeks. Influenza may lead to hospitalization or even death, even among previously healthy children.

Measles (Can be prevented by MMR vaccination)

Measles is one of the most contagious viral diseases. Measles virus is spread by direct contact with the airborne respiratory droplets of an infected person. Measles is so contagious that just being in the same room after a person who has measles has already left can result in infection. Symptoms usually include a rash, fever, cough, and red, watery eyes. Fever can persist, rash can last for up to a week, and coughing can last about 10 days. Measles can also cause pneumonia, seizures, brain damage, or death.

Meningococcal Disease (Can be prevented by meningococcal vaccination)

Meningococcal disease has two common outcomes: meningitis (infection of the lining of the brain and spinal cord) and bloodstream infections. The bacteria that cause meningococcal disease spread through the exchange of nose and throat droplets, such as when coughing, sneezing, or kissing. Symptoms include sudden onset of fever, headache, and stiff neck. With bloodstream infection, symptoms also include a dark purple rash. About one of every ten people who gets the disease dies from it. Survivors of meningococcal disease may lose their arms or legs, become deaf, have problems with their nervous systems, become developmentally disabled, or suffer seizures or strokes.

Mumps (Can be prevented by MMR vaccination)

Mumps is an infectious disease caused by the mumps virus, which is spread in the air by a cough or sneeze from an infected person. A child can also get infected with mumps by coming in contact with a contaminated object, like a toy. The mumps virus causes swollen salivary glands under the ears or jaw, fever, muscle aches, tiredness, abdominal pain, and loss of appetite. Severe complications for children who get mumps are uncommon, but can include meningitis (infection of the covering of the brain and spinal cord), encephalitis (inflammation of the brain), permanent hearing loss, or swelling of the testes, which rarely results in decreased fertility.

Pertussis (Whooping Cough) (Can be prevented by Tdap vaccination)

Pertussis spreads very easily through coughing and sneezing. It can cause a bad cough that makes someone gasp for air after coughing fits. This cough can last for many weeks, which can make preteens and teens miss school and other activities. Pertussis can be deadly for babies who are too young to receive the vaccine. Often babies get whooping cough from their older brothers or sisters, like preteens or teens, or other people in the family. Babies with pertussis can get pneumonia, have seizures, become brain damaged, or even die. About half of children under 1 year of age who get pertussis must be hospitalized.

Pneumococcal Disease (Can be prevented by pneumococcal vaccination)

Pneumonia is an infection of the lungs that can be caused by the bacteria called pneumococcus. These bacteria can cause other types of infections too, such as ear infections, sinus infections, meningitis (infection of the lining of the brain and spinal cord), and bloodstream infections. Sinus and ear infections are usually mild and are much more common than the more serious forms of pneumococcal disease. However, in some cases pneumococcal disease can be fatal or result in long-term problems, like brain damage and hearing loss. The bacteria that cause pneumococcal disease spread when people cough or sneeze. Many people have the bacteria in their nose or throat at one time or another without being ill—this is known as being a carrier.

Polio (Can be prevented by IPV vaccination)

Polio is caused by a virus that lives in an infected person's throat and intestines. It spreads through contact with the stool of an infected person and through droplets from a sneeze or cough. Symptoms typically include sore throat, fever, tiredness, nausea, headache, or stomach pain. In about 1% of cases, polio can cause paralysis. Among those who are paralyzed, about 2 to 10 children out of 100 die because the virus affects the muscles that help them breathe.

Rubella (German Measles) (Can be prevented by MMR vaccination)

Rubella is caused by a virus that is spread through coughing and sneezing. In children rubella usually causes a mild illness with fever, swollen glands, and a rash that lasts about 3 days. Rubella rarely causes serious illness or complications in children, but can be very serious to a baby in the womb. If a pregnant woman is infected, the result to the baby can be devastating, including miscarriage, serious heart defects, mental retardation and loss of hearing and eye sight.

Tetanus (Lockjaw) (Can be prevented by Tdap vaccination)

Tetanus mainly affects the neck and belly. When people are infected, the bacteria produce a toxin (poison) that causes muscles to become tight, which is very painful. This can lead to "locking" of the jaw so a person cannot open his or her mouth, swallow, or breathe. The bacteria that cause tetanus are found in soil, dust, and manure. The bacteria enter the body through a puncture, cut, or sore on the skin. Complete recovery from tetanus can take months. One to two out of 10 people who get tetanus die from the disease.

Varicella (Chickenpox) (Can be prevented by varicella vaccination)

Chickenpox is caused by the varicella zoster virus. Chickenpox is very contagious and spreads very easily from infected people. The virus can spread from either a cough, sneeze. It can also spread from the blisters on the skin, either by touching them or by breathing in these viral particles. Typical symptoms of chickenpox include an itchy rash with blisters, tiredness, headache and fever. Chickenpox is usually mild, but it can lead to severe skin infections, pneumonia, encephalitis (brain swelling), or even death.

If you have any questions about your child's vaccines, talk to your healthcare provider.

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Fig. 12.8 (continued)

Wrap-Up:

Mention that once you complete the history, you would then examine the child.

Question: "How will you counsel the parents?"

Answer: "Both the parents and the child should be reassured that primary monosymptomatic enuresis is a very common condition and it usually will resolve spontaneously in most children. This usually will motivate the child and parents to consider behavioral management and defer the need for medical management. There are a few simple comorbid conditions that contribute to enuresis and that can be treated quite easily. These include constipation, obstructive sleep apnea, and urinary tract infections. Constipation, if present, should be adequately managed prior to even addressing enuresis. It will also be advisable to target any behavioral issues as well as any psychosocial stressors."

"The first step in management, after organic causes have been excluded, is behavioral changes. It is important to

involve the child in this process. Most children will already be motivated and won't need a rewards system to take part in management. The prospect of a dry bed will be enough. It will be helpful to have a calendar that is marked with wet or dry each night. You can encourage the child to make the calendar and use stickers for dry nights or whatever suits their interests. It is not advisable to restrict fluid intake, as the child needs to remain well hydrated; however, avoid caffeinated drinks at night such as coffee, tea, hot chocolate, or soft drinks in the evening and onward. Waking the child at night to urinate may be helpful. Cleanliness training, where you make the child change the sheets and make the bed each time they have an episode, may alter their habits."

"Apart from basic behavioral modification, bed alarms are currently the most effective treatment available. A bed alarm has a moisture sensor, which is placed either in the child's underwear or as a pad underneath the child and is connected by a wire to a loud alarm. When moisture is detected, a loud alarm is signaled, with the intention that the child is woken up at the beginning of an episode and will ultimately control

Table 12.2 Australian health department national immunization program schedules for children and adolescents

Age	Disease	Vaccine	Comments
Childhood schedule (birth to 4 years)			
Birth	An injection for hepatitis B ^a (usually offered in hospital)	H-B-Vax® II pediatric or Enderix B – pediatric	Hepatitis B vaccine should be given to all infants as soon as practicable after birth. The greatest benefit is if given within 24 h, and must be given within 7 days
2 months (vaccines can be given from 6 weeks of age)	A combined injection for diphtheria, tetanus, whooping cough (pertussis), hepatitis B, polio, Hib (<i>Haemophilus influenzae</i> type b)	Infanrix® hexa	None
	An injection for pneumococcal	Prevenar 13®	None
	Oral drops for rotavirus	Rotarix®	Oral dose of rotavirus vaccine 6–14 weeks of age
4 months	A combined injection for diphtheria, tetanus, whooping cough (pertussis), hepatitis B, polio, Hib (<i>Haemophilus influenzae</i> type b)	Infanrix® hexa	None
	An injection for pneumococcal	Prevenar 13®	None
	Oral drops for rotavirus	Rotarix®	Oral dose of rotavirus vaccine 10–24 weeks of age
6 months	A combined injection for diphtheria, tetanus, whooping cough (pertussis), hepatitis B, polio, Hib (<i>Haemophilus influenzae</i> type b)	Infanrix® hexa	None
	An injection for pneumococcal	Prevenar 13®	None
6 months and over with medical risk factors	Injection for influenza		Refer to the current edition of <i>The Australian Immunisation Handbook</i> for all medical risk factor conditions
12 months	A combined injection for measles, mumps, rubella	M-M-R® II or Priorix®	None
	A combined injection for Hib (<i>Haemophilus influenzae</i> type b), meningococcal C	Menitorix®	None
	An injection for pneumococcal	Prevenar 13®	Medically at-risk children only Refer to the current edition of <i>The Australian Immunisation Handbook</i> for all medical risk factor conditions
18 months	A combined injection for measles, mumps, rubella, chickenpox (varicella)	Priorix-Tetra® or ProQuad®	None
	A combined injection for diphtheria, tetanus, whooping cough (pertussis)	Infanrix® or Tripacel®	None
4 years	A combined injection for diphtheria, tetanus, whooping cough (pertussis), polio	Infanrix® IPV or Quadracel®	None
	An injection for pneumococcal	Pneumovax 23®	Medically at-risk children only Refer to the current edition of <i>The Australian Immunisation Handbook</i> for all medical risk factor conditions
Adolescent and adult schedule (10 years and older)			
10–15 years (school programs)	Injections for HPV (human papillomavirus) (2 doses)	Gardasil® 9	Contact the state or territory health service for details on the school grade eligible for vaccination
	A combined injection for diphtheria, tetanus, whooping cough (pertussis)	Boostrix®	Contact the state or territory health service for details on the school grade eligible for vaccination

Adapted from Australian Government Department of Health [18]

their urination, switch off the alarm, and go to the toilet to finish urinating. This process is time-consuming and can take up to a few months and thus will require the parents to be motivated to invest their time into this behavioral modification intervention.”

“If all the above fails, the next step is to consider pharmacological therapy. This includes the use of a drug called desmopressin. This ultimately decreases the amount of urine produced overnight. This medication is safe to use, so long as instructions are followed.

“It is important to be patient and supportive of your child who is going through management for enuresis. It is important to make sure you do not punish or make fun of your child as this may only worsen the problem. It is important that the child’s siblings are aware of this too. It is vitally important to have the child involved in their treatment plan and work together with them.”

Phone Call: History and Counseling, Child Swallowed A Cleaning Agent

Candidate Information:

You receive a phone call in the ED from a very anxious mother stating that her 2-year-old girl swallowed some household cleaning agent. Take a history over the phone and then advise her on what to do next.

Most incidents of accidental ingestion poisoning occur among 1- to 3-year-olds; and it should be considered in any young child presenting with symptoms that cannot be otherwise explained. Most ingestions are insignificant. However, there are a few agents that are highly toxic, and sometimes a low toxic agent is ingested in quite a large quantity. In older children, intentional poisoning must be taken very seriously. These children should be admitted into the hospital with psychiatry reviews. Suicide should always be considered even in children; and at the same time, non-accidental injury should be considered in young children.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your ID badge.
- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am the attending physician for today.”

Confirm who is on the phone and their relationship to the child.

Presenting Complaint:

- “What is your name? Child’s name? Date of birth/age of child?”
- “What seems to be the problem?”
- “I understand that you are calling because your child has swallowed some medication. I know that you are stressed and it is a difficult time for you. I need your phone number now, and it is important, because if we get disconnected then I will call you back.”
- “How far away from the hospital are you?”
- “Try and stay calm.”
- “I will give you some instructions and you need to follow them. First I will ask you a few questions about his condition:”
 - “When did it happen?”
 - “How long was he alone?”
 - “What is the child’s current condition? Conscious? Airway open? Breathing? Talking?”
 - “Is he crying?”
 - “Is he breathing?”
 - “What is his color? Pink?”
 - “Try to hold him and check his mouth; if there are chemical/medications there, remove them.”
 - “What is the agent ingested?” (Ask the parent to read the hazard label on the agent.)
 - “Any chance there were multiple substances ingested?”
 - “Route of ingestion (ingested, inhaled, topical exposure)?”
 - “What was the time of the incident?”
 - “What is the **weight** of the child?”
 - “Amount of agent ingested? Estimate?”
- “We will send the ambulance for you.”

Systems Review:

- Loss of consciousness? Seizures? Loss of tone? Stiff? Paralysis? Neurological signs?
- Feel the pulse racing or very slow? Pale? Dizzy? Cold?
- Difficulty breathing?
- Abdominal pain? Vomiting? Nausea? Diarrhea? Constipation?
- Fevers? Urinary symptoms? Sweats? Rigors?

Past Medical and Surgical History:

- Baby health visits
- Medical illnesses
- Any previous or recent surgery
- Chronic and current illness
- Hospitalization history or emergency visits, accidents, frequent trauma

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, OTC, herbal/vitamins)

Child (BINDES): To Be Asked Once the Child Arrives at the Hospital (No Need to Ask over the Phone)

- Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment, and social history

Mention that once you complete the history, you would then examine the child (once they arrive at the hospital).

The OSCE can pose a similar scenario in which the child has taken a family member's prescribed medicines. The following questions need to be asked:

- "Which medications did he take?"
- "Whose medications did he take?"
- "Do you have the container?"
- "Don't go to the next room to bring them. When the paramedics arrive then you can go and get the container."
- "Do you know for what condition these medications were prescribed for? Was it vitamins, sleeping pills, or any other?"
- "How much did he ingest?"
- "Don't use any ipecac. Do not induce vomiting."
- "Has it happened before?"

Then in the management, you need to call the poison control center to get the management guidelines.

Wrap-Up:**Question: "How will you counsel the parents?"**

Answer: "Firstly, it will be important to reassure the mother and to keep her calm. Inform her that accidental ingestion is common, and mostly it is insignificant. Explain to the mother that if it was a very minimal amount ingested and the child is well with no signs and symptoms of poisoning, then the child can remain at home. However, if a large amount was ingested, the child is displaying any signs or symptoms, or if the mother is concerned at all to bring the child in. If she is unable to drive over to the ED, then we will call an ambulance for her. While we are waiting for the child to head over, we will contact the poisons information center to get any further advice from them."

"When the child presents to the ED, we would need to do an initial emergency assessment (ABC), while concurrently obtaining any further history that wasn't obtained over the phone. We would first assess that there was a patent airway, normal breathing/saturations and lastly that circulation is

intact in terms of being hemodynamically stable and having a regular rhythm. We would then ensure there were no seizures or drug-induced syndromes (malignant hyperthermia, serotonin syndrome, neuroleptic malignant syndrome) and lastly check the blood glucose level."

"Next, we would look at if there was any way to decrease the exposure to the poison. If contamination to the eyes or skin, we would advise copious irrigation. On recommendation from the toxicologist, activated charcoal, gastric lavage, or whole bowel irrigation may be considered. If any specific drugs were ingested, then consideration for an antidote would be given."

"Lastly, some further investigations may be required. These include full blood count, electrolytes, urea, kidney function tests, liver function tests, serum ketones/glucose, venous/arterial blood gas, and if the substance was unknown, then a toxicology screen may add some benefit."

"The child will likely be kept in the emergency department for a period of observation."

History and Management: Child Abuse**Candidate Information:**

A 4-year-old girl is brought in to the ED by her mother due to a painful arm. Some bruising is also noticed on both arms. She is otherwise well and recently moved in with her mother's new boyfriend.

Differential Diagnosis:

- Infection
 - Septic arthritis, osteomyelitis, reactive arthritis, synovitis
- Trauma/overuse
 - Fracture (accidental vs. non-accidental injury), soft tissue injury, hypermobility
- Malignancy
 - Leukemia, neuroblastoma, bone tumors
- Hematologic
 - Hemophilia, sickle cell anemia
- Inflammatory
 - Juvenile idiopathic arthritis, systemic lupus erythematosus (SLE), Henoch-Schönlein purpura (HSP)
- Non-inflammatory
 - Growing pains, fibromyalgia, conversion reaction

Non-accidental injury is a significant cause of morbidity and mortality among children. Doctors should always consider the possibility of abuse or neglect when they assess an injured child and when they interact with a child who appears vulnerable to abuse and neglect. In most states, there is a legal requirement for doctors to notify child protection if

there is a suspicion of abuse or neglect. There are various forms of child abuse, including physical abuse, sexual abuse, emotional abuse, and, lastly, neglect, which is the failure of the caregiver to adequately provide for and take care of the child's well-being and safety.

The following are features on the history that may raise suspicion of non-accidental injury [20]:

- No story is offered to account for the injuries.
- Inconsistent story from the same individual.
- Inconsistent story between multiple individuals (without an explanation).
- Story is inconsistent with the child's developmental skills.
- The mechanism of injury involves a young sibling or other child.
- An unexplained delay between the time of injury and the time of presentation.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your ID badge.
- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of...? And she is... old?”

Presenting Complaint:

“What brings you in today?”

History of Presenting Illness:

- “When was the child last well?”
- “When did the pain start? Was there a specific mechanism of injury?”
- Determine when, where, and how the injury occurred.
- “What is the nature of the pain?”
- “What is the intensity of the pain, on a scale of 0–10?”
- “Where exactly is the pain? Does it radiate?” Ask the child to point to where it hurts.
- “How long has it been going on for?”
- “What makes the pain better or worse?”
- “Any inciting event that causes the pain?”
- “Any associated symptoms?”
- “Have you tried any treatment or medication so far?”
- “Is the pain activity related?”

- “Is the pain bad enough to prevent the child from their activities, sports/play, or school?”
- “Does the pain wake her at night?”
- “Any previous injuries? Any history of easy bruising? Any past fractures?”
- “Is the child gaining appropriate weight?”
- “Meeting developmental milestones?”

Note Make sure to note who told this story and where the information is coming from. Try to assess whether anyone witnessed the events that caused the injury, and try to contact the witness to see if their story matches with the initial history. Concurrently, try to assess the child's developmental capabilities.

Systems Review:

- Any fevers? Rashes? Weight loss?
- Change in activity?
- Decreased appetite? Lethargy? Changes in sleep patterns?
- Any generalized bruising on the body? Abrasions? Lacerations? Other injuries?
- And previous burns?
- Any problems with lungs? Prior infections?

Past Medical and Surgical History:

- Baby health visits
- Medical illnesses
- Any previous or recent surgery
- Chronic and current illness
- Hospitalization history or emergency visits, accidents, frequent trauma

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, OTC, herbal/vitamins)

Child (BINDES):

- Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment, and social history
- Performance at school, extracurricular activities
- Child's growth and weight gain

Family History:

- Anyone else in the family having similar symptoms?
- Any conditions that run in the family?
- Any bleeding disorders? Any bone disorders?

Social History:

- “Financial resources to support the family?”
- “Where do you live? And how many people are in the household?”

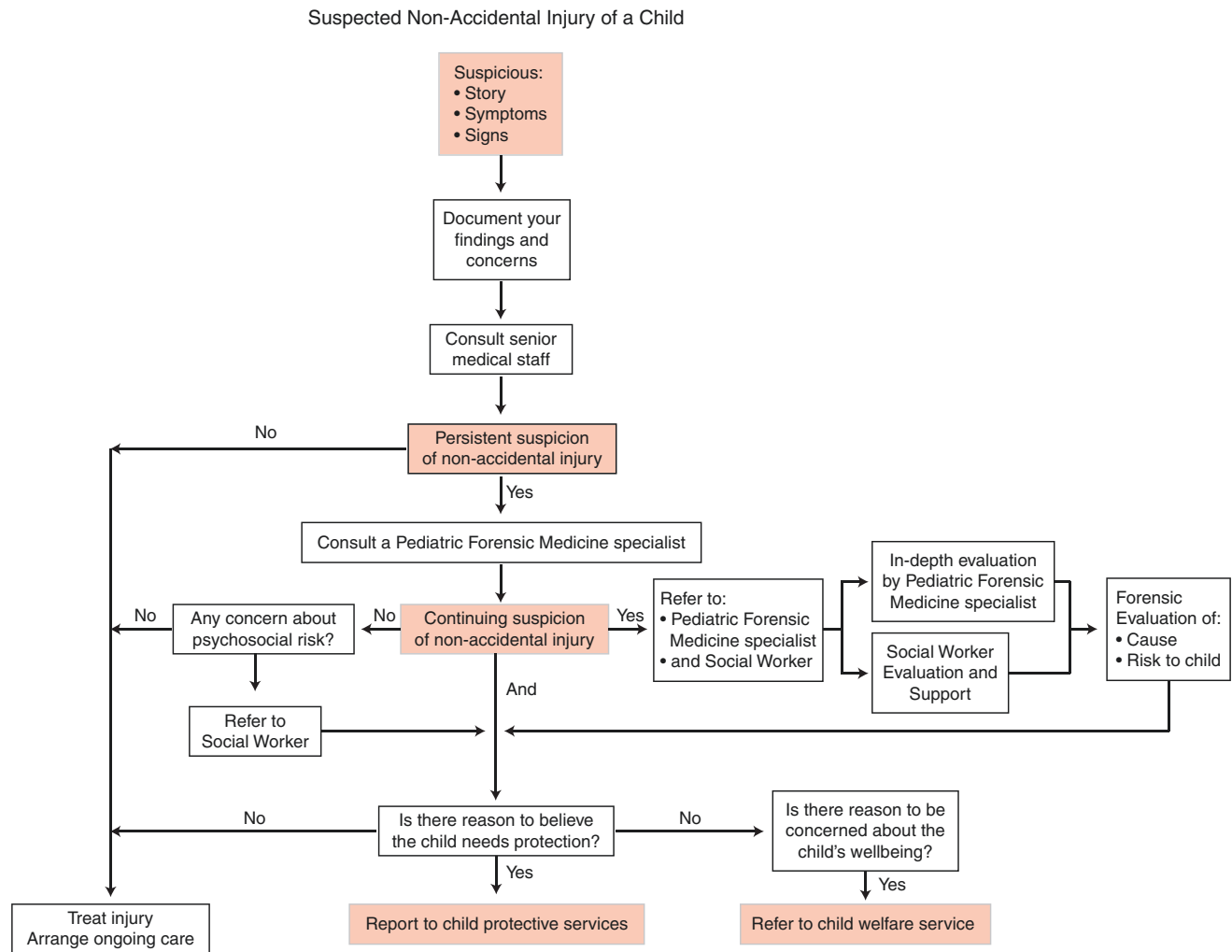


Fig. 12.9 Suspected non-accidental injury algorithm (Adapted from Victorian Forensic Paediatric Medical Service [21])

- “How many siblings does the child have? Are they well?”
- “Do you have extended family in the area with whom you are close?”
- “Do you see the GP regularly for the child?”
- “Methods of disciplining children?”
- “Any behavioral issues with the child?”
- “Do any of the parents/caregivers use substances/drugs or abuse alcohol? Smoke?”
- “Any previous involvement with child protection for any reason?”

Wrap-Up:

Mention that once you complete the history, you would then examine the child.

Question: “How will you manage the case?”

Answer: “If there is a concern for the safety of the child and/or if medically required, the child should be admitted

to the hospital. Further investigations should be done for the arm pain and bruising, to rule out medical causes, especially if there is a suspicion of non-accidental injury” (Fig. 12.9) [21].

“There are a few findings on history and examination that will generate suspicion for a non-accidental cause for injury. During the history taking you may suspect non-accidental injury if there is no explanation for the injury, an inconsistent story between an individual or between multiple people, if there is an inconsistency of the injury and the child’s developmental capability, or if there was a delay between the time of injury and the presentation.”

“During the examination and assessment, there are a few findings that should raise suspicion for non-accidental injury. These include bruising/fractures in an immobile child, bruises away from bony prominences, patterned bruising, unexplained encephalopathy in a child <2 years, unexplained intracranial bleed, metaphyseal fractures at the ends of long bones, and, lastly, immersion-patterned burns.”

“Further investigations for the unexplained bruising would include a full blood count and a coagulation profile. If there are any suspicions of a medical cause, then you can consider a full clotting/thrombophilia screen. Further investigations for the arm pain would firstly include a basic X-ray to look for fractures. If there is a suspicion of previously undiagnosed fractures, then you can consider a skeletal survey and a bone scan.”

“A referral can then be done to child protection services if there is a suspicion that there has been child abuse or neglect.”

History and Management: Limping Child

Candidate Information:

A 5-year-old boy has been brought into the ED by his parents because they have noticed he has been walking funny over the past week.

Differential Diagnosis:

- Toddlers (1–4 years old):
 - Developmental dysplasia of the hip
 - Toddlers fracture
 - Transient synovitis of the hip
 - Child abuse
- Child (4–10 years old):
 - Transient synovitis of the hip
 - Perthes disease
- Adolescent (>10 years):
 - Slipped upper femoral epiphysis (SUFE)
 - Overuse syndromes/stress fractures
- All ages:
 - Infections (septic arthritis, osteomyelitis, myositis, etc.)
 - Trauma (fractures, sprains, strains)
 - Malignancy (leukemia, bone tumors)
 - Rheumatological disorders (reactive arthritis)
 - Acute abdomen (e.g., appendicitis)
 - Inguinoscrotal conditions (e.g., testicular torsion)
 - Vasculitis
 - Child abuse/non-accidental injury
 - Functional disorder

At some time or the other, almost all children will develop a limp. Most will be due to a minor injury that is self-limiting. However, occasionally it may be due to a more serious condition and will need further investigation and treatment. A limp is defined as a deviation in the normal walking pattern for a child’s age. It should always be remembered that the gait itself undergoes orderly stages of development, and this must be taken into consideration. Limp is not a diagnosis but rather a clinical presentation of conditions that vary across different age groups.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the parents/patient.
- Give stickers to the examiner (if required) or show your ID badge.
- Sit on the chair or stand on the right side and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr./Mrs....? Are you the parents of...? And he is... old?”

Presenting Complaint:

“What brings you in today?”

History of Presenting Illness:

- How long has the child been limping/walking like this? Acute vs. subacute vs. chronic
- Painful or non-painful?
 - Onset of pain? Location? Duration? Intensity (on a scale of 0–10)? Nature of the pain? Specific times (night vs. day)? Any aggravating or alleviating factors? Any radiation? Associated symptoms? Any treatment tried so far?
- Course of the limp since onset?
- Course of the limp throughout the day? Worse in the morning or at night?
- Unilateral or bilateral?
- Recent trauma? Recent infections?
- Any prior episodes like this?
- Ability to weight bear?
- Any morning stiffness?
- What position is the leg held in?
- Does joint movement or bony pressure cause pain?
- Is there a limitation of movement (active and passive)?

Systems Review:

- Any fevers? Weight loss? Night sweats?
- Rashes? Joint pain? Back pain? Muscular pain?
- Bowel and urination issues?
- Recent coughs? Colds? Runny nose? Ear ache?
- Nausea? Vomiting? Diarrhea? Constipation?
- Any unexplained bruising or other body pains?

Past Medical and Surgical History:

- Baby health visits
- Medical illnesses
- Any previous or recent surgery
- Chronic and current illness
- Hospitalization history or emergency visits, accidents, frequent trauma

Medications/Allergic History/Triggers:

- Any known allergies
- Any regular medications (prescribed, OTC, herbal/vitamins)

Child (BINDES):

- Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment, and social history
- Child's growth and weight gain

Family History:

- Anyone else in the family having similar symptoms?
- Any conditions that run in the family?
- Any bleeding disorders? Any bone disorders? Any autoimmune conditions?

Social History:

- "Financial resources to support the family?"
- "Where do you live? And how many people are in the household?"
- "How many siblings does the child have? Are they well?"
- "Do you see the GP regularly for the child?"
- "Any previous involvement with child protection for any reason?"

Wrap-Up:

Mention that once you complete the history, you would then examine the child.

Question: "How will you manage the case?"

Answer: "Ultimately, after a thorough history and examination, the management will depend on the underlying cause. Most presentations for a limp will be due to a minor injury that is self-limiting; however, there are a few red flags to be aware of. These include but are not limited to a very young child (under 3 years old), an unwell/febrile child, a child who can't weight bear at all, those with painful restricted hip movements, an immunosuppressed child, and, lastly, any suspicion of a non-accidental injury."

"One of the most common reasons for a limp in a child of this age is irritable hip (transient tenosynovitis); however, this is also a diagnosis of exclusion. The usual presentation of irritable hip is a child who is well with a limp/difficulty walking and may or may not have a painful hip. The usual clinical features of this condition include having a recent history of a viral illness, no history or evidence of trauma, child is able to weight bear (but with pain), child is afebrile and well, and there is minimal decrease in range of movement due to pain."

"As this is a diagnosis of exclusion, if there is suspicion of a more sinister cause, then further investigations should be conducted. These include a full blood count with a differen-

tial, erythrocyte sedimentation rate (ESR) and a C-reactive protein (CRP), a plain X-ray of the joint/limb, an ultrasound of the hip, and, lastly, a bone scan may be considered."

"The treatment for irritable hip (transient tenosynovitis) comes down to conservative management, rest and analgesia as required. The more a child can rest, the quicker they will recover. If they return to activity too quickly, they may have a relapse with a return of symptoms. If this is a problem, then one may consider admission for the child."

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Introduction

The thyroid history and examination is one very important topic for the objective structured clinical examination (OSCE). It is frequently repeated. It is very important to practice focused history and thyroid examination well before the examination. When I used to practice with my colleagues for OSCE, I found it very difficult to complete both the history and examination of the thyroid in 8–10 min.

Diabetes is also a very important topic for the OSCE. Diabetes-related topics can come in many different forms: a simple first visit history and examination, a diabetic foot examination, a teenage patient with diabetes, or with atypical presentations, for example, fatigue.

This chapter will outline a few common topics related to the thyroid and diabetes.

History and Physical Examination: Hypothyroidism

Candidate Information:

A 58-year-old female presents with a husky voice, cold intolerance, facial swelling, and tiredness for a few days. She is known to have hypothyroidism. Please take a focused history and perform a relevant physical examination.

Differentials:

Hypothyroidism [1, 2]:

- Thyroid destruction after thyroidectomy (surgery), radioactive thyroid ablation
- Metabolic: hypopituitarism or hypothalamic disease
- Autoimmune/allergic: Hashimoto thyroiditis

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- Medicines: lithium, amiodarone, interferon
- Severe iodine deficiency
- Lymphocytic thyroiditis (which may occur after hyperthyroid)
- Idiopathic/iatrogenic: idiopathic atrophy of the thyroid

Starting the Interview:

- Knock on the door.
- Enter the station.
- Handwash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your identification (ID) badge.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mrs...? Are you 58 years old?”

Chief Complaint

Chief complaint or the reason patient is visiting the clinic. “What brings you in today?”

The patient will tell about her symptoms.

Ask Questions About Symptoms Associated with Hypothyroidism:

- Fatigue/weakness
- Weight gain or increased difficulty losing weight
- Coarse/dry hair
- Dry/rough pale skin
- Hair loss
- Husky voice
- Cold intolerance
- Muscle cramps and frequent muscle aches
- Myofibrosis

- Myalgia
- Joint effusion
- Constipation
- Depression
- Irritability
- Memory loss
- Abnormal menstrual cycles
- Decreased libido
- Slowed speech (severe cases)
- Jaundice (severe cases)
- Increase in tongue size (severe cases)

Past Medical History:

- “Do you have any previous health issues?”
- Ask about cardiac ischemia, cardiomegaly, pericardial effusion, bradycardia, hyperlipidemia, galactorrhea, goiter, infertility, neuropathy, nerve entrapment, ataxia.
- Patients at risk of hypothyroidism are those with:
 - Previous Graves’ disease
 - Autoimmune disorder (rheumatoid arthritis, type 1 diabetes)
 - Down syndrome
 - Turner syndrome
 - Previous thyroid or neck surgery
 - Previous radioactive iodine treatment of the thyroid

Hospitalization History or Emergency Admission

History: “Do you have any previous hospitalization or previous surgery?”

Medications History:

- Current medications?
- Use of lithium, amiodarone, interferon
- Prescribed, over the counter, and any herbal?

Allergic History: “Do you have any known allergies?”

Family History: “Has anyone in your family had similar symptoms or similar health problem?”

Social History:

- “Do you smoke? Do you drink alcohol?”
- If yes, then ask further questions: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?”

Relationships: “Are you sexually active? Do you have sexual preferences?”

Self-Care and Living Condition: “What do you do for living? Who lives with you?”

Support: “Do you have good family and friends support?”

Impact on Life/Disability and Adaptation:

- “Effects on life?”
- “Any effect on your daily activity?”

Physical Examination:

“Now, I will start the examination.”

- Comment on the vital sign findings: check for presence of bradycardia.
- Check level of consciousness, alertness, and orientation.

General Physical Examination:

- Evaluate body habitus, nervous/depressed and observe for dull facial expressions.
- Skin: Look for color, texture, and moisture. (Dry, coarse, yellow – red pigmentation on palms or soles or brittle nails)
- Hair: Coarse, brittle, loss of lateral one-third of the eyebrows (Queen Anne’s eyebrows).
- Face: Edema around the eyes and macroglossia.

Thyroid Examination:

Inspection:

- Neck:
 - Observe the whole neck, but pay particular attention to the area of the thyroid gland. Inspect the neck from the front and side, and look for any obvious abnormalities, scars, or swellings.
 - Hand the patient a glass of water, and observe them as they take a drink. Watch the movement of any swellings as they drink as this can help to differentiate between different causes.
 - Comment on size, symmetry, and visible nodule in the neck.

Palpation:

(Be very gentle with the patient – so many people have already examined her at the day of your examination)

- Next feel the gland:
 - The approach is from behind so always tell the patient what you will be doing and that you will be behind her. Warn her again the moment before you actually touch her neck.

- Palpate the entire length of both lobes of the gland as well as the isthmus. Note any swellings or abnormal lumps. Comment on the shape and consistency of any lumps as well as whether they are tender or mobile. Also examine while the patient drinks to assess whether the lump moves with swallowing.
- While still behind the patient, take the opportunity to examine the cervical lymph nodes.
- Examine the eyes from behind and above to look for any exophthalmos.

Percuss:

- Percuss for substernal extension of the thyroid.

Auscultate:

- Auscultate over the lateral lobes with a bell to detect a bruit.

Check neck lymph nodes and trachea.
Check for pretibial edema (non-pitting).

Cardiovascular Examination:

- Palpate peripheral pulses
 - Note: pulse volume, contour, and rhythm
- Auscultate (bradycardia and for any murmur)
 - Muffled heart sounds and an elevated jugular venous pressure – pericardial effusion

Respiratory System:

- Inspection: Check chest expansion and percussion.
- Auscultate: Breath sounds and adventitious sounds.

Nervous Examination:

- Note for tremors
- Motor power
- Muscle tone
- Sensations
- Reflexes (delayed relaxation phase or brisk)

Wrap-Up:

- Thank the patient and ask the patient to cover up.
- Wrap up your findings with the examiner or the patient.

Question: “What tests will you order?” (Questions may be asked by the patient or the examiner.)

Answer:

- Thyroid function test
- Thyroxine (T4): subnormal
- Thyroid-stimulating hormone (TSH): elevated

- Serum cholesterol
- Anemia: normocytic may be macrocytic
- Electrocardiogram (ECG): Sinus bradycardia

Question: “What are a few complications if hypothyroid is not treated?”

Answer: Untreated hypothyroidism can lead to [3]:

- **Goiter**
- **Heart problems.** Hypothyroidism may also be associated with an increased risk of heart disease, primarily because high levels of low-density lipoprotein (LDL) cholesterol. Hypothyroidism can also lead to an enlarged heart and heart failure.
- **Mental health issues.** Depression. Hypothyroidism can also cause slowed mental functioning.
- **Peripheral neuropathy.** Long-term uncontrolled hypothyroidism can cause damage to your peripheral nerves, the nerves that carry information from your brain and spinal cord to the rest of your body, for example, your arms and legs. Signs and symptoms of peripheral neuropathy may include pain, numbness, and tingling in the area affected by the nerve damage. It may also cause muscle weakness or loss of muscle control.
- **Myxedema.** This rare, life-threatening condition is the result of long-term, undiagnosed hypothyroidism. Its signs and symptoms include intense cold intolerance and drowsiness followed by profound lethargy and unconsciousness. A myxedema coma may be triggered by sedatives, infection, or other stress on your body. If you have signs or symptoms of myxedema, you need immediate emergency medical treatment.
- **Infertility.** Low levels of thyroid hormone can interfere with ovulation, which impairs fertility.
- **Birth defects.** Babies born to women with untreated thyroid disease may have a higher risk of birth defects than babies born to healthy mothers. These children are also more prone to serious intellectual and developmental problems. Infants with untreated hypothyroidism present at birth are at risk of serious problems with both physical and mental development. But if this condition is diagnosed within the first few months of life, the chances of normal development are excellent.

**History and Physical Examination:
Hyperthyroidism**

Candidate Information

A 29-year-old female presents with heat intolerance, weakness, sweaty skin, and weight loss. Please take a focused history and perform a relevant physical examination.

Differentials: *Hyperthyroidism:*

- Graves' disease
- Subacute thyroiditis
- Hashimoto's thyroiditis
- Toxic multinodular goiter
- Toxic adenoma
- Iatrogenic and factitious (exogenous thyroid hormones, excessive iodine ingestion)
- Anxiety disorder
- Pheochromocytoma
- Premenopausal state
- Metastatic neoplasm

Starting the Interview:

- Knock on the door.
- Enter the station.
- Handwash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

"Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Miss...? Are you 29 years old?"

Chief Complaint

"Can you please describe your symptoms to me?" The patient will tell about her symptoms.

- "How long has it been going on?"
- "How was these problems come about?" (suddenly versus gradual)
- "When did you first notice these symptoms?"
- "Are these progressing?"
- "Which symptoms are getting worse?"
- "How often do you notice these symptoms?" (intermittent versus constant)

Ask Questions About Symptoms Associated with Hyperthyroidism:

- "Have you notice any swelling in the neck?" (goiter)
- "Weight loss?"
- "How much? Over what duration of time?"
- "Do your clothes still fit you?"
- "How is your appetite?" (Usually good or even increased).
- "Heat intolerance? How severe?"
- "Accelerated heart rate or palpitations?"
- "Do you feel irritable?"

- "Do you find difficulty in getting to sleep? Sleeping difficulties?"
- "Muscle weakness and trembling?"
- "Have you noticed that your hands shake or do you have tremors in your hands?"
- "Have you noticed any change in bowel habits? Diarrhea?"
- "Sweating?"
- "Nervousness, agitation, and anxiety?"
- "Changes in menstruation, including scantier flow and increased cycle length?"
- "Last menstrual period?"
- "Do you have any swelling in your legs?" (pretibial myxedema)
- "Itching?"
- "Did you notice any change in your eyes? Bulging?"
- "Did you notice any change in your vision? Double vision? Staring gaze?"
- "Does anything make your symptoms better? Or worse?"

Constitutional Symptoms: Fever, chills, night sweats, anorexia

Past Medical History:

- "Do you have any previous health issues?"
- Ask about thyroid disease, any treatment for thyroid disease, radiation delivered to the neck, or radiation exposure.

Hospitalization History or Emergency Admission History: "Have you had any previous hospitalization or previous surgery?"

Medications History:

- Current medications?
- Use of thyroid replacement therapy, iodine, lithium, amiodarone, interferon, propylthiouracil, cold and cough remedies, antiepileptics.
- Prescribed, over the counter, and any herbal?

Allergic History: "Do you have any known allergies?"

Family History: "Has anyone in your family had similar symptoms or similar health problems?"

Social History:

- "Do you smoke? Do you drink alcohol?"
- If yes, then further ask: "How much? Daily? How long?"
- "Have you ever tried any recreational drugs?"

Relationships: "Are you sexually active? Do you have sexual preferences? Man, woman or both?"



Fig. 13.1 Looking for tremors

Self-Care and Living Condition: “What do you do for living? Who lives with you?”

Support: “Do you have good family and friend support?”

Impact on Life/Disability and Adaptation:

- “Affects on your life?”
- “Any effect on your daily activity?”

Physical Examination:

“Now, I will start the examination.”

- Comment on the vital sign findings: check for presence of tachycardia, heart rhythm, and respiratory rate. Atrial fibrillation? Fever?
- Check level of consciousness, alertness, and orientation.

General Physical Examination:

- Evaluate body habitus and nervous/anxious, and observe for anxious facial expressions.
- Skin: Look for color, texture, and moisture.
- Hands: Feel the hands for any sweating.
- Look for any tremors: Placing a piece of paper on the back of the patient’s outstretched hands. Look for tremors (Fig. 13.1).
- Check the nails for any thyroid acropachy: Clubbing (Fig. 13.2), or onycholysis, where the nail comes away from the nail bed.
- Observe for palmar erythema (Fig. 13.3).
- Next you should feel the pulse (Fig. 13.4). It may be tachycardiac.
- Inspect eyes: Eye protrusion, lid retraction, or lid lag or exophthalmos.

Thyroid Examination:

Inspection:

- Neck:
 - Observe the neck as a whole, but pay particular attention to the area of the thyroid gland. Inspect the neck



Fig. 13.2 Checking for clubbing



Fig. 13.3 Hand examination

from front and side and looking for any obvious abnormalities, scars, or swellings.

- Hand the patient a glass of water, and observe them as they take a drink. Watch the movement of any swellings as they drink as this can help to differentiate between different causes.
- Comment on size, symmetry, and visible nodule in the neck.

Palpation:

(Be very gentle with the patient – so many people have already examined her at the day of your examination).



Fig. 13.4 Checking radial pulse

- Next feel the gland.
 - The approach is from behind, so always tell the patient what you will be doing and that you will be behind them. Warn them again the moment before you actually touch their neck.
 - Palpate the entire length of both lobes of the gland as well as the isthmus. Note any swellings or abnormal lumps. Comment on the shape and consistency of any lumps as well as whether they are tender or mobile. Also examine while the patient drinks to assess whether the lump moves with swallowing.
 - While still behind the patient, take the opportunity to examine the cervical lymph nodes.
 - Examine the eyes from behind and above to look for any exophthalmos.

Percuss:

- Percuss for substernal extension of the thyroid.

Auscultate:

- Auscultate over the lateral lobes with a bell to detect a bruit (Fig. 13.5).
- Pretibial edema (non-pitting)

Cardiovascular Examination:

- Palpate peripheral pulses
- Note: pulse volume, contour, and rhythm
- Auscultate (tachycardia and for any murmur)

Respiratory System:

- Inspection: Check chest expansion and percussion.
- Auscultate: Breath sounds and adventitious sounds.

Nervous Examination:

- Note for tremors.



Fig. 13.5 Auscultate with a bell

- Motor power.
- Muscle tone (proximal myopathy).
- Sensations.
- Reflexes (hyperreflexia may be present).

Mention that you will also perform a fundoscopic examination to note any papilledema.

Wrap-Up:

- Thank the patient and ask the patient to cover up.
- Wrap up your findings with the examiner or the patient.

Question: “What tests will you order?”

Answer:

- Thyroid function test
- TSH (low)
- T4 and triiodothyronine (T3) (elevated)
- Thyroid antibodies (checked to differentiate Graves’ and toxic multinodular goiter)
- Imaging
 - Radioisotope scan
 - Increased uptake in overactive thyroid and decreased in thyroiditis and iatrogenic T4 ingestion.
 - Uptake is homogeneous in Graves, heterogeneous in multinodular goiter, and single focus in a hot nodule.

Question: “What treatment will be advised?”

Answer:

- Antithyroid drugs: propylthiouracil (PTU) and methimazole (MMI, Tapazole)
 - Inhibit thyroid hormone synthesis (block thyroid peroxidase); inhibit peripheral conversion of T4 to T3.
 - Most useful in young, nonpregnant patients with small glands and mild disease.

- Patients should be seen every 1–3 months until euthyroid and then q 3–4 months while remaining on medication.
- B-blockers: propranolol for symptomatic control
- Medical ablation:
 - Radioactive iodine: It is given in Graves' when PTU or MMI fail to produce remission. Usually require life-long thyroid hormone replacement.
- Surgical ablation:
 - Subtotal thyroidectomy

History and Physical Examination: Diabetic Patient First Visit

Candidate Information:

A 46-year-old male presents to your GP clinic with concerns of high blood sugar levels, which were checked in a medical awareness camp. Please take a focused history and perform a relevant physical examination.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Handwash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID badge.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Are you 46 years old?”

Chief Complaint:

“I understand, you came today to discuss about your blood results. Is it alright if I ask you a few questions about your blood test and general health? Then we will discuss about it. I would be happy to address any concerns you may have.”

- “Why was the blood test done?”
- “When was the blood done?”
- “Who ordered it?”
- “What were the results?”
- “Have you ever had blood sugar levels done before? When?”

Continue with **symptoms** related to diabetes/hyperglycemia. Ask about:

- Being excessively thirsty

- Passing more urine
- “How is your urine? Is it frothy or cloudy?”
- Feeling tired and lethargic
- Always feeling hungry
- Having cuts that heal slowly
- Itching, skin infections
- “Have you ever had an eye check?”
- “When was the last time you saw an ophthalmologist?”
- Any retinal complications?
- Blurred vision or vision changes?
- Any history of heart attack?
- Gradually putting on weight
- Mood swings
- Headaches
- Feeling dizzy
- “How are your feet?”
- Any feet ulcers?
- Leg cramps
- “Do you have tingling or numbness?”

Past Medical History: “Do you have any previous health issues?”

Hospitalization History or Emergency Admission History: “Have you had any previous hospitalization or previous surgery?”

Medications History:

- Current medications?
- Prescribed, over the counter, and any herbal?

Allergic History: “Do you have any known allergies?”

Family History: Diabetes?

Social History:

- “Do you smoke? Do you drink alcohol?”
- If yes, then further ask: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?”

Relationships: “Are you sexually active? Do you have sexual preferences? Man, woman, or both?”

Self-Care and Living Condition: “What do you do for living? Who lives with you?”

Support: “Do you have good family and friend support?”

Impact on Life/Disability and Adaptation:

- “Effects on life?”
- “Any effect on your daily activity?”

Physical Examination:

“Now, I will start the examination.” Comment on the vital signs.

General Physical Examination:

- Ask for patient height and weight with body mass index (BMI).
- Check level of consciousness, alertness, and orientation.
- General appearance.
- Head and neck exam:
 - Oral: hygiene, thrush, and caries
 - Nose
 - Mouth and throat
 - Thyroid assessment
 - Cervical lymph nodes

Cardiovascular Examination:

- Palpate peripheral pulses
- Note: pulse volume, contour and rhythm
- Auscultate
- Pedal edema

Respiratory System:

- Inspection: Check chest expansion and percussion.
- Auscultate: Breath sounds and adventitious sounds.

Abdominal Examination:

- Inspection
- Palpation

Nervous Examination:

- Note for tremors.
- Motor power.
- Muscle tone.
- Sensations (proprioception, vibration, light touch).
- Reflexes (delayed relaxation phase or brisk).

Skin:

- Fungal infections
- Cutaneous infection
- Signs of dyslipidemia

Examination of Hand and Feet**Wrap-Up:**

- Thank the patient and ask the patient to cover up.
- Wrap up your findings with the examiner or the patient.

Question: What tests will you order?**Answer:**

- Full blood count
- Hemoglobin A1c (HbA1c)
- Fasting lipid profile

- Urea and creatinine
- Electrolyte
- Estimated glomerular filtration rate (eGFR)
- Urine dip
- ECG
- Ophthalmologist referral for eye exam (check your regional guidelines)

Question: What will you do next?**Answer:**

- Referral to diabetic clinic
- Diabetic education
- Information on healthy diet (food guide)
- Information about regional diabetic resources

Question (Patient): “Doctor, please tell me more about type 1 diabetes.”

Answer: “Type 1 diabetes represents about 10% of all cases of diabetes and is one of the most common chronic childhood conditions. Type 1 diabetes is an autoimmune condition in which your immune system is activated to destroy the cells in the pancreas that produce insulin. We do not know what causes this autoimmune reaction. Type 1 diabetes is not linked to modifiable lifestyle factors. There is no cure and it cannot be prevented. Its onset is usually abrupt and the symptoms obvious. It is managed with insulin injections several times a day or the use of an insulin pump.”

Question: “What happens if people with type 1 diabetes do not receive insulin?”

Answer: “If the patient will not get insulin, the body will start burning its own fats as a substitute, which releases chemical substances in the blood. Without ongoing injections of insulin, the dangerous chemical substances will accumulate and can be life-threatening if it is not treated. This is a condition called ketoacidosis”[4].

Question (Patient): “Doctor, please tell me more about type 2 diabetes.”

Answer: “Type 2 diabetes represents about 85–90% of all cases of diabetes. It is a progressive condition in which the body becomes resistant to the normal effects of insulin and or gradually loses the capacity to produce enough insulin in the pancreas. It usually develops in adults over the age of 45 years but is increasingly occurring in younger age groups. We do not know what causes type 2 diabetes. It is also likely in people with a family history of type 2 diabetes or from particular ethnic backgrounds. Some patient may present with a complication of diabetes such as a heart attack, vision

problems, or a foot ulcer. It is managed with a combination of regular physical activity, healthy eating, and weight reduction. Because type 2 diabetes is often progressive, most people will need to take oral medications and/or insulin injections in addition to lifestyle changes over a period of time” [5].

Question: “What is hypoglycemia?”

Answer: Hypoglycemia, or low blood sugar, occurs when a person’s blood glucose level drops too low – lower than 4 mmol/L. It can make a person very unwell, so it is very important to treat it as quickly as possible. A person may experience the following symptoms:

- Light-headedness
- Dizziness
- Sweating
- Hunger
- Shaking, trembling, or weakness
- Paleness
- Headache
- Pins and needles around mouth
- Fitting/seizures
- Loss of consciousness

Question: “How do you treat hypoglycemia?”

Answer: If hypoglycemia is suspected, immediately check blood sugar level. Or seek help to get someone to check it for you.

If your blood sugar level is below 4 mmol/L, take 15 g of a fast-acting carbohydrate. For example, one of these:

- Six to seven jelly beans
- Half a can of regular soft drink
- Half a glass of fruit juice
- Three teaspoons of sugar or honey
- Glucose tablets equivalent to 15 g carbohydrate

After this, please wait for 15 min and then recheck the blood glucose levels to see if the blood sugar level has risen above 4 mmol/L. If the blood sugar level has not risen, then take another 15 g of a fast-acting carbohydrate as above. If blood sugar has improved, then eat a snack or meal.

History: Diabetic Follow-Up Visit

Candidate Information:

A 39-year-old male, who is a known diabetic, presented to your GP clinic for a routine checkup. Please take a detailed history. No physical examination is required.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Handwash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID badge.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Are you 39 years old? You are here for your diabetic follow-up. As I am seeing you for the first time, I will ask you a few questions about diabetes and then your general health. If you have any question or concern, please ask me.”

Chief Complaint

- “What type of diabetes do you have?”
- “How long have you been diagnosed with diabetes? Or how old were you when you were diagnosed to have diabetes?”
- “How was it diagnosed?”
- “What treatment you are taking?”
- “Who does the follow-ups?”
- “When was the last time you had HbA1c checked?”
- “When was the last time your lipid profile was checked?”
- “When was the last time you had a urine screen for microalbuminuria?”
- “Do you see a diabetic educator/nurse?”
- “Do you see a dietitian/nutritionist?”
- “Have you seen an endocrinologist?”
- “How often do you monitor blood sugar?”
- “How are the numbers?”
- “How well is your blood sugar under control?”
- “Did you ever have an episode of diabetic ketoacidosis?”

Ask About Symptoms of Hyperglycemia:

- Being excessively thirsty
- Passing more urine
- “How is your urine? Is it frothy or cloudy?”
- Feeling tired and lethargic
- Always feeling hungry

Ask About Symptoms of Hypoglycemia:

- “Do you have episodes of hypoglycemia?”
- Pallor
- Sweating
- Palpitations

- Tremor
- Headache
- Hunger
- Abdominal pain
- Decrease level of consciousness
- Fainting

“Have you ever had an eye check?”:

- “When was the last time you saw an ophthalmologist?”
- “Any retinal complications?”
- “Blurred vision or vision changes?”

Past Medical History:

- “Do you have any previous health issues?”
- Eye problems
- Infections
- Hypertension
- Ischemic heart disease
- Nephropathy: microalbuminuria and renal failure
- Peripheral neuropathy or mononeuropathy

Hospitalization History or Emergency Admission

History: “Have you had any previous hospitalization or previous surgery?”

Medications History:

- Current medications?
- Insulin (dose, frequency, and mode of delivery).
- Prescribed, over the counter, and any herbal?

Allergic History: “Do you have any known allergies?”

Family History: Diabetes? Vascular disease?

Social History:

- “Do you smoke? Do you drink alcohol?”
- If yes, then further ask: “How much? Daily? How long?”
- “Have you ever tried any recreational drugs?”

Relationships: “Are you sexually active? Do you have sexual preferences?”

Self-Care and Living Condition: “What do you do for living? Who lives with you?”

Support: “Do you have good family and friends support?”

Impact on Life/Disability and Adaptation:

- “Effects on life?”
- “Any effect on your daily activity?”

Wrap-Up

Question: “What tests will you order?”

Answer:

- Full blood count
- HbA1c
- Fasting lipid profile
- Urea and creatinine and (Urine albumin to creatinine ratio ACR)
- Electrolyte
- eGFR
- Urine dip
- ECG
- Fundoscopy
- Ophthalmologist referral for eye exam (check your regional guidelines)

History and Counseling: Child with Diabetes

Candidate Information:

A 10-year-old male, known to be diabetic, is brought by his father to your GP clinic for a checkup. Please take a detailed history. No physical examination is required. (Make sure you remember throughout the station that you are asking questions of the patient’s father.)

Starting the Interview:

- Knock on the door.
- Enter the station.
- Handwash/alcohol rub
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID badge.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? You are...’s father? How can I help you today?”

Chief Complaint

- “You are here for his checkup. Is there anything in particular that you are worried about?”
- “Is he doing well in school?”
- “Is he not looking well?”
- “Is he not playing well and looks tired?”

“As, I am seeing him for the first time, I am going to ask a few questions about his diabetes and then about his general health.”

- “How long has he been diagnosed with diabetes? Or how old was he when diagnosed to have diabetes?”
- “How was it diagnosed?”
- “What treatment was he taking?”
- “When was the last follow-up?”
- “Who does the follow-ups?”
- “When was the last time that his HbA1c was checked?”
- “When was the last time he had a urine screen for microalbuminuria?”
- “Does he follow-up with a diabetic educator/nurse?”
- “Does he see a dietitian/nutritionist?”
- “Does he see an endocrinologist?”
- “How often do you monitor his blood sugar?”
- “What are his numbers like?”
- “Did he ever have an episode of diabetic ketoacidosis?”

Ask About Symptoms of **Hyperglycemia**

- Being excessively thirsty?
- Passing more urine?
- “How is his urine? Is it frothy or cloudy?”
- Feeling tired and lethargic?
- Always feeling hungry?

Ask About Symptoms of **Hypoglycemia**

- “Does he have episodes of hypoglycemia?”
- Pallor
- Sweating
- Palpitations
- Tremor
- Headache
- Hunger
- Abdominal pain
- Decrease level of consciousness
- Fainting

Ask About His **Insulin**

- “Does he take insulin himself or does somebody else give it to him?”
- “Does he take it regularly and all on time?”
- “Does he skip doses?”
- “Does he need any help to take insulin?”
- “Do you record his blood sugar levels?”
- “Do you maintain a log book of his blood sugar levels?”

Past Medical History:

- “Does he have any previous health issues?”
- Eye problems?
- Infections?
- Heart problem?

- Nephropathy: microalbuminuria and renal failure?

Hospitalization History or Emergency Admission History: “Has he had any previous hospitalization or previous surgery?”

Medications History:

- Current medications?
- Insulin (dose, frequency, and mode of delivery).
- Prescribed, over the counter, and any herbal?

Allergic History: “Does he have any known allergies?”

Child (BINDES): Birth/pregnancy history, immunization status, nutrition/weight gain, developmental history/meeting milestones, environment and social history

Family History: Diabetes? Vascular disease?

Wrap-Up

Question: “What tests will you order?”

Answer:

- Full blood count
- HbA1c
- Fasting lipid profile
- Urea and creatinine and (Urine albumin to creatinine ratio ACR)
- Electrolyte
- eGFR
- Urine dip
- ECG
- Fundoscopy
- Ophthalmologist referral for eye exam (check your regional guidelines)

Question: “Tell me more about his diabetes.”

Answer: Ask the patient’s father about his understanding about diabetes. Then explain, “when we eat food containing sugar, it is absorbed in our intestine. The sugar goes to the blood and from there to different parts of our body. Sugar acts like a fuel in our body. We require insulin in order for our body to use this energy. Patients having diabetes do not have enough insulin. Sugar will built up in the blood. The body tries to get rid of it by peeing extra sugar. This will lead to increasing thirst and tiredness.”

“This can be avoided by controlling the blood sugar. If the blood sugars are well controlled, these symptoms can be avoided. If blood sugars are not controlled, it may end up in diabetic ketoacidosis and with serious consequences.”

“Always be aware of hypoglycemic symptoms: loss of consciousness, sweating, heart racing, hungry. It is advised

that your son should carry a medical alert card or a bracelet that will clarify that he has diabetes.”

Physical Examination: Diabetic Foot

Candidate Information:

A 51-year-old male, who is a known diabetic, presents to your GP clinic. Please perform a diabetic foot examination.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Handwash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Stand on the right side of the patient and start the examination.

Equipment:

- Monofilament
- Tuning fork (128 Hz)
- Tendon hammer

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Are you 51 years old? Today, I shall be doing a detailed examination of your feet. Are you alright with that? During the examination, if you feel uncomfortable please let me know.”

Inspection:

- Inspect legs from front, side, and behind.
- Inspect feet, both dorsal and planter aspects, and in between toes.
- **Color of foot:** Pallor, cyanosis, erythema (looking for ischemia and cellulitis).
- **Skin:**
 - Look for dry, shiny, and hair loss (looking for peripheral vascular disease [PVD]).
 - Eczema or hemosiderin staining (venous disease).
- **Ulcers:**
 - Venous ulcers: (venous insufficiency or varicose veins).
 - Moderate to no pain, ulcers may be larger or shallow.
 - Arterial ulcers (diabetes mellitus or peripheral vascular disease).
 - Usually very painful, deep punched out appearance.
- **Swelling:**
 - Edema: venous insufficiency or heart failure
 - Deep vein thrombosis: tender on palpation
- **Planter arch:**

- Observe for loss of planter arch.

- **Toes:**

- Look for clawing of toes due to neuropathy.

- **Calluses:**

- Check weight-bearing area for callus. May indicate incorrectly fitting shoes.

- **Venous filling:**

- Guttering of veins or reduced visibility suggests PVD.

- **Deformity caused by neuropathy:**

- Charcot arthropathy

Palpation:

- **Temperature:**

- Feel the temperature with the back of your hand and compare both sides.
- Cool (PVD).
- Hot (cellulitis).

- **Capillary refill time:**

- Normal: <2 s.
- Prolongation suggests PVD.

- **Pulses:**

- Dorsalis pedis artery.
- Posterior tibial artery.
- Absence of peripheral pulses is suggestive of peripheral vascular disease.

- **Sensations:**

- Monofilament:
 - Guide the patient by touching the monofilament to the patient’s arm or sternum and letting him acknowledge the sensation.
 - Ask the patient to close his eyes, place the monofilament on the hallux and metatarsal heads. Press firmly so that the filament bends.
 - Hold the monofilament against the skin for 1–2 s, and ask the patient to tell you when he feels it.
 - Avoid touching at the areas of calluses and scars as these will likely have a reduced level of sensation, which is not representative of the surrounding normal tissue.
- **Vibration sensation:**
 - With the patient’s eye closed, tap a 128 Hz tuning fork. Place it on the patient’s sternum and confirm that the patient can feel it buzzing.
 - Ask the patient to inform you when he can feel it on his foot and to tell you when it stops buzzing.
 - Assess sensation by placing the vibrating tuning fork onto the distal phalanx of the great toe. Repeat on the other side and compare.
 - If sensations are intact, he should mention that he can feel the tuning fork buzzing.
 - You should then gently place your hand onto the tuning fork to stop it vibrating. If the patient’s sen-

sation is intact, then he should state that the vibration has now stopped.

- If sensation is impaired, continue to assess more proximally, e.g., proximal phalanx.
- Repeat assessment on the other leg.
- **Proprioception**
 - Hold the distal phalanx of the great toe by its sides.
 - Demonstrate movement of the toe upward to the patient.
 - Then ask the patient to close his eyes and state whether you are moving the toe up or down.
 - If the patient is unable to correctly identify direction of movement, move to a more proximal joint: to ankle, knee, and then hip.
- **Gait:** Observe the patient walking while assessing.
 - Symmetry and balance
 - Turning: quick, slow, or staggered
 - Abnormalities: broad-based gait, foot drop, or antalgia
- **Examine the footwear (just mention that you will also have a look on the patient's shoes):**
 - Note pattern of wear on the soles.
 - Look for asymmetrical wearing (for gait abnormality).
 - Ensure the shoes are the correct size for the patient.
 - Note holes and material inside the shoes that could cause foot injury.
- **Ankle jerk reflex:** Ankle jerk reflex may be absent in advanced peripheral neuropathy.

To Complete the Examination

- Mention you will also examine lower limb neurological examination and peripheral vascular examination.
- Thank the patient. Ask him to cover up.
- Sum up your findings to the examiner.

History and Management: Diabetic Ketoacidosis (DKA)

Candidate Information:

You are working in an emergency room when a 24-year-old male is brought by ambulance because of drowsiness, cough, fever, diffuse abdominal pain, and vomiting for 2 days. He is known to be type 1 diabetic. Manage this case. There is a nurse in the room to carry out the orders.

Differential Diagnosis of Diabetic Ketoacidosis:

- Hyperglycemic hyperosmolar state (HHS)
- Abdominal pain differentials
- Cough with fever differentials
- Other causes of raised anion gap metabolic acidosis
- Alcohol

- “MUDPILES”: Methanol, uremia, DKA, paraldehyde, isoniazid, lactate, ethylene glycol, salicylates
- Carbon monoxide/cyanide

This scenario can be divided into two parts:

- History and examination
- Management

Starting the Interview:

- Knock on the door.
- Enter the station.
- Handwash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Stand on the right side of the patient and start.

Opening:

The nurse may give you the blood result report as you walk in to see the patient [6]:

- Hemoglobin: 13.3 g/dl (133 g/L)
- WBC: (19.0) 19,000/ μ (mu)l
- Hematocrit: 49%
- Glucose: 450 mg/dl (25.0 mmol/L)
- Urea: 60 mg/dl (10.2 mmol/L)
- Creatinine: 1.4 mg/dl (123.7 μ [mu]mol/L)
- Na⁺: 142 mEq/L
- K⁺: 5.3 mEq/L
- Cl⁻: 110 mmol/L
- Arterial pH: 7.23
- PO₂: 95 mm Hg
- PCO₂: 28 mm Hg
- HCO₃: 9 mEq/L
- O₂ sat: 98%.
- Strip for ketone bodies in urine: strongly positive
- Urinalysis: glucose 800 mg/dl and
- Specific gravity: 1030

Interpret quickly: hyperglycemia, ketosis, and metabolic acidosis.

“He has DKA.”

Triage Immediately:

- Call the patient's name and check his response. Or gently shake his shoulder or hand.
- Check for response and immediately tell the examiner about your findings.

If the patient is conscious and stable, then introduce yourself to the patient: “Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Are you 24 years old?”

Ask the nurse for vital signs – interpret the vital signs:

- Temp: 39 °C
- Heart rate (HR): 110
- Blood pressure (BP): 90/60
- Respiratory rate (RR): 27

Mention to the examiner: “I will start primary survey (ABCD)”

Airway

- Is the airway patent?
- Comment on the airway.
- If the patient is talking well, then mention that the airway is patent.

Breathing

- Is the patient breathing?
- Check respiratory rate.
- Pulse oximetry.
- Deliver high flow oxygen 15 L/min via reservoir mask and titrate to achieve oxygen saturations (S_pO_2) 94–98%.
- Listen to the chest and heart.

The examiner may inform you that the patient has dry mucous membranes, poor skin turgor, and decreased air entry with rales in the right lower chest.

Circulation

- Check pulse, BP
- Ask the nurse to please pass two large bore cannula (G14/G16), one on each arm.
- Ask the nurse to prepare 1 L normal saline 0.9% to start infusing as the first liter in 1 h.
- Ask the nurse to prepare continuous monitoring with cardiac monitoring/12-lead ECG.
- Add blood cultures and urine cultures in the investigations.
- Portable chest X-ray. (Remember that the patient has cough and fever – order it here. Many times candidates miss it later in the history).

D: Disability and neurological status:

- Rapid neurological assessment should be done next.
- During the primary survey, a basic neurological assessment is made, known by **AVPU** (an acronym for “alert, voice, pain, unresponsive”).
- **Pupils:** size, symmetry, and reaction.
- Any lateralizing signs.

History:

You need to ask questions about abdominal pain, cough, and fever. (Do not go into too much detail as this is a manage-

ment station, and there is too much still to cover. Select questions from the following list.)

Pain Questions:

- Onset: “When did the pain start?”
- Course: “How did it start?” (Suddenly or gradually)
- Duration: “How long have you had this pain?”
- Location: “Where does the pain start?” Then clarify the area: right upper quadrant (RUQ), right left quadrant (RLQ), left upper quadrant (LUQ), left lower quadrant (LLQ), suprapubic, epigastrium, or flanks.
- Character: “What is the pain like?”
- Progression: “Is the pain progressing?”
- Severity: “From 0 to 10, 10 being the worst pain and 0 as no pain, how is your pain now?”
- Aggravating: “Anything that increases the pain?”
- Alleviating: “Anything that relieves the pain?”

Cough Questions:

- “When did your cough start?” *2 days back*
- “Did it start gradually or suddenly?”
- “Is it continuous or does it come and go?”
- “Is the cough present all the time or does it come on at a specific time?”
- “Does your cough come with certain positions? Lying down?”
- “Is it getting worse with time?”
- “How long does each bout of coughing last?”
- “What increases/decreases this cough?”
- “Is it accompanied by phlegm?”
- “Consistency?”
- “Odor?”
- “Color?”
- “Amount?”
- “Any blood?”
- “Do you become short of breath?”
- “Have you noticed any difficulty in breathing? Not enough air, chest pain, chest tightness, or wheezing?”

Fever: “When and how much? Did you take anything for it?”

Past Medical History: “Any previous health issues? Previous DKA, previous hospital admissions?”

Medication History: Insulin glargine 28 IU at bedtime and a rapid-acting insulin analog before each meal.

Social History: Smoking, alcohol, drugs, sexual history

Now Back to Management: (Check your regional and hospital guidelines.)

Fluid Resuscitation:

The rates should be adjusted according to urine output and patient condition. Aim for a urine output of >0.5 ml/kg/h; insert a urethral catheter if necessary.

- 0.9% saline 1 L intravenous (IV) over 1 h.
- 0.9% saline 1 L IV over 2 h.
- 0.9% saline 1 L IV over 4 h.
- 0.9% saline 1 L IV over 6 h.
- Use 5% dextrose when blood glucose is <10 mmol [7].

Insulin Intravenous Infusion:

- Ask the nurse to draw up 50 units of actrapid in 50 ml of 0.9% saline (1 unit/ml) and run at 0.1 unit/kg/h, for example, 8 units/h for a 80 kg individual.
- Ketone levels should fall by 0.5 mM/h. If it does not, then increase the infusion rate by 0.1 unit/h increments until the target rate is achieved.
- Insulin rates that will be adequate to switch off ketogenesis usually make patients hypoglycemic, so start glucose 10% IV at 125 ml/h once glucose <14 mM.
- Continue long-acting insulin therapy at the usual dose and timing.

Potassium Replacement:

Potassium levels may be high on arrival; they will fall rapidly once the fixed rate insulin IV infusion commences. The supplementation suggested below should be added to the resuscitation fluid:

- Potassium >5.5 mmol requires no supplementation.
- Add when potassium <3.5 mmol: give 20 mmol with each liter infusion and give 10 mmol/h when potassium = 3.5–5 mmol.

Monitoring [8]:

- Blood glucose and ketones: hourly
- VBG should be done: 0, 2, 6 h
- Creatinine: 0, 6, 12, 24 h
- Bicarbonate: 0, 1, 2, 3, 6, 12, 24 h

The examiner may hand you an X-ray (Fig. 13.6)

- This is right-sided pneumonia.
- Mention you will chart broad-spectrum antibiotics.
- Consult the medical unit and critical care.

Thank the patient and describe your findings to the examiner.

Question: “What are complications of DKA?”**Answer:**

- Hyperkalemia
- Hypokalemia

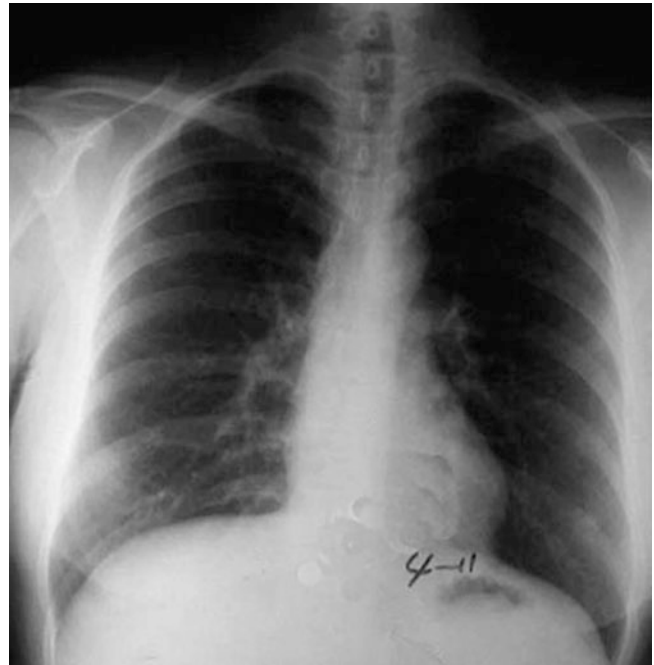


Fig. 13.6 On day 1 of pneumonia, the chest X-ray shows subpleural flakes of blurry shadow at the right lower lung. (Reprinted with permission from Liang [9])

- Hypoglycemia from fixed rate insulin IV infusion without glucose supplementation
- Cerebral edema
- Pulmonary edema
- Death

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History Overview: General History Hematology

I have brought these few blood-related topics together in one hematology chapter. In the objective structured clinical examinations (OSCE), you may or may not have one of these scenarios. The general structure of going through these scenarios in OSCE will generally be similar to the other medical scenarios. These will often come as a history-taking station with counseling. If you will be asked to perform an examination, it will be either limited to focus on one system examination or a general physical examination.

See Table 14.1 for an overview of the pattern of history-taking required for hematology stations.

Checklist: Physical Examination Hematology

See Table 14.2 for a checklist that can be used as a quick review before the exam.

History and Counseling: Warfarin

Candidate Information:

A 60-year-old male presents in your GP clinic with concerns of his international normalized ratio (INR) being 1.0 today. Please take a detailed but relevant history and counsel the patient accordingly.

Vital Signs: Heart rate (HR), 62/min, regular; blood pressure (BP), 140/80 mmHg; temp, 36.8 °C; respiratory rate (RR), 18/min; O₂ saturation, 100%.

No physical examination is required for this station.

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Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Are you 60 years old?”

History of Present Illness:

“I understand you came today to discuss your blood results. Is it alright if I ask you a few questions about your blood test and general health? Then we will discuss about it. I’d be happy to address if you have any concerns.”

- “Why was the blood test done?”
- “When was the blood test done?”
- “Who ordered it?”

The patient may explain that he was diagnosed with pulmonary embolism (PE) or deep vein thrombosis (DVT) a few months back and was put on warfarin (Coumadin). He has been coming for regular checkups until last week to another GP.

- “How was it diagnosed?”
- “What investigations were done?”
- “Were you admitted to the hospital? How many days?”
- “What were the symptoms at that time?”
- “Was there any pain and swelling?”
- “Was there shortness of breath? Chest pain?”
- “Which were the medicines that you were treated with?”

Table 14.1 Quick review of history taking required for hematology stations

Introduction
Name and age
Chief complaint
In patient's own words
History of present illness
Analysis of chief complaint
Onset
Course
Duration
If pain
Nature
Intensity (1–10)
Location
Progression
Frequency
Quality
Radiation
Severity (1–10)
Timing
Contributing factors
Aggravating/alleviating factors
Related symptoms
Associated symptoms: nausea, vomiting, change in bowel habits, appetite, blood in vomiting/feces/urine
Predisposing factors
Aggravating and relieving factors
Red flags/risk factors
Rule out differential diagnosis
Review of systems
Respiratory
Cardiovascular
Neurology
Musculoskeletal
Constitutional symptoms: anorexia, chills, night sweats, fever, lumps/bumps, and weight loss
Past medical history and surgical history
Medical illnesses
Any previous or recent medical issues
History of previous surgery/operation, especially relevant to the area of concern
Any related anesthetic/surgical complication?
Hospitalization history or emergency admission history
Medication history
Current medications (prescribed, over the counter, and any herbal)
Allergic history/triggers
Any known allergies?
Family history
Family history of any long-term or specific medical illness
Home situation
Occupation history
What do you do for a living?
Social history
Smoking
Alcohol

Table 14.1 (continued)

Street drugs
Sexual history
If adult female
Menstrual history (LMP)
Gynecology history
Obstetric history
If teen
Home
Education
Employment
Activities
Drugs
Sexual activity
Wrap-up
Describe the diagnosis
Management plan
Possible medical treatment
Duration of treatment and side effects
Red flags
Laboratory tests
Further information websites/brochures/support groups or societies/toll-free numbers
Follow-up

- “What was the target INR set?”
- “Is INR done on a regular basis?”
- “What was your last INR and when?”
- “What was the level?” 1.0
- “I want to find out why it is 1.0.”

Check for compliance:

- “Do you take your medications on a regular basis?”
- “Do you take your medicines by yourself or do you need help?”
- “Was there any chance that you skipped a dose?”
- “Did you start any new medications or antibiotics?”
- “Are you eating a lot of spinach?”
- “Are you recently taking any vitamin K supplements?”

He may tell that he stopped taking warfarin because of some particular reason; for example, he was told by a friend that it may cause stroke! Or he may mention any other side effects, such as skin necrosis/bleeding!

“I need to ask you more questions before answering this concern”:

- “Did you notice any blood from your gums, nose, bruises in body, coughing up blood?”
- “Do you have any stomachache?”
- “Did you vomit? Blood in vomit?”
- “Did you pass black tarry stools?”
- Ask about any neurological symptoms.

Table 14.2 Checklist for hematology examination

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your identification (ID) badge
	Now sit on the chair or stand on the right side of the patient and start the examination
Opening	Introduction, greet, explain, position, and exposure/drape
	Ask for vital signs – interpret the vital signs
	Ask for orthostatic blood pressure (BP)
General physical examination	Check for alert and orientation. Look for any abnormal findings in
	Face: characteristic face
	Eyes: palpebral conjunctival pallor, jaundice
	Mouth: mucosal bleeding, gum bleeding, strawberry tongue, cheilosis
	Palms: pallor in creases, petechia, cold, clammy
	Fingers: nail changes or clubbing
	Cervical lymph nodes palpation
	Axillary lymph nodes palpation
	Sternal tenderness: press and ask for bone pain
	Skin
	Thinning and dry skin
	Evidence of delayed healing (multiple scars or unresolved wounds)
	Look for any bruise or rash
	Record the distribution, number, site, and size of bruising together with any petechiae, ecchymoses, and subcutaneous hematoma
	Examine the pattern of bruising
	In dependent areas: thrombocytopenia or stasis factor
	Only on the arms or legs: possible trauma
	Around the eyes: connective tissue disorder
	In atypical areas such as back, buttocks, arms, and abdomen: bleeding disorder or non-accidental injury
	Typically over extensor surfaces of forearms: suspect senile purpura
	Palpate bruise: raised above the surface, tenderness, blench on touch
	Abdominal examination
Auscultation: bowel sounds and bruits	
Palpation:	
Superficial/light palpation	
Deep palpation	
Liver palpation	
Spleen palpation	
Kidney palpation	
Inguinal lymph nodes palpation	
Rectal examination	Mention

Table 14.2 (continued)

Chest examination	Auscultate (murmurs)
Respiratory system	Auscultate
Nervous examination	Motor power
	Muscle tone
	Sensations
	Reflexes
Legs examination	Petechia on legs, bruises, check of position sense, and vibration sense
Wrap-up	Thank the patient and ask the patient to cover up
	Wrap up your findings with the examiner or the patient

“Since you stopped warfarin, I want to ensure that there is no relapse of your DVT/PE”:

- “Do you have any swelling of your calf?”
- “Did you have any calf pain?”
- “Did you have shortness of breath?”
- “Have you had any heart racing?”
- “Did you notice any chest tightness?”
- Ask about fever.

Past Medical History: “How is your health otherwise? Any other medical problems? Diabetes mellitus (DM), hypertension (HTN), history of kidney/liver disease? Stroke? Bleeding disorder?”

Past Hospitalization and Surgical History: “Have you had any previous hospitalization or previous surgery?”

Medication History: “Are you taking any medication?” If he says no, then continue to the next question.

“Over-the-counter or herbal medications and any side effects?”

Allergic History: “Do you have any known allergies?”

Family History: “Any family history of stroke, blood disorders, liver and kidney disorders?”

Social History: “Do you smoke? Do you drink alcohol? Do you take any recreational drugs?”

Self-Care and Living Condition: “What do you do for living? Who lives with you?”

Work Conditions and Financial Status?

Support: “Do you have good family and friends support?”

Wrap-Up

Counseling:

Ask him about his understanding of DVT or PE? (But do not go into too much details. Remember it is a warfarin scenario.)

Question: “Why does he require treatment?” (Questions may be asked by the patient or the examiner.)

Answer: “The main reason about the treatment about DVT or PE is that if not treated, there is a high chance that relapse may recur. In high-risk patients or recurrent DVT or PE, life-long treatment will be required. In addition, these clots formed in your legs may dislodge and may travel all the way to your heart and then to lungs. This can be serious and even can cause sudden death.”

Question: “Why is blood clotting important?”

Answer: “Blood clotting or coagulation, which is the process of forming of clots, is an important function of the body, especially when we get a cut and need to stop bleeding. However, clots forming inside blood vessels are dangerous because they can travel to potentially any organ of the body, especially the heart, lung, and brain. In the brain it can cause a stroke. If it travels to the heart, it can cause a coronary attack.”

Question: “What treatment will you advise to this patient now?”

Answer: “Because you stopped warfarin, we need to start both heparin and warfarin. We need to bridge heparin until you have adequate INR, then we will stop heparin and continue with warfarin.”

Question: “What about missing a warfarin tablet?”

Answer: “It is important to take warfarin at around the same time each day. If you miss a dose, *do not take a double dose*, but take your next dose when it is due and contact your doctor.”

Question: “What factors can affect warfarin?”

Answer:

- **“Your diet:** There should be some dietary restriction while taking warfarin. Some foods may contain vitamin K that may interact with warfarin. Spinach, collard greens, Brussels sprouts, parsley, kale, and chard need to be avoided.
- **Some drinks** may change warfarin’s effects, such as cranberry juice and green tea.

- **Alcohol** may interact with warfarin. Use it in moderation and avoid binge drinking.
- **Medications enhancing the warfarin effects:** Antibiotics, aspirin, nonsteroidal anti-inflammatory drugs (NSAIDs), cimetidine, allopurinol, amiodarone, anabolic steroids, metronidazole, omeprazole, phenytoin, quinine, and thyroxine.
- **Medications decreasing the effect of warfarin:** Antacids, antihistamines, barbiturates, diuretics, haloperidol, estrogen, oral contraceptives, and vitamin C.”

History and Counseling: Anemia

Candidate Information:

A 40-year-old male presents to your GP clinic with a blood report showing hemoglobin of 8.0 gm/dl. Please take a detailed history and determine what is the most likely cause. Discuss your differentials with the examiner. What investigations would be helpful?

Differentials:

Pathophysiology:

1. Decreased production
2. Increased loss
3. Increased destruction
 - *Microcytic:*
 - Anemia of chronic disease
 - Iron deficiency
 - Thalassemia
 - Lead poisoning
 - Sideroblastic anemia – defects in heme biosynthesis
 - *Normocytic:*
 - Acute blood loss
 - Bone marrow failure
 - Chronic disease
 - Destruction (hemolysis)

High reticulocyte count:

- **Hemolysis:**
 - Inherited: hemoglobinopathy (sickle cell)
 - Membrane: spherocytic
 - Metabolic: hexose monophosphate (HMP) shunt, glycolytic pathway
- **Acquired:**
 - Microangiopathic hemolytic anemia: Disseminated intravascular coagulation (DIC), thrombotic thrombocytopenic purpura (TTP), hemolytic-uremic syndrome (HUS), HELLP syndrome (hemolysis, elevated liver enzymes, and low platelet count)
 - Immune: Coombs positive, drug-related, cold agglutinin

- Infection: Malaria
- Oxidative/drug-related
- **Bleeding:** Gastrointestinal (GI), genitourinary (GU), or other
- **Low reticulocyte count:** Decreased production (retics <2%)
- **Pancytopenia:** Aplastic anemia, myelofibrosis, leukemia, drugs (chemotherapy)
- **Non-pancytopenia:** Anemia of chronic disease, renal/liver disease
- *Macrocytic:*
 - **Megaloblastic:** B12 and/or folate deficiency: Metformin, proton pump inhibitor (PPI), H2 blocker, methotrexate, sulfa, chemotherapy, bacteria overgrowth at terminal ileum, pernicious anemia
 - **Non-megaloblastic:** Alcoholism, liver disease, hypothyroidism

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Are you 40 years old?”

“I understand, you came today to discuss your blood results. Is it alright, first, if I ask you a few questions about your blood test and general health? Then we will discuss about it. I would be happy to address any of your concerns.”

History of Present Illness:

- “Why was the blood test done?”
- “When was the blood test done?”
- “Who ordered it?”

The patient may explain that he was feeling tired/recent trauma/bleeding. He visited another GP in the same clinic who ordered this blood test, and now the other GP is on vacation. Tell him that you are covering the other GP and you are seeing the other GP’s patients in his absence.

Ask about symptoms to rule out differentials:

- Fatigue
- Malaise
- Weakness
- Shortness of breath

- Easy bruising
- Pallor
- Fever
- Loss of appetite
- Night sweats
- Bone pain
- Bumps and lumps
- Weight loss
- Nose bleeding
- Gum bleeding
- Heart burns
- Black stool (GI bleeding)
- Jaundice (hemolysis)
- Tingling and numbness (B12 deficiency)
- Diarrhea
- Change in bowel habits
- Rash
- Joint pain
- Nail changes
- Brittle hair
- Trouble swallowing
- Heart racing
- Orthostatic changes:
 - Feeling dizzy while standing up suddenly from sitting or lying
 - Blackout episodes when standing
- Recent accident/trauma leading to bleeding

Systemic Review (Only Ask if Not Asked Before):

- GI: Nausea, vomiting, appetite, weight loss, abdominal pain, and bowel routine
- Cardiovascular system: Chest pain, dyspnea
- Respiratory system: Cough, hemoptysis, and chest pain
- Central nervous system: Headache, loss of consciousness, and confusion
- Musculoskeletal: Bone point, joint pain, and muscular pain

Constitutional Symptoms (only ask if not asked before in the history): Fatigue and malaise, night sweats, fever, weight loss

Diet Restrictions: Vegetarian?

Past Medical History: “Do you have any other health issues?”

Ask in particular about:

- Bleeding disorder
- Previous anemia
- History of thalassemia
- History of sickle cell anemia

- History of cancer
- History of radiotherapy
- History of chronic disease
- Mechanical heart valve
- History eating disorders
- Previous history of transfusion

Past Hospitalization and Surgical History: “Have you had any previous hospitalization or surgeries (bowel resection)?”

Medication History: “Are you taking any medication prescribed, over the counter, or herbal? If so, have there been any side effects?” (Pain killer, blood thinners, methyldopa, chloramphenicol, phenytoin)

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke?”
- “Do you drink alcohol?”
- “Have you ever tried any recreational drugs?”

Family History: Any family history of chronic disease, thalassemia, sickle cell anemia, or bleeding disorder?

Relationships: “Are you sexually active? Do you have sex with men, women, or both?”

Self-Care and Living Condition: “What do you do for living? Working status and occupation? Educational status? Who lives with you?”

Support: “Do you have good support from your family and friends?”

Functional status or severity or impact on life activities.

Wrap-Up:

Question: “What will you do next?”

Answer: “I would like to perform a physical examination. I will order further blood tests, according to history and physical examination findings”:

- Hemoglobin and hematocrit
- Red cell indices
- Reticulocyte count
- Iron studies – serum iron, total iron-binding capacity (TIBC), ferritin, transferrin
- Serum B12 and folate
- Haptoglobin
- Lactate dehydrogenase (LDH)
- Schilling test

- Hemoglobin electrophoresis

Question: “What is the treatment?”

Answer: “Once iron deficiency has been diagnosed and its underlying cause addressed, the next challenge is restoration of the iron supply. Assuming an average absorption of 10% of the iron in a medicinal form, the daily elemental iron requirement is 10 mg in children, adult males, and post-menopausal women (to provide 1 mg to the body); 20 mg in young nonpregnant women; and 30 mg in pregnant women. Of course, patients who do not absorb iron well, such as those who have undergone gastric bypass, will require higher doses” [1].

Iron Therapy

Oral ferrous iron salts are the most economical and effective medications for the treatment of iron deficiency anemia. Of the various iron salts available, ferrous sulfate is the one most commonly used.

Iron Supplements

To improve your body’s ability to absorb the iron in the tablets [2]:

- **For best results, take iron tablets on an empty stomach.** However, because iron tablets may cause stomach upset, you may need to take the tablets with food.
- **Avoid taking iron with antacids.** Antacids can interfere with the absorption of iron. Take iron 2 h before or 4 h after taking antacids.
- **Take iron tablets with vitamin C,** which improves the absorption of iron. Your doctor might recommend taking the tablets with a glass of orange juice or with a vitamin C supplement [2].

History and Counseling: Needle Stick Injury

Candidate Information:

You are working in an emergency department, and a 27-year-old female hospital nurse presents after having a needle stick injury about 10 min ago. Please take a detailed history and counsel her about your plan of action.

Differentials:

More than 25 blood-borne viruses have been reported to be caused by needle stick injuries [3].

The major blood-borne pathogens of concern associated with needle stick injury [3]:

- Human immunodeficiency virus (HIV)
- Hepatitis B
- Hepatitis C

Other pathogens [4]:

- Human T-lymphotropic retroviruses I (HTLV-I) and II (HTLV-II)
- Hepatitis D virus (HDV – or delta agent), which is activated in the presence of HBV
- GB virus C (GBV-C) – formerly known as hepatitis G virus (HGV)
- Cytomegalovirus (CMV)
- Epstein-Barr virus (EBV)
- Parvovirus B19
- Transfusion-transmitted virus (TTV)
- West Nile virus (WNV)
- Malarial parasites
- Prion agents such as those associated with transmissible spongiform encephalopathies (TSEs)

Determine Risk by:

- Exposure risk
- Source risk

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... Are you ...? And are you 27 years old? I just read that you are one of our nurses. How can I help you today?”

She will mention that she was drawing blood or giving some IV medication and got a needle stick injury.

History of Present Illness:

Questions related to event:

- What happened?
- When did it happen?
- Show empathy. (Please do not say that it was her fault and she should have been careful.)

Ask about:

- Used or new needle.
- Size of needle.
- What was gauge of needle?
- Blunt or hollow.
- Any visible blood on the needle?
- How deep was the injury?

- Where was the location of the prick?
- Any bleeding after that?
- Was she wearing gloves?
- What did she do immediately?
- Is it the first time?
- Ask about body fluid if it was a splash or patient spitted/vomited.
- What was done after the puncture? (washing, alcohol scrub, or Betadine wash)

Source Risk:

- Was the patient admitted to the hospital?
- Was the patient’s HIV status known?
- If yes, then when was it tested – viral loads, CD4 levels, any previous or current treatments and its responses.
- Was the patient hepatitis B and C status known?
- Did someone inform the patient about the needle stick injury?
- Did someone obtain the patient’s permission or consent for further testing?
 - If not, then tell the nurse, “We need to obtain consent. Without consent I will not be able to order any tests from the source.”
 - If consent has already been taken, then order the required blood tests.

Past Medical History:

- “How is your health otherwise? Any other medical problems?”
- “Being a health-care provider”:
 - “Have you been vaccinated before for hepatitis A and B?”
 - “How many doses?”
 - “When was the last dose?”
 - “Liver disease: Have you ever been yellowish? Itchiness? Dark urine? Pale stool? Bruises in body?”
 - “Repeated infections?”
 - “Chronic diarrhea?”
- “I am going to ask you some questions if you were **exposed before** for any of the viruses previously mentioned”:
 - Any travel outside the country?
 - Any recent surgery?
 - Any blood transfusions?
 - Any tattoos/piercings?

Past Hospitalization and Surgical History: “Have you had any previous hospitalization or previous surgery?”

Medication History: “Are you taking any medication?” If she says no, then continue to next question. “Over-the-counter or herbal medications and any side effects?”

Allergic History: “Do you have any known allergies?”

Social History: “Do you smoke? Do you drink alcohol? Do you take any recreational drugs?”

Wrap-Up:

Counseling:

- Tell her to write an incident report.
- Consult infectious diseases department/consultant.
- Give her the **risks** of being infected with needle stick injury:
 - HIV: 0.3%
 - Hepatitis C: 3%
 - Hepatitis B: 30%

Laboratory Studies

(Please check with your regional and hospital guidelines)

- **Source patient** (only after consent being given):
 - HIV testing
 - Hepatitis B antigen
 - Hepatitis C antibody
- **Health-care worker/exposed individuals:**
 - Hepatitis B surface antibody
 - HIV testing at time of incident and again at 6 weeks, 3 months, and 6 months
 - Hepatitis C antibody at time of incident and again at 2 weeks, 4 weeks, and 8 weeks
- **Laboratory tests before initiating retroviral therapy:**
 - Pregnancy test
 - Complete blood count (CBC) with differential and platelets
 - Serum creatinine/blood urea nitrogen (BUN) levels
 - Urinalysis with microscopic analysis
 - Aspartate transaminase/alanine transaminase (AST/ALT) levels
 - Alkaline phosphatase level
 - Total bilirubin level

Question: “What will be the management plan?”

Answer:

According to the US Centers for Disease Control and Prevention [5]:

- **“Exposure Management**
- Treatment of an exposure site: Wounds and skin sites that have been in contact with blood or body fluids should be washed with soap and water; mucous membranes should be flushed with water. There is no evidence that the use of antiseptics for wound care or expressing fluid by squeezing the wound further reduces the risk for HIV transmis-

sion. However, the use of antiseptics is not contraindicated. The application of caustic agents (e.g., bleach) or the injection of antiseptics or disinfectants into the wound is not recommended [5].”

- **“Evaluation of Exposure.** The exposure should be evaluated for potential to transmit HIV based on the type of body substance involved and the route and severity of the exposure. Exposures to blood, fluid containing visible blood, or other potentially infectious fluid (including semen; vaginal secretions; and cerebrospinal, synovial, pleural, peritoneal, pericardial, and amniotic fluids) or tissue through a percutaneous injury (i.e., needle stick or other penetrating sharp-related event) or through contact with a mucous membrane are situations that pose a risk for blood-borne transmission and require further evaluation [5]” (Fig. 14.1).

“For screening, we need to send bloods today, and then:

- HIV testing again at 6 weeks, 3 months, and 6 months
- Hepatitis C antibody again at 2 weeks, 4 weeks, and 8 weeks”

Prophylaxis:

- **Recommended 28-day prophylaxis** – Tenofovir 300 mg daily plus emtricitabine 200 mg daily plus either raltegravir 400 mg BID or dolutegravir 50 mg daily.
- **Hepatitis B prophylaxis:**
 - Patients who have been previously vaccinated with known response to vaccine: No further therapy required.
 - Patients previously vaccinated without known response to vaccine: Send anti-HepBs titer; administer prophylaxis (one dose of HBIG); booster is required.
 - Unvaccinated: Provide one dose of HBIG and initiate vaccination series.
- **Hepatitis C prophylaxis** – There is no known effective postexposure prophylaxis for hepatitis C.

History and Physical Examination: Easy Bruising

Candidate Information:

A 20-year-old male presents in your GP clinic with easy bruising and epistaxis for the past 2 months. Please take a relevant history and perform a focused examination. What investigations you will order to reach to a diagnosis?

or

A 20-year-old female presents to your GP clinic with recurrent episodes of bleeding from her nose. Please take a focused history and perform a focused examination.

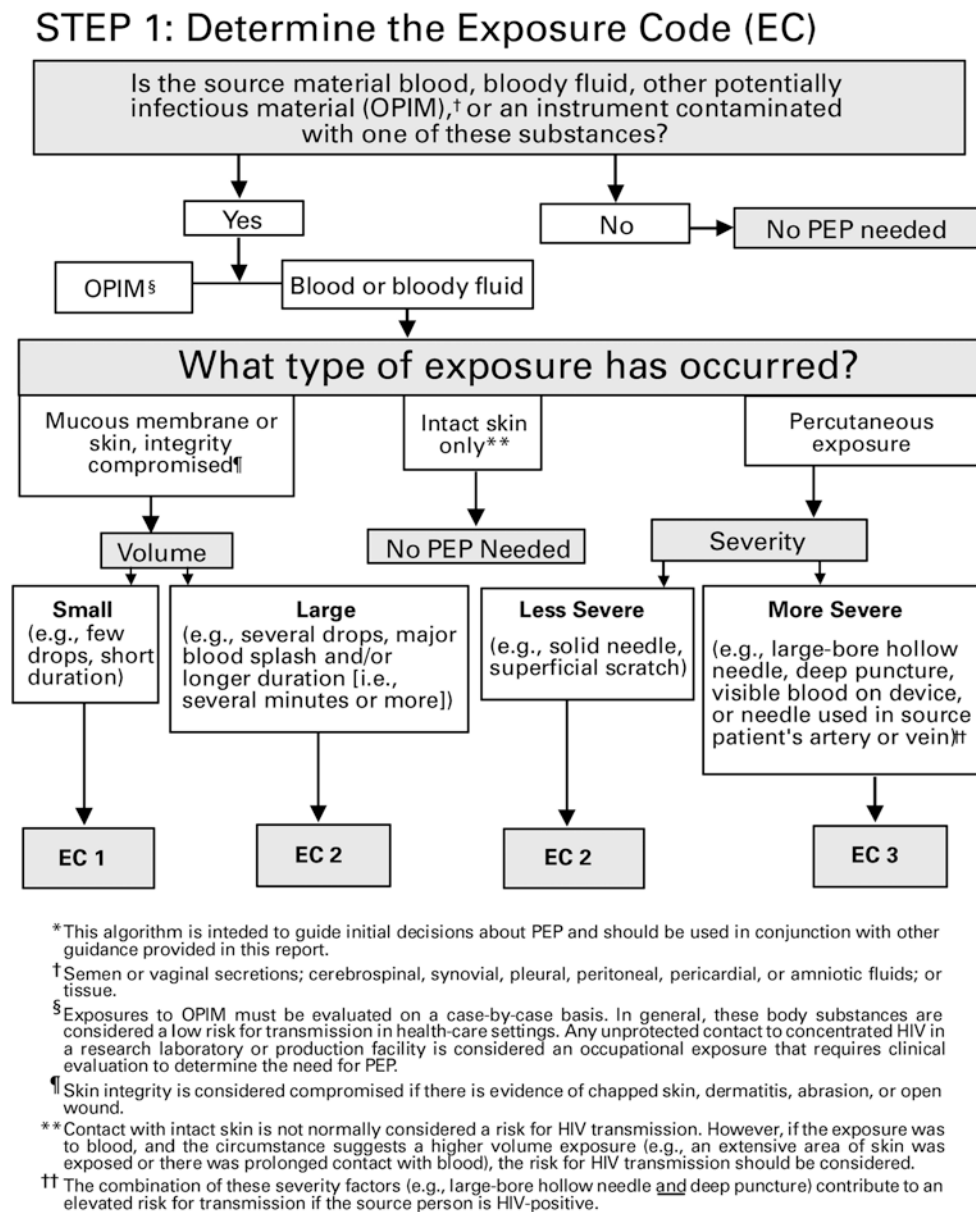


Fig. 14.1 Determining the need for HIV postexposure prophylaxis (PEP) after an occupational exposure. (Reprinted from Centers for Disease Control and Prevention [5])

Differentials [6]:

- **Platelet disorders (quantitative):** Idiopathic thrombocytopenic purpura, thrombotic thrombocytopenic purpura, malignancy, viral disease
- **Platelet disorders (functional):** Glycoprotein disorders (Bernard-Soulier syndrome, Glanzmann thrombasthenia), storage pool disease, von Willebrand's disease
- **Hemophilia type A or B (factor VIII or IX deficiency) or other factor deficiencies:** Classically presents with joint or soft-tissue bleeding; family history of bleeding in men (skipped generations)
- **Hereditary hemorrhagic telangiectasia:** Telangiectasias over lips, tongue, nasal cavity, and skin. Epistaxis
- **Vasculitis or cryoglobulinemia:** Neuropathy; pulmonary-renal involvement; purpura
- **Leukemia:** Abnormal complete blood count or peripheral blood smear
- **Disseminated intravascular coagulation:** Bleeding from multiple sites Prolonged prothrombin time and partial thromboplastin time
- **Vitamin K deficiency:** Malabsorption (bacterial overgrowth, celiac disease, chronic pancreatitis, inflammatory bowel disease, short-gut syndrome), poor diet

(alcoholism, total parenteral nutrition), or drugs that bind vitamin K

- **Alcohol abuse:** Social history
- **Abuse (including child abuse):** Atypical pattern of bruising or bleeding. Bruises that pattern after objects; bruises in children who are not yet mobile. History that is inconsistent with the patient's injuries
- **Senile purpura:** Dark ecchymosis in aged, thin skin; typically over extensor surfaces of forearms
- **Cushing's disease:** Facial plethora, hirsutism, hyperglycemia, hypertension, poor wound healing, stria
- **Marfan's syndrome:** Enlarged aortic root; eye involvement; mitral valve prolapse; scoliosis; pectus excavatum; stretch marks; tall and slim, with long limbs and digits
- **Vitamin C deficiency (scurvy):** Dietary history
- **Ehlers-Danlos syndrome or connective tissue disease:** Atrophic scarring or joint dislocation, hypermobile joints, skin hyperextensibility

Medications that can cause bleeding and bruising [6]:

- **Common causes:**
 - Aspirin
 - Clopidogrel
 - Heparin
 - NSAIDs
 - Warfarin
- **Rare causes:**
 - Cephalosporins
 - *Ginkgo biloba*
 - Gold
 - Interferon
 - Penicillins
 - Selective serotonin reuptake inhibitors (SSRIs)

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Are you 20 years old? I am going to ask you questions about the bruising and nasal bleeding. I would also like to perform a focused examination. Should we start?”

History of Present Illness:

Start with bruising:

- Onset
- Course
- Duration (from birth or just presently)
- Location: where?
- Size: how big?
- Color?
- After trauma or spontaneously?
- How frequent?

Ask a few questions about epistaxis:

- Onset
- Course
- Duration (from birth or just presently)
- After trauma or spontaneously?
- How frequent?
- How much blood?
- What measure taken to stop bleeding?
- Did he visit the hospital?
- Was he admitted?
- Any blood tests done?

Show empathy.

Ask about symptoms to rule out differentials:

- Bleeding too long from small cuts (platelet problem)
- Fatigue
- Malaise
- Weakness
- Shortness of breath
- Pallor
- Fever
- Loss of appetite
- Night sweats
- Bone pain
- Joint swelling (hemarthrosis – hemophilia)
- Bumps and lumps
- Weight loss
- Gum bleeding
- Heart burns
- Black stool (GI bleeding)
- Jaundice (hemolysis)
- Tingling and numbness (B12 deficiency)
- Diarrhea
- Change in bowel habits
- Rash
- Joint pain
- Nail changes

- Brittle hair
- Trouble swallowing
- Heart racing
- Orthostatic changes:
 - Feeling dizzy while standing up suddenly from sitting or lying
 - Blackout episodes when standing

Systemic Review (Only Ask if Not Asked Before):

- GI: Nausea, vomiting, appetite, weight loss, abdominal pain, and bowel routine
- Cardiovascular system: Chest pain, dyspnea
- Respiratory system: Cough, hemoptysis, and chest pain
- Central nervous system: Headache, loss of consciousness, and confusion
- Musculoskeletal: Bone point, joint pain, and muscular pain

Constitutional Symptoms (only ask if not asked before in the history): Fatigue and malaise, night sweats, fever, weight loss

Diet Restrictions: Vegetarian?

Past Medical History:

- “Do you have any other health issues?”
- Ask in particular about:
 - Bleeding disorder.
 - Previous anemia.
 - History of chronic disease.
 - Childhood illness: Chemotherapy or radiation therapy for childhood malignancies may later lead to treatment-related bleeding from bone marrow disorders such as myelodysplasia or leukemia.
 - Autoimmune disorders that may affect the blood vessels.
 - Renal disease: Causing platelet dysfunction.
 - Hepatic disorders: May affect the numbers of platelets, platelet function, quantity of coagulation proteins, or the quality of the skin and connective tissue.

Past Hospitalization and Surgical History: “Have you had any previous hospitalization or surgeries (bowel resection)?”

Medication History: “Are you taking any medication prescribed, over the counter, or herbal? If so, have there been any side effects?” (Pain killer, blood thinners, aspirin)

Allergic History: “Do you have any known allergies?”

Social History:

- “Do you smoke?”
- “Do you drink alcohol?”
- “Have you ever tried any recreational drugs?”

Family History: “Any family history of chronic disease, thalassemia, sickle cell anemia, or bleeding disorder?”

Relationships: “Are you sexually active? Do you have sex with men, women, or both?”

Self-Care and Living Condition: “What do you do for living? Working status and occupation? Educational status? Who lives with you?”

Support: “Do you have good support from your family and friends?”

Functional status or severity or impact on life activities.

Physical Examination:

“Now, I will start the examination.”

Comment on the vital sign findings if there are any mentionable findings, otherwise state that vitals are normal.

Check level of consciousness, alertness, and orientation.

General Physical Examination:

- Look for any abnormal findings in:
 - Face: Characteristic face.
 - Eyes: Palpebral conjunctival pallor, jaundice.
 - Mouth: Mucosal bleeding, gum bleeding, strawberry tongue, cheilosis.
 - Nose: Check for clots or any fresh bleed.
 - Palms: Pallor in creases, petechia, cold, clammy.
 - Fingers: Brittle nails – due to nutritional factors, aging, and thyroid diseases.
 - Cervical lymph nodes palpation.
 - Axillary lymph nodes palpation.
 - Sternal tenderness: Press and ask for bone pain.
- **Skin:**
 - Thinning and dry skin
 - Evidence of delayed healing (multiple scars or unresolved wounds)
- **Look for any bruise or rash:**

- Record the distribution, number, site, and size of bruising together with any petechiae, ecchymoses, and subcutaneous hematoma
- Examine the pattern of bruising:
 - In dependent areas: Thrombocytopenia or stasis factor
 - Only on the arms or legs: Possible trauma
 - Around the eyes: Connective tissue disorder
 - In atypical areas such as back, buttocks, arms, and abdomen: Bleeding disorder or non-accidental injury
 - Typically over extensor surfaces of forearms: suspect senile purpura
- Palpate bruise: Raised above the surface, tenderness, blench on touch

Abdominal Examination:

- **Inspection**
- **Palpation:**
 - Superficial/light palpation
 - Deep palpation
 - Liver palpation
 - Spleen palpation
 - Kidney palpation
 - Inguinal lymph nodes palpation (mention)

Rectal Examination (mention)

Chest Examination: Auscultate (murmurs)

Respiratory System: Auscultate.

Comment on your findings.

Thank the patient and tell the patient to cover up.

Ask the patient if they have any questions or concerns.

Wrap-Up

Question: “What will you do next?”

Answer: “I will order further blood tests according to history and physical examination findings:

- Full blood count (FBC) and differentials
- Hemoglobin and hematocrit
- Red cell indices
- Reticulocyte count
- Coagulation panel
- Iron studies (serum iron, TIBC, ferritin, transferrin)
- Serum B12 and folate
- Hemoglobin electrophoresis
- Coagulation screen”

Partial Thromboplastin Time and Prothrombin Time

The partial thromboplastin time (PTT) is the measure of the factors of the intrinsic and common pathways. Lack of these factors, including factor VIII (hemophilia A) and factor IX (hemophilia B), will prolong the value of PTT. Factor VIII levels may also be low in patients with von Willebrand’s disease. In these patients there will be prolonged PTT [6].

Prothrombin time (PT) is the measure of the factors of the extrinsic and common pathways. Deficiencies of these factors, most commonly factor VII, will prolong the value of PT. Vitamin K is essential for the synthesis of these factors. So patients with vitamin K deficiency will have a prolonged PT (Fig. 14.2) [6, 7].

History and Management: Acetaminophen Intoxication

You are working in an emergency room when a 25-year-old female was brought in after taking pills of paracetamol. She recently broke up with her boyfriend. She was brought in by an ambulance. Please manage the patient. There is also a bedside nurse to help you carry out orders.

This scenario can be divided into three parts:

- History and examination
- Management
- Psychiatric evaluation of the patient

So try to complete and cover all three of these.

Starting the Interview:

- Knock on the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner, nurse, and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Now stand on the right side of the patient and start the examination.

Opening:

Triage immediately.

- Call the patient’s name and check the patient’s response. Or gently shake shoulder or hand.
- Check for response and immediately tell the examiner about your findings.

If the patient is conscious and stable, then introduce yourself to the patient: “Good morning/good afternoon. I am Dr... I am your attending physician for today. Are you Miss...? Are you 25 years old?”

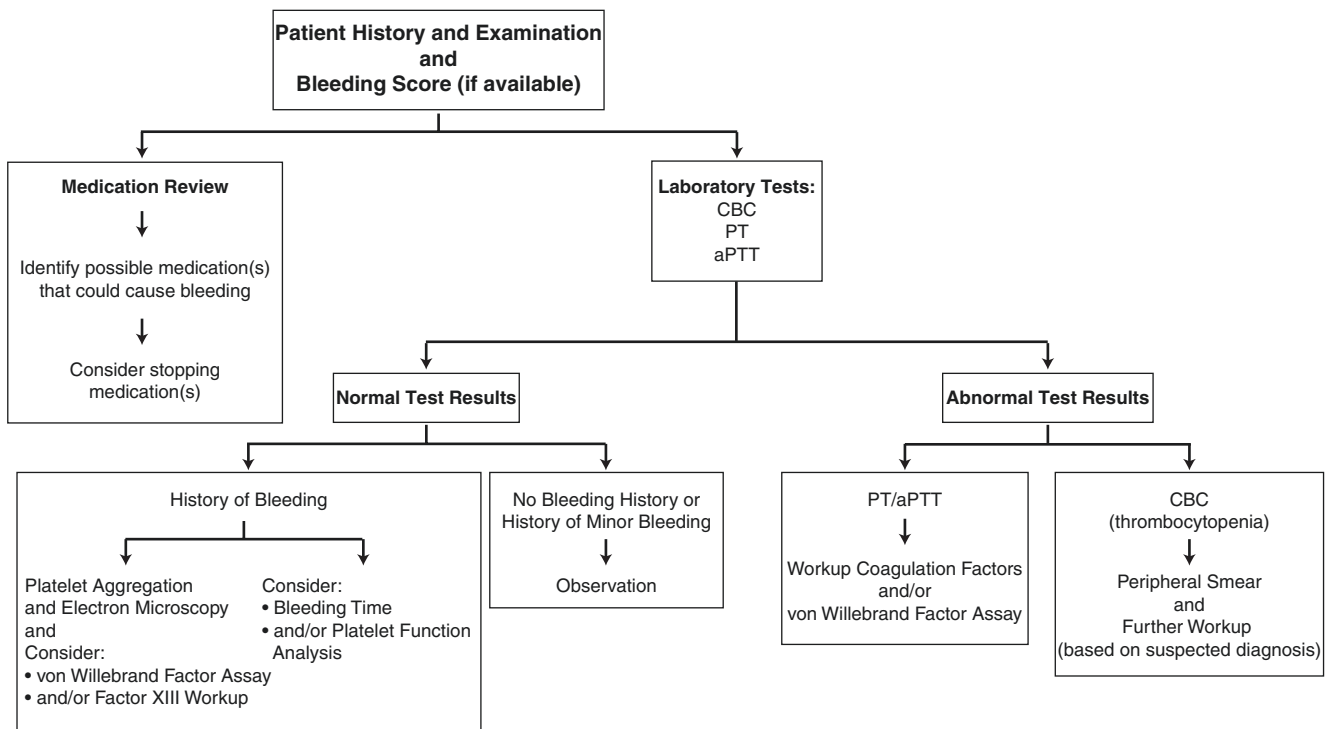


Fig. 14.2 Easy bruising algorithm. PT prothrombin time, aPTT activated partial thromboplastin time, CBC complete blood count. (Adapted from Wang and Kraut [7])

Ask the nurse for vital signs – interpret the vital signs.

Mention to the Examiner: “I will start primary survey (ABCD)”:

A. Airway

- Is the airway patent?
- Comment on airway.
- If the patient is talking well, then mention that the airway is patent.

B. Breathing

- Is the patient breathing?
- Check respiratory rate.
- Pulse oximetry to keep $\text{SaO}_2 > 95\%$

C. Circulation

- Check pulse, BP.
- Ask the nurse to please pass two large-bore cannula (G14/G16), one on each arm.
- Draw blood for:
 - CBE
 - Liver function tests (LFTs)
 - Electrolytes
 - Paracetamol level
 - Coagulation profile
 - Lactate
 - Amylase
 - Blood alcohol
- Urine toxicology/pregnancy test

- Mention that you will send a paracetamol level at 4 h of ingestion.
- Ask the nurse to put continuous monitoring with cardiac monitoring/12-lead electrocardiogram (ECG).

D. Disability and neurological status

- Rapid neurological assessment should be done next. During the primary survey, a basic neurological assessment is made, known as **AVPU**:
 - Alert
 - Verbal stimuli response
 - Painful stimuli response
 - Unresponsive
- Or by using the **Glasgow Coma Scale (GCS)**.
- **Pupils:** size, symmetry, and reaction.
- Any lateralizing signs.
- Ask for a **blood glucose level** (finger prick). Give dextrose if hypoglycemia.

Body Language and Clues:

Ask the patient what happened. The patient will describe the events and her circumstances leading her to the decision to attempt suicide.

In this particular station, it is very important to show empathy and support. The patient may look sad or low and may avoid eye contact. If so then one should offer support and help. Offer social worker’s support. You must encourage the patient by saying it is a good thing she called the

emergency number to seek help. You and your team are here to help her.

Ask the nurse if a collateral history available:

- Ask for the empty pill bottles to confirm the drug, how many pills, when taken, concurrent ingestion of alcohol or other drugs.
- Where was the patient found?
- Was there a period of unconsciousness? How long did this last?

Suicide History (customize according to time):

- “What happened?”
- “When did it happen?”
- “Did you have thoughts of hurting yourself?”
- “How long have you been thinking about suicide?”
- “When did you plan it? What was the method?”
- “How long you have been planning on it? How often do you have these thoughts?”
- “How severe are your thoughts? Do these suicidal thoughts affect your activities of daily life? Have you ever been hospitalized?”
- “What made you decide to act on today’s event? Any recent event or stressor precipitated in these thoughts?” Or may ask, “What made you want to kill yourself?”
- “Did you leave a note?”
- “Did you make a will?”
- “Did you tell someone?”
- “Did you give away your belongings?”
- “Did you select a date or specific time? Any particular place?”
- “Did you buy a weapon? How did you get the gun/pills?”
- “Did you try stopping these thoughts? Did you seek help?”
- “Is there anything that has held you from executing the suicide plan? Family, friends, religion?”
- “Did it happen before? When?”
- “Do you still have a plan to kill yourself? What are your plans?”
- “Any time lag between the suicide attempt and arrival in emergency?”
- “What do you feel to survive from the attempt you made?”

Assessment:

Modified SAD PERSONS scale score of greater or equal to 6 shows need for emergency psych consult (Table 14.3).

Psychiatric Symptoms Screening

Depression Screening:

- **Low mood:**
 - “How is your mood nowadays? Have you been feeling low/sad/down or depressed these days? Is your mood always low or does it alternate?”

Table 14.3 Modified SAD PERSONS scale

Sex male	1
Age <19 or >45	1
Depression	2
Previous attempt	1
Excessive alcohol	1
Rational thinking loss	2
Separated	1
Organized plan	2
No support	1
Stated future intent	2

- “How were you feeling before this?”
- “How long have you been feeling like this?”
- **Loss of Interest:** “What kind of activities do you do for pleasure? Do you still enjoy them? Or do you enjoy social activities and relationships you used to enjoy?”
- **Lack of Sleep:** “How is your sleep? Do you have problems with going to sleep or maintaining sleep? Do you wake up early in the morning and then find it difficult to go back to sleep? Do you feel you are sleeping for a longer duration than before?”
- **Guilt:** “Do you feel guilty/hopeless/worthless?”
- **Decreased Energy:** “Do you feel lack of energy? Do you feel tired?”
- **Inability to Concentrate:** “Do you have difficulty in concentrating?”
- **Loss of Appetite:** “Has your appetite changed recently?”
- **Psychomotor Retardation:** “Do you think that you have slowed down in your usual pace?”
- **Suicide Ideas (Very Important in This Station):** “Do you have any plan to hurt yourself or others? Any previous attempt? Recurrent thoughts? Left a note?”

Screen for Anxiety: Just one question

Screen for Mania: Just one or two questions

Screen for Psychosis: Just one question about delusions and one for hallucinations

Past Medical History: Any previous health issues?

Past Psychiatric History: Diagnosis, treatments, admissions, follow-ups, previous suicide attempts

Medication History: Antidepressant, anxiolytics, antipsychotics, or any other medications and any side effects

Family History and Family Psychiatric History

Social History: Smoking, alcohol, drugs, sexual history

Self-Care, Living Condition, and Relationships

Work Conditions and Financial Status

Support: Family and friends

Physical Examination:

Tell the patient that you will be doing a physical examination.

- Review vital signs with the examiner.
- **Exposure:** Stand on the right side of the bed and tell the patient (indirectly to the examiner), “Miss..., I am starting my examination now. During the examination if you feel uncomfortable at any point please do let me know.”
- **Position:** Supine, arms on the side, legs uncrossed.

General Physical Examination: Check for alert and orientation. Look for any abnormal findings in the hands, face, neck, and chest.

Chest: Listen to the chest (respiration and heart sounds).

Abdominal Examination: Inspection and palpation.

Thank the patient and describe your findings to the examiner.

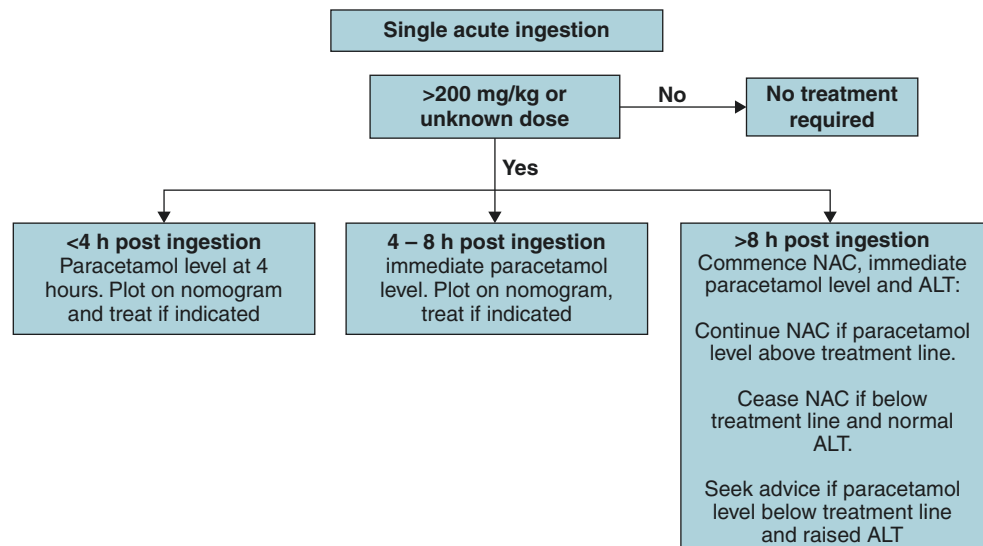
Wrap-Up:

Question: “What are the clinical features?”

Answer:

- Stage 1 (0–24 h): Asymptomatic or GI upset only
- Stage 2 (24–48 h): Resolution or nausea and vomiting, right upper quadrant (RUQ) pain and tenderness, and progressive elevation of transaminases, bilirubin, PT
- Stage 3 (48–96 h): Hepatic failure (jaundice, coagulopathy, encephalopathy)
- Stage 4: Death from hepatic failure or normalization of LFTs and complete resolution of hepatic architecture by 3 months [8].

Fig. 14.3 Paracetamol ingestion flowchart. (Republished, with permission, from resources at the Royal Children’s Hospital, Melbourne, Australia. https://www.rch.org.au/clinicalguide/guideline_index/Paracetamol_poisoning/)



Question: “What will be your further management plan?”

(Please check your local and regional guidelines for paracetamol overdose.)

Answer: You need to consult:

- Psychiatrist
- Medical unit
- Intensive care unit (ICU) (if unstable)
- Poison control

This patient needs to be admitted for observation and further management.

According to the patient condition, patient weight, number of pills ingested, and time duration, assess if activated charcoal and/or N-acetyl cysteine (NAC) needs to be given.

Decontamination with activated charcoal is recommended in cooperative adults within 2 h of ingestion of (solid) immediate-release forms or within 4 h of ingestion of either modified-release forms or greater than 30 g of acetaminophen (paracetamol).

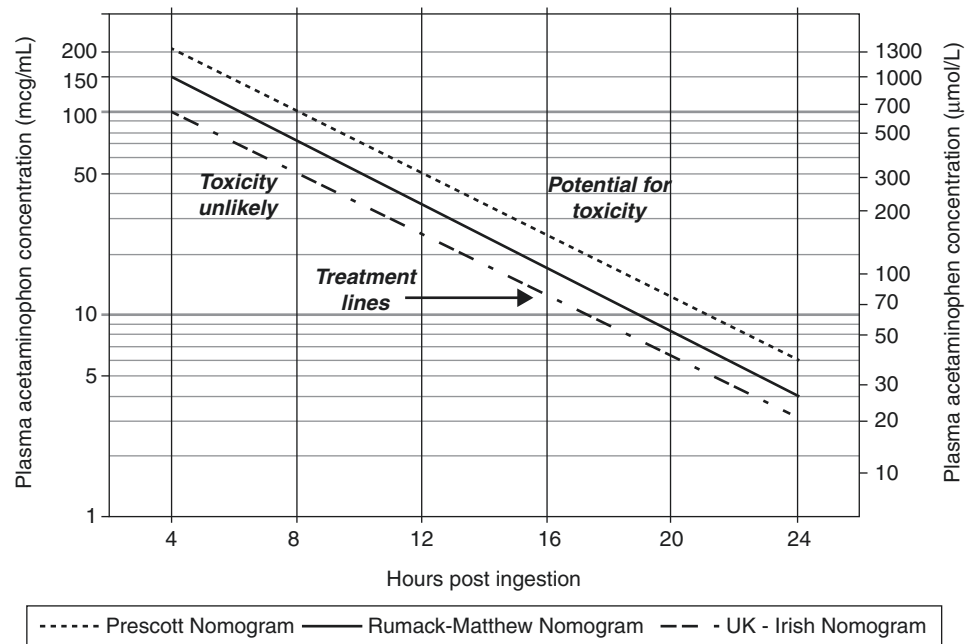
See Figs. 14.3 and 14.4 for clinical guidelines in single acute ingestion of paracetamol.

Question: “What if the patient has ingested tricyclic antidepressants?”

Answer: “Most of the management will be the same as of the aforementioned patient.”

“The main effects of overdose are on the cardiovascular system, central nervous system, and peripheral autonomic nervous system [9]. The initial side effects, which can be mild, usually develop within 2 h of overdose. Common symptoms

Fig. 14.4 Acetaminophen (paracetamol) treatment nomograms. Treatment is recommended if the plasma acetaminophen concentration is above the solid (150 mg/L at 4 h) line in North America and Australia. In the UK and Ireland the dotted-dashed line (100 mg/L at 4 h) is used to determine therapy with acetylcysteine. (Reprinted with permission from Bateman [12])



may include tachycardia, dilated pupils, confusion, agitation, drowsiness, dry mouth, urinary retention, nausea and vomiting, headache, fatigue, anxiety, blurry vision, and dizziness. Additional signs of overdose may include palpitations, hypertension, tremors, confusion, delirium, and lethargy” [10].

“The signs of severe poisoning include life-threatening cardiac rhythm and conduction disturbances, changes in level of consciousness, coma, convulsions, hypotension, and pulmonary complications” [10].

Decontamination

Charcoal is generally contraindicated due to risk of aspiration. However, patients who have ingested more than 10–15 mg/kg should be given charcoal following intubation [11].

Specific Treatments:

If QRS is widened or there is ventricular arrhythmia, commence alkalization with sodium bicarbonate (bolus 2 mmol/kg). Repeat boluses may be given in addition to consideration of intubation and hyperventilation in order to bring pH to 7.5 [11].

Ongoing Care and Monitoring:

- Cardiac monitoring and regular ECGs
- Contact the ICU if the patient is in an altered state of consciousness, GCS <12, having seizures, widened QRS, or arrhythmia.
- Treat seizures with benzodiazepines – avoid phenytoin as it has sodium channel blockade activity.
- If asymptomatic: Follow investigation procedures, observe for 6 h, and discharge if ECG remains normal [11].

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Additional Readings

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History Overview: The Skin

There are only a few skin cases that are important for the objective structured clinical examination (OSCE). Besides inquiring about the skin problem, it is equally important to complete the rest of the history just as for other systems. Occupation and residence histories are very important. Exposure to allergens, sun, and other triggering factors are essential questions in skin scenarios. It becomes difficult for some candidates to diagnose skin diseases due to limited experience in this particular field.

This chapter will outline a few common skin issues and will outline how to go through these in the OSCE. See Table 15.1 for an overview of the pattern of history taking required for skin stations.

Please do not forget to seek help from experts: the dermatologists.

Common Signs and Symptoms for the OSCE

For the skin, common presenting symptoms are:

- Rash
- Itching
- Blisters
- Hives
- Ulcers
- Pigmentation
- Moles
- Scaly rash (psoriasis)
- Erythema
- Hair problems
- Nail problems

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Detailed History: The Skin

Starting the Interview:

- Knock the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr/Mrs/Miss...? And you are ... years old?”

Gender, Age, and Skin Conditions:

See Tables 15.2 and 15.3 [1].

Chief Complaint

Chief complaint or the reason the patient is visiting the clinic. “What brings you in today?”

History of Present Illness

Chief Complaint:

- Onset
- Course
- Duration
- Progression
- Severity of symptoms
- Skin lesions (Fig. 15.1) [2]:
 - What did the initial lesions look like?
 - How have they evolved and extended?
 - Which part of the body involved?
 - Is the nails or hair involved?
 - What did patient do to relieve the symptoms?

Table 15.1 Quick review of history taking for the skin stations

Introduction
Name and age
Chief complaint
In patient's own words
History of present illness
Analysis of chief complaint
Onset (when, where, and how the skin problem started?)
Course
Duration
Progression
Skin lesion
What did the initial lesion look like?
How have they evolved and extended?
Describe the lesion
Asymmetry
Border
Color
Diameter
Elevation
Associated symptoms: itching, pain, bleeding, nausea, vomiting, urine changes, jaundice, chills, sweating, fever, weight loss
Predisposing factors
Aggravating and relieving factors (sunlight, rest, antihistamines)
Constitutional symptoms
Review of systems
Respiratory
Genitourinary
Cardiovascular
Neurology
Impact on the body
Rule out differential diagnosis
Past medical and surgical history
Medical illnesses (similar symptoms, atopy, skin lesions, systemic diseases, for example, rheumatoid arthritis, celiac disease)
Any previous or recent surgery (skin related)
Hospitalization history or emergency admission history
Medication history
Current medications
New drugs, antibiotics, immunosuppressants
Prescribed, over the counter, and any herbal
Allergic history/triggers
Any known allergies?
Family history
Family history of same symptoms (scabies)
Any long-term disease, any genetic skin problem – neurofibromatosis
Home situation
With whom do you live in?
Occupation history
What kind of work do you do?
Does the problem improve when away from work/home or hobbies?
Social history
Smoking
Alcohol
Street drugs
Sexual history
Tattoos

Table 15.1 (continued)

If adult female
Menstrual history (LMP)
Gynecology history
Obstetric history
If teen
Home
Education
Employment
Activities
Drugs
Sexual activity
If child
Birth history
Immunization
Nutrition
Development
Wrap-up
Describe the diagnosis
Management plan
Possible medical treatment
Duration of treatment and side effects
Red flags
Laboratory tests
Further information: websites/brochures/support groups or societies/toll-free numbers
Follow-up

- **Describe the lesion:**

- Asymmetry
- Border
- Color
- Diameter
- Elevation

- **Description of skin lesions:**

- *Lesion Type (Primary Morphology):*

- **Macules** are nonpalpable flat lesions that are smaller than 1 cm in diameter in size. These look like just a change in color and the skin surface is not raised or depressed [3].
- A **patch** is a relatively larger macule. Examples include freckles, flat moles, port wine stains, the rashes of rubella, and measles [3].
- **Papules** are small, solid, rounded bumps rising from the skin. Usually, a papule is less than 1 cm in diameter. The term “papule” is derived from the Latin *papula*, meaning a pimple. Examples include warts, nevi, insect bites, actinic keratoses, and skin cancers [3, 4].
- **Nodules** are firm lesions that extend into the dermis or subcutaneous tissue, for example, cysts and lipomas [3].
- **Plaques** are palpable lesions more than 1 cm in diameter that are elevated or depressed compared to the skin surface. These can be flat topped or rounded. For example, lesions of psoriasis and granuloma annulare commonly form plaques [3].

Table 15.2 Age and skin conditions (Modified from Simon et al. [1])

Age	Some common skin conditions based on age
Child	Atopic eczema
	Epidermolysis bullosa
	Erythropoietic porphyria
	Head lice
	Ichthyosis
	Bacterial infection, e.g., impetigo
	Infantile seborrheic dermatitis
	Port wine stain
	Strawberry nevus
	Urticaria pigmentosa
	Viral infection, e.g., chicken pox, warts, molluscum contagiosum
Early adult	Dermatitis herpetiformis
	Lichen planus
	Lupus erythematosus
	Pityriasis versicolor
	Psoriasis
	Seborrheic dermatitis
Middle age	Vitiligo
	Lichen planus
	Mycosis fungoides
	Pemphigus vulgaris
	Porphyria cutanea tarda
	Rosacea
Old age	Skin cancers: basal cell carcinoma, malignant melanoma
	Venous ulceration
	Asteatotic eczema
	Bullous pemphigoid
	Cherry angioma (Campbell de Morgan spot)
	Herpes zoster
	Seborrheic warts
	Senile pruritus
	Skin cancers: basal cell carcinoma, squamous cell carcinoma
	Solar elastosis
Solar keratosis	
Venous and arterial ulcers	

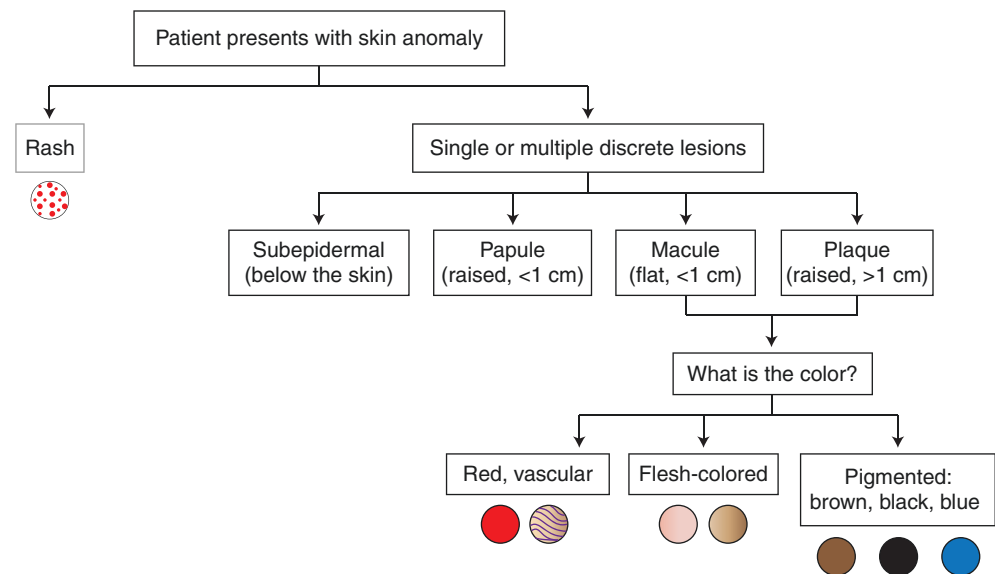
- Skin plaques can have defined borders or not, and they can take on many different shapes, including [5]:
 - Annular (ring-shaped)
 - Arcuate (half-moon)
 - Polygonal (varied and not geometric)
 - Polymorphic (varied shapes)
 - Serpiginous (snake-shaped)
 - Poikilodermatous (variegated) [5]
- **Vesicles** are fluid-filled clear lesions with diameter less than 0.5 cm. These are seen in impetigo, contact dermatitis, and insect bites.
- **Bullae** are clear fluid-filled lesions with a diameter more than 1 cm. These may be caused by burns, bullous pemphigoid, pemphigus, dermatitis herpetiformis, or chronic bullous dermatosis.

Table 15.3 Gender and skin conditions (Modified from Simon et al. [1])

Sex	Some common skin conditions based on sex
Female	Dermatitis artefacta
	Lichen sclerosus
	Lupus erythematosus
	Malignant melanoma
	Morphea
	Palmoplantar pustulosis
	Rosacea
	Systemic sclerosis
	Venous ulceration
	Male
Mycosis fungoides	
Polyarteritis nodosa	
Porphyria cutanea tarda	
Pruritus ani	
Seborrheic dermatitis	
Squamous cell carcinoma	
Tinea cruris	
Tinea pedis	

- **Pustules** are fluid-filled vesicles containing pus, for example, acne vulgaris, rosacea, and folliculitis.
- **Scale** is epidermal cells produced by abnormal keratinization of the skin that have died and then been shed. Examples are fungal infections, psoriasis, and seborrheic dermatitis.
- **Urticaria** (wheals or hives) are raised lesions caused by localized edema. Wheals are red and pruritic. These are seen in stings and bites or hypersensitivity to drugs [3].
- **Crusts (scabs)** are dried collections of serum and cellular exudates, for example, impetigo.
- **Ulcers** are a discontinuation of an epithelial lining extending into the epidermis/dermis. For example:
 - Arterial ulcer caused by ischemia and usually located on the lateral aspect of the ankle or distal ends of the digits of the lower limbs
 - Venous ulcer due to valvular insufficiency of the veins
 - Neuropathic ulcer related to sensory loss in the lower limbs – most common in diabetes [6]
- **Petechiae, purpura, and ecchymosis:** These are all terms that refer to bleeding that occurs in the skin. Petechiae generally refer to smaller lesions, while purpura and ecchymoses are used to describe larger lesions. Petechiae, ecchymoses, and purpura do not blanch when pressed. Sometimes, purpura may be palpable [7]. Examples of petechiae can be seen in thrombocytopenia, platelet dysfunction, vasculitis, and infections such as meningococemia.
- **If pain then go through pain questions:**
 - Onset: “When did the pain start?”
 - Course: “How did it start?” (suddenly or gradually)
 - Duration: “How long have you had this pain?”

Fig. 15.1 Common benign skin lesion algorithm. (Adapted from Henry [2])



- Location: “Where does the pain start?”
- Character: “What is the pain like?”
- Progression: “Is the pain progressing?”
- Severity: “From 0–10, 10 being the worst pain and 0 as no pain, how is your pain now?”
- **Associated symptoms:**
 - Itching, pain, bleeding, nausea, vomiting, urine changes, jaundice, chills, sweating, fever, or weight loss
 - Other lesions
- **Aggravating and relieving factors** – sunlight, rest, or antihistamines

Review of Systems:

- **Nervous system:** Headache or vision changes
- **Urine:** Hematuria, change in color of urine, dysuria, polyuria, change in frequency of urine, nocturia, or anuria
- **Eyes:** Iritis, scleritis, or conjunctivitis
- **Mouth:** Ulceration or erosion
- **Respiratory system:** Shortness of breath, cough, or chest pain
- **Gastroenterology:** Malabsorption, change in bowel habits like constipation alternating to diarrhea, or just constipation
- **Liver disease:** Nausea, vomiting, anorexia, abdominal distension, blood in vomiting or blood with bowel movements, easy bruising, impotence, change in normal sleep pattern, confusion, bad taste, or jaundice (yellowness of eyes or skin)
- Bone pain
- Enlarged lymph nodes

Past Medical History:

- “Do you have any previous health issues?”
- Similar symptoms, atopy, skin lesions, systemic diseases, for example, rheumatoid arthritis (RA), celiac disease.

- Any previous or recent **surgery** (skin related).
- Hospitalization history or emergency admission history.

Medication History:

- Current medications?
- New drugs (antibiotics or immunosuppressants)
- Prescribed, over the counter, and any herbal?

Past Hospitalization and Surgical History: “Have you had any previous hospitalizations or any previous surgeries?”

Allergic History: “Do you have any known allergies?”

Family History:

- “Has anyone in your family had similar symptoms or similar health problem?”
- Family history of any long-term or specific medical illness? (Inflammatory bowel disease)

Social History:

- “Do you smoke? Do you drink alcohol?”
- “Have you ever tried any recreational drugs?”
- If yes, then further ask, “How much? Daily? How long?”

Relationships: “Are you sexually active? Do you have sexual preferences? Man, woman, or both?”

Self-Care and Living Condition: “What do you do for living? Who lives with you?”

Support: “Do you have good family and friends support?”

Impact on Life/Disability and Adaptation:

- Affects on life?
- “Any effect on your daily activity?”

If patient is a teenager, then add these questions: Home, education, employment, activities, drugs, and sexual activity

If patient is an adult female, then ask these questions:

- Menstrual history (LMP)
- Gynecology history
- Obstetrics history

If patient is more than 65 years old, add these questions here:

- Any problem with balance?
- Any difficulty in peeing/urination?
- Any issues with sleeping?
- Any change in vision/hearing?
- Any recent change in memory?
- Any regular medication? Prescribed or over the counter?

Skin Examination:

- Distribution of skin lesions.
- Try to identify lesion morphology (using a magnifying glass will be helpful):
 - Are lesions monomorphic (one form) or pleomorphic?
 - Are there secondary changes on top of primary lesions, for example, excoriation?
 - How are lesions grouped locally, for example, ring shaped?
- Check hair, nails, and mucous membranes.
- Complete a general examination.

Wrap-Up:

- Describe the diagnosis.
- Laboratory tests.
- Management plan.
- Duration of treatment and side effects.
- Describe the red flags.
- Further information: Websites/brochures/support groups or societies.
- Follow-up.

History and Counseling: Changing Mole**Candidate Information:**

A 28-year-old male comes to your clinic concerned about the mole/skin lesion on his back. Please take a detailed history and perform a relevant physical examination.

Differentials [8]:

- Vascular:
 - Pyogenic granuloma
 - Thrombosed or irritated hemangioma
- Neoplastic:
 - Malignant melanoma
 - Pigmented basal cell carcinoma
 - Dysplastic nevus
 - Seborrheic keratosis
- Congenital/genetic:
 - Irritated congenital or compound nevus [8]

Starting the Interview:

- Knock the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Are you 28 years old?”

Chief Complaint:

“What brings you in today?” The patient will tell about a mole on his back that recently has increased in size.

History of Present Illness:

“I am going to ask you few questions about the mole and then about your general health. I will also like to perform a physical examination. Should we start?”

- “When noticed?”
- “Did you have it before or you noticed it for the first time?”
- “What is the size of it?”
- “Is it growing in size?”
- “What is the color?”
- “Is the color changing?”
- “How are the borders?” (irregular vs. regular)
- “Is it itchy?”
- “Did you notice any bleeding?” (spontaneously or after scratch)
- “Any other mole on your body?”
- “How is the surface above it?” (raised or flat)
- “Do you have any pain in it?”
- “Is it tender on touch?”
- “Have you noticed such lesions around eyes or genital area?”

- “Do you have any vision problems?”
- “Are the nails or hair involved?”

Associated Symptoms (If Have Not Asked Before):

- Itching, pain, bleeding, nausea, vomiting, urine changes, jaundice, chills, sweating, fever, or weight loss
- Other lesions
- Aggravating and relieving factors (sunlight, rest, or antihistamines)

Risk Factors:

Factors associated with increased risk of melanoma [9]:

- Changing or persistently changing mole
- One or several irregularly pigmented lesions
- Atypical mole
- Congenital mole
- White race (Caucasian)
- Previous melanoma
- Melanoma in parents, children, or siblings
- Immunosuppression
- Multiple moles
- Sun sensitivity, tans poorly, burns easily, had multiple or severe sunburns
- Excessive sun exposure, particularly during childhood

Review of Systems:

- **Nervous system:** Headache or vision changes
- **Urine:** Hematuria, change in color/frequency of urine
- **Eyes:** Iritis, scleritis, or conjunctivitis
- **Mouth:** Ulceration/erosion
- **Respiratory system:** Shortness of breath, cough, or chest pain
- **Gastroenterology:** Malabsorption, change in bowel habits like constipation alternating to diarrhea, or constipation
- **Liver disease:** Nausea, vomiting, anorexia, or abdominal distension
- **Bone pain**
- **Enlarged lymph nodes**

Past Medical History:

- “Do you have any previous health or skin issues?”
- Any previous or recent **surgery** (skin related).
- Hospitalization history or emergency admission history.

Medication History:

- Current medications?
- Prescribed, over the counter, and any herbal?

Allergic History: “Do you have any known allergies?”

Family History: “Does anyone in your family have similar symptoms or a similar health problem?”

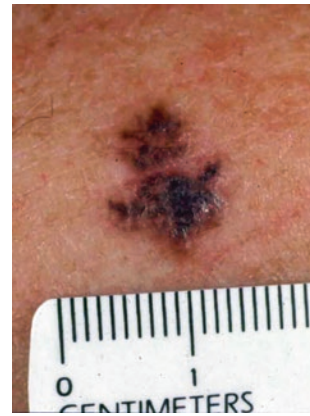


Fig. 15.2 Stage I. The asymmetric shape, scalloped borders, and variety of colors typical of a superficial spreading melanoma are seen on this patient’s shoulder. (Reprinted with permission from Naylor [10])

Social History: “Do you smoke? Do you drink alcohol? Have you ever tried any recreational drugs?”

Relationships: “Are you sexually active? Do you have sexual preferences? Man, woman, or both?”

Physical Examination:

(Run through the examination part. Remember to leave 1–2 min for wrap-up.)

“Now, I will start the examination.” Comment on the vital sign findings: State if there are any mentionable findings; otherwise state that vitals are normal.

General Appearance

- Head and neck exam:
 - Nose
 - Mouth and throat (limitations to intubation)
 - Cervical lymph nodes
- Skin: Look for any rash. The examiner may show a picture or a model (Figs. 15.2 and 15.3) [10].
- **Skin examination:**
 - Distribution of skin lesions.
 - Try to identify lesion morphology (just tell that you will use a magnifying glass to examine the lesion).
 - Comment on:
 - Asymmetry
 - Border
 - Color
 - Diameter
 - Elevation
- Check hair, nails, and mucous membranes.
- Chest examination.
- Inspection, auscultation, palpation, and percussion.
- Cardiovascular examination:
 - Auscultation for heart sounds



Fig. 15.3 Stage II. A nodular melanoma is apparent on the back of this middle-aged male. (Reprinted with permission from Naylor [10])

- Abdominal examination:
 - Inspection and palpation

Comment on your findings.

Thank the patient and tell the patient to cover up.

Wrap-Up:

Question: “How will you describe the diagnosis?”
(Melanoma) (Questions may be asked by the patient or the examiner.)

Answer: “Melanoma is the most serious type of skin cancer. It affects young adults as well as older people. Melanoma is a form of cancer that develops in the skin’s pigment cells called melanocytes. Melanocytes produce melanin, which helps protect the skin from ultraviolet (UV) radiation, i.e., sunlight. When melanocyte cells aggregate together in the skin during childhood or adolescence they form a mole.

Most moles are quite safe, however sometimes the melanocytes in a mole begin to grow and divide in an uncontrolled way. If they start to grow in an unregulated way, either expanding outward or down into the lower layers of the skin, they can become a melanoma. Melanoma is the most serious form of skin cancer and grows very quickly if left untreated. It can spread to the lower part of your skin (dermis), enter the lymphatic system or bloodstream, and then spread to other parts of the body, e.g., lungs, liver, brain, or bone.”

Question: “What causes melanoma?”

Answer: “The main preventable cause of melanoma is overexposure to UV radiation from the sun or things such as solarium tanning machines (sunbeds). There are many risk factors that increase the chances of melanoma, including people with fair skin, a high mole count, family history and

a pattern of sunburns throughout life, especially during childhood. Importantly, melanoma can occur anywhere on the skin, even in areas that receive little or no sun exposure, e.g., inside the mouth or on the soles of your feet” [11].

Question: “How is a melanoma diagnosed?”

Answer: “If a melanoma is suspected then your doctor is likely to advise an excisional biopsy. In this procedure, the entire abnormal area of skin is removed by a minor operation. (Local anesthetic is injected into the skin to make this painless.) This tissue is looked at under the microscope. This is to:

- Confirm the diagnosis – abnormal melanoma cells can be seen.
- To assess the melanoma’s thickness (how deep it has spread into the skin). The thickness of the melanoma helps to guide treatment and the need for further assessment” [12].

“Further investigations may include shave biopsy, sentinel lymph node biopsy, a baseline chest X-ray and serial lactate dehydrogenase (LDH)” [9].

“Further treatment for primary melanoma should include wide local excision and regular follow-up” [9].

“Treatment of metastatic disease may include radiation, immunotherapy and chemotherapy” [9].

Further information: Websites/brochures/support groups or societies.

Book a follow-up.

History and Counseling: Face Lesion

Candidate Information:

A 62-year-old male presents to your clinic with a small bump on his face that he has had for about 5 months. He noticed some bleeding while shaving. Please take a detailed history and perform a relevant physical examination.

Differentials:

- Basal cell carcinoma (BCC)
- Squamous cell carcinoma (SCC)
- Benign hemangioma
- Excoriated nevus
- Irritated nevus
- Keratoacanthoma
- Sebaceous gland hyperplasia
- Seborrheic keratosis
- Actinic keratosis
- Rosacea
- Folliculitis

Starting the Interview:

- Knock the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician for today. Are you Mr...? Are you 62 years old?”

Chief Complaint:

Chief complaint or the reason patient is visiting the clinic. “What brings you in today?”

The patient will tell about a small bump on his face.

History of Present Illness:

“I am going to ask you few questions about the bump on your face and then about your general health. I would also like to do a physical examination. Should we start?”

- “When did you notice the bump?”
- “Did you have it before or did you notice it for the first time?”
- “Was it long-standing but now changing?”
- “How did the lesion appear when you first noticed it?”
- What is the size of it?
 - Is it a papule?
 - Ulcer like? (BCC or SCC)
 - Scaly plaque? (actinic keratosis)
- “Is it growing in size?”
- What is the color?
 - Is it a flesh-color papule present with associated inflammation of surrounding skin? (irritated nevus)
- “Is the color changing?”
- How are the borders? (irregular vs. regular)
 - Does it have shiny, pearly quality with associated telangiectasia? (BCC)
- How is the surface above it?
 - Is it flat, rough, and scaly with ill-defined borders? (actinic keratosis)
- Does the lesion have a stuck-on appearance? (seborrheic keratosis)
- Are there multiple soft, yellow, umbilicated papules present? (sebaceous hyperplasia)
- “Is it itchy?”

- “Did you notice any bleeding?” (spontaneously or after scratch) (BCC or SCC)
- “Is there any other similar bump on the body?”
 - “Is the lesion painful?”
- “Is it tender on touch?”
- “Nail or hair involvement?”

Associated Symptoms (If These Have Not Been Asked Before in the History):

- Itching, pain, bleeding, nausea, vomiting, urine changes, jaundice, chills, sweating, fever, or weight loss
- Aggravating and relieving factors (sunlight, rest, or antihistamines)

Review of Systems:

- **Nervous system:** Headache or vision changes
- **Eyes:** Iritis, scleritis, or conjunctivitis
- **Mouth:** Ulceration/erosion
- **Respiratory system:** Shortness of breath, cough, or chest pain
- **Gastroenterology:** Nausea or vomiting
- **Bone pain**
- **Enlarged lymph nodes**

Past Medical History:

- “Do you have any previous health or skin issues?”
- “Previous skin cancers?”
- “Any previous or recent **surgery** (skin related)?”
- Hospitalization history or emergency admission history

Medication History:

- Current medications? Aspirin and other blood thinners (the lesion bleeds on shaving?)
- Prescribed, over the counter, and any herbal?

Allergic History: “Do you have any known allergies?”

Family History: “Does anyone in your family have similar symptoms or a similar health problem?”

Social History: “Do you smoke? Do you drink alcohol? Have you ever tried any recreational drugs?”

Relationships: “Are you sexually active? Do you have sexual preferences? Man, woman, or both?”

Physical Examination:

(Go through the examination part. Remember to leave 1–2 min for wrap-up.)

“Now, I will start the examination.” Comment on the vital sign findings: State if there are any mentionable findings; otherwise state that vitals are normal.



Fig. 15.4 A basal carcinoma on the proximal helix. Prior to removal by Mohs surgery, a reservoir of laxity was identified at the preauricular sulcus and relaxed skin tension lines marked. (Reprinted with permission from Humphreys [16])

General Appearance

- Head and neck exam:
 - Nose
 - Mouth and throat (limitations to intubation)
 - Cervical lymph nodes
- Skin: Look for the lesion. The examiner may show a picture (Figs. 15.4 and 15.5a, b).
- **Skin examination:** Describe the lesion in picture (Fig. 15.5a):
 - It is about ... x ... cm shiny, pearly skin nodule.
 - It has irregular borders.
 - It is pink to red in color.
- Check hair, nails, and mucous membranes.
- Chest examination:
 - Inspection and auscultation
- Cardiovascular examination:
 - Auscultation for heart sounds
- Abdominal examination:
 - Inspection and palpation

Thank the patient and tell the patient to cover up.

Comment on your findings: “It appears to be a basal cell carcinoma.”

Wrap-Up:

Question: “What is basal cell carcinoma?”

Answer: “Basal cell carcinoma is the most common skin cancer. About 75% of all skin cancers are BCCs. It is usually the least dangerous. If treated, it will be almost always completely curable. BCCs are slowly growing and almost never

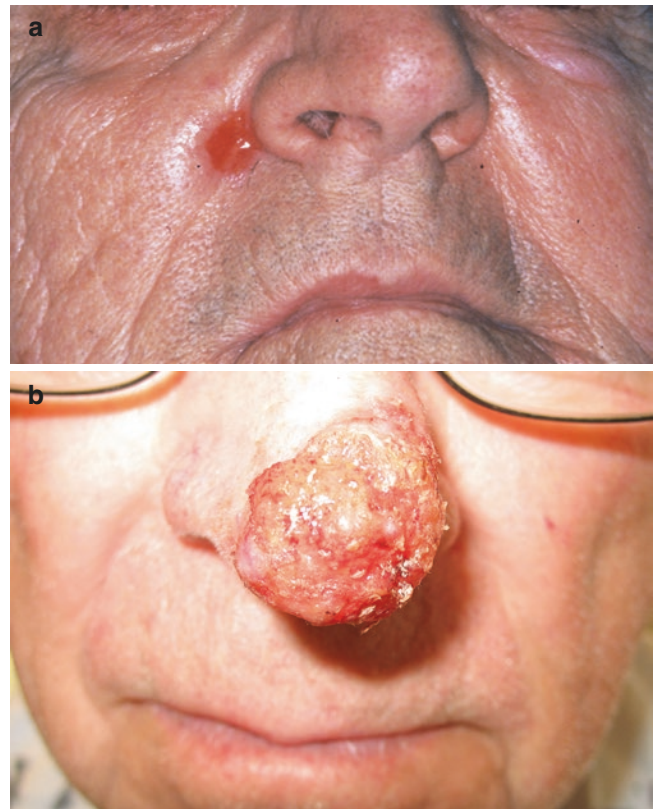


Fig. 15.5 (a) Basal cell carcinoma at alar base and junction with the cheek. (b) Large basal cell carcinoma of nasal tip. (Reprinted with permission from Humphreys [16])

spread to other parts of the body. These can destroy and damage the overlying skin and surrounding tissues.”

Question: “What causes BCC?”

Answer: “There are many factors that lead to the development of most cancers. However, sun exposure is by far the most important factor in the development of BCCs. This excessive sun exposure usually occurred many years before the BCC develops. Those who are at a greater risk of developing a basal cell carcinoma include people with fair skin, people with a strong family history of BCC, and those with a Celtic background” [13].

“Diagnosis is often based on skin examination and confirmed by tissue biopsy.”

Question: “What does a BCC look like?”

Answer: “BCCs usually start with a subtle change on the skin—often a small bump or a flat red patch. BCCs develop very slowly over months and years, steadily becoming larger and more obvious. Eventually they may appear as a non-healing sore. BCCs are often not noticed until relatively well developed and their appearance can be confused with that of

a mole, patch of dermatitis, or a scar. A lesion that bleeds on the face is quite suspicious of BCC.”

Question: “What types of BCC are there?”

Answer:

- Superficial
- Nodular
- Infiltrating

Question: “What is the treatment for BCC?”

Answer: A biopsy is taken and sent to a pathology laboratory. The specimen will be then examined under a microscope to confirm the diagnosis.

In the treatment of BCC in a particular patient, the following factors are considered:

- Patient age
- Size of lesion
- Site of lesion
- Depth of the lesion
- Patient’s general health
- Type of BCC

Various treatment options include:

- Serial cryotherapy
- Standard surgical excision (removal)
- Mohs micrographic surgery
- Curettage and cautery
- Photodynamic therapy
- Topical immunotherapy
- Radiotherapy

Question: “What sort of follow-up is needed?”

Answer: “The general recommendation after removal of a BCC is to undergo regular skin follow-ups every 6–12 months. It is important that the skin be self-examined and any suspicious new lesions reported” [13].

History and Counseling: Eczema Flare-Up

Candidate Information:

A 9-year-old male is brought by his parents to your GP clinic with a flare-up of his eczema. He is in the waiting area. His mother is in the *consultation* room. Please take a detailed history. No examination is required for this station.

Differentials:

- Flare-up with physical factors:
 - Summer weather

- Heat
- Humidity
- Intense exercise

- Atopic dermatitis with secondary *Staphylococcus aureus* infection
- Eczema herpeticum
- Atopic dermatitis
- Allergic contact dermatitis
- Drug reaction

Starting the Interview:

- Knock the door.
- Enter the station.
- Hand-wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... Are you ...’s mother? How can I help you today?”

Mom will tell about her kid’s eczema flare-up.

Chief Complaint:

“I am going to ask you a few questions about his eczema and his general health. Then I would like to bring him in for an examination. Should we start?”

History of Present Illness:

- When noticed?
- How long has it been going on?
- Did this flare-up develop suddenly or progressively?
- Previous flare-ups?
- What were the triggering factors?
- Previous treatments given?
- How often are the topical moisturizers or medicated ointment applied?
- Any regular follow-ups? Dermatologists?
- Is this something new?
- What does the eczema look like?
 - Dry or scaly?
 - Is the skin very dry?
- How is the skin involved? Thickened?
- Which part of the body is involved?
- Is it progressing?
- Is any new area involved? Localized or generalized?
- Is it flexor surfaces mostly? (antecubital and popliteal fossae? – common areas of eczema)
- Is it itchy?
- Is it painful, umbilicated vesicles present in a generalized or widespread distribution? (eczema herpeticum)

- Are there small, deep, intensely itchy vesicles present within the eczema? (more acute flare-up)
- Are the lesions crusting and oozing? (secondary bacterial infection with *S. aureus*)
- How is the eczema affecting the child's life?

Associated Symptoms (If These Have Not Been Asked Before in the History):

- Itching, pain, bleeding, nausea, vomiting, chills, sweating, fever, weight loss
- Aggravating and relieving factors (sunlight, rest, antihistamines, dust, pets, or wool?)

Past Medical History:

- “Do you have any previous health or skin issues?”
- Previous hospital admission for eczema or use of oral antibiotics to treat secondary infection?
- History of asthma or rhinitis?
- Any previous or recent **surgery** (skin related)?

Medication History:

- Current medications? Creams/moisturizers?
- Prescribed, over the counter, or any herbal?

Allergic History: “Do you have any known allergies? Skin allergy testing?”

Family History: “Does anyone in your family have similar symptoms or similar health problem? Atopic dermatitis, asthma?”

Social History: Do you smoke? Do you drink alcohol? Do you take any recreational drugs?

Birth History: “Any problems during or after birth?”

Immunization: “Are his immunizations up to date?”

Developmental History: “Any concerns about his growth? How is he doing in school?”

Thank the patient's mother and tell her that you would like to see the child now.

Wrap-Up

Question: “How will you describe eczema to the patient?”

Answer: “Eczema or atopic dermatitis is an inherited, chronic inflammatory skin condition. Most cases first develop in children under the age of 5 years. It is unusual to develop atopic eczema for the first time after the age of 20. Patches of skin will become itchy, scaly, and red. At times small blisters containing clear fluid can form and the

affected areas of skin can weep. Weeping is a sign that the dermatitis has become infected, usually with the bacterium *Staphylococcus aureus* (“golden staph”). Eczema is not contagious. Eczema can vary in severity and symptoms may flare up or subside from day to day. If your eczema becomes worse, disrupts sleep, or becomes infected, see your doctor.

“Using moisturizers and cortisone-based ointments can help ease the symptoms. It is also important to avoid skin irritants, such as soap, hot water, and synthetic fabrics.

“Children with eczema have a higher risk of developing food allergies, asthma, and hay fever later in childhood” [14].

Question: “What causes eczema?”

Answer: “The cause is unknown. It is more seen in children whose family members have eczema, asthma, or hay fever.”
Triggering factors:

- Skin dryness
- Overheated
- Irritation from soaps or detergents
- Allergies to dust mites
- Allergies to plant pollens
- Allergies to animal fur
- Food allergies

Question: “Will the treatment cure eczema?”

Answer: “Eczema can be well controlled in most children by:

- Identifying and avoid the triggers
- Skin care and avoiding dryness
- Reducing the itchiness by wet dressings and cool compresses
- A good quality moisturizer can be used as often as necessary.

To control the itch and redness, your doctor may prescribe a cortisone-based cream or ointment. Cortisone is a natural hormone that is produced by the body. Cortisones are very effective in controlling eczema and are safe if used as directed. Weaker cortisones should be used on the face and stronger cortisones are used for the body.”

Try to control the itch as scratching makes the eczema worse and can cause infection:

- Try applying a soft, cool wet towel to the itchy area for immediate relief and leave on for 5–10 min.
- Remove the wet dressing and apply a thick layer of moisturizer.
- Distract your child when he/she is scratching.

Table 15.4 Checklist for psoriasis

Starting the station	Knock on the door
	Enter the station
	Hand-wash/alcohol rub
	Greet the examiner and the patient
	Give stickers to the examiner if required or show your ID badge
	Now sit on the chair or stand on the right side of the patient and start the interview
Opening	Introduction, greet, explain, position, and exposure/drape
	Ask for vital signs – interpret the vital signs
Vitals	Start by commenting on the vitals given at the door. (It should include pulse rate, blood pressure, respiratory rate, temperature, and O ₂ saturation)
	“Vital signs are within normal range.” Or comment if they are not
General examination	Exposure: Expose patient’s upper body and then lower body. Drape him accordingly
	Inspection
	Examine the entire skin area
	Just mention that you will also examine the anogenital area
	Examine scalp
	Look for typical silvery scales
	Examine the face, mucous membranes, and neck
	Examine nails
	Pitting
	Onycholysis
	Oil drop sign (yellow to red discoloration of nail bed)
	Examine for Koebner’s phenomenon
	Linear or traumatized area involvement
	Palpation
	Observe for raised plaques versus erythema only (treated psoriasis)
	Observe for Auspitz sign
	Pinpoint bleeding that occurs on a psoriatic plaque with physical removal of scale
	Examine for large joints (hip and lumbosacral spine)
	Tenderness
	Range of movements
	Examine hands
	Swelling (sausage digits)
	Tenderness
	Range of movements
	Chest examination
	Inspection and auscultation
	Cardiovascular examination
	Auscultation for heart sounds
	Abdominal examination
	Inspection and palpation
	Comment on your findings
	Thank the patient and tell the patient to cover up
	Wrap-up
Wrap up your findings and ask the patient if he has any concerns	

- Avoid overheating your child, particularly in bed or on long car trips.
- Keep your child’s fingernails short and clean.
- Avoid heat. Keep your child cool at all times.

If there are signs of skin infection, antibiotics will be required. If the child has a severe infected rash, the child may need to be referred to nearest hospital for treatment [15].

Checklist: Physical Examination Psoriasis

Candidate Information:

A 29-year-old male with known psoriasis presents to your clinic for a follow-up examination. Please perform a relevant physical examination. See Table 15.4 for a checklist that can be used as a quick review before the exam.

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History Overview: The Geriatrics

In OSCE, geriatric stations are important and frequently repeated stations. These are usually history-taking and counseling stations.

Please see Table 16.1 for an overview of the pattern of history taking required for geriatric stations.

Common Geriatrics Signs and Symptoms for the Objective Structured Clinical Examination

Common presenting symptoms are:

- Headache
- Vertigo
- Hearing loss
- Weakness or sensory/motor loss
- Confusion
- Delirium
- Depressed level of consciousness
- Falls
- Head injury
- Abuse
- Dementia
- Dizziness
- Urine related symptoms

History and Counseling: Falls

Candidate Information:

A 66-year-old female was brought to the emergency room by ambulance after having a fall at home. Please take a detailed

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history and counsel the patient. No external injury was found. The patient's Glasgow Coma Scale (GCS) is 15/15 and vitals are within the normal range.

No examination is required for this station.

(A similar topic "frequent falls" has been discussed in the chapter on the nervous system.)

Differentials:

- **Fall secondary to medical conditions:**
 - Low blood pressure/orthostatic hypotension
 - Polypharmacy
 - Hypovolemia
 - Poor intake
 - Vomiting/diarrhea
 - Recent bleeding
 - Cardiovascular disease
 - Poor diabetic control/hypoglycemia
 - Psychological conditions (depression)
 - Dementia or delirium
 - Stroke
 - Parkinson's disease
 - Epilepsy
 - Vision problems (impaired vision/cataract)
 - Arthritis
 - Foot disorders
 - Balance disorders
 - Impaired lower limb strength
- **Social conditions:**
 - Elder abuse
- **Environmental factors:**
 - Poor lighting
 - Slippery surfaces (wet floors, wet toilets, slippery shower/bath area)
 - Loose objects on floor
 - Poorly fitting footwear
 - Loose rugs and mats
 - Uneven floors or paving
 - No handrails on stairs

Table 16.1 Quick overview of geriatric history taking

Introduction:
Name and age
Chief complaint:
In patient's own words
History of present illness:
Analysis of chief complaint:
Onset
Course
Duration
If pain – pain questions
Associated symptoms: nausea, vomiting, diarrhea, constipation, change in bowel habits, reflux, appetite, blood in vomiting/feces/urine
Predisposing factors
Aggravating and relieving factors
Red flags/risk factors
Constitutional symptoms: anorexia, chills, night sweats, fever, weight loss
Review of systems:
Respiratory
Genitourinary
Cardiovascular
Neurology
Rule out differential diagnosis
Specific geriatric questions:
Any problems with balance?
Any difficulty in urination?
Any issues with sleeping?
Any change in vision/hearing?
Any recent change in memory?
Past medical and surgical history:
Medical illnesses
Any previous or recent surgery
Hospitalization history or emergency admission history
Medications history:
Current medications (prescribed, over the counter, and any herbal)
Ask if the patient has brought the list of prescribed medicines
Allergic history/triggers
Any known allergies?
Family history:
Family history of any long-term or specific medical illness
In some cases, may need to ask about substitute decision maker or next of kin or power or attorney
Acute resuscitation plan (ARP) status?
Social history:
Smoking
Alcohol
Street drugs
Sexual history
Home situation: further explore
Activities of daily living (ADLs)
Walking
Transferring
Dressing and grooming
Feeding
Bathing
Toileting

Table 16.1 (continued)

Instrumental activities of daily living (IADLs)
Finances
Transportation
Shopping and meal preparation
House cleaning
Communication
Medications: obtaining medications and taking them as required
Wrap-up:
Describe the diagnosis
Management plan
Possible medical treatment
Duration of treatment and side effects
Red flags
Laboratory tests
Further information websites/brochures/support groups or societies/toll free numbers
Follow-up

Starting the Interview:

- Knock the door.
- Enter the station.
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician. Are you Ms....? Can I confirm that you are 66 years old?”

History of Present Illness:

“Is it alright if I ask you a few questions about your fall? During the history if you have any questions or if you feel any discomfort please let me know. Should we start?”

Please divide the history into three parts:

- *About the fall*
- *Before the fall*
- *After the fall*

About the fall:

- “When did the fall occur?”
- “Can you recall what happened?”
- “Where did it occur? Home or outside?”
- “What were you doing at the time?”
- “Were you alone? Did someone witness the fall?” If she says yes, then just mention that you need to take a collateral history later.
- “How did you fall?”

- “Did you trip or just feel your legs give way?”
- “Did you or someone else notice any shaking/jerky movements when you had the fall?”
- “Did you wet yourself?”
- “Did you turn blue or turn stiff?”
- “Did you bite your tongue?”
- “How do you feel now?”
- “Did you hurt yourself?”
- Any previous fall injuries?”
- “Do you need any urgent attention?”
- Pain control?”

Before the fall:

- “How were you feeling before the fall?”
- “Did you feel light headed or your head spinning?”
- “Did you feel hungry? Did you notice your heart racing? Was there any sweating?” (*Hypoglycemia*)
- “Did you have chest pain? Did you have palpitations? Did you notice shortness of breath?” (*Cardiovascular*)
- “Did you experience lights flashing, a strange smell, or strange feeling in body?” (*Seizure*)
- “Did you have any weakness, numbness, difficulty finding words, or visual disturbances?” (*Stroke*)
- Ask about environmental factors:
 - “Was the lighting good?”
 - Tight or loose shoes?
 - Slippery/wet or uneven floors?
 - Loose rugs?
 - Slippery/wet or uneven stairs, lighting on stairs?
 - “How is your vision?”
 - “Is your footwear comfortable?”

After the fall:

- “Did you hit your head on the ground?”
- “Did you lose consciousness?”
- “Any other obvious injury?”
- “Could you get up by yourself?”
- “When did the help arrive?”
- “Did you have any nausea or vomiting?”
- “Did you notice any weakness?”
- “Did you have any difficulty in finding words?”
- “Did you have any vision problems?”
- “Did you have loss of sensation in the arms or legs?”
- “Did you have ringing in your ears?”
- “Did you seek medical help?” “What were you advised?”

Past Medical History:

“How is your health otherwise? Do you have any previous health issues?” History of stroke, transient ischemic attack (TIA), heart attacks, chest pain, hypertension (HTN), diabetes mellitus (DM), atrial fibrillation, and neurological dis-

ease (seizures, head trauma, migraine, multiple sclerosis (MS), aneurysms, depression, gastrointestinal bleeding and dementia).

Past Hospitalization and Surgical History: “Have you had any previous hospitalizations or any previous surgery?”

Medication History: “Are you taking any medication (prescribed, over the counter, or herbal)? Was there any side effects?” If patient says no, then continue to the next question.

- Antihypertensives, diuretics – Ask for any recent changes in the doses.
- Polypharmacy – Ask if the patient has a list of her medications. She may hand over a list. Read it carefully before commenting on the medications.

Allergy History: “Do you have any known allergies?”

Personal History: “Please tell me about yourself.” (Can be asked in any sequence: marital status, occupation, religion, education, type of residence, living conditions.)

Social History: “Do you smoke? Do you drink alcohol?”

Self-Care and Living Condition: “What do you do for a living? Working status and occupation? Educational status? Who lives with you? Do you have good family and friends support?”

Functional status or severity or impact on life activities?

Activities of Daily Living (ADLs)

- Walking: Getting around the home or outside, also labeled as ambulating.
- Transferring: Being able to move from one body position to another. This includes being able to move from a bed to a chair, or into a wheelchair.
- Dressing and grooming: Selecting clothes, putting them on, and managing one’s personal appearance.
- Feeding: Being able to get food from a plate into one’s mouth.
- Bathing: Washing one’s face and body in the bath or shower.
- Toileting: Getting to and from the toilet, using it appropriately, and cleaning oneself.

Instrumental Activities of Daily Living (IADLs)

- Finances: Paying bills and managing financial assets.
- Transportation: Driving or organizing other means of transport.

- Shopping and meal preparation: Getting a meal on the table. This includes shopping for clothing and other items required for daily life.
- Housecleaning: Cleaning kitchen after cooking/eating, keeping one's living space clean and tidy. Keeping up with home maintenance.
- Communication: Using telephone and mail.
- Medications: Obtaining medications and taking them as required.

Wrap-Up:

Wrap up your findings and ask the patient if they have any concerns.

Question: “What will you do next?” (Questions may be asked by the patient or the examiner.)

Answer: “I would like to do a detailed physical examination.”

Question: “What will you observe for in a physical examination?”

Answer: “I shall observe for:

- Postural changes in vital signs.
- Check for visual problems.
- Presence of arrhythmia.
- Listen for carotid bruits.
- Check for lower extremity strength and joint function.
- Check for gait and balance abnormalities.
- A neurologic evaluation looking for focal deficits.
- Assessment of lower extremity peripheral nerves, proprioception, and vibration sense.
- Tests for cerebellar functions.
- Timed up and go test: Observe patient for unsteadiness as the patient gets up from a chair without using the arms, walks 10 ft (~3 m), turns around, walks back, and resumes a seated position. Timing the process, which should take less than 16 s, enhances the sensitivity of this test. Patient difficulties performing this test indicate an increased risk for falling and the need for further comprehensive evaluation.”

Question: “What tests will you order?”

Answer: “CBC, electrolytes, blood urea nitrogen (BUN), creatinine, glucose, thyroid function, and vitamin B₁₂ levels. Syncope evaluation may include an electrocardiogram (ECG), an echocardiography, a Holter monitoring, and a possible consult to a cardiologist. Consider brain imaging if the history suggests a cerebral cause and lastly a physiotherapy (PT) and occupational therapy (OT) review.”

Question: “What will you do next?”

Answer:

- Fall risk counseling
- Adjusting medications
- Safety-related skills
- Environmental hazard reduction: Home safety assessment and modifications
- Exercise and physical training: Improve balance and progressive muscle strengthening
- A walking plan: Appropriate use of assistive devices by an occupational therapist

Question: “What will you tell your patient if the cause of the fall was *orthostatic hypotension*; resulting from polypharmacy?”

Answer: “I will explain to my patient that based on our discussion and my examination, the most likely reason of your fall is a condition called orthostatic hypotension. Have you ever heard about it? Do you want to know more about it?”

“In a normal person, when you change your position from lying to sitting or standing, the blood pools to the legs and blood vessels narrow to maintain your blood pressure.”

“In patients with orthostatic hypotension – due to age, medication, and other medical problems such as diabetes mellitus – the body might fail to react with a change in posture and blood pools in the legs causing a fall in blood pressure. There won't be enough blood reaching the brain, which will lead to dizziness or a feeling that you may pass out.”

“There is a possibility that this may occur again. From now on, I would like to recommend to you that whenever you change your position from lying down to standing, do it slowly, and sit at the edge of the bed and gradually stand up.”

“I also need to review your home medications, which may require modifications in the dosage of some of your blood pressure medications or a change in them altogether.”

“Do you have any questions?”

Thank the patient and the examiner.

History and Counseling: Dizziness

Candidate Information:

A 66-year-old female is brought to your GP practice with dizziness since this morning. Please take a detailed history and counsel the patient.

Vitals are within normal range.

No examination is required for this station.

Dizziness:

Dizziness can be classified into four groups [1]:

- Vertigo (spinning sensation)
- Disequilibrium (feeling of imbalance)
- Light-headedness (sensation of giddiness)
- Presyncope (sensation of feeling faint)

Differentials:

Neurologic and Otologic Causes [2]:

- **Peripheral vestibular**
 - Benign paroxysmal positional vertigo
 - Meniere’s disease
 - Vestibular neuronitis
 - Labyrinthitis
 - Otitis media
 - Acoustic neuroma
- **Central vestibular causes**
 - Cardiovascular accident
 - Vertebrobasilar ischemia
 - Cerebellopontine angle mass
 - Brain tumor
 - Motion sickness
- **Cardiovascular causes**
 - Arrhythmias
 - Orthostatic hypotension
 - Hypovolemia
 - Anemia
 - Myocardial ischemia
 - Hypoxia
 - Valvular heart disease
 - Vasovagal episode
- **Hypoglycemia**
- **Hormonal**
 - Thyroid disease
 - Menstruation
 - Pregnancy
- **Psychiatric (hyperventilation or anxiety)**
 - Panic disorder
 - Hyperventilation
 - Anxiety
 - Depression
- **Age related**
 - Diminished visual
 - Balance and perception of spatial orientation abilities

Medications Associated with Dizziness from Orthostatic Hypotension [2]:

- **Cardiac medication**
 - Alpha-blockers (doxazosin, terazosin)
 - Alpha-/beta-blockers (carvedilol, labetalol)
 - Clonidine (Catapres)
 - Angiotensin-converting enzyme inhibitors
 - Diuretics (Furosemide)

- Hydralazine
- Methyldopa
- Nitrates (sublingual nitroglycerin)
- **Central nervous system medications**
 - Parkinsonian drugs (bromocriptine, levodopa/carbidopa)
 - Antipsychotics (chlorpromazine, clozapine, thioridazine)
 - Opioids
 - Skeletal muscle relaxants (baclofen)
 - Tricyclic antidepressants (e.g., amitriptyline, doxepin, trazodone)
- **Urologic medications**
 - Phosphodiesterase type 5 inhibitors (sildenafil)
 - Urinary anticholinergics (oxybutynin)

Starting the Interview:

- Knock the door.
- Enter the station.
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician. Are you Ms....? Are you 66 years old?”

History of Present Illness:

“Is it alright if I ask you a few questions about your dizziness? During the history if you have any question or if you feel any discomfort, please let me know. Is this alright? How can I help you today?”

- “Can you please describe your dizziness more?”
- “When did it start?” (*gradual* versus *sudden*)
- “How long has it been going on?”
- “Is it progressing?”
- “Was there any triggering factor?”

Ask about associated symptoms:

- “Did you black out?” (*Syncope*)
- “Did you feel dizzy when standing up from sitting or lying?” (*Vasovagal*)
- “Did you feel light-headed or the head spinning?” (*Vertigo*)
- “Did you have ringing in ears?” (*Tinnitus*)
- “Did you notice any problem with your ears? Fullness of ears?”
- “Any recent hearing problem?”

- “Did you lose balance?”
- “Did you have any vision difficulties?”
- “Any change in your vision? Transient one-eye blindness?” (*TIA*)
- “Transient hand or leg weakness?”
- “Did you find difficulty in finding words? Slurred speech?”
- “Did you have any weakness, numbness, difficulty finding words or visual disturbances?” (*Stroke*)
- “Did you feel hungry? Did you notice heart racing? Were you sweating?” (*Hypoglycemia*)
- “Did you have chest pain? Did you have heart racing/palpitations? Did you notice shortness of breath?” (*Cardiovascular*)
- “Did you experience lights flashing, strange smell, or strange feeling in the body?” (*Seizure*)
- “Did you have any nausea or vomiting?”
- “Did you have epigastric pain?” (*Upper gastrointestinal bleed*)
- “Did you pass any tarry stool (*melena*) or blood in stool?”
- “Did you notice shortness of breath?” (*Panic attack*)
- “Feeling of shock?”
- “Tingling and numbness in hands and feet?”
- “Have you ever been screened for thyroid problems?”

Past Medical History: “How is your health otherwise? Do you have any previous health issues?”

Past Hospitalization and Surgical History: “Have you had any previous hospitalization or previous surgery? History of stroke, TIA, heart attacks, chest pain, HTN, DM, atrial fibrillation, neurological disease (*seizures, head trauma, migraine, MS, aneurysms*), depression, gastrointestinal bleeding, or dementia. Thyroid problems?”

Medication History: “Are you taking any medication – prescribed, over the counter, or herbal – and are there any side effects?” If patient says no, then continue to the next question.

- Antihypertensives or diuretics – Ask for any recent changes in the doses.
- Polypharmacy – Ask if the patient has a list of her medications. She may hand over a list. Read it carefully before commenting on the medications.

Allergic History: “Do you have any known allergies?”

Personal History: “Please tell me about yourself.” (Can be asked in any sequence: marital status, occupation, religion, education, type of residence, living conditions.)

Social History: “Do you smoke? Do you drink alcohol?”

Self-Care and Living Condition: “What do you do for a living? Working status and occupation? Educational status? Who lives with you? Do you have good family and friends support?”

Functional status or severity or impact on life activities?

Activities of Daily Living (ADLs)

- **Walking:** Getting around the home or outside, also labeled as ambulating.
- **Transferring:** Being able to move from one body position to another. This includes being able to move from a bed to a chair, or into a wheelchair.
- **Dressing and grooming:** Selecting clothes, putting them on, and managing one’s personal appearance.
- **Feeding:** Being able to get food from a plate into one’s mouth.
- **Bathing:** Washing one’s face and body in the bath or shower.
- **Toileting:** Getting to and from the toilet, using it appropriately, and cleaning oneself.

Instrumental Activities of Daily Living (IADLs)

- **Finances:** Such as paying bills and managing financial assets.
- **Transportation:** Driving or organizing other means of transport.
- **Shopping and meal preparation:** Getting a meal on the table. It includes shopping for clothing and other items required for daily life.
- **Housecleaning:** Cleaning kitchens after eating, keeping one’s living space clean and tidy. Keeping up with home maintenance.
- **Communication:** Using telephone and mail.
- **Medications:** Obtaining medications and taking them as required.

Wrap-Up:

Wrap up your findings and ask the patient if they have any concerns. Thank the patient.

Question: “What will you do next?”

Answer: “I would like to do a detailed physical examination.”

- **Blood pressure lying and standing:** Measure blood pressure while the patient is lying on the bed, and then recheck at least 1 min after the patient stands up. A systolic blood pressure decrease of 20 mm Hg, diastolic blood pressure decrease of 10 mm Hg, or pulse increase

of 30 beats per minute is indicative of orthostatic hypotension.

- **The Dix-Hallpike maneuver:** It is diagnostic for benign paroxysmal positional vertigo (BPPV) if positive. It will not rule out BPPV if negative. The maneuver is performed on a flat examination table. While the patient is in a seated position, the physician turns the patient's head 45° to one side, then rapidly lays the patient into a supine position with the head hanging about 20° over the end of the table, and observes the patient's eyes for approximately 30 s. The maneuver is repeated with the head turned to the opposite side. Nystagmus is diagnostic of vestibular debris in the ear that is facing down, closest to the examination table. There is usually a latent period of a few seconds before the patient develops nystagmus and a sensation of vertigo for up to 1 min. The sensitivity of the Dix-Hallpike maneuver is 50–88% for BPPV.
- **Cardiovascular examination and ECG:** Further testing may be required if a cardiac cause is suspected, for example, Holter monitor testing and carotid Doppler testing.

After obtaining the patient's history, the physician can tailor the physical examination to best fit the differential diagnosis. One approach to the initial evaluation of patients with dizziness is presented in Fig. 16.1 [2].

Question: "What tests will you order?"

Answer: Laboratory testing and radiography are not beneficial in the work-up of patients with dizziness when no other neurologic abnormalities are present. Complete blood count, electrolytes, BUN, creatinine, glucose, thyroid function, and vitamin B₁₂ levels can be ordered.

History and Counseling: Elder Abuse

Candidate Information:

A 71-year-old male presented to your GP clinic with pain in the left forearm for 3 days. He tried taking pain medications

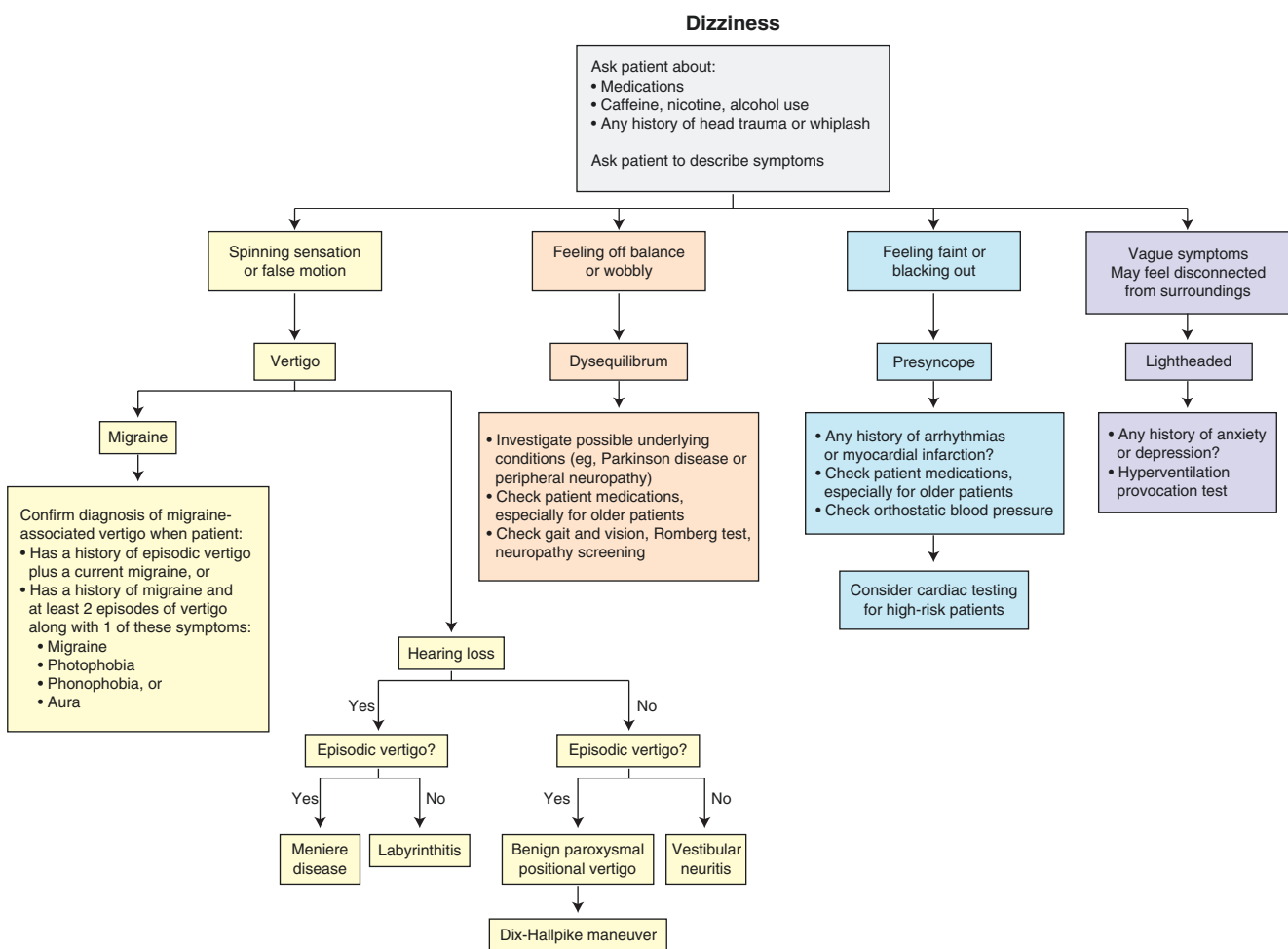


Fig. 16.1 Algorithm for evaluating a patient with dizziness. (Adapted from [2])

and put his arm in a sling, but the pain continued. He was brought today by a neighbor. Please take a detailed history.

No examination is required for this station.

Differentials:

Elder abuse has been used as an all-inclusive term that is often used to represent physical abuse. So, that already indicates that there are differences in the way elder abuse is interpreted. It may involve relationships between spouses, adult children, other relatives, maybe friends, and anyone else in whom the older person has placed trust. Other behavior that is considered abusive may depend on its duration, its frequency, its intensity, its intentionality, and the consequences [3].

Elder abuse can be:

- Physical
- Psychosocial
- Financial
- Sexual
- Neglect

Physical abuse [4]

- Inappropriate physical restraints
- Inappropriate chemical restraints
- Slapping, hitting, pushing, shaking, shoving, or restraining
- Harm created by over or under medicating

Psychosocial abuse [4]

- Threaten to hurt
- Threatened with eviction or moving to a nursing home or age care facility
- Threaten to damage your belongings
- Threatened to stop seeing the family or friends
- Being harassed, humiliated, or intimidated
- Threatened to attend regular activities

Financial abuse [4]

- Being denied access to your own funds
- Misuse of an enduring power of attorney
- Pension money skimmed
- Money stolen or taken from your bank account
- Your belongings taken away or sold without permission
- Your property taken improperly
- Being forced to change your Will

Sexual abuse [4]

- Someone making unwanted sexual approaches or behaving indecently toward you
- No consent, or consent given by using force or threats

Neglect [4]

- Not being allowed to get essential care services
- Physical, medical, or emotional needs not taken care of

Red flags [5]

- Unexplained physical injuries
- Depression, fear, anxiety, passivity
- Dehydration, malnutrition, or lack of food
- Poor hygiene, rashes, pressure sores
- Oversedation
- Delay in seeking medical care
- Disparity in histories
- Frequent emergency room visits
- Presentation of functionally impaired patient without designated caregiver
- Lab findings inconsistent with history

Victim risk factors [5]

- Greater frailness
- Older age (80 and above)
- Female gender
- Dependence on the abuser
- Cognitive impairment or disability in activities of daily living
- Living in isolation

Perpetrator risk factors [5]

- Suffering from caregiver stress
- Poor mental health or psychiatric illness
- Alcohol or drug dependence
- Financial dependence on the victim
- Male gender

Starting the Interview:

- Knock the door.
- Enter the station.
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... Are you Mr...? Are you 71 years old?”

History of Present Illness:

“How can I help you today?” (*It is very important to listen carefully about the mechanism of injury and the reasoning*

for delayed presentation. Also check for poor eye contact from the patient.)

The patient may describe the pain: The pain started about 3 days back when he had a fall on his outstretched left hand. His son gave him paracetamol and put his arm in a sling. His pain persisted. Today his neighbor found him to be in pain and then brought him to your clinic.

- Did he have any other injury? *No*
- Loss of consciousness before or after the fall? *No*
- Where is the pain? *The pain is in the upper and middle part of the forearm, increases with any movement.*
- Any visible swelling or deformity? *Yes, in the same area where pain is.*
- Any paralysis or loss of sensation? *None*
- Why the delay in seeking medical attention? The patient may avoid eye contact and will look worried. His son did not bring him to a clinic or hospital because he was busy. He also did not let him seek help.

Show empathy and offer pain medication. Assure him about his privacy, confidentiality, and safety. Delayed presentation should raise a red flag for elder abuse. But do not forget to rule out radius and ulna fracture.

Rule out previous physical abuse (as mentioned earlier):

- Inappropriate physical restraints
- Inappropriate chemical restraints
- Slapping, hitting, pushing, shaking, shoving, or restraining
- Harm created by over- or under-medication

Rule out psychosocial abuse

- Threatened to hurt
- Threatened with eviction or moving to a nursing home or age care facility
- Threatened to damage your belongings
- Threatened to stop seeing the family or friends
- Being harassed, humiliated, or intimidated
- Threatened to attend regular activities

Rule out sexual abuse

- Someone making unwanted sexual approaches or behaving indecently toward you
- No consent, or consent given by using force or threats

Rule out neglect

- Not being allowed to get essential care services
- Physical, medical, or emotional needs not taken care of

History of Previous Attacks

- The frequency and severity of previous attacks?
- Previous threats?

- The presence of weapons in the home.
- What is the degree of physical violence?

Rule out red flags

- Unexplained physical injuries
- Depression, fear, anxiety, passivity
- Dehydration, malnutrition, or lack of food
- Poor hygiene, rashes, pressure sores
- Oversedation
- Delay in seeking medical care
- Disparity in histories
- Frequent ER visits
- Presentation of functionally impaired patient without designated caregiver
- Lab findings inconsistent with history

Rule out perpetrator risk factors

- Suffering from caregiver stress
- Poor mental health or psychiatric illness
- Alcohol or drug dependence
- Financial dependence on the victim
- Male gender

Past Medical History: “How is your health otherwise? Do you have any previous health issues?” Patients with psychiatric complaints, especially suicide attempts, ideation, or gestures, always should be questioned about current or past domestic violence.

Past Hospitalization and Surgical History: “Have you had any previous hospitalization or previous surgery?”

Medication History: “Are you taking any medication – prescribed, over the counter, or herbal – and are there any side effects?” If patient says no, then continue to the next question.

Allergic History: “Do you have any known allergies?”

Personal History: “Please tell me about yourself.” (Can be asked in any sequence: marital status, occupation, religion, education, type of residence, living conditions.)

Social History: “Do you smoke? Do you drink alcohol?” *None.*

Self-Care and Living Condition:

- “Who lives with you?” *His son only.*
- “Do you have good family and friends support?” *None.*

Functional status or severity or impact on life activities?

Activities of Daily Living (ADLs)

- Walking: Getting around the home or outside, also labeled as ambulating.
- Transferring: Being able to move from one body position to another. This includes being able to move from a bed to a chair, or into a wheelchair.
- Dressing and grooming: Selecting clothes, putting them on, and managing one's personal appearance.
- Feeding: Being able to get food from a plate into one's mouth.
- Bathing: Washing one's face and body in the bath or shower.
- Toileting: Getting to and from the toilet, using it appropriately, and cleaning oneself.

Instrumental Activities of Daily Living (IADLs)

- Finances: Such as paying bills and managing financial assets.
- Transportation: Driving or organizing other means of transport.
- Shopping and meal preparation: Getting a meal on the table. It includes shopping for clothing and other items required for daily life.
- Housecleaning: Cleaning kitchens after eating, keeping one's living space clean and tidy. Keeping up with home maintenance.
- Communication: Using telephone and mail.
- Medications: Obtaining medications and taking them as required.

Wrap-Up:

Wrap up your findings and ask the patient if he has any concerns.

Question: "What will you do next?"

Answer: "I would like to do a detailed physical examination."

Question: "What will you observe in the physical examination?"

Answer: "I shall observe for vital signs, skin examination, extremities examination, cardiovascular, respiratory, and GI examination." Make a record of any visible injuries.

Question: "What will be your management plan?"

Answer: "I will establish the patient's concerns and ask him about his decisions. I will assure him of confidentiality. I will explain about the sources of support. Establish if he has any friend or family member that knows or could support him. I will tell him that elder abuse needs to be reported

(check with your local and regional guidelines about elder abuse reporting)" [6, 7].

"I will need to send him to the nearest the emergency department for an X-ray and possible management of his forearm fracture. He will require orthopedic consultation (cast versus open reduction and internal fixation)."

The patient may require:

- Admitting to the hospital.
- Obtaining a court protective order.
- Placing the patient in a safe home.
- Permitting return home if the patient has the capacity to make an informed decision and refuses intervention.
- Referral to social services and adult protective services.
- Seeking support and assistance from family members or friends, caregivers, health care providers, social services, senior centers, police, legal professionals, and/or members of faith communities.
- Management of sexual or physical assault – If you are given permission by the patient, or you are satisfied that there are grounds to believe that the patient has been abused sexually or physically, you may want to notify the police. Once it is established by the police that abuse has occurred, they will conduct any further notification or questioning.
- In criminal cases you should document all injuries and consider photographing injuries before initiating treatment. You will need to gain consent from the patient to photograph injuries. In the case of sexual assault, evidence may need to be collected by forensic examination.

Question: "What recommendations you will give to patient?"

Answer: "The patient may or may not want to leave the situation or take action, but it is important to know the options and that help is available."

"To seek help, one should [8]:

- Tell someone trusted about what is happening.
- Ask others for help if you need it.
- Turn to the police for help if someone is hurting you or you do not feel safe.
- Talk with people to learn more about resources and services available in your community.
- Find out your options to take care of your personal needs and financial security.
- Make a safety plan in case you have to leave quickly."

Safety Planning Checklist

One may want to consider putting together an emergency kit with [8]:

- Emergency phone numbers written out and stored in a safe place
- Emergency money (e.g., for a taxi, hotel, or payphone)
- Extra clothing
- A list of medications, name, and phone number of pharmacy and at least 3 days' worth of medications
- Glasses, hearing aids, and other assistive devices such as cane, walker, or wheelchair
- A safe place to go in the event of an emergency (both in and outside your home)
- An escape route from your home
- Keys for home, car, and safety deposit box
- Copies of relevant documents
- Neurogenic
- Situational (cough/post-micturition)
- Psychogenic
- Metabolic (hyperventilation)

Medications:

- **Medicines causing long QT:** Sotalol, Cisapride, Amiodarone, Erythromycin, Terfenadine, Quinidine, Clarithromycin, Haldol, Fluoxetine.
- **Drugs causing orthostatic hypotension:**
 - Alpha-blockers (doxazosin, terazosin)
 - Alpha-/beta-blockers (carvedilol, labetalol)
 - Clonidine (Catapres)
 - Angiotensin-converting enzyme inhibitors
 - Diuretics (furosemide)
 - Hydralazine
 - Methyldopa
 - Nitrates (sublingual nitroglycerin)
- **Central nervous system medications**
 - Parkinsonian drugs (bromocriptine, levodopa/carbidopa)
 - Antipsychotics (chlorpromazine, clozapine, thioridazine)
 - Tricyclic antidepressants (e.g., amitriptyline, doxepin, trazodone)
- **Urologic medications**
 - Phosphodiesterase type 5 inhibitors (sildenafil)
 - Urinary anticholinergics (oxybutynin)

History and Counseling: Syncope

Candidate Information:

A 71-year-old female is brought to the emergency department after passing out for a brief period of time at a nearby shopping mall. Please take a detailed history. The patient's GCS is 15/15 and vitals are within the normal range.

No examination is required for this station.

Differentials:

Major life-threatening causes of syncope:

- **Cardiovascular**
 - Arrhythmias
 - Ventricular tachycardia
 - Supraventricular tachycardia
 - Long QT syndrome
 - Brugada syndrome
 - Bradycardia: Mobitz II or 3° heart block
 - Acute coronary syndrome (ACS)
 - Myocardial infarction (MI)
 - Structural abnormalities
 - Valvular heart disease
 - Cardiomyopathy
 - Atrial myxoma
 - Cardiac tamponade
 - Aortic dissection
- **Non-cardiovascular**
 - Significant hemorrhage
 - Trauma with significant blood loss
 - GI bleed
 - Pulmonary embolism
 - Subarachnoid hemorrhage

Other common causes of syncope:

- Orthostatic hypotension (drug induced)
- Reflex mediated (vasovagal)

Starting the Interview:

- Knock the door.
- Enter the station.
- Hand wash/alcohol rub.
- Greet the examiner and the patient.
- Give stickers to the examiner (if required) and/or show your ID.
- Sit on the chair or stand on the right side of the patient and start the interview.

Opening:

“Good morning/good afternoon. I am Dr.... I am your attending physician. Are you Ms....? Are you 71 years old?”

History of Present Illness:

- Express empathy:
 - “Did you hurt yourself?”
 - “How do you feel right now?”
 - “I am glad that you are alright.”
- “What happened?”
- “When did it happen?”
- “How long did you remain unconscious?”
- “What were you doing?”
 - Standing up from sitting?
 - Coughing?

- “Did someone witness the event?”
- “What brought it on?”
- “Did you ever have this before?”
- **Ask about associated symptoms:**
 - “Did you black out?” (Syncope)
 - “Did you feel dizzy when standing up from a sitting or lying position?” (Vasovagal)
 - “Did you feel light headed or was your head spinning?” (Vertigo)
 - “Did you have ringing in your ears?”
 - “Did you notice any problem with your ears? Fullness of ears?”
 - “Any recent hearing problem?”
 - “Did you lose balance?”
 - “Did you have any vision difficulties?”
 - “Any change in your vision? Transient one-eye blindness?” (TIA)
 - “Transient hand or leg weakness?”
 - “Did you find difficulty in finding words? Slurred speech?”
 - “Did you have any weakness, numbness, difficulty finding words, or visual disturbances?” (Stroke)
 - “Did you feel hungry? Did you notice your heart racing? Were you sweating?” (Hypoglycemia)
 - “Did you have chest pain? Did you have heart racing/palpitations? Did you notice shortness of breath?” (Cardiovascular)
 - “Did you experience lights flashing, strange smell, or strange feeling in body?” (Seizure)
 - “Did your body get stiff?”
 - “Did you have any nausea or vomiting?”
 - “Did you have epigastric pain?” (Upper GI bleed)
 - “Did you pass any tarry stool (melena) or blood in stool?”
 - “Nausea/vomiting?”

Past Medical History:

- “How is your health otherwise? Do you have any previous health issues?”
- “Previous syncopal episodes?”
- “History of stroke, TIA, heart attacks, chest pain, HTN, DM, atrial fibrillation, neurological disease (*seizures, head trauma, migraine, MS, aneurysms*), depression, gastrointestinal bleeding, or dementia. Thyroid problems?”

Past Hospitalization and Surgical History: “Have you had any previous hospitalization or previous surgery?”

Medication History: “Are you taking any medication – prescribed, over the counter, or herbal – and are there any side effects?” If patient says no, then continue to the next question.

- Antihypertensives, diuretics – Ask for any recent changes in the doses.
- Polypharmacy – Ask if the patient has a list of her medications. She may hand over a list. Read it carefully before commenting on the medications.

Allergic History: “Do you have any known allergies?”

Personal History: “Please tell me about yourself.” (Can be asked in any sequence: marital status, occupation, religion, education, type of residence, living conditions).

Social History: “Do you smoke? Do you drink alcohol?”

Self-Care and Living Condition: “What do you do for living? Working status and occupation? Educational status? Who lives with you? Do you have good family and friends support?”

Functional status or severity or impact on life activities?

Activities of Daily Living (ADLs)

- Walking: Getting around the home or outside, also labeled as ambulating.
- Transferring: Being able to move from one body position to another. This includes being able to move from a bed to a chair, or into a wheelchair.
- Dressing and grooming: Selecting clothes, putting them on, and managing one’s personal appearance.
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- Housecleaning: Cleaning kitchens after eating, keeping one’s living space clean and tidy. Keeping up with home maintenance.
- Communication: Using telephone and mail.
- Medications: Obtaining medications and taking them as required.

Wrap-Up:

Wrap up your findings and ask the patient if they have any concerns. Thank the patient.

Question: “What will you do next?”

Answer: “I would like to do a detailed physical examination.”

- Vitals signs including lying and standing blood pressure
- General physical examination
- Complete cardiovascular and respiratory system examination
- Neurological and abdominal examination

Ask for an ECG: The examiner may give you an ECG (you must be familiar with the ECG changes).

Question: “What will be the plan for this patient?”

Answer: “According to physical examination findings, blood tests results, and ECG, I will consult the cardiology or medical unit or both. Most likely the patient will require admission for observation and further investigations.”

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Further Reading

Index

A

- Abdomen, 245, 247
- Abdominal girth, 202–203
- Abdominal pain
 - first trimester vaginal bleeding, 344
 - management
 - abdominal examination, 260, 261
 - allergic history, 260
 - candidate information, 259
 - differentials, 259
 - family history, 260
 - IV line and draw bloods, 261
 - interview, starting, 259
 - management, 261
 - medication history, 260
 - opening, 260
 - past hospitalization and surgical history, 260
 - past medical history, 260
 - physical examination, 260
 - present illness, history of, 260
 - rule out differentials, questions to, 260
 - social history, 260
- Abdominal wall hernias, 186
- Abdominopelvic quadrants, 182
- Abduction, 18
- Abductor digiti minimi, 19
- Abductor pollicis longus, 20
- Abnormal vaginal bleeding, 222, 326
- Accessory nerve, 42
- Accommodation reflex, 37
- Acetaminophen (paracetamol) intoxication
 - ABCD survey, 423
 - clinical features, 425
 - clinical presentation, 422
 - decontamination, 426
 - ingestion flowchart, 425
 - ongoing care and monitoring, 426
 - overdosage management, 425
 - patient history, 424
 - physical examination, 425–426
 - psychiatric symptoms screening, 424
 - risk factors, 425
 - SAD PERSONS scale score, 424
 - sucidal history, 423–424
 - treatment, 426
- Acromioclavicular joint osteoarthritis, 292
- Active abduction, 294
- Activities of daily living (ADLs), 9, 62
- Acute diverticulitis, 11
- Acute post-traumatic ankle pain, 317
- Acute retroviral syndrome, 146
- Adductor of hip, 27
- Adhesive capsulitis, 291, 293
- Advance Trauma Life Support (ATLS), 245
- Airway, breathing and circulation (ABCD), 119, 124
- Alcohol intoxication, 65–66
- Amenorrhea
 - primary
 - adolescents, 329
 - allergic history, 329
 - candidate information, 328
 - causes of, 328
 - differential diagnosis, 328
 - family history, 329
 - interview, starting, 328
 - laboratory test, 330, 331
 - medication history, 329
 - opening, 328
 - past hospitalization, 329
 - past medical history, 329
 - presenting complaint, 328
 - presenting illness, history, 328, 329
 - self-care and living condition, 329
 - social history, 329
 - support, 329
 - surgical history, 329
 - treatment, 331
 - wrap-up, 329, 330
 - secondary
 - allergic history, 332
 - Asherman syndrome after miscarriage, 332
 - candidate information, 331, 332, 334
 - differentials, 331
 - family history, 332
 - interview, starting, 331
 - management, 332, 333
 - medication history, 332
 - opening, 331
 - past hospitalization, 332
 - past medical history, 332
 - polycystic ovarian syndrome, 333
 - presenting complaint, 331
 - presenting illness, history of, 331, 332
 - self-care and living condition, 332
 - social history, 332
 - support, 332
 - surgical history, 332
- Anaphylaxis, 366–367
- Anemia, 371–373
 - clinical presentation, 414
 - differential diagnosis, 414–415
 - patient history, 415–416
 - physical examination, 416
 - treatment of, 416

- Ankle, 27
 - acute post-traumatic ankle pain, 317
 - chronic pain, 318
 - differential diagnosis, 316
 - examination, 319
 - neurovascular assessment, 320
 - range of motion, 320
 - tests, 320
- Ankle clonus, 29
- Ankle edema, 117
- Ankle jerk, 29
- Ankle jerk reflex, 407
- Ankle jerk test, 29
- Ankle sprain
 - assessment, 321
 - differential diagnoses, 320
 - first- and second-degree, 322
 - inspection, 321
 - neurovascular assessment, 322
 - palpation, 321
 - range of motion, 322
 - severity, 322
 - tests, 322
 - third-degree, 322
- Ankylosing spondylitis, 288
- Anorexia nervosa, 97
- Antenatal counseling
 - allergic history, 342
 - candidate information, 341, 342
 - checkups, 342
 - family history, 342
 - gynecology history, 342
 - interview, starting, 341
 - medication history, 342
 - obstetrics history, 342
 - opening, 341
 - past hospitalization, 342
 - past medical history, 342
 - pregnancy plan, 342
 - pregnancy, cause, 342
 - social history, 342
 - surgical history, 342
 - take sexual history, 342
 - traveling, 343
 - visits, 342, 343
 - wrap-up, 343
- Anterior apprehension test, 297, 298
- Anterior draw test, 315, 316, 320, 321
- Anterolateral infarction, 121
- Antiepileptic drugs (AEDs), 55
- Antiretroviral therapy (ART), 214
- Antithyroid drugs, 400
- Anxiety, 71, 74
 - delirium, 103
 - dementia, 101
 - drug seeker, 98
 - history and counseling, 81–82
 - mania, 78
 - psychosis/schizophrenia, 93
 - suicide, 100
- Apley grinding test, 316, 318
- Appendectomy, 253
- Appendicitis
 - abdominal examination, 251
 - allergic history, 251
 - appendix, 252
 - candidate information, 250
 - causes, 252
 - differential diagnosis, 250
 - family history, 251
 - gynecology history, 251
 - interview, starting, 250
 - medication history, 251
 - opening, 251
 - past hospitalization and surgical history, 251
 - past medical history, 251
 - present illness, history of, 251
 - problem, 252
 - sexually active, 251
 - social history, 251
 - test, 252
 - travel history, 251
 - treatment, 253
 - vital signs, 250
- Appendix, 252
- Aricept, 102
- Arm tone, 17
- Arousal, 72
- Arterial pulse, 276
- Asherman syndrome, 332
- Asthma
 - action plans, 164
 - associated symptoms, 162
 - clinical investigations, 163
 - closed-mouth technique, 165
 - definition, 163
 - diagnosis, 163
 - differential diagnosis, 161
 - family and friend support, 163
 - follow-up, 166
 - functional status, 163
 - history of, 162–163
 - management, 163
 - medical treatment, 165
 - patient interview, 161
 - precipitating/aggravating factors, 162
 - puffer (MDI)/inhalers, 165
 - relationships, 163
 - self-care and living condition, 163
 - shortness of breath, 161
 - signs and symptoms, 165
 - spacer device, 165
- Asymmetrical oligoarthritis, 273
- Atypical pneumonia, 146, 150
 - associated symptoms, 152
 - causes, 153
 - clinical investigations, 153
 - common pathogens, 153
 - complications, 154
 - diagnosis, 153
 - differential diagnosis, 151
 - family and friend support, 153
 - follow up, 154
 - history of present illness, 152
 - outpatient treatment, 154
 - patient history, 153
 - patient instructions, 154
 - physical findings, 153
 - precipitating/aggravating factors, 152
 - prevention, 154
 - relieving factors, 153
 - risk factors, 152

- self-care and living condition, 153
- treatment at home, 154
- Auscultation, 115, 251
- Australian Medical Council Clinical Examination, 1
- B**
- Bacterial meningitis, 53
- Basal cell carcinoma (BCC)
 - alar base and cheek, 437
 - biopsy, 437
 - causes of, 437
 - characteristics of, 437
 - follow-up, 438
 - on proximal helix, 437
 - skin cancer, 437
 - skin examination, 437
 - treatment of, 438
 - types, 438
- Basic Life Support (BLS), 245
- B-blockers, 401
- BCC, *see* Basal cell carcinoma
- Bell's palsy, 46
 - antiviral agents, 47
 - candidate information, 45
 - cause of, 46
 - clinical diagnosis, 47
 - cranial imaging, 47
 - differential, 45
 - eye care, 47
 - inspection, 46
 - interview, starting, 45
 - neurologic findings, 47
 - opening, 45
 - outcome, 47
 - physical therapy, 47
 - reference, 47
 - site of, 46
 - treatment, 47
 - vital signs, 45, 46
 - wrap-up, 46
- Belly-press test, 297, 298
- Benign paroxysmal positional vertigo
 - causes of, 58
 - examination, 57
 - family history, 57
 - history and examination, 56
 - interview, starting, 56
 - medication history, 57
 - neuroimaging, 57
 - opening, 56
 - past history, 57
 - past hospitalization and surgical history, 57
 - pathophysiology, 58
 - personal/social history, 57
 - present illness, history of, 56, 57
 - referral, 58
 - wrap-up, 57
- Benign prostatic hyperplasia (BPH), *see* Urinary hesitancy
- Benzodiazepam, 87
- Benzodiazepines, 55
- Biceps, 18
- Biceps reflex, 20
- Biceps tendinitis, 292
- Big toe extension, 29
- Big toe flexion, 29
- Bilateral cerebellar lesion, causes of, 32
- Bipolar disorder, 71, 78
 - allergies, 80
 - candidate information, 78
 - chief complaint, 79
 - contract, 80
 - differentials, 78
 - follow-up appointment, 80
 - interview, starting, 79
 - mania, 80
 - medication history, 80
 - opening, 79
 - organic, 80
 - past medical history, 80
 - psychiatric symptoms screening, 80
 - safety check, 80
 - social history, 80
 - support, 80
 - treatment, 80
 - vital signs, 78
 - wrap-up, 80
- Bleeding after menopause
 - allergic history, 353
 - associated symptoms, 353
 - candidate information, 352
 - chief complaint, 353
 - differentials, 352, 353
 - family history, 354
 - gynecology history, 353
 - interview, starting, 353
 - investigations, 354
 - medication history, 353
 - obstetrics history, 353
 - opening, 353
 - past hospitalization, 353
 - past medical history, 353
 - physical examination, 354
 - social history, 353
 - surgical history, 353
- Blood clotting, 414
- Blood pressure, 128
- Boas' sign, 254
- Bowel obstruction, management of, 263
 - abdominal examination, 262, 263
 - allergic history, 262
 - candidate information, 261
 - counselling, 263
 - differential diagnosis, 261
 - family history, 262
 - interview, starting, 261
 - medication history, 262
 - opening, 261
 - past hospitalization and surgical history, 262
 - past medical history, 262
 - physical examination, 262
 - present illness, history, 262
 - rule out differentials, questions to, 262
 - social history, 262
- Brain death, 206
- Brainstem tumors, 59
- Breakthrough bleeding, 325
- Breast lump
 - allergic history, 264
 - candidate information, 263
 - differential diagnosis, 263
 - family history, 264

- Breast lump (*cont.*)
 - fibroadenoma, 266
 - fibrocystic disease, 266
 - interview, starting, 263
 - mammogram, 266
 - medication history, 264
 - menstrual, gynecology, and obstetric history, 264
 - metastasis, signs of, 264
 - opening, 263
 - past hospitalization and surgical history, 264
 - past medical history, 264
 - physical examination, 264, 265
 - present illness, history of, 263, 264
 - risk factors, 264, 265
 - self-examination, 266
 - signs and symptoms, 265
 - social history, 264
 - treatment, 265
 - wrap-up, 265
- Breastfeeding counseling, 343
 - allergic history, 340
 - breast *vs.* formula milk, 340, 341
 - candidate information, 339
 - contraception, 341
 - interview, starting, 340
 - medication history, 340
 - opening, 340
 - past hospitalization, 340
 - past medical history, 340
 - social history, 340
 - surgical history, 340
- Bronchial breath sounds, 136
- Bronchiolitis, 362
- Bronchodilators, 167
- Bronchovesicular breath sounds, 136
- Brudzinki's sign, 52
- Bulge sign, 315
- Burning micturition
 - constitutional symptoms, 238
 - differential diagnosis, 238
 - family and friend support, 239
 - foreign travel, 239
 - history of present illness, 238
 - patient history, 239
 - physical examination, 239
 - preventive measures, 240
 - relationships, 239
 - self-care and living condition, 239
- C**
- Caloric test, 42
- Capillary refill, 276
- Cardiac auscultation, 116
- Cardiovascular system
 - history and management, 111, 112
 - acute chest pain, 118–120
 - heart failure, 123–126
 - hypertension, 126–129
 - palpitation, 120, 122, 123
 - present illness, history of, 119, 120
 - physical examination
 - candidate information, 111
 - capillary refill, 113
 - chest, 115–118
 - face, 113
 - general physical examination, 112, 113
 - hands, 113
 - JVD/JVP, 114
 - neck, 113, 114
 - vital signs, 111, 112
 - wrap-up, 118
 - symptoms, 111
 - volume status examination, 129
- Carotid bruit, 117
- Carotid pulse, 117, 118
- Carpal tunnel syndrome (CTS), 303, 307
- Castell's sign, 184
- Cauda equina syndrome, 285
- Cerebellar dysarthria, 34
- Cerebellar syndromes, 59
 - physical examination
 - additional examination, 33, 34
 - bilateral cerebellar lesion, causes of, 32
 - candidate information, 31
 - clinical diagnosis, 35
 - diagnosis, 34
 - differential diagnosis, 31
 - Friedreich's ataxia, 32
 - gait, 34
 - interview, starting, 32
 - observe walking and standing, 33
 - opening, 32
 - remember, 34
 - unilateral cerebellar lesion, causes of, 32
 - vital signs, 31, 33
 - wrap-up, 34
- Cervical discopathy, 307
- Cervical myelopathy, 278
- Cervical radiculopathy, 278
- Cervical spine
 - active movement, 279
 - checklist, 281
 - clinical investigation, 281
 - compression test, 280
 - differential diagnosis, 278
 - history of present illness, 278, 279
 - inspection, 279
 - joint palpation, 279
 - Lhermitte sign, 280
 - management, 281
 - neurological examination, 279
 - occiput-to-wall distance, 280
 - passive movements, 279
 - patient interview, 278
 - power assessment, 279
 - Spurling's sign, 280
 - vital signs, 278, 279
- Cervical spondylosis, 278
- Chemotherapy, 329, 332
- Chest
 - auscultation, 136
 - cardiovascular system, 115–118
 - expansion, 133
 - history and management
 - ABCD, 119
 - allergic history, 120
 - candidate information, 118, 119
 - differentials, 118, 119
 - ECG, 120
 - family history, 120
 - medication history, 120

- NSTEMI/ STEMI, 120
 - opening, 119
 - past medical history, 120
 - risk factors, 120
 - social history, 120
 - starting the station, 119
- Chest wall palpation, 114
- Child abuse, 388–391
- Child Swallowed A Cleaning Agent, 387–388
- Cholecystitis, acute
 - abdominal examination, 254
 - allergic history, 254
 - biliary colic and, 254
 - candidate information, 253
 - differential diagnosis, 253
 - family history, 254
 - gallbladder, function of, 254
 - gallstones, 254
 - interview, starting, 253
 - medication history, 253
 - opening, 253
 - past hospitalization and surgical history, 253
 - past medical history, 253
 - present illness, history of, 253
 - sexual history, 254
 - social history, 254
 - test, 254
 - travel history, 254
 - treatment, 255
 - ultrasound, 255
 - vital signs, 253
- Chronic obstructive pulmonary disease (COPD)
 - associated symptoms, 166
 - constitutional symptoms, 166
 - differential diagnosis, 166
 - exacerbation, 168
 - family and friend support, 167
 - follow up, 168
 - functional status, 167
 - history of present illness, 166
 - interview, 166
 - management, 167
 - medications, 167
 - patient history, 166
 - relationships, 167
 - relieving factors, 166
 - risk factors, 166
 - self-care and living condition, 167
- Closed-Mouth Technique, 165
- CN-IV palsy, 38
- CN-VI palsy, 38
- Codeine, 98
- Collateral ligament stress test, 316, 317
- Colostrum, 340
- Combined oral contraceptives (COCs), 55
- Common cold
 - allergic history, 139
 - causes, 138
 - differential diagnosis, 138
 - family history, 139
 - follow-up, 140
 - functional status, 139–140
 - history of present illness, 138
 - medication history, 139
 - past hospitalization and surgical history, 139
 - past medical history, 139
 - precipitating or aggravating factors, 138
 - self-care and living condition, 139
 - social history, 139
 - symptoms, 139
 - vital signs, 138
 - warning signs, 140
- Communication, 5
- Community-acquired pneumonia, 150
- Compression test, 280, 281
- Conjugate movements, 37
- Conjugated bilirubin, 376
- Consensual pupillary reflex, 37
- Constipation
 - associated symptoms, 196
 - causes, 197
 - constitutional symptoms, 196
 - counseling, patient, 197
 - definition, 197
 - differential diagnosis, 195
 - family and friends support, 196
 - fiber, 197
 - history of present illness, 196
 - interview, 195
 - management plan, 196
 - patient history, 196
 - relationships, 196
 - risks, 197
 - self-care and living condition, 196
- Constitutional symptoms, 76
- Contract
 - bipolar disorder, 80
 - mania, 78
- Conversion disorder, 89–90
- Corticosteroid, 167
- Costovertebral angle (CVA) tenderness, 184, 185
- Cough
 - asthma, history of, 162
 - checklist, 159
 - clinical investigations, 158
 - constitutional symptoms, 158
 - diagnosis, 158
 - differential diagnosis, 157
 - follow-up, 159
 - friends and family support, 158
 - functional status, 158
 - heart failure, 124
 - history of present illness, 157
 - management, 159
 - patient history, 158
 - precipitating/aggravating factors, 158
 - relationships, 158
 - relieving factors, 158
 - self-care and living condition, 158
 - work conditions and financial status, 158
- Courvoisier's sign, 183
- Crackles, 136
- Cranial nerves
 - accessory nerve, 42
 - candidate information, 35
 - color vision, 36
 - equipment, 35
 - facial, 39
 - fundoscopy, 36
 - glossopharyngeal nerve, 42
 - hypoglossal nerve, 42
 - inspection, 35

- Cranial nerves (*cont.*)
- interview, starting, 35
 - jaw jerk, 39
 - light touch (posterior column) sensation, 38, 39
 - motor, 39
 - opening, 35
 - pinprick (spinothalamic) sensation, 39
 - testing eye movements, 37
 - testing pupils, 37, 38
 - vagus nerve, 42
 - vestibulocochlear nerve, 39–41
 - visual acuity, 35
 - visual field, 36
 - vitals, 35
 - wrap-up, 42
- Crossed straight leg raising test, 285, 287
- Cubital Tunnel syndrome, 300
- Cushing's syndrome, 127
- D**
- De Quervain disease, 303
- de Quervain tenosynovitis, 308
- Death before survival, 205, 206
- Deep tendon reflexes, 275
- Deep vein thrombosis (DVT), 411
- cause of death, 414
 - prophylaxis, 248
- Delirium, 250
- history
 - anxiety, 103
 - blood work, 104
 - candidate information, 102, 104
 - causes, 104
 - chief complaint, 103
 - diagnosis, 104
 - differentials, 102, 103
 - follow-up, 104
 - interview, starting, 103
 - management, 104
 - medication history, 104
 - mood, 103
 - opening, 103
 - organic, 103
 - past medical history, 103
 - past psychiatric history, 104
 - present illness, history of, 103
 - psychosis, 103
 - social history, 104
 - support, 104
- Deltoid, 17
- Dementia, 100–102
- Depression, 70, 208
- anxiety, 81
 - checklist, 76
 - generalized anxiety disorder, 86
 - history and counseling
 - allergic history, 75
 - anxiety, 74, 75
 - body language and clues, 74
 - candidate information, 73
 - differentials, 73
 - family history, 75
 - interview, starting, 73
 - investigations, 75
 - management, 75
 - mania, 74
 - medication history, 75
 - opening, 74
 - organic causes, 74
 - past hospitalization and surgical history, 75
 - past medical, 75
 - present illness, history of, 74
 - presentations of, 75
 - psychiatric symptoms screening, 74
 - psychosis, 74
 - relationships, 75
 - self-care and living condition, 75
 - social history, 75
 - starting with sleep problems, 76
 - support, 75
 - wrap-up, 75
- Derealization, 105
- Dermal segmentation, 22, 276
- Diabetes, 248, 395
- chief complaints, 401
 - in children, 404
 - prediabetic counseling for parents, 405
 - insulin injection, 405
 - hypoglycemia symptoms, 405
 - hyperglycemia symptoms, 405
 - history, 405
 - diagnostic and imaging studies, 405
 - chief complaints, 404
 - clinical presentation, 401
 - complications of, 402
 - diagnostic and imaging studies of, 402
 - examination, 402
 - foot examination, 406
 - ankle jerk reflex, 407
 - equipment for, 406
 - foot wear, 407
 - inspection, 406
 - neurological examination, 407
 - palpation, 406–407
 - hypoglycemia (*see* Hypoglycemia)
 - patient history, 401
 - prediabetic counseling, 402
 - routine checkup for
 - chief complaints, 403
 - diagnostic and imaging studies, 404
 - hyperglycemia, 403
 - hypoglycemia, 403
 - patient history, 404
 - symptoms, 401
- Diabetic ketoacidosis (DKA), 402, 405
- ABCD survey, 408
 - blood result report, 407
 - chest X-ray, 409
 - clinical presentation, 407
 - complications of, 409
 - differential diagnosis of, 407
 - fluid resuscitation, 409
 - insulin intravenous infusion, 409
 - patient history, 408
 - potassium replacement, 409
 - vital signs, 408
- Diaphragm, 135, 136
- Diarrhea, 370–371
- associated symptoms, 198
 - constitutional symptoms, 198
 - definition, 199
 - dehydration, 198
 - diagnosis, 199

- differential diagnosis, 197
 - family and friends support, 199
 - history of present illness, 197, 199
 - interview, 197
 - management, 199
 - patient history, 198
 - physical examination, 199
 - relationships, 198
 - risk factors, 199
 - self-care and living condition, 198
 - treatment, 199
 - Diphtheria, 146
 - Direct pupillary reflex, 37
 - Distal interphalangeal (DIP) joints, 20
 - Diverticulitis, acute
 - abdominal examination, 256
 - allergic history, 256
 - candidate information, 255
 - causes, 257
 - complications, 256
 - differential diagnosis, 255
 - diverticulosis vs., 256
 - family history, 256
 - gynecology history, 256
 - interview, starting, 255
 - management, 256, 257
 - medication history, 255
 - opening, 255
 - past hospitalization and surgical history, 255
 - past medical history, 255
 - physical examination, 256
 - present illness, history of, 255
 - sexually active, 256
 - social history, 256
 - surgery, 257
 - test, 256
 - travel history, 256
 - vital signs, 255
 - Dix-Hallpike maneuver, 58
 - Dizziness
 - activities of daily living, 448
 - algorithm for (*see* Benign paroxysmal positional vertigo)
 - classification, 446
 - clinical presentation, 446
 - diagnostic studies, 449
 - differential diagnosis, 447
 - instrumental activities of daily living, 448
 - medication associated with, 447
 - patient history, 447–448
 - physical examination, 448–449
 - Dorsalis pedis artery, 118
 - Dorsiflexion of ankle, 27, 28
 - Down syndrome screening test, 343
 - Drop arm test, 295, 296
 - Drug seeker
 - anxiety, 98
 - candidate information, 97
 - chief complaint, 97
 - differential diagnosis, 97
 - follow-up, 99
 - interview, starting, 97
 - management, 99
 - mania, 98
 - medication history, 98
 - opening, 97
 - organic, 98
 - past medical history, 98
 - past psychiatric history, 98
 - present illness, history of, 97, 98
 - psychiatric symptoms screening, 98
 - psychosis, 98
 - questions regarding tylenol, 98
 - social history, 98
 - support, 98
 - wrap-up, 98
 - Dysdiadochokinesia test, 23, 24, 34
 - Dysfunctional uterine bleeding (DUB), 326
 - history and counseling
 - allergic history, 352
 - associated symptoms, 351
 - candidate information, 350
 - chief complaint, 351
 - counseling, 352
 - differentials, 350, 351
 - family history, 352
 - gynecology history, 351
 - interview, starting, 351
 - investigations, 352
 - medical treatment, 352
 - medication history, 351
 - obstetrics history, 351
 - opening, 351
 - past hospitalization, 351
 - past medical history, 351
 - sexual history, 351
 - social history, 352
 - surgical history, 352
 - surgical treatment, 352
 - wrap-up, 352
 - Dyspareunia, 222, 326
 - Dysphagia
 - associated symptoms, 188
 - constitutional symptoms, 188
 - diagnosis, 189
 - differential diagnosis, 187
 - history of present illness, 188
 - interview, 188
 - patient history, 188, 189
 - relationships, 189
 - relieving factors, 188
 - self-care and living condition, 189
 - weight loss, 188
- ## E
- Ear pain, 362–364
 - Easy bruising
 - algorithm, 423
 - chest and abdominal examination, 422
 - clinical presentation, 418
 - differential diagnosis, 419–420
 - medications causes of, 420
 - partial thromboplastin time and prothrombin time factors, 422
 - patient history, 420–421
 - physical examination, 421–422
 - respiratory system, 422
 - Eating disorder
 - anxiety, 96
 - candidate information, 94
 - contract, 97
 - differentials, 95, 96
 - follow-up, 97
 - interview, starting, 95
 - management plan, 97

- Eating disorder (*cont.*)
 - mania, 96
 - menstrual history, 96
 - opening, 95
 - organic, 96
 - physical examination, 96, 97
 - present illness, history of, 95, 96
 - psychiatric symptoms screening, 96
 - psychosis, 96
 - wrap-up, 97
- Ectopic pregnancy, 344
- Eczema flare-up
 - chief clients, 438
 - children, 439
 - clinical presentation, 438
 - differential diagnosis, 438
 - patient history, 438–439
 - treatment of, 439–440
 - triggering factors for, 439
- Eighth cranial nerve, 46
- Elbow, 18
 - checklist, 303
 - cubital tunnel syndrome, 300
 - examination, 301
 - Golfer' elbow, 302
 - lateral elbow pain, 299
 - medial elbow, 300
 - neurovascular assessment, 302
 - osteoarthritis, 300
 - patient history, 300
 - radial tunnel syndrome, 299
 - range of motion, 301
 - tennis elbow, 302
- Elder abuse
 - activities of daily living, 452
 - counseling for, 452
 - differential diagnosis, 450
 - financial abuse, 450
 - instrumental activities of daily living, 452
 - management of, 452
 - neglect, 450
 - patient history, 450–451
 - physical abuse, 450
 - physical examination, 452
 - psychosocial abuse, 450
 - red flags, 450
 - risk factors, 450
 - safety planning checklist, 453
 - sexual abuse, 450
- Empathy, 5, 67
- Empty can and full can tests, 296, 297
- Engorgement, 340
- Enuresis
 - BINDES, 384
 - differential diagnosis, 382
 - family history, 384
 - history of presenting illness, 383
 - interview, 382
 - medications/allergic history/triggers, 384
 - monosymptomatic, 382
 - nonmonosymptomatic, 382
 - parent counseling, 385
 - past medical and surgical history, 384
 - presenting complaint, 383
 - primary vs. secondary, 382
 - social history, 384
 - systems review, 384
- Enzyme immunoassays (EIA), 212
- Epigastric pain
 - clinical investigations, 193
 - constitutional symptoms, 192
 - diagnosis, 192
 - differential diagnosis, 191–193
 - factors, 193
 - history of present illness, 192
 - interview, 191
 - management, 193
 - abdominal examination, 258
 - allergic history, 258
 - candidate information, 257
 - diagnosis, 259
 - differentials, 257
 - family history, 258
 - interview, starting, 257
 - management, 258, 259
 - medication history, 258
 - opening, 257
 - order, 258
 - pancreas, 259
 - past hospitalization and surgical history, 258
 - past medical history, 258
 - present illness, history of, 257
 - rule out differentials, questions, 257
 - social history, 258
 - X-ray, 258
 - patient history, 192
 - physical examination, 193
 - relationships, 192
 - self-care and living condition, 192
 - urea breath test, 193
 - work conditions and financial status, 192
- Epilepsy, 55, 326
- EpiPen, 366–367
- Erectile dysfunction (ED)
 - anxiety screening, 236
 - definition, 237
 - differential diagnosis, 235
 - history of present illness, 236
 - mood screening, 236
 - patient counseling, 237
 - patient history, 236
 - physical examination, 237
 - relationships, 237
 - treatment options, 237
- Ethics
 - brain death, 206
 - confidentiality, 208–209
 - death before survival, 205, 206
 - decision-making, 209–210
 - forgo treatment, 207, 208
 - Marijuana, son's bag, 215–217
 - medical error/wrong blood transfusion, 214–215
 - organ donation, 206, 207
 - pharmacist refusal, 210
 - positive HIV test, 213, 214
 - pre-HIV test, 211, 212
 - surrogate decision-maker, 210
 - truth telling, 211
- Eversion stress test, 320, 321
- Exercise, 343
- Extensor carpi radialis longus, 19
- Extensor carpi ulnaris, 19
- Extensor digitorum, 19
- Extensor hallucis longus, 28

External genitalia, 226
 External rotation resistance test, 296, 297
 External rotation test, 320
 Eye movements, 37, 41

F

Faber test, 285, 288
 Face lesion
 basal cell carcinoma (*see* Basal cell carcinoma)
 chief complaint, 436
 clinical presentation, 435
 differential diagnosis, 435
 patient history, 436
 physical examination, 436–437
 Facial nerve, 39
 Failure to thrive (FTT)
 BINDES, 378
 case management, 378
 differential diagnosis, 377
 family history, 378
 history of presenting illness, 378
 interview, 377
 medications/allergic history/triggers, 378
 past medical and surgical history, 378
 presenting complaint, 378
 social history, 378
 systems review, 378

Falls

 activities of daily living, 445
 clinical presentation, 443
 diagnostic test, 446
 differential diagnosis, 443
 instrumental activities of daily living, 445
 management of, 446
 patient history, 444–445
 physical examination, 446

Febrile conversion, 360–361

Female genital tract examination, 327

Female genitourinary system

 abdominal examination, 225, 226
 abnormal vaginal bleeding, 222
 cervix examination, 226
 checklist, 227, 228
 common symptoms, 219
 dyspareunia, 222
 external genitalia, 226
 interview, 225
 pelvic examination, 226
 physical examination, 225
 rectal examination, 227
 uterus examination, 227
 vaginal discharge, 222

Femoral artery pulse, 117

Fever, 358–360

Fibroadenoma, 266

Fibrocystic disease, 266

Fifth cranial nerve, 46

Finger, 19, 20

 Finger abduction, 20

 Finger extension, 19

 Finger flexion, 20

 Finger-to-nose test, 21, 23, 34

 Finkelstein's test, 306, 308

 First dorsal interosseous, 19

 First trimester vaginal bleeding
 allergic history, 345

 candidate information, 344
 chief complaint, 344, 345
 differential diagnosis, 344, 345
 family history, 345
 incomplete abortion, counsel for, 346
 interview, starting, 344
 management plan, 345
 medication history, 345
 obstetrics history, 345
 opening, 344
 past hospitalization, 345
 past medical history, 345
 social history, 345
 surgical history, 345
 threatened abortion, counsel for, 345, 346

Fistula test, 42

Flexor carpi radialis, 19

Flexor digitorum superficialis, 19

Flexor hallucis longus, 28

Flip test, 285, 286

Flu and pneumonia shots, 168

Folic acid, 343

Forced expiratory time, 137

Forgo treatment, 207, 208

Frequent falls**history**

 ADLs, 64

 allergic history, 64

 differentials, 63

 IADLs, 64

 interview, starting, 63

 medication history, 64

 opening, 63

 past hospitalization and surgical history, 64

 personal history, 64

 present illness, history of, 63, 64

 self-care and living condition, 64

 social history, 64

 wrap-up, 64

 physical examination, 64

Friedreich's ataxia, 32

Frozen shoulder, 291

Functional hypothalamic amenorrhea, 329, 332

Functional status, 49

Fundoscopy, 36

Fundus height, 347

G

Gait, 25, 26, 34, 62, 310

Galactorrhea, 332

Gastroesophageal reflux disease, 191

Gastrointestinal (GI) system, 252

 abdominal girth, 202–203

 constipation, 195–197

 diarrhea, 197–199

 dysphagia, 187–189

 epigastric pain, 191–193

history

 adult female, 179

 allergic history, 179

 chief complaint, 177

 constitutional symptoms, 179

 family and friends support, 179

 family history, 179

 history of present illness, 177

 interview, 177

- Gastrointestinal (GI) system (*cont.*)
- life/disability and adaptation, 179
 - malignancy symptoms, 179
 - medications history, 179
 - older adult, 180
 - past medical history, 179
 - relationships, 179
 - self-care and living condition, 179
 - social history, 179
 - teen age, 179
- jaundice, 199–202
- lower gastrointestinal bleeding, 193–195
- physical examination
- abdominal examination, 181
 - asterixis, 180
 - auscultation, 181
 - bruits, 182
 - checklist, 187
 - chest, 180
 - face, 180
 - hands, 180
 - hernia examination, 185, 187
 - neck, 180
 - palpation, 182–184
 - percussion, 185
 - pulse, 180
- signs and symptoms, 177
- upper gastrointestinal bleeding, 189–191
- General surgery
- abdomen, 245, 247
 - history and physical examination
 - acute appendicitis, 250–253
 - acute cholecystitis, 253–255
 - acute diverticulitis, 255–257
 - breast lump, 263–266
 - candidate information, 246
 - postoperative fever, 248–250
 - preoperative visit, 245, 247, 248
 - history taking, 245, 246
 - management
 - abdominal pain, 259–261
 - bowel obstruction, 261–263
 - epigastric pain, 257–259
 - candidate information, 257
- Generalized anxiety disorder, 71, 86–87
- Genital ulcers, 222, 326
- Genitourinary system
- associated symptoms, 221
 - burning micturition/UTI, 238–240
 - chief complaints, 220, 221
 - constitutional symptoms, 221
 - erectile dysfunction, 235–237
 - family and friends support, 223
 - in female
 - vaginal discharge, 222
 - psychosexual history, 224
 - physical examination, 224–227
 - obstetric history, 224
 - menstrual history, 224
 - dyspareunia, 222
 - common symptoms, 219
 - abnormal vaginal bleeding, 222
 - foreign travel, 223
 - hematuria, 232–235
 - history of present illness, 221
 - increase frequency of urination, 240–242
 - in male
 - common symptoms, 219
 - genital ulcers, 222
 - infertility, 222
 - physical examination, 227–229
 - testicular pain, 222
 - urethral discharge, 222
 - older adults, 224
 - overview, 220
 - patient history, 223
 - patient interview, 220
 - relationships, 223
 - renal, 221
 - self-care and living condition, 223
 - urinary hesitancy, 229–231
 - uterovaginal prolapse and urinary incontinence, 242–244
- Geriatrics
- abuse (*see* Elder abuse)
 - dizziness (*see* Dizziness)
 - falls (*see* Falls)
 - overview of, 444
 - symptoms, 443
 - syncope (*see* Syncope)
- Gestational diabetes, 326
- Glabellar tap, 62
- Glandular fever
- associated Symptoms, 141
 - differential diagnosis, 140
 - functional status, 141–142
 - history of present illness, 140
 - patient history, 141
 - precipitating or aggravating factors, 141
 - self-care and living condition, 141
- Glasgow coma score, 60
- Glenohumeral osteoarthritis, 292
- Glossopharyngeal nerve, 42
- Gluteus maximus, 27
- Gluteus medius, 27
- Gluteus minimus, 27
- Golfer' elbow, 302
- Gonococcal pharyngitis, 145
- Granulomas, 173
- Group A Beta Hemolytic Strep (GABHS), 144, 145
- Gynecology
- checklist
 - antenatal counseling, 341–343
 - breastfeeding counseling, 339–341
 - HRT counseling, 338, 339
 - OCP counseling, 337, 338
 - history, 323
 - abnormal vaginal bleeding, 326
 - allergic history, 327
 - bleeding after menopause, 352–354
 - chief complaint, 323
 - current pregnancy, 325
 - dysfunctional uterine bleeding, 350–352
 - dyspareunia, 326
 - family history, 327
 - first trimester vaginal bleeding, 344–346
 - genital ulcers, 326
 - history taking, 323, 324
 - interview, starting, 323
 - medication history, 326
 - menstrual, 325, 326
 - opening, 323
 - past hospitalization, 326

- past medical history, 326
 - present illness, history of, 324, 325
 - primary amenorrhea, 328–331
 - problems and treatments, 326
 - secondary amenorrhea, 331–334
 - self-care and living condition, 327
 - sexual history, 326
 - 65 years old, 327
 - social history, 327
 - support, 327
 - surgical history, 327
 - teenager, 327
 - third trimester vaginal bleeding, 346, 347, 350
 - vaginal discharge, 334–337
 - wrap-up, 327
 - objective structured clinical examination, 323
 - physical examination, 327
- H**
- Hallpike's maneuver, 42
 - Hallucination, 105
 - Haloperidol, 93
 - Hawkins test, 294
 - Headache, 48–50
 - Heart failure, 126
 - history and physical examination, 125
 - ABCD, 124
 - abdomen, 126
 - acute onset, 124
 - allergic history, 125
 - associated symptoms, 124
 - candidate information, 123
 - cardiovascular examination, 125
 - causes of, 123
 - constitutional symptoms, 125
 - cough, 124
 - differentials, 123
 - family history, 125
 - general physical examination, 125
 - gradual onset, 124
 - hospitalization history, 125
 - interview, starting, 123
 - investigations, 126
 - life/disability and adaptation, 125
 - medication history, 125
 - past medical history, 125
 - precipitating/aggravating factors, 125
 - present illness, history of, 124
 - relationships, 125
 - relieving factors, 125
 - respiratory system, 126
 - risk factors, 125
 - self-care and living condition, 125
 - social history, 125
 - support, 125
 - triage immediately, 123
 - wrap-up, 126
 - Heart sound auscultation, 115, 116
 - in supine position, 117
 - in upright position, 116
 - Heaves, 115
 - Heel-to-shin test, 31, 32, 34
 - Hematology
 - pattern of history, 411, 412
 - physical examination checklist, 411, 413
 - Hematuria
 - clinical investigations, 234
 - constitutional symptoms, 234
 - diagnosis, 234
 - etiology, 232
 - family and friend support, 234
 - foreign travel, 234
 - history of present illness, 233
 - key related symptoms, 232, 233
 - management plan, 235
 - painless/painful hematuria, 232, 233
 - patient history, 234
 - physical examination, 234
 - relationships, 234
 - self-care and living condition, 234
 - Hemoptysis
 - associated symptoms, 160
 - clinical investigations, 161
 - differential diagnosis, 159
 - family and friend support, 161
 - functional status, 161
 - history of present illness, 160
 - management, 161
 - patient history, 160, 161
 - relationships, 161
 - risk factors, 160
 - self-care and living condition, 161
 - Hemothorax, 170–171
 - Hepatitis, 200
 - Hepatitis B prophylaxis, 418
 - Hepatitis C prophylaxis, 418
 - Hepatojugular reflex, 114
 - Hip, 26
 - causes, 309
 - checklist, 312
 - diagnosis, 312
 - differential diagnosis, 309
 - examination, 310
 - history, 309–310
 - leg length discrepancy, 310
 - management, 312
 - neurovascular assessment, 311
 - pulse, 311
 - reflexes, 311
 - straight leg, 311
 - thomas test, 311
 - Hip adduction, 28
 - Hip extension, 27
 - Hip flexion, 27
 - Hormone excess, 329, 332
 - Hormone replacement therapy (HRT), 338–339
 - Hospital-acquired pneumonia, 150
 - Human immunodeficiency virus (HIV), 154–157, 214
 - See also* Needle stick injury
 - Hyperbilirubinemia, 375
 - Hyperglycemia, 403, 405
 - Hypertension, 248
 - history and physical examination
 - abdominal examination, 127
 - allergic history, 127
 - blood pressure values, 128
 - candidate information, 126
 - cardiovascular examination, 127
 - chief complaint, 126, 127
 - counsel patient, 128
 - family history, 127

Hypertension (*cont.*)

- general physical examination, 127
- hospitalization history, 127
- interview, starting, 126
- life/disability and adaptation, 127
- medication history, 127
- neurology examination, 128
- opening, 126
- past medical history, 127
- respiratory system, 127
- risk factors, 127, 128
- self-care and living condition, 127
- social history, 127
- support, 127
- symptoms, 127
- tests, 128
- treatment, 128
- various conditions, 128
- wrap-up, 128

Hyperthyroidism, 127

- associated symptoms, 398
- chief complaints, 398
- clinical presentation, 397
- constitutional symptoms, 398
- diagnostic and imaging studies of, 400
- differential diagnosis, 398
- examination, 399–400
- patient history, 398–399
- treatment for, 400–401

Hypoglossal nerve, 34, 42

Hypoglycemia, 403

Hypothyroidism, 127, 307, 326

- associated symptoms, 395–396
- chief complaints, 395
- complications of, 397
- diagnostic test, 397
- differential diagnosis, 395
- examination
 - auscultate, 397
 - cardiovascular, 397
 - fundoscopic, 400
 - neck, 396
 - neck lymph nodes and trachea, 397
 - nervous, 397
 - palpation, 396
 - percuss, 397
 - physical, 396
 - pretibial edema, 397
 - respiratory system, 397
- patient history, 396
- risk of, 396

Hypotonia, 34

I

- Iliopsoas, 26
- Illusion, 105
- Imperforate hymen, 329
- Impingement syndrome, 290, 293
- Incidental solitary lung nodule, 171
- Infectious granulomas, 173
- Infertility, 222
- Influenza
 - associated symptoms, 143
 - differential diagnosis, 142
 - functional status, 143–144
 - history of present illness, 143

- patient history, 143
 - precipitating or aggravating factors, 143
- Instrumental activities of daily living (IADLs), 9
- Intention tremors, 34
- Intermenstrual bleeding, 325
- Inversion stress test, 320, 321
- Iron deficiency anemia, 373

J

Jaundice

- associated symptoms, 200
 - BINDES, 377
 - causes, 377
 - checklist, 201
 - clinical investigations, 201
 - constitutional symptoms, 200
 - differential diagnosis, 199, 201, 375
 - failure to thrive, 377–379
 - family history, 377
 - follow up, 201
 - history of present illness, 200, 376
 - maternal/obstetric history, 376
 - medications/allergic history/triggers, 376
 - newborn history, 376
 - past medical and surgical history, 376
 - patient history, 200
 - patient interview, 199, 376
 - patient/parents counseling, 377
 - physical examination, 201
 - presenting complaint, 376
 - relationships, 200
 - self-care and living condition, 200
 - signs, 375
- Jobe supraspinatus test, 296
- Jugular vein distention (JVD), 114
- Jugular venous pressure (JVP), 114, 129

K

- Kernig's sign, 52
- Kidney palpation, 185
- Kienbock disease, 303
- Kleiger test, 320
- Knee, 27
 - checklist, 316
 - diagnosis, 312
 - differential diagnosis, 313
 - effusion, 315
 - examination, 314–315
 - history, 313–314
 - neurovascular assessment, 315
 - range of motion, 315
 - tenderness, 315
 - tests, 315
- Knee extension, 28
- Knee flexion, 28
- Knee jerk test, 29
- Kussmaul sign, 114

L

- Lachman test, 315
- Lamotrigine, 55
- Lasègue's sign, 285
- Lateral elbow pain, 299
- Latissimus dorsi, 17

- Leopold maneuvers, 347, 348
 - Leriche syndrome, 235
 - Lhermitte sign, 280
 - Lift-off test, 296, 297
 - Light touch sensation, 21, 22, 30, 38, 39
 - Limping child
 - BINDES, 392
 - case management, 392
 - differential diagnosis, 391
 - family history, 392
 - history of presenting illness, 391
 - interview, 391
 - medications/allergic history/triggers, 392
 - past medical and surgical history, 391
 - presenting complaint, 391
 - social history, 392
 - systems review, 391
 - Liver disease, 201
 - Liver palpation, 183
 - Liver percussion, 184
 - Lobar pneumonia, 150
 - Low back pain, 288
 - See also* Lumbar spine
 - Lower gastrointestinal bleeding, 193–195
 - Lower limbs
 - candidate information, 24
 - checklist, 31, 33
 - coordination, 31
 - equipment, 24
 - exposure, 25
 - gait, 25, 26
 - general, 25
 - inspection, 26
 - interview, starting, 24
 - light touch (posterior column) sensation, 30
 - opening, 24
 - pinprick (spinothalamic) sensation, 30
 - position sense, 30
 - power, 26, 27, 29
 - sensation, 30
 - tone, 26
 - vibration sensation, 30
 - vital signs, 24
 - wrap-up, 31
 - Lumbar spine
 - age, 282
 - aggravating factors, 283
 - associated symptoms, 283
 - cauda equina syndrome, 285
 - checklist, 286
 - differential diagnoses, 282
 - duration, 282
 - inspection and palpation, 284, 285
 - location, 282
 - neurovascular assessment, 285
 - onset of pain, 282
 - patient history, 284
 - patient interview, 282
 - radiation, 282
 - red flags, 283
 - relieving factors, 283
 - sciatica, 282
 - severity, 282
 - timings, 283
 - vital signs, 282
 - Lung cancer
 - associated symptoms, 174
 - clinical investigations, 175
 - diagnosis, 175
 - differential diagnosis, 174
 - follow-up, 176
 - friends and family support, 175
 - history of present illness, 174
 - patient history, 175
 - patient interview, 174
 - relationships, 175
 - risk factors, 175
 - self-care and living condition, 175
 - staging workup, 175
 - Lung nodule
 - associated symptoms, 172
 - benign lesions, 173
 - constitutional symptoms, 172
 - definition, 173
 - differential diagnosis, 171
 - family and friend support, 173
 - features, benign lesions, 173
 - follow-up, 173, 174
 - history of present illness, 172
 - malignant, 173
 - malignant lesion, 173
 - patient history, 172
 - patient, interview, 172
 - physical examination, 173
 - relationships, 173
 - risk factors, 172
 - self-care and living conditions, 173
 - work conditions and financial status, 173
- M**
- Male genitourinary system
 - abdominal examination, 229
 - benign prostatic hypertrophy, 222
 - common symptoms, 219
 - genital ulcers, 222
 - infertility, 222
 - neurological examination, 229
 - pelvic examination, 229
 - prostate cancer, 222
 - testicular Pain, 222
 - urethral discharge, 222
 - Mammogram, 266
 - Mania, 70, 74
 - anxiety, 81
 - bipolar disorder, 80
 - checklist, 78, 79
 - drug seeker, 98
 - eating disorder, 96
 - generalized anxiety disorder, 86
 - history, 77–78
 - screening, 71
 - suicide, 100
 - McBurney' point, 182, 183
 - McMurray test, 316, 317
 - Melanocytes, 435
 - Melanoma
 - causes of, 435
 - development of, 435
 - diagnosis of, 435
 - nodular, 434, 435
 - risk factors, 434
 - superficial spreading, 434
 - treatment of, 435

- Ménière's disease, 58
- Meningitis
- allergic history, 51
 - associated symptoms, 51
 - candidate information, 50
 - causes, 53
 - contraindications, 52
 - differentials, 50
 - environmental risk factors, 51
 - examination, 51
 - family history, 51
 - functional status, 51
 - interview, starting, 51
 - management, 52
 - medication history, 51
 - opening, 51
 - past hospitalization and surgical history, 51
 - past medical history, 51
 - precipitating/aggravating factors, 51
 - present illness, history of, 51
 - relationships, 51
 - risk factors, 51
 - self-care and living condition, 51
 - social history, 51
 - symptoms, 53
 - systems review, 51
 - vaccine, 53
 - vital signs, 50–52
 - wrap-up, 52
- Menorrhagia, 325
- Menorrhagia, 325
- Mental status examination (MSE), 104–106
- Mesenteric infarction, *see* Abdominal pain
- Metastatic tumor lesions, 292
- Metered dose inhalers (MDIs), 165
- Methimazole, 400
- Migraine, *see* Headache
- Mini-mental status examination (MMSE), 106–107
- Modified SAD PERSONS scale, 99, 100, 102
- Mole
- associated symptoms, 434
 - clinical presentation, 433
 - differential diagnosis, 433
 - melanoma (*see* Melanoma)
 - patient history, 433–434
 - physical examination, 434–435
- Monoarthritis, 273
- Monosymptomatic enuresis, 382
- Mood, 70
- delirium, 103
 - dementia, 101
- Motor nerve, 42
- Murmurs, 116
- Murphy's sign, 183, 252, 254
- Muscle tone, 17
- Musculoskeletal system
- ankle, 320–322
 - ankylosing spondylitis, 288
 - cervical spine, 278–281
 - checklist, 277
 - elbow, 299–303
 - hip pain, 308–312
 - history, taking details of
 - adult female, 274
 - allergy, 274
 - chief complaint, 271
 - constitutional symptoms, 273
 - family and friend support, 274
 - functional status, 274
 - inflammatory, 273
 - life, disability, and adaptation, 273
 - mechanical, 273
 - medication, 274
 - noninflammatory, 273
 - older adults, 274
 - pain, 271
 - past hospitalization and surgical, 274
 - past medical, 274
 - patient interview, 271
 - pattern of joint involvement, 273
 - present illness, 271
 - relationships, 274
 - self-care and living condition, 274
 - seronegative, 273
 - seropositive, 273
 - social, 274
 - systems and extra-articular features, 273
 - teenage patient, 274
 - knee pain, 312–316
 - low back pain, 288
 - lumbar spine, 281–288
 - overview, 271, 272
 - physical examination, 274–277
 - shoulder pain, 290–299
 - wrist and hand, 303–307
- Mycoplasma pneumonia, 154
- Myocardial infarction (MI), 248
- N**
- National immunization program, 380, 386
- Neck pain, *see* Cervical pain
- Needle stick injury
- clinical presentation, 416
 - counseling, 418
 - determined risk, 417
 - differential diagnosis, 416
 - laboratory studies, 418
 - management of, 418
 - patient history, 417–418
 - postexposure prophylaxis, 418, 419
- Neer test, 294, 295
- Nerve and brain disorders, 235
- Nervous system, 13
- history, 13, 14
 - for adult female, 16
 - allergic history, 15
 - benign paroxysmal positional vertigo, 56–58
 - chief complaint, 14
 - constitutional symptoms, 15
 - family history, 15
 - frequent falls, 63–65
 - headache, 48–50
 - interview, starting, 14
 - medication history, 15
 - Ménière's disease, 58
 - meningitis, 50–53
 - pain questions, asking, 15
 - Parkinson's disease, 61, 62
 - past hospitalization and surgical history, 15
 - past medical history, 15
 - present illness, history of, 14, 15

- relationships, 15
 - seizures, 53–56
 - self-care and living condition, 15
 - social history, 15
 - support, 15
 - systems review, 15
 - for teenager, 15
 - vestibular neuronitis, 58
 - wrap-up, 16
 - physical examination, 16
 - Bell's palsy, 45–47
 - cerebellar syndromes, 31–35
 - checklist, 24
 - cranial nerves, 35–39, 41, 42
 - equipment, 16
 - exposure, 16
 - general, 16
 - grading power, 17, 20, 21
 - inspection, 16
 - interview, starting, 16
 - lower limbs, 24–27, 29–31
 - opening, 16
 - power, 17
 - pronator drift, 17
 - stroke/transient ischemic attack, 42–45
 - tone, 17
 - vitals, 16
 - wrap-up, 24
 - symptoms, 13
 - unresponsive patient, 59, 60
 - Neurovascular assessment, 275
 - Nixon's sign, 184
 - Nonmonosymptomatic enuresis, 382
 - Nystagmus, 34
- O**
- Objective structured clinical examination (OSCE), 1, 131
 - advantages, 1
 - books and course, 2
 - candidate information/doorway information, 3
 - consists of, 1
 - day of examination, 2, 3
 - document writing
 - admission orders, 11, 12
 - candidate information, 10
 - scenario, starting, 10, 11
 - exam security, 3
 - fail, 11
 - good interview, conduct, 5, 6
 - history taking, details of, 4
 - activities, 9
 - ADLs, 9
 - alcohol, 9
 - allergic history, 7
 - birth history, 7, 8
 - character, 6
 - constitutional symptoms, 7
 - course, 6
 - development history, 8
 - diet, 9
 - drugs, 9
 - duration, 6
 - education, 9
 - employment, 9
 - environment, 8
 - events associated, 6
 - family history, 7
 - foreign travel, 7
 - frequency, 6
 - home, 8
 - IADLs, 9
 - immunization, 8
 - medication history, 7
 - nutrition, 8
 - onset, 6
 - past psychiatry history, 7
 - personal history, 7
 - precipitating factors/aggravating factors, 6
 - quick recap, 6
 - relationships, 7
 - relevant associated symptoms, 6
 - relieving factors, 6
 - risk factors, 7
 - rule out, 6
 - self-care and living condition, 7
 - setting, 6
 - sexual activity, 9
 - social history, 7
 - suicide, 9
 - support, 7
 - systems review, 7
 - timings, 6
 - wrap up, 9
 - interview, 2, 4
 - navigating, 10
 - patient interaction, 4
 - patient rapport, building, 5
 - physical examination, tips for, 9, 10
 - plan, making, 3
 - preparation, 2
 - quick checklist, 3
 - registration and orientation, 3
 - stations, 2
 - study plan, 2
 - Obsessive compulsive disorder, 71, 82–84
 - Obstetrics
 - checklist
 - antenatal counseling, 341–343
 - breastfeeding counseling, 339–341
 - HRT counseling, 338, 339
 - OCP counseling, 337, 338
 - history, 323
 - abnormal vaginal bleeding, 326
 - allergic history, 327
 - bleeding after menopause, 352–354
 - chief complaint, 323
 - current pregnancy, 325
 - dysfunctional uterine bleeding, 350–352
 - dyspareunia, 326
 - family history, 327
 - first trimester vaginal bleeding, 344–346
 - genital ulcers, 326
 - history taking, 323, 324
 - interview, starting, 323
 - medication history, 326
 - opening, 323
 - past hospitalization, 326
 - past medical history, 326
 - pregnant patient, symptoms to ask, 325
 - present illness, history of, 324, 325
 - previous history, 325

Obstetrics (*cont.*)

- primary amenorrhea, 328–331
- secondary amenorrhea, 331–334
- self-care and living condition, 327
- sexual history, 326
- social history, 327
- support, 327
- surgical history, 327
- teenager, 327
- third trimester vaginal bleeding, 346, 347, 350
- vaginal discharge, 334–337
- wrap-up, 327
- objective structured clinical examination,
 - symptoms for, 323
- physical examination, 327
- Obturator's sign, 183, 184, 252
- Oculomotor nerve, 36
- Olfactory nerve, 35
- Oligomenorrhea, 325
- Optic nerve, 35
- Oral contraceptive pill (OCP) counseling, 337–338
- Organic disease, 72, 74
 - anxiety, 81
 - bipolar disorder, 80
 - conversion disorder, 90
 - delirium, 103
 - dementia, 101
 - drug seeker, 98
 - eating disorder, 96
 - generalized anxiety disorder, 86
 - post-traumatic stress disorder, 88
 - psychosis/schizophrenia, 93
 - somatization disorder, 91
 - suicide, 100
- Orthostatic hypotension, 446
- Osteoarthritis (OA), 300, 312
- Ottawa ankle rule, 320, 321
- Ottawa foot rule, 320, 322
- Oxygen therapy, 168

P

- Painful arc test, 294
- Palpable heart sounds, 115
- Palpation, 115, 252
- Palpitation
 - allergic history, 122
 - associated symptoms, 122
 - candidate information, 120, 122
 - cardiovascular examination, 123
 - chief complaint, 122
 - differentials, 120
 - family history, 122
 - general physical examination, 123
 - hospitalization history/emergency admission
 - history, 122
 - interview, starting, 122
 - life/disability and adaptation, 123
 - medication history, 122
 - neurology examination, 123
 - opening, 122
 - past medical history, 122
 - physical examination, 123
 - presenting illness, history of, 122
 - relationships, 122
 - respiratory system, 123

- self-care and living condition, 123
- social history, 122
- support, 123
- Pancreas, 259
- Pancreatitis, chronic, *see* Epigastric pain
- Panic disorder, 71, 84–86
- Paracetamol, 250
- Paraneoplastic syndrome, 175
- Parkinson's disease
 - gait problems in, 63
 - history and physical examination, 62
 - ADLs, 62
 - allergic history, 61
 - associated symptoms, 61
 - candidate information, 61
 - differential, 61
 - family history, 61
 - general appearance, 62
 - IADLs, 62
 - inspection, 62
 - interview, starting, 61
 - medication history, 61
 - opening, 61
 - past hospitalization and surgical history, 61
 - personal history, 61
 - present illness, history of, 61
 - relationships, 61
 - self-care and living condition, 61
 - social history, 61
 - speech, 62
 - support, 61
 - vital signs, 61
 - vitals, 62
 - wrap-up, 62
- Partial thromboplastin time (PTT), 422
- Patellar Ballottement test, 315
- Pectoralis major, sternal head of, 17
- Pediatrics
 - anaphylaxis, 366–367
 - anemia, 371–373
 - child abuse, 388–391
 - child swallowed A cleaning agent, 387–388
 - common symptoms, 355
 - diarrhea, 370–371
 - ear pain, 362–364
 - enuresis, 382–387
 - EpiPen, 366–367
 - febrile conversion, 360–361
 - fever, 358–360
 - history, 355
 - allergies, 357
 - BINDES, 357
 - birth, 357
 - chief complaint, 356
 - development history, 358
 - environment, 358
 - family, 358
 - HEEADDSS, 358
 - immunization, 357
 - medications, 357
 - nutrition, 357
 - past medical and surgical, 357
 - presenting illness, 356
 - review of systems, 356
 - school performance, 358
 - social, 358

- jaundice, 375–377
- limbing child, 391–392
- overview, 356
- rash, 364–366
- respiratory tract infection, 361–362
- short stature, 373–375
- vaccinations, 379–380
- vomiting, 367–370
- Pelvic abscess, 250
- Pendular knee jerk, 34
- Peptic ulcer disease, 190, 191
- Perforated peptic ulcer, *see* Epigastric pain
- Peripheral bruit, 116
- Peripheral edema, 116
- Peripheral pulses, 117
- Peroneus longus, 28
- Peyronie's disease, 235
- Phalen test, 306, 308
- Pheochromocytoma, 127
- Phobic disorder, 71
- Pinprick (spinothalamic) sensation, 21, 30, 39
- Pinprick sensation, 22, 30
- Pituitary tumor, 329, 332
- Placenta abruptio, 350
- Placenta previa, 347, 349, 350
- Plantar response, 29
- Plantarflexion of ankle, 27
- Pleural rub, 136
- Pneumonia
 - antibiotics, 151
 - associated symptoms, 149
 - atypical, 151–154
 - causes, 151
 - diagnosis, 150
 - differential diagnosis, 149
 - duration of therapy, 151
 - family support, 150
 - follow up, 151
 - history of present illness, 149
 - patient history, 149–150
 - physical findings, 150
 - precipitating/aggravating factors, 149
 - prevention, 151
 - relieving factor, 149
 - risk factors, 149
 - self-care and living condition, 150
 - treatment at home, 151
 - treatment at hospital, 151
- Pneumothorax, 168–170
- Polycystic ovarian syndrome (PCOS), 333
- Polymenorrhea, 325
- Popliteal artery pulse, 117
- Position sense, 21, 30
- Positive Trendelenburg's sign, 310
- Posterior drawer test, 315, 316
- Posterior sag sign, 315
- Posterior tibial artery, 117
- Postexposure prophylaxis (PEP), 419
- Postmenopausal bleeding, 326
- Postoperative fever
 - allergic history, 249
 - before surgery, 250
 - candidate information, 248, 250
 - delirium, 250
 - diagnoses, 249–250
- Post-traumatic stress disorder, 87–89
- Preoperative visit
 - allergic history, 248
 - candidate information, 245
 - family history, 248
 - follow-up, 248
 - general appearance, 248
 - interview, starting, 245
 - investigations, 248
 - medication history, 248
 - opening, 245
 - past hospitalization and surgical history, 247
 - past medical history, 247
 - physical examination, 248
 - preoperative assessment, 245
 - self-care and living condition, 248
 - social history, 248
 - surgery, questions, 246
 - wrap-up, 248
- Prescription drug use, 329, 332
- Previous preeclampsia, 326
- Profundus, 19
- Progesterone-only contraceptives, 55
- Pronator drift, 17, 18, 57
- Pronator syndrome, 303, 306
- Propylthiouracil (PTU), 400
- Prostate cancer, 222
- Prostate gland, 231
- Prothrombin time (PT), 422
- Proton-pump inhibitors (PPIs), 193
- Pseudoseizure, 56
- Psoas sign, 183, 252, 254
- Psoriasis, checklist for, 440
- Psychiatry, 67
 - depression, checklist, 76
 - history and counseling, 67–69
 - anxiety, 81, 82
 - bipolar disorder, 78–80
 - chief complaint, 69
 - conversion disorder, 89, 90
 - course, 69
 - delirium, 102–104
 - dementia, 100–102
 - depression, 73–76
 - drug seeker, 97–99
 - eating disorder, 94–97
 - duration, 69
 - empathy, 67
 - events associated, 69
 - generalized anxiety disorder, 86, 87
 - interview, starting, 69
 - mania, 77, 78
 - obsessive compulsive disorder, 82–84
 - onset, 69
 - opening, 69
 - panic disorder, 84–86
 - post-traumatic stress disorder, 87–89
 - precipitating factors/aggravating factors, 70
 - psychosis/schizophrenia, 92–94
 - relevant associated symptoms, 70
 - relieving factors, 70
 - risk of, 104
 - rule out, 70
 - setting, 69
 - somatization disorder, 90–92
 - stress, 69
 - suicide, 99, 100

- Psychiatry (*cont.*)
 support, 67
 timings, 69
 validation, 67, 69
 MMSE, 106, 107
 MSE, 104–106
 symptoms screening
 adult female, 73
 allergic history, 73
 anxiety, 71
 arousal, 72
 associated events, 71
 avoidance, 72
 constitutional symptoms, 72
 course, 70
 developmental history, 73
 duration, 70
 family history, 73
 mania, 70
 medication history, 73
 mood, 70
 onset, 70
 organic, 72
 past hospitalization and surgical
 history, 73
 past medical history, 72
 personal history, 73
 re-experience, 72
 relationships, 73
 review of, 72
 safety check, 72
 self-care and living condition, 73
 show empathy, 72
 social history, 73
 support, 73
 teenager, 73
 traumatic event, 71
 unable to function, 72
 wrap-up, 73
- Psychosis, 72, 74
 anxiety, 81
 delirium, 103
 dementia, 101
 drug seeker, 98
 eating disorder, 96
 generalized anxiety disorder, 86
 mania, 78
 suicide, 100
- Psychosis/schizophrenia
 anxiety screening, 93
 body language and clues, 92
 candidate information, 92
 checklist, 94, 95
 chief complaint, 94
 differential diagnosis, 92, 94
 disorganized behavior, 93
 disorganized speech, 93
 interview, starting, 92
 investigations, 94
 management, 93
 medical treatment, 93
 medication history, 93
 mood screening, 93
 negative symptoms, 93
 opening, 92
 organic, 93
 past medical history, 93
 past psychiatric history, 93
 present illness, history of, 92
 social history, 93
 support, 93
 wrap-up, 93
- Puberty, 329, 332
 Pulmonary embolism (PE), 411, 414
 Pursuit movements, 37
 Pyloric stenosis, 369
- Q**
 Quadriceps, 27
- R**
 Radial artery, 118
 Radial pulse, 117, 118
 Radial tunnel syndrome, 299
 Radiation, 329, 332
 Radioactive iodine, 401
 Rash, pediatrics, 364–366
 Rebound phenomenon, 34
 Rebound tenderness, 182, 252, 254
 Reflexes, 20, 21, 29, 275
 Relocation test, 297, 298
 Renal symptoms, 127
 Respiratory system
 asthma, 161–166
 atypical pneumonia, 151–154
 COPD, 166–168
 cough for 4 weeks, 157–159
 heart failure, 126
 hemoptysis, 159–161
 hemothorax, 170–171
 history, 131
 HIV, 154–157
 hypertension, 127
 lung cancer, 174–176
 lung nodule, 171–174
 physical examination
 checklist, 137
 chest, 133
 chest auscultation, 136
 chest expansion, 133
 diaphragm, 135, 136
 face, 133
 forced expiratory time, 137
 hands, 133
 neck, 133
 palpation, 133
 tactile fremitus, 134
 vital signs, 131, 132
 vocal fremitus, 137
 pneumonia, 148–151
 pneumothorax, 168–170
 shortness of breath, 146–148
 sore throat (*see* Sore throat)
 Respiratory tract infection, 361–362
 Rhonchi, 136
 Rinne's test, 40, 41
 Risperidone, 93
 Romberg's test, 26, 33, 41, 57
 Rotator cuff, 291, 292
 Rovsing's sign, 182, 183, 252, 254

S

- Saccades, 37
- Saccadic pursuits, 33–34
- Sacral edema, 117
- Scaphoid nonunion, 303
- Scarf test, 295, 296
- Schober's test, 284
- Sciatica, 282
- Seizures
 - history and counseling
 - allergic history, 54
 - candidate information, 53
 - chances of children, 55
 - contraceptives, 55
 - differentials, 53
 - driving, 55
 - epilepsy, 55
 - family history, 54
 - functional status, 54
 - interview, starting, 53
 - medication history, 54
 - opening, 54
 - past medical history, 54
 - pregnant, 55
 - present illness, history of, 54
 - relationships, 54
 - risk to fetus, 55
 - rule out differentials, 54
 - social history, 54
 - wrap-up, 54
 - and pseudoseizure, 56
 - syncope and, 56
- Sensation, 21
- Sensory test, 30
- Septic arthritis, 292
- Seventh nerve palsy, 39
- Sexually transmitted infections (STIs), 334
- Short stature, 373–375
- Shortness of breath
 - acute onset, 147
 - associated symptoms, 147
 - asthma, 161
 - with cough, 147
 - differential diagnosis, 146
 - functional status, 148
 - gradual onset, 147
 - history of present illness, 146
 - patient history, 147–148
 - precipitating/aggravating factors, 147
 - self-care and living condition, 148
 - support, 148
 - work conditions and financial status, 148
- Shoulder, 17
 - acromioclavicular joint, 295
 - anatomy, 290
 - anterior dislocation, 297
 - biceps, 295
 - checklist, 299
 - complete rotator cuff tear, 295
 - diagnosis, 298
 - differential diagnosis, 290
 - examination, 293
 - impingement, 294
 - infraspinatus and teres minor, 296
 - inspection, 293
 - instability, 291
 - joint palpation, 293
 - management, 299
 - movements, 290, 291
 - neurovascular assessment, 298
 - patient history, 292–293
 - physical findings, 293
 - range of motion, 293
 - subscapularis, 296
 - supraspinatus, 296
- Sixth nerve palsy, 46
- Skin cancer, *see* Melanoma
- Skin diseases
 - age and skin condition, 429, 431
 - chief complaint, 429
 - eczema (*see* Eczema flare-up)
 - examination, 433
 - gender and skin condition, 429, 431
 - lesion (*see* Face lesion)
 - moles (*see* Moles)
 - patient history, 429–433
 - pattern of history, 429, 430
 - signs and symptoms, 429
- Skin lesions, 429, 432
- Smoking, 248
- Somatization disorder, 90–92
- Sore throat
 - common cold
 - allergic history, 139
 - causes, 138
 - differential diagnosis, 138
 - family history, 139
 - follow-up, 140
 - functional status, 139–140
 - history of present illness, 138
 - medication history, 139
 - past hospitalization and surgical history, 139
 - past medical history, 139
 - precipitating/aggravating factors, 138
 - self-care and living condition, 139
 - social history, 139
 - symptoms, 139
 - vital signs, 138
 - warning signs, 140
 - glandular fever
 - associated symptoms, 141
 - differential diagnosis, 140
 - functional status, 141–142
 - history of present illness, 140
 - patient history, 141
 - precipitating factors or aggravating factors, 141
 - self-care and living condition, 141
 - influenza
 - associated symptoms, 143
 - differential diagnosis, 142
 - functional status, 143–144
 - history of present illness, 143
 - patient history, 143
 - precipitating or aggravating factors, 143
- Spatial ability, testing, 107
- Speeds test, 296
- Spinal Stenosis, 285
- Spleen palpation, 184, 185
- Spontaneous abortion, 344
- Spurling test, 280
- Spurling's sign, 280
- Square wave jerks, 33

- Squeeze test, 320, 321
Staphylococcus aureus, 439
 Status epilepticus, 60
 Sternocleidomastoid muscles, 42
 Straight Leg Raising (SLR), 285
 Stress incontinence, 221
 Stridor, 136
 Stroke/transient ischemic attack, 59
 - allergic history, 44
 - associated symptoms, 44
 - candidate information, 42
 - cerebellar examination, 45
 - cranial nerve examination, 45
 - differentials, 43
 - family history, 44
 - general appearance, 44
 - illness, history of, 44
 - inspection, 45
 - interview, starting, 43
 - medication history, 44
 - muscle power, 45
 - muscle tone, 45
 - opening, 43
 - past hospitalization and surgical history, 44
 - personal history, 44
 - reflexes, 45
 - relationships, 44
 - risk factors, 44
 - self-care and living condition, 44
 - sensory, 45
 - social history, 44
 - support, 44
 - vital signs, 43, 44
 - wrap-up, 45
 Subtotal thyroidectomy, 401
 Suicide, 99–100
 Sulcus sign test, 298, 299
 Supinator reflex, 18, 21
 Symmetrical large joint polyarthritis, 273
 Symmetrical small joints polyarthritis, 273
 Syncope, 56
 - activities of daily living, 454
 - clinical presentation, 453
 - diagnostic test, 455
 - differential diagnosis, 453
 - instrumental activities of daily living, 454
 - medications, 453
 - patient history, 453–454
 - physical examination, 455
- T**
- Tactile fremitus, 134
 Talk therapy, 78
 Temporal arteritis (TA), 50
 Tennis elbow, 302
 Tenofovir, 418
 Tensor fasciae latae, 27
 Teres major, 17
 Testicular pain, 222
 Testing eye movements, 37
 Third trimester vaginal bleeding
 - allergic history, 347
 - associated symptoms, 346
 - candidate information, 346, 347
 - chief complaint, 346
 - differentials, 346
 - family history, 347
 - interview, starting, 346
 - management, 347, 350
 - medication history, 347
 - obstetrics history, 346
 - opening, 346
 - past hospitalization, 347
 - past medical history, 347
 - placenta abruption, 350
 - placenta previa, 347, 350
 - possible complications, 350
 - risk factors, 350
 - social history, 347
 - surgical history, 347
 Thomas test, 311
 Thompson squeeze test, 319
 Thromboembolic disease, 326
 Thyroid disease, 329, 332
 Thyroid function test, 397, 400
 Tibialis posterior, 28
 Tinel's sign, 306, 307
 Tolerance, 98
 Tongue, 43
 Tracheal breath sounds, 136
 Trapeziometacarpal joint arthrosis, 303
 Trapezius, 42
 Traube's space, 184
 Trauma patient
 - checklist assessment, 266
 - candidate information, 266
 - vital signs, 269
 - primary survey for, 266–268
 - secondary survey for, 266, 269
 Trendelenburg sign, 310
 Triceps, 18, 19
 Triceps reflex, 21
Trichomonas vaginalis, 336
 Trichomoniasis, 336
 Trigeminal nerve, 38
 Triple therapy, 193
 Tumor spread disease, 175
 Tylenol, 98
 Type 1 diabetes, 402
- U**
- Unconjugated bilirubin, 376
 Unilateral cerebellar lesion, causes of, 32
 Unilateral palatal palsy, 42
 Upper gastrointestinal bleeding
 - associated symptoms, 190
 - case management, 191
 - constitutional symptoms, 190
 - differential diagnosis, 189
 - history of present illness, 189
 - interview, 189
 - liver problems, 190
 - patient history, 190
 - work conditions and financial status, 191
 Upper limbs, 16
 - checklist, 24
 - equipment, 16
 - exposure, 16
 - general physical examination, 16
 - grading power, 17, 20, 21

- inspection, 16
 - interview, starting, 16
 - opening, 16
 - physical examination, 25
 - power, 17
 - pronator drift, 17
 - tone, 17
 - vitals, 16
 - wrap-up, 24
 - Urea breath test, 193
 - Urethral discharge, 222
 - Urge incontinence, 221, 244
 - Urinary hesitancy
 - associated symptoms, 231
 - clinical investigations, 232
 - constitutional symptoms, 231
 - diagnosis, 232
 - differential diagnosis, 230
 - family and friends support, 231
 - history of present illness, 230
 - initial treatment, 232
 - patient history, 231
 - relationships, 231
 - risk factors, 232
 - self-care and living condition, 231
 - Urinary incontinence
 - clinical investigations, 243
 - differential diagnosis, 242
 - follow up, 244
 - history of present illness, 242
 - management plan, 244
 - patient counseling, 244
 - patient history, 243
 - physical examination, 243
 - risk factors, 243
 - Urinary tract infections (UTIs)
 - constitutional symptoms, 238
 - differential diagnosis, 238
 - family and friend support, 239
 - foreign travel, 239
 - history of present illness, 238
 - patient history, 239
 - physical examination, 239
 - preventive measures, 240
 - relationships, 239
 - risk factor, 239
 - self-care and living condition, 239
 - treatment, 239
 - Urination, increase frequency of, 240–242
 - Uterovaginal prolapse
 - clinical investigations, 243
 - differential diagnosis, 242
 - follow up, 244
 - history of present illness, 242
 - management plan, 244
 - patient counseling, 244
 - patient history, 243
 - physical examination, 243
 - risk factors, 243
- V**
- Vaccinations
 - benefits vs. risks, 380
 - BINDES, 380
 - communication barriers, 379
 - contraindications, 380
 - family history, 380
 - history of presenting illness, 379
 - immunization, 379
 - interview, 379
 - medications/allergic history/triggers, 380
 - national immunization program, 380
 - past medical and surgical history, 380
 - presenting complaint, 379
 - social history, 380
 - systems review, 379
 - Vaccine, 53
 - Vaginal bleeding, 344
 - Vaginal discharge, 222
 - allergic history, 336
 - candidate information, 334
 - causes of, 334, 335
 - diagnosed with trichomoniasis, 336, 337
 - differentials, 334
 - family history, 336
 - gynecological history, 335, 336
 - interview, starting, 334
 - investigations, 337
 - medication history, 336
 - opening, 334
 - past hospitalization, 336
 - past medical history, 336
 - physical examination, 336
 - present illness, history of, 334, 335
 - presenting complaint, 334
 - self-care and living condition, 336
 - social history, 336
 - support, 336
 - surgical history, 336
 - Vagus nerve, 42
 - Vesicoureteric reflux, 239
 - Vesicular breath sounds, 136
 - Vestibular neuronitis, 58
 - Vestibulocochlear nerve, 39
 - auditory testing, 40
 - vestibular testing, 41
 - Vestibulo-ocular reflex tests, 57
 - Vibration sensation, 21, 30
 - Violent patient checklist, 108
 - Visual field test, 36
 - Vocal fremitus, 137
 - Volume status examination, 129
 - Vomiting, 367–370
- W**
- Walking pneumonia, *see* Atypical pneumonia
 - Warfarin (Coumadin), 411
 - for blood clotting, 414
 - clinical presentation, 411
 - counseling, 414
 - factors affecting, 425–426
 - heparin and, 414
 - missed dosage, 414
 - patient history, 411–413
 - risk for stroke, 412
 - side effects, 412
 - Weber's test, 40, 41
 - Weight gain, 343
 - Wheeze action plan, 363
 - Wheezes, 136

-
- Wrist and hand, 19
 - checklist, 308
 - clinical investigations, 307
 - diagnosis, 307
 - differential diagnosis, 303, 306
 - examination, 305
 - history, 304–305
 - management, 307
 - neurovascular assessment, 306
 - palpation, 306
 - range of motion, 306
 - referral for surgery, 307
 - treatment, 307
 - Wrist extension, 19
 - Wrist flexion, 19
- Y**
- Yergason test, 295, 297