

Jeannette M. Potts

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## 11.1 The Importance of the Sexual History

The combination of cultural openness and the availability of treatments for sexual dysfunction has led to a permissive environment for these types of discussions.

The growing attitude of normalcy toward sexual concerns provides health-care professionals with a new and perhaps even better means to assess patient well-being, while prescribing more compelling interventions to improve patient health.

Sexual health in men is comprised of an intricate web of biochemical factors influenced by weight gain and insulin resistance; vascular and inflammatory changes; hormonal factors that can become altered by lifestyle, medications, or age; and psychosocial issues which include quality of partner relationship, job satisfaction, and stressful life events. I believe that an open query about a man's sex life provides more answers and valuable insights about his overall health and psychosocial well-being. By incorporating a simple screening phrase like "Now tell me about your sex life?" into the standard Review of Systems, the health-care provider can demonstrate the importance of this topic while creating a comfortable environment for further discussion.

Because medical education in sexual health in the United States and Canada is believed to be lacking, a summit was held to address the depth of the problem and formulate solutions. "Medical students and practicing physicians report being underprepared to adequately address their patients' sexual health needs" [1]. As many of us can attest, there was little instruction about this topic during medical school or residency training. Indeed, findings presented at the summit demonstrated high rates of inadequate sexual health training. Ageism may prevent us from acknowledging sexual function concerns in older patients. People are living longer,

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J.M. Potts, M.D. (✉)

Vista Urology and Pelvic Pain Partners, 2998 South Bascom Avenue,  
Suite 100, San Jose, CA 95124, USA

e-mail: [DrPotts@VistaUrology.com](mailto:DrPotts@VistaUrology.com)

well beyond their reproductive years. And although comorbidities that can impact sex increase with age, our growing elderly population is generally healthy and active. Research has shown that 40 % of men between 75 and 85 are sexually active [2]. Surveys of older married men demonstrated significant rise in the percentage of men enjoying an active sex life in this era as compared to their peers from 20 years ago: 68 % vs. 52 %. Among unmarried men, the increase was likewise impressive: 54 % vs. 30 % [3].

I would also add that some health-care providers erroneously assume that they would make patients uncomfortable, especially if they don't share the same age, gender, or sexual orientation of the patient. This in fact may reflect the discomfort of the health-care provider. Hopefully, through education and introspection, we can assuage this discomfort in our colleagues and improve care for our patients.

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## 11.2 Just Ask!

Consider this, if you are already conducting a thorough Review of Systems by asking about eating and exercise habits, sleep, micturition, and bowel habits, wouldn't it gracefully follow to ask about sexual well-being or concerns?

By revealing that he has noticed a decrease in sexual frequency and desire, one might find out that a healthy-appearing middle-aged man is having financial problems and consuming more alcohol. By sharing his recent discomfort after intercourse, a patient may reveal symptoms of pelvic floor neuromuscular dysfunction. Recent onset of sexual dysfunction in men may be considered a sentinel event for cardiovascular disease, diabetes, metabolic syndrome, hyperlipidemia, hyperthyroidism, depression, alcoholism, spousal abuse, domestic violence, etc. By opening a dialogue about sex with patients, health-care providers may be better able to implement earlier interventions for some conditions while providing more compelling education about diet, exercise, weight loss, stress management, individual psychotherapy, and couple's counseling.

Among men, sexual dysfunction has been shown to be associated with significantly lower health-related quality of life. In a study from Iran, two groups of subjects (mean age 49 years) were compared: 95 patients (69 % men) with sexual dysfunction versus 111 controls (69.30 % men). Men most frequently complained of premature ejaculation, while the most common complaint in women was decreased libido. The presence of sexual dysfunctions was associated with greater social dysfunction, sleep issues, mood, and overall quality of life [4].

Sexual desire within a relationship is a key determinant of the quality of the non-sexual aspects of the relationship. Both men and women reporting a discrepancy between their own and their partner's sexual desire have lower relationship satisfaction, and individuals in sexually inactive marriages report less marital happiness [5].

Obviously, as a quality of life parameter alone, sex is an extremely important health issue; but as a marker for serious chronic disease, sexual functioning should be in the forefront of our patient assessments.

### 11.3 Questionnaires and Surveys

Validated questionnaires and surveys are essential for research of sexual dysfunction, but they are unnecessary in purely clinical practice. In other words, just because you don't use the latest "approved" sex questionnaire in your office doesn't mean you can't conduct a review of systems that should include a question pertaining to sexual function. None of us have specially printed pamphlets to ask patients if they become short of breath with exertion or have regular bowel movements without bleeding.

On the other hand, a written questionnaire prior to office visits may provide some patients and their doctors with an "icebreaker" with which to introduce the topic during the face-to-face consultation. The SHIM is one of the most widely used and tested.

But again, be aware that although many questionnaires are adequate for their own purposes (research of a specific parameter), some investigators have found "a serious lack of standardized, internationally (culturally) acceptable questionnaires that are truly epidemiologically validated in general populations" [6]. Therefore, some questionnaires are not applicable to persons who are single, currently not sexually active, or involved in same-sex relationships.

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### 11.4 Recognizing His Concerns within the Context of His Relationship

Though I wish to emphasize the importance of evaluating and treating patients in the context of their relationship to their sexual partner, sexual health and well-being should be addressed in single patients and those not currently involved in a sexual relationship. Men's sense of desire, arousal, and attractiveness can continue to play an important part of their health and sense of well-being even when they choose not to be involved in a sexual relationship.

I frequently ask single patients if they have any worries or concerns that could arise if they were to contemplate a sexual relationship. Some patients identify themselves as asexual. Other patients may explain that their dysfunction or worries actually prevent them from seeking a relationship or socializing in general. If not for the direct query by the physician, these concerns and health issues would be often overlooked among single patients. This is also important among recently widowed or divorced men. I always include sexual functioning questions along with queries regarding grief and bereavement in these individuals.

For couples, things may not always be what they seem either. Some men may develop erectile dysfunction as a result of fear of "hurting" their postmenopausal wife who has recently complained of discomfort during intercourse. ("Doc, someone prescribed Viagra – it didn't help. I would've hurt her even more.") Some men lose their desire because they cannot achieve an erection. ("I just started avoiding sex, and I am just used to not feeling this way anymore.") Conversely, some women may misinterpret their partner's erectile dysfunction as their fault, believing it is a

result of their own lack of sexual attractiveness. (“He doesn’t think I am sexy anymore!”) This may lead to further performance anxiety and fuel a vicious cycle of miscommunication and sexual dysfunction.

Fostering healthy communication for men is one important way to address sexual concerns; this should include the sexual partner whenever possible.

Decline in sexual desire is observed in older patients and in those in longer relationships. But women also report lower desire when their partner experienced a sexual dysfunction [7]. Female partners of men with ED have also been shown to suffer a range of emotions from frustration to hopelessness, while others have (creatively) focused on nonsexual intimacy strategies [8].

Sexual dysfunction in one partner is also associated with sexual dysfunction in the other partner. Conversely, successful treatment of sexual dysfunction may improve sexual functioning parameters in the partner. Sexual life satisfaction, for example, improved in female partners of men receiving PDE-5 inhibitor treatment for erectile dysfunction [9]. In one study, the favorable effects of erectile dysfunction therapy in men were enhanced by the “couple global caring” parameter, again, emphasizing the importance of the relationship and a shared intention.

Investigators in Australia and New Zealand observe that while drugs like Viagra impact on both individuals and interpersonal relationships, the social and psychological aspects of treatment are absent from the majority of research on the drug. “The advent of Viagra has seen diminishing sexual capacities once linked with normal aging now viewed as dysfunctional, with possible alternative psychological factors largely ignored” [10].

In a similar study involving in-depth interviews, three issues and concerns for women regarding the use of Viagra by their male partners were identified: the neglect of women by those producing and prescribing Viagra, the embodied relationship (which encompasses physical and psychosocial effects of Viagra use), and broader sociocultural implications (e.g., the impact of “the culture of Viagra” on understandings about sexuality in older age and on ideas about male and female sexuality) [11].

Both studies remind us of the importance of, including the partner, both the discussion about the problem and the strategies to address mutual concerns.

Other sexual dysfunctions are also associated with distress for the partner. Issues of climax and orgasm affect both partners even when only one partner manifests the disorder. Premature ejaculation is associated with low sexual satisfaction in men and their partners [12]. This in turn, obviously, adversely affects the overall quality of the relationship.

It is important to remind couples that sex is an important part of communication. Although relationship dynamics change over time and partners may not have stereotypical roles, many of my patients have found the following written prescription helpful:

Women need to feel emotionally connected in order to be sexual... Men need sex in order to feel emotionally connected.

**Table 11.1** Interest in sexual activity

	Men	Women
Never	6.7 %	46.7 %
1/month	26.7	33.3
1/week	40.0	10.0
Daily	23.3	0

As described by Kalra [13]

A common complaint among heterosexual married men is the incompatibility of desired frequency of sex with their partner.

A study from India illustrates these differences [13]. Men and women were queried about their ideal frequency of sex, which varied greatly (see Table 11.1). Perhaps a little education can be provided to men about female health issues and vice versa. This can go a long way in sensitizing men about their spouse's needs, resulting in overall improvement of their relationship, which often translates into better sex for both.

Experts agree that a woman's motivation and ability to find and respond to sexual stimuli is largely influenced by her emotional intimacy with her partner [14]. Partners need to understand that a woman's emotional and relationship well-being contributes more to her sexual enjoyment than does her physiological response. Likewise, partners of men need to understand the need for physical sexual connectivity and how strongly this is linked to men's emotional well-being.

## 11.5 Opportunity and Libido

Sexual desire in men (and women) arises from their intrinsic hormonal, emotional, and biochemical milieu as well as extrinsic factors of sexual attraction and social opportunity.

Patients should be asked about opportunity, which may be limited due to shift work or adult children moving back home.

According to Dr. Berman of Berman Center for Sexual Health and other experts, couples should never allow more than two-week gaps in their sexual activity, for risk of creating an unhealthy pattern and decreasing emotional connectivity.

Risk factors for low libido have been linked to age; however, this may reflect increased prevalence of comorbid conditions and diminished opportunity.

In men, risks factors for diminished libido include alcohol and drug abuse, chronic illness such as COPD or renal failure, sleep apnea, cardiovascular disease, depression, diabetes, hyperlipidemia, hypertension, hypogonadism, hyperprolactinemia, neurological disease (multiple sclerosis), obesity, sedentary lifestyle, smoking, thyroid disease, surgery (GU or vascular), trauma, and medications [15].

Over the past decade, significant strides have been made in recognizing the adverse effects of obesity, diabetes, and sleep deprivation on testosterone levels. The metabolic syndrome is a risk factor for sexual dysfunction, but sexual

dysfunction has been found to be predictive of subsequent metabolic syndrome as well [16]. A separate discussion regarding metabolic syndrome is included as a separate chapter in this book.

Bereavements, economic problems, retirement, children leaving or returning home, divorce and personal illness, or illness of their partner or close relative may impact sexual functioning. For some older persons, their most significant obstacles to sexuality are their adult children. Cultural biases and ageism can prevent many mature adults from seeking or nurturing sexual relationships after death of a spouse or divorce, and children may be the most prejudiced or restrictive of their parents.

A change in a partner's sexual function, which may be diminished or enhanced by medication, may alter the dynamics and sexual functioning in a relationship.

Male self-esteem issues that can affect libido arise from stability in career or financial matters, as well as the respect and fulfillment derived from their vocations. Therefore, it is essential to address these issues as part of a sexual history.

Impaired sexual function is a common feature of depression as well as antidepressant therapy. Ironically, adverse effects of most commonly prescribed antidepressants such as serotonin reuptake inhibitors manifest as diminished libido, impaired arousal, and/or delayed or absent orgasm [17].

As discussed earlier, hormonal factors in men can occur with aging but are strongly linked to other conditions such as obesity and diabetes. In contrast to the decline in estrogen in women following menopause, testosterone levels in men do not change abruptly, but diminish gradually with age.

Thyroid dysfunction is associated with erectile dysfunction and low libido. Sexual dysfunction has been demonstrated as significantly more prevalent among men with either hypo- or hyperthyroidism when compared to age-matched controls [18]. Hypothyroidism is also associated with sleep apnea, which alone is also a risk factor for sexual dysfunction.

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## 11.6 Erectile Dysfunction

While there is certainly strong evidence correlating age and erectile dysfunction, the increasing prevalence of comorbidities over time, along with pharmacological therapies, may play a more significant role.

Aging alone is associated with compromised blood flow to the erectile tissue, endothelial dysfunction with decreased release and availability of nitric oxide (which relaxes the vascular tone), decreased smooth muscle cells, and increased collagen deposition, all of which are enhanced by androgen deficiency—also linked to aging [19]. However, among younger men, these phenomena can be frequently observed in association with obesity, hypertension, and diabetes.

Although erectile dysfunction is not the most common form of male sexual dysfunction, it is the most common sexual complaint prompting medical consultation. It is defined as the persistent inability to attain and maintain penile erection sufficient for sexual intercourse. Among elderly men, it is cited as the “main reason” for sexual inactivity.

As mentioned earlier, obesity, diabetes, and metabolic syndrome are strongly linked to sexual dysfunction in men.

*I believe the increasing prevalence of obesity and metabolic syndrome will have a greater impact on global sexual health than the apparent concern over the advancing age in the general population.*

## 11.7 Disorders of Climax

Although erectile dysfunction receives so much greater public and medical attention, disorders of ejaculation are far more prevalent than ED across all ages. According to one survey, nearly half of men reported an ejaculatory “disturbance” during the prior 4 weeks [20].

The ejaculatory process is mainly mediated by the autonomic nervous system and consists of two main phases: emission and expulsion. The organs involved in the emission phase comprise the epididymis, vas deferens, seminal vesicles, prostate gland, prostatic urethra, and bladder neck. The organs participating in the expulsion phase include the bladder neck and urethra, as well as the pelvic striated muscles [20]. Anatomical changes, neurological disorders, or functional impairment of these structures may cause ejaculatory dysfunction.

Ejaculatory dysfunctions include premature ejaculation (PE), delayed ejaculation, retrograde ejaculation, anorgasmia, and dysorgasmia (see Table 11.2 for definitions). Depending upon his or his partner’s perceptions, men may feel extremely dissatisfied with their ejaculatory function. However, what one man perceives as frustrating (e.g., delayed or retarded ejaculation), another may perceive with pride.

Some investigators have observed a relationship between hormonal levels and the spectrum of orgasmic disorders. For example, in an Italian cohort, men with most severe symptoms of PE had highest levels of testosterone and lowest levels of TSH and prolactin, while those with increasing delay in ejaculation up to anorgasmia had correspondingly lower testosterone levels and higher average prolactin and TSH levels [21]. Others believe there exists a potential genetic link for PE as seen in a Finnish study of twin pairs. Genetics was observed to be a consistent factor in 30 % of men with lifelong PE [22]. And still others would argue that some

**Table 11.2** Defining ejaculatory dysfunction

*Premature:* brief ejaculatory latency (usually <2 min), associated with feeling of lack of control and/or distress for the patient or his partner

*Delayed:* orgasm/ejaculation which does not occur in >20–30 min and causes distress to the man and/or his partner

*Anorgasmia:* inability to achieve an orgasm despite long and adequate sexual stimulation

*Retrograde:* ejaculation which “falls” back into the bladder rather than being expelled through the urethra due to anatomical or functional decrease in bladder neck tone

*Dry ejaculation:* climax without semen may be due to retrograde ejaculation or decreased semen production resulting from radiation therapy or medication, for example

*Dysorgasmia:* climax or ejaculation which are uncomfortable or painful

ejaculatory variations are not disorders at all. For example, some believe PE should not be considered a dysfunction, since upper mammalian species, including primates, ejaculate almost immediately on penetration of the vagina [23]. One can imagine the evolutionary advantage of being able to inseminate the female quickly. Perhaps increasing delay of ejaculation posed a risk to copulating couples, making them more vulnerable or less successful in achieving conception.

PE affects 4–39 % of men as a primary disorder. This range reflects the variation in definitions, regional and cultural differences in prevalence, as well as degree of patient bother [24]. Female partners of men with PE report significantly greater sexual problems, with reduced satisfaction, increased distress and interpersonal difficulty, and more orgasmic problems than partners of non-PE men [12].

Criteria have been published that define any ejaculation occurring in 1 min, 2 min, 3 min, or even 7 min from penetration, or 8–15 penile thrusts, as premature. Even more confusing is the historical perspective by Masters and Johnson, who suggested that a man has PE if he is unable to delay his ejaculation until his partner is sexually satisfied in at least 50 % of their sexual approaches [25]. (This definition certainly overestimates the number of women who are able to climax with vaginal penetration alone.) And yet another inadequate definition, in my opinion, is found in The European Association of Urology disorders of ejaculation guidelines, published in 2004, which defines PE as the inability to control ejaculation for a “sufficient” length of time before vaginal penetration.

Taking into account these criteria and the various ways men respond to PE, the International Society of Sexual Medicine, in 2009 [26], proposed this more meaningful and clinically useful definition:

...a male sexual dysfunction characterized by ejaculation which always or nearly always occurs prior to or within about 1 minute of vaginal penetration, and the inability to delay ejaculation on all or nearly all vaginal penetrations, and negative personal consequences, such as distress, bother, frustration and/or the avoidance of sexual intimacy.

The controversy about whether PE is behavioral or biomedical is reflected in the two differing approaches to therapy (i.e., behavioral or psychotherapy versus pharmacological therapy). Psychological causes include anxiety, novelty of partner or situation, and low frequency in sexual activity. Biological causes include endocrinopathy such as hyperthyroidism, substance abuse, opiate withdrawal, and perhaps UTI or prostatitis. Lifelong or primary PE may be due to certain physiological factors such as penile hypersensitivity, hyperexcitable ejaculatory reflex, hyperarousability, genetic predisposition, or dysfunction of the 5-hydroxytryptamine (5-HT) receptor [25].

Lifelong PE is best managed with pharmacotherapy [selective serotonin reuptake inhibitor (SSRI) and/or topical anesthetics]. According to investigators at the Brazilian Cochrane center, there is overall weak and inconsistent evidence regarding the effectiveness of psychological interventions for the treatment of PE, especially primary PE [20].

The management of acquired PE is etiology specific and may include erectile dysfunction pharmacotherapy, for example, in men with comorbid ED. Behavioral



therapy is indicated when psychogenic or relationship factors are present. Counseling combined with pharmacotherapy in an integrated treatment program may be helpful as an integrated PE management strategy.

Nonmedical therapies include start and stop methods as well as squeeze technique; however, long-term management of PE using these methods has not been observed in the majority of patients studied. For younger men, precoital masturbation has been helpful in diminishing penile sensitivity [26], but again, if this is confirmed to be lifelong PE, pharmacotherapy should be recommended.

In contrast to PE, primary lifelong delayed ejaculation is less common (estimated 4 % prevalence) and has not been well studied. As mentioned earlier, men with premature vs. delayed ejaculation may have hormonal profiles reflecting this spectrum. However, in one of very rare studies looking at delayed ejaculation, testosterone and prolactin levels were similar between 19 men with delayed ejaculation and 19 age-matched controls [27]. But a few significant differences were noted. Lifelong delayed ejaculation was associated with higher and idiosyncratic masturbatory activity. Men with lifelong delayed ejaculation were also more likely to have lower incidence of night emissions, infertility, longer ejaculation latency times, lower orgasmic and intercourse satisfaction domains of International Index of Erectile Function, as well as higher anxiety and depression scores [27].

Retrograde ejaculation is defined as semen entering the bladder during orgasm, instead of emerging through the meatus and out of the penis. Men with this condition report little or no semen even though they have reached sexual climax. This poses no medical problems except in younger men who wish to impregnate their partner. The condition, however, can cause some distress in any man and his partner.

Retrograde ejaculation may occur as an adverse effect of alpha-blocking drugs used in the treatment of BPH/LUTS and occurs more commonly with tamsulosin [28]. The phenomenon is reversible upon discontinuation of the drug; however, I have found that most patients can accept this side effect if they are provided with a detailed description of the anatomy along with thorough explanation of the mechanism which causes the semen to flow into the bladder rather than forward through the urethra. Understanding that the bladder neck relaxation achieved to relieve voiding symptoms is allowing for a path of less resistance at the time of ejaculation, assuages patients' fears, and extinguishes the misconception that semen is actually being blocked or "backed up." Transurethral resection of the prostate gland for BPH is associated with a >70 % incidence of retrograde ejaculation. And again, even though this poses no health risk to the patient, appropriate counseling and preparation are required prior to the procedure, as the absence of ejaculation during orgasm can be very distressing to the patient and his partner. Neurological conditions or neuropathies (e.g., diabetic neuropathy) can also lead to decreased tone of the bladder neck, facilitating retrograde ejaculation.

Some men notice decreased volumes of semen during ejaculation, but this may not be the result of retrograde ejaculation, but rather diminished semen production associated with age or use of 5-alpha-reductase inhibitors, which shrink the glandular component of the prostate. Many men also experience a decrease in semen

volume after radiation or brachytherapy of the prostate gland. It may diminish to completely dry orgasm, which often correlates to lowest PSA nadirs reached many months after treatment.

Delayed ejaculation, anejaculation, and/or anorgasmia may have a biogenic and/or psychogenic etiology. Men with age-related penile hypoanesthesia should be educated, reassured, and instructed in revised sexual techniques, which maximize arousal [29].

Because sexual function studies involve mostly heterosexual persons or activities, there may be some concern regarding interpretation within the context of homosexual relationships. Potential effects of sexual orientation on ejaculatory function, for example, have been overlooked in the literature. In preparation of the fifth edition of DSM, efforts were made to use universally suitable definitions of ejaculatory dysfunction. To that end, a recent study from Finland aimed to investigate effects of sexual orientation on premature and delayed ejaculation. When differences in frequencies and patterns of sexual activities were controlled for, there remained no significant effects of sexual orientation on ejaculatory dysfunction [30]. This suggests similar prevalence and concerns among same-sex couples and the importance of addressing sexual issues in all patients, regardless of gender or sexual orientation.

Dysorgasmia is a poorly understood condition, which is often misdiagnosed as prostatitis. Investigation of sexually active men with BPH, revealed discomfort associated with ejaculation [31]. While it is important to rule out an infection, one must be aware that men who experience pain during ejaculation are more likely to have a noninfectious cause for this symptom, such as pelvic floor myalgia or pelvic floor myofascial pain syndrome or pudendal neuralgia. In rare cases, this symptom is the manifestation of ejaculatory duct obstruction, requiring transrectal ultrasound confirmation and endoscopic intervention. Alpha-blocking agents have been shown to ameliorate symptoms of dysorgasmia.

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## 11.8 Evaluation

A thorough history obtained during a comfortable interview cannot be overemphasized. All facets of the patient's life should be considered for query: childhood, sexual awakening/awareness, sexual education and experience, stress and psychosocial issues, family dynamics, religion, relation(s), fidelity, and career and employment (see Table 11.3).

A complete physical examination is warranted and must include a more comprehensive examination of the genitalia. This includes a sensory exam of the lower abdomen and saddle area and by testing for anal wink and bulbocavernosa reflex. The pelvic floor either via the rectum should be palpated for masses, muscle spasm, myofascial trigger points, and laxity.

The penis should be examined for evidence of plaques due to Peyronie's disease, which causes curvature of the penis and is sometimes associated with painful erection. The meatus and shaft should be examined for signs of inflammation or trauma.

**Table 11.3** Managing sexual dysfunction in men

<i>Biopsychosocial assessment</i>
Partner status
Employment
Sexual experiences, history of abuse
Sexual stimulation, mental and physical arousal
Medical history, medications, drug/alcohol use
Exercise, smoking, and sleep
<i>Comprehensive physical evaluation</i>
Special attention to genital and pelvic exam
Vascular: BP, pulses, fundi, etc.
Neurosensory
<i>Understand psychosocial or contextual issues</i>
Body image and self-esteem
Financial issues and job stress
Inhibitions and anxieties, cultural/religious beliefs
Screen for depression

Testicles are examined for signs of atrophy or neoplasm. Large hydroceles or spermatoceles may pose a physical or aesthetic obstacle to intercourse.

Neurosensory and vascular assessment should be carried out, testing sensation, temperature, and pulses.

The prostate should be examined. Although it is rare, aggressive prostate cancers in younger men can manifest as erectile dysfunction without any other symptoms or cause. In one of my clinics, several years ago, a healthy 53-year-old man was referred to me because of a mildly elevated PSA level. As part of my routine history, I ask about sexual function and was surprised that this man had become impotent 4 years earlier and had never pursued further workup as he and his wife were not distressed by this. When I examined his prostate, I encountered a very bumpy piece of cement—prostate cancer, Gleason 10, which had already metastasized.

Laboratory tests to consider include hormonal levels: testosterone, LH, prolactin, and thyroid-stimulating hormone (TSH). As dictated by history and physical findings, patients may require additional testing, such as lipid profile, cardiac stress test, sleep lab studies, or imaging.

For a comprehensive summary of questionnaires and algorithms for evaluation and treatment, I would refer the reader to “Summary of the Recommendations on Sexual Dysfunctions in Men,” a consensus by Lue and colleagues, cited in the references.

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## 11.9 First-Line Therapy: Lifestyle Modifications

Obesity, sedentary lifestyle, and cigarette smoking are the most common lifestyle factors that cause or contribute to ED and/or decreased libido. These issues should be addressed as primary management strategies.

The heart-healthiest recommendations have consistently served as the safest and most potentially effective options in urology for benign prostatic hyperplasia, chronic nonbacterial prostatitis, interstitial cystitis, multiple urologic cancers, male infertility, *sexual dysfunction*, kidney stones, and Peyronie's disease [32, 33]. In other words, anything that is good for the heart (and the colon) is most probably good for sexual health (and everything else).

Dietary and pharmacological management of dyslipidemia should be among the first steps in managing sexual functioning in men. Statins, for example, have been shown to improve sexual function [34]. A single center prospective randomized placebo-controlled parallel-group trial was conducted. One hundred sixty male patients with ED and dyslipidemia were randomized in a one-to-one ratio to receive up to 1500 mg oral niacin daily or placebo for 12 weeks. Among patients with moderate to severe erectile dysfunction, niacin afforded improvements as measured by the erectile function of the International Index of Erectile Function and Sexual Health Inventory for Men [35]. Niacin alone may be helpful in improving both erectile functioning and lipid profiles in some men.

Along with diet and lipid profiles, exercise is positively correlated to sexual health. Regular aerobic exercise is associated with a significant risk reduction of future erectile dysfunction in men. While hormone replacement therapy in men has been linked to decreased visceral and central body fat [36], patients who engage in weight loss programs with vigorous exercise have been able to improve these parameters and increase their testosterone levels naturally [37].

Although I have had numerous long distance cyclist in my practice, only a few have had sexual complaints or chronic pelvic pain syndrome related to cycling. Through careful observation of their riding techniques and physical therapy, we have recommended appropriate bicycle seats and corrected riding style and seat positioning.

It is important to keep these parameters in mind as preventive measures for those patients about to embark in a new exercise or weight loss program. Similarly, when prescribing exercise to patients, counseling should include the importance of proper technique, proper footwear, and stretching.

I prescribe specialized PT for the management of men with CP/CPPS with or without dysorgasmia. Frequently, patients volunteer an improvement in the quality of their erections and increase in pleasure during climax after a period of PT and exercise. Anderson and colleagues have also observed significant improvement in sexual functioning after specialized PT and progressive relaxation sessions prescribed for the treatment of CP/CPPS [38].

Eliminating risk factors, such as smoking, is another valuable health intervention. A group of male smokers, irrespective of erectile dysfunction status, who were motivated to stop smoking ("quitters") were enrolled in an 8-week smoking cessation program involving a nicotine patch therapy and adjunctive counseling. Participants were assessed at baseline (while smoking regularly), at mid-treatment (while using a high-dose nicotine patch), and at a 4-week post-cessation follow-up. At each visit, penile plethysmography, sexual arousal indices, and self-reported sexual functioning were assessed. Despite this relatively short time interval, quitters

compared to relapsed smokers showed enhanced erectile tumescence responses and faster onset to reach maximum subjective sexual arousal [39]. These results may serve as a novel means to motivate men to quit smoking.

To me, sleep is an obvious correlate to sexual functioning and should be addressed anyway, as part of general health maintenance. In a compelling review, investigators addressed the interrelationships between testosterone, sexual function, and sleep, including sleep-disordered breathing in both sexes. Hormonal changes in testosterone were associated with sleep apnea and chronic sleep deprivation, with negative ramifications on sexual life [40].

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## 11.10 Prescribed Therapies for Sexual Dysfunction

Hypogonadism in men is associated with low sexual desire, erectile dysfunction, arousal disorders, and orgasmic/ejaculation disorders. Hormonal measures should be done to exclude deficiencies of testosterone in men. Replacement therapies should be carefully weighed against the individual's risk factors. Sex hormone replacement therapies remain controversial for both sexes; however, there is growing evidence showing overall health benefits of testosterone given to hypogonadal men, with minimal to no increased risk of prostate cancer [41]. However, high doses of testosterone can increase cardiovascular events, possibly due to polycythemic effects.

Individual and/or couples counseling should be encouraged for most patients as sexual dysfunction is rarely a purely physical phenomenon, and the consequences, regardless of cause, can be emotionally devastating for individuals and their partners. Even in cases that appear to be purely organic, such as ED after prostatectomy, psychological counseling is recommended while recovering sexual functioning.

Replacement or ablative therapies should be prescribed accordingly, for hypo- or hyperthyroidism, a not uncommon cause of sexual dysfunction.

Sildenafil citrate (Viagra) is a potent PDE 5 inhibitor. By inhibiting this enzyme, sildenafil citrate results in larger concentrations of cGMP and improved smooth muscle relaxation and erections provided that sexual stimulation occurs. Vardenafil's (Levitra) mechanism of action is similar. Some men appreciate fewer AEs with vardenafil; however, Viagra has continued to be the favorite among my patients until the arrival of tadalafil (Cialis). With its longer half-life, Cialis has afforded many patients with greater romantic and sexual spontaneity. Given the high prevalence of cardiac conditions in the aging man, one needs to be cautious when prescribing these medications. They are contraindicated in anyone taking nitrates or nitrate donor medications and are relatively contraindicated in patients with unstable angina pectoris, recent myocardial infarction, certain arrhythmias, and poorly controlled hypertension. In patients taking alpha-blockers, the addition of PDE5 inhibitor may cause postural hypotension.

Other ED treatments can be administered as injections. The most commonly utilized substances include prostaglandin E1 (PGE1), phenolamine, and papaverine. PGE1 and papaverine cause cavernous smooth muscle relaxation by elevation

of the intracellular concentration of the second messengers, cGMP and cyclic adenosine monophosphate. Phentolamine is an alpha-adrenergic antagonist. PGE1 is also available as an intraurethral administered pellet (medicated urethral system/suppository for erection, MUSE). Urethral and intracavernosal administration of vasoactive substances results in erection within several minutes, which may last 30 min to 2 h [15].

Adverse events from these therapies include priapism, variable degrees of pain with injection in about half of patients, and penile fibrosis after long-term use. MUSE has been associated with hypotension, syncope, urethral burning or pain, and vaginal irritation in the partner. Relative contraindications to injection therapy include men who have a history of priapism and those with bleeding disorders.

For men who are unable to take PDE5 inhibitors or have inadequate response to nonsurgical therapies, the vacuum constriction devices provide a relatively safe alternative and may help some patients to avoid or postpone surgical implantation of penile prosthetics. It may seem awkward or cumbersome for some patients and their partners, and couples need to be prepared for the less natural appearance of the penis, which may become cool and cyanotic. Maintenance of erection is facilitated by application of a rubber cuff applied around the penile base, which may cause some instability as the firmness of the penis will be distal to this ring [15].

For more details regarding treatment options, I strongly recommend the article, "Evaluation and Treatment of Erectile Dysfunction in the Aging Male: A mini-review," cited in the references.

Medications for PE include alpha-blockers and antidepressants. Adverse effects are important considerations for the use of these medications especially because efficacy in treatment of PE is best with consistent daily regimens. While on-demand therapy seems most appealing and minimizes adverse effects, most men would prefer daily treatment because of its affording sexual spontaneity. On the other hand, with regard to off-label use of antidepressants for PE, men may be uncomfortable with the stigma of an antidepressant prescription.

Based upon the observations of delayed orgasm or anorgasmia among patients treated with SSRIs, this group of antidepressants has been most frequently used for PE. Sertraline is the most commonly prescribed SSRI prescribed in the United States, both as daily or on-demand regimens. Side effects, however, include fatigue, yawning, mild nausea, loose stools, and perspiration [17]. Decreased libido and mild erectile dysfunction may occur with SSRIs as well. The most serious concern is increased suicide risk observed in depressed patients treated with SSRIs especially paroxetine.

Dapoxetine is a drug specifically developed for the on-demand treatment of PE, not currently licensed in the United States. It has been extensively evaluated in five randomized, placebo-controlled phase III clinical trials involving more than 6000 men with PE. This is the largest and most comprehensive clinical trial program to date for a drug therapy to treat PE. It is a short-acting SSRI designed to be taken as needed, 1–3 h before sexual intercourse, which is currently available in Europe [24]. As of 2015, it has not yet been approved by the FDA.

Treatment of PE with PDE5 inhibitors remains controversial although some have theorized that the decreased sexual latency period observed with this drug could facilitate immediate repeat intercourse of possibly increased duration, but this has never been studied. Because one-third of men with ED also have PE, the use of PDE5 inhibitors may be the treatment of choice, especially if the PE occurred secondarily to ED.

Desensitizing creams have also been shown to be effective in treating PE. Prilocaine-lidocaine may be administered as a cream or aerosol spray. There are local and rarer systemic adverse effects associated with this topical therapy. Desensitizing creams and sprays can cause side effects including hypoesthesia of the penile shaft and numbing of the vaginal vault of the partner, unless a condom is used [24].

In cases of delayed ejaculation, the use of bupropion-SR in a daily dosage of 150 mg provided statistically significant benefits to the patients: improvement in ejaculation control, improved orgasmic and intercourse satisfaction, and improved depression scores [27].

Management and therapies are summarized in Table 11.4.

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### 11.11 Depression and Therapy

Because depression and antidepressant use are so prevalent in the general population, it is important to bear in mind that untreated depression and antidepressant medications can both cause sexual dysfunction. The incidence of sexual dysfunction caused by antidepressants may be as high as 93 %; side effects from SSRIs occur in 67 % of patients, manifest as decreased desire, arousal difficulties (lack of erection), or inability to climax or ejaculate [17].

Because up to 40 % of patients complaining of sexual adverse effects were found to have had sexual dysfunction prior to initiating therapy, I strongly recommend assessing sexual functioning prior to prescribing antidepressants, particularly those which have greater risk such as SSRIs [17]. One must also bear in mind that antidepressant medication therapy is associated with a relatively high noncompliance rate (30 %), which may be due in part to the sexual side effects.

Management strategies for antidepressant-induced sexual dysfunction include investigating pre-tx function (which, again, is much better achieved by assessing at the time just prior to prescribing medication), investigating noncompliance, reassessment for comorbidities or other medications that may cause sexual dysfunction, and counseling about adaptation, which may help a small number of patients who can resume normal activity after a brief period of adjustment [17]. The majority of patients, however, will not be able to “adapt”; therefore, one might consider decreasing the dose or switching, for example, from sertraline to nefazodone. In one study, 67 % of men taking sertraline reported ejaculatory difficulties compared with 19 % of the nefazodone-treated group. In women, nefazodone was superior to sertraline with regard to the ability to achieve orgasm. Bupropion may also be an appropriate alternative. In another study, sexual dysfunction developed in 15 % of men taking

**Table 11.4** Management and treatment

<i>Clinical testing and labs</i>
Metabolic syndrome, diabetes, hypertension, etc.
Consider hormonal abnormalities
Testosterone, thyroid replacement
Rule out medication side effects esp. antihypertensives and antidepressants
Prescribe or modify drug regimens
Penile ultrasound and Doppler
<i>Lifestyle</i>
Diet and exercise
Weight loss
Smoking cessation
Sleep hygiene
Coordination of schedules and bedtime
<i>Integrative approaches</i>
Counseling or life coaching
Yoga
Specialized physical therapy
Marriage retreats (spiritual/religious)
<i>Prescribed therapies</i>
Low libido
Testosterone, bupropion
ED
Sildenafil, vardenafil, MUSE
Alprostadil injection, vacuum device
Premature ejaculation
Sertraline, PDE-5 inhibitor, topical anesthetics
Retrograde ejaculation
Adrenergic agonists
Delayed ejaculation/anorgasmia
Testosterone, bupropion
Dysorgasmia
Alpha-adrenergic blockers
Antibiotics, low-dose benzodiazepine
Specialized pelvic floor physiotherapy

bupropion as compared to 63 % taking sertraline. Bupropion is an important alternative for the treatment of depressed patients who are concerned about maintaining their sexual functioning.

Alternatively, patients may be prescribed bupropion in addition to the primary antidepressant to “reverse” the adverse effect. Some experts also debate the implementation of drug holidays, perhaps for weekends [17]. While this may be helpful in some patients with less severe depression or in those using drugs with shorter



half-life, caution is needed for possible drug withdrawal symptoms and perhaps lack of spontaneity with unreasonable time constraints imposed by the “holiday” schedule.

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## 11.12 Summary

While sexual dysfunction is classified into components of desire, arousal, and climax, treatments targeting one of these can improve other aspects and overall sexual function. Emotional and marital factors should not be discounted in male sexual health. The subject of sexual functioning should be a “natural” part of general health maintenance, and caregivers should strive to provide a comfortable environment in which to approach this topic.

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