



Cognitive Behavioral Therapy on the Basis of Urotherapy

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25.1 Introduction

The loss of urine during the day in children is a complex process. Children who wet themselves during the day have in almost every case a functional problem in the lower urinary tracts. Accurately mapping out and understanding the issues are essential to arriving at a correct diagnosis, which is critical to formulate an adequate treatment plan. The basic strategy for children with incontinence is urotherapy, that is a therapeutic treatment method. In addition to medical treatment, in the last decade, it has found itself in an important position in the range of treatment options for children with lower urinary tract dysfunctions. It is a treatment that uses techniques from cognitive behavioral therapy. Urotherapy appears to make a successful contribution to the improvement or disappearance of symptoms.

25.2 What Is Cognitive Behavioral Therapy?

25.2.1 Cognitive Therapy

Cognitive therapy is mainly based on the premise that what we think affects our emotions and what we choose to do or avoid. The therapy focuses on irrational, dysfunctional thoughts and beliefs. The aim of the therapy is to find alternative thoughts or beliefs that are more functional than the dysfunctional ones. At the same time one strives to have a good understanding of the experience someone is facing [1]. The therapy involves a series of techniques, such as “self-monitoring” (observation and

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recording), “activity planning” (organization of activities), and “labeling” (with the help of positive suggestive statements) and homework arrangements.

25.2.2 Behavioral Therapy

In behavioral therapy, the focus is on the behavior of the person. How a person acts determines to a large extent how a person feels. The therapy concentrates on observable behavior and the circumstances in which the behavior occurs. It focuses on changing observable behavior through various techniques, such as “classical conditioning” and “operant conditioning”, which basically mean learning through success, and can be achieved by using positive or negative reinforcement strategies. Baselineing and monitoring are also effective techniques used in cognitive behavioral therapy. Merely observing and recording actually have a therapeutic effect and reduce many symptoms just as they are observed [2].

Next, the therapist helps the patient react with more suitable behavior patterns in those circumstances. Various exercises and homework assignments are used to both identify the problematic behavior and invent and practice a new, more appropriate behavior to substitute instead.

25.2.2.1 A Good Combination

Cognitive therapy combined with behavioral therapy can influence a person’s mindset, interpretations, and/or actions. Sometimes the emphasis is on thinking, sometimes more on behavior or avoiding behaviors. In other cases, one works simultaneously with both aspects. Cognitive therapy techniques are used in the treatment of children with urinary problems. The goal of urotherapy is to regulate the patterns of bladder management and prevent all aspects of psychological and physical damage. Therefore, basic training always starts with explanation of bladder function and possible dysfunction. Therefore, basic training always starts with explanation of bladder functions and dysfunctions. Insight into the problem helps with further motivation for treatment. Urotherapy takes the overall process of potty training into account, from filling to emptying the bladder [3].

Urotherapy is described as a therapy that is designed for children with lower urinary tract syndrome (LUTS) and is aimed at improving bladder dysfunction [4]. In the standardization of terminology of lower urinary tracts in children, the International Children’s Continence Society (ICCS) defines urotherapy as a non-pharmacological, nonsurgical treatment of dysfunctions of lower urinary tracts.

The program is divided into standard therapy and specific interventions such as pelvic floor training, behavioral training, and biofeedback training [5, 6].

25.3 Assessment

Assessment is a very wide ranging term which will be common to a broad variety of different practitioners each having their own understanding, professional codes and practices and spectrum of investigations. Caregivers that offer urotherapy must have knowledge of the anatomy, physiology, and pathophysiology of the entire urogenital

system, including the lower and upper urinary tracts [7]. Additionally, they must understand all forms of functional incontinence and have insight into the psychological and behavioral influences of incontinence on children.

It is the task of the urotherapist to seek out the child's problem and to decide. Whether the whole spectrum or only part of urotherapy is needed for the individual bladder problem. The following elements should be identified before starting treatment:

1. Identify the subtype of incontinence, come to a diagnosis.
2. Is bladder training suitable for this problem?
3. Is the development of the child suitable to endure treatment.

It will be useful to look at each of the elements separately but it is important to note that these elements are interrelated.

1. Identify the Subtype of Incontinence

Voiding and defecation diary: Before treatment it is essential to look at defecation frequency for 1 week at home. Voiding diary with fluid intake, voiding frequency and voided volumes needs to be done for 2 days.

Voiding history: Through the voiding and defecation diary, micturition history and repeated uroflowmetry followed by ultrasound to measure residual urine, a complete picture is obtained of the urinary problem. After this, one should be able to come to a diagnosis. This urinary incontinence is a heterogeneous disease with different subtypes (defined by the ICCS). A proper diagnosis is important in order to start an adequate treatment. In addition, a distinction should be made between the different sub-types of incontinence. Possible diagnoses are overactive bladder (OAB) dysfunctional voiding (DV), voiding postponement (VP) and underactive bladder (UAB). An child with overactive bladder (OAB) requires a different focus of treatment than one with dysfunctional voiding.

2. Is Bladder Training Suitable for the Problem?

In the majority of incontinent children, no obvious reason for this incontinence can be found, and there is a considerable overlap between the different lower urinary tract conditions presenting with daytime incontinence. Non-pharmacological treatment options and the pharmacological therapy as well as the combined therapy are recommended. The majority of the children will require a combination of these treatment options to achieve continence during the day. A bladder training is a form of specific urotherapy, it is a combination of behavioral training, and biofeedback training.

A bladder training is being applied by a less invasive and a child-friendly approach.

Before starting a bladder training, anatomical and neurological causes of incontinence should be excluded.

Constipation and/or urinary tract infections must be identified and treated before a child is eligible for bladder training. It is advisable to analyze defecation issues according to the Bristol score list and the Rome IV criteria.

3. Is the development of the child suitable to endure treatment?

Assessing psychosocial history is important to judge that the child has the sufficient psychological ability and motivation to sustain the training before it begins.

Important events such as moving or the arrival of a little brother or sister may be reasons to postpone the start of treatment. Interactive problems within the family can also have a negative impact on treatment results. Additionally, psychological and psychiatric aspects play an important role in caring for children and adolescents with either nocturnal enuresis or urinary incontinence. Correct assessment is essential both from the point of view of the diagnosis and the point of view of treatment of interest. Behavioral and emotional disorders are seen more often in children with incontinence than anatomical or neurological causes and this comorbidity. Research shows that 20–30% of children with bed-wetting, 20–40% with urinary incontinence, and 30–50% with fecal incontinence meet the criteria of psychiatric disorders as classified in the ICD-10 and DSM-IV [8]. Because of the high prevalence of comorbidity, each child should be screened as a part of routine assessment. Questionnaires are effective screening tools for gathering information even though they offer no diagnosis. A broad and validated questionnaire is the Child Behavior Checklist (CBCL) [8–10].

25.4 Treatment

25.4.1 Standard Treatment

Standard treatment can be given to children over 6 years old. When the child is younger than 6 years, the clinician would give parents advice about sitting on the toilet, medications, urinary frequency, fluid intake, and constipation.

In addition to instruction on relaxation of the pelvic floor, urinary frequency, and drinking patterns, there must also be a change in behavior in which the child learns to consciously react to urges and wet incidents. Repetition and reinforcements are part of the therapy.

1. Constipation

When kids have constipation problems in addition to issues wetting the bed, it is advisable to treat this at the start of treatment. Constipation can cause voiding dysfunction or worse. The child receives advice to go to the toilet two to three times daily after meals to try to defecate. The child also gets an explanation about good pushing techniques during defecation [5]. The results are recorded, so that the Bristol score list can be a helpful tool for the child and parents. Simultaneously, eating and drinking patterns can be modified, and sometimes medication must be added for extended periods of time [11].

2. Urinary Tract Infections

Urinary tract infections must be treated, and eventually prophylaxis is administered to prevent recurrence of infection.

3. Psycho-Education

Educate the child about his or her disorder, and help to understand normal and abnormal functions of the bladder (Fig. 25.1). When parents and the child

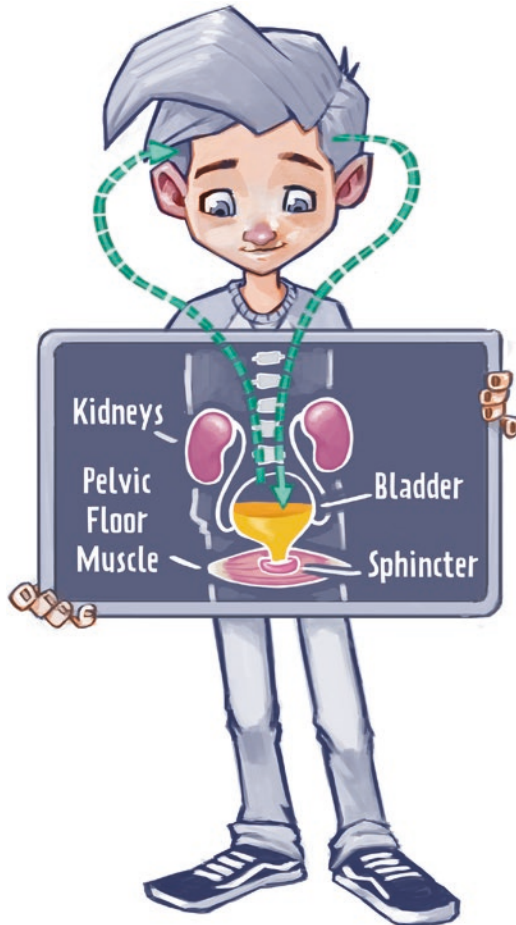


Fig. 25.1 The pee factory

understand why symptoms arise, they will exhibit a higher commitment and adherence to training. The following are the main components to be covered in explaining urotherapy to the child and parents [12–18]:

- Explain normal and abnormal function.
- Discuss survival strategies.
- Fluid intake.
- When and how often to urinate.
- Toilet position.
 - *Explain the normal and abnormal function of the bladder by using age-appropriate drawings or videos. A clear and child-oriented explanation will increase the child’s motivation to carry out the training instructions.*
 - *Discuss the survival strategies used by the child.* Many children have given up the courage to go to the toilet in time. They tend to pretend that wet pants do not bother them. Others have found a way to cope with unexpected

urges. For example, when a child “wobbles” or “squats” upon urges (“holding it” techniques), parents see this and want to send the child to the bathroom, but the child does not want to go because they unconsciously know they will be wet. When the feelings of urges are gone, the child does not go to the toilet. Children and parents learn to understand why the child cannot walk to the toilet on time of imperative urgency. Sometimes the bladder may also not be totally filled, and the child feels he or she can wait to go pee. If parents understand the abnormal functions of the bladder and know that it is not the fault of the child, then they will be able to respond appropriately and effectively apply the training rules.

- *Drink regularly with a recommended fluid intake of approximately 1.5 L per day.* (About 1200–1500 mL depending on child’s age).

Children with an overactive bladder have an instinctive, unconscious habit of not drinking a lot. They are most likely thinking, “If I don’t drink too much, I won’t have to pee as often and will be less wet.” As a result this creates a vicious circle, because the lack of fluid intake prevents the bladder from getting the chance to build volume. Additionally, highly concentrated urine has a stimulating effect and can cause irritation.

- *Teach when and how often one should urinate.*

When to Void

The urinary frequency is often different, because children have symptoms of an overactive bladder, a hypoactive bladder, or abnormal urination. They either are not sensitive to the urges of their bladder or go pee every time they feel the need, for fear of wetting their pants. Other children pay no attention to whether or not they should urinate (avoidance behavior). From a kind of survival mechanism, they have learned to ignore the sense of urgency, because they suffer too much from the issue. They need to learn to let go of this survival strategy and instead become aware again of this sense of urgency. Since many children urinate irregularly and do not know which bladder signals to react too, setting times to go pee is a good method to add to the other instructions.

How Often

On average the child should go to the toilet six to seven times, in accordance with regular daily routines such as school, breaks, eating, and sleeping times. The child will try to urinate with or without urge. If it doesn’t work to pee, that is alright. If the child has to pee at another time (not scheduled), naturally they should go then too. “Time voiding” leads to positive results because the child does not wet their pants as often. If it is difficult for the child to adhere to these set times, it is helpful to have them wear a special watch with a vibrating alarm to remind them to go to the toilet. These watches can be set at random times. By keeping a voiding diary as homework, the child gets insight into the frequency of urination and allows for normal urinary frequency to be learned.

- *Instructions of a relaxed toilet position.* Relaxation of the pelvic floor muscles and sphincter during urination is necessary to properly empty the bladder. Children are instructed to sit on the toilet in a relaxed manner by

supporting the feet on the floor or on a stool so that the thighs are horizontal with the lower legs and form an angle of 90° (see Fig. 25.2). Accidents are also recorded in the voiding diary to assess improvement after standard advice and to make children and parents aware of the frequency of these accidents.

- Tacking can also provide insight as to what times there is leakage, which can lead to discussions of specific interventions.

The basis of the training consists of three learning elements (Table 25.1), each with its own feedback mechanisms. It is essential that all three learning elements are



Fig. 25.2 Correct and wrong voiding posture

Table 25.1 Learning elements

Learning element	Goal	Tools	Child action
1. When do you pee	Adequate reactions to signals from bladder	- Voiding diary - Detection of underwear/pants control	- Record every urination accident
2. How should you pee	Relaxed peeing, empty the bladder	- Flowmeter - Specific physiotherapy,	- No straining - Relaxed stomach - Listen to the urine stream - Feet on a stool and thighs horizontal
3. How often do you pee	Learning about regular urination frequency	- Voiding diary - Timed voiding/peeing watch	- Record every urination

carried out simultaneously; otherwise optimum results will not be expected. Depending on the diagnosis, one or more of these elements will be emphasized. It is important that the children themselves can explain what they will be learning during training.

25.4.2 The First Learning Element: When Do You Urinate

Children learn to recognize the signal to urinate with a reaction of going to the toilet. The concentration and awareness of the bladder need to be relearned. This relearning process can be disrupted by infections, an overactive bladder, and thickened bladder walls or through abstaining urination in response to detector pants, which is a kind of bed-wetting alarm that can be worn during the day and responds immediately with a beeping sound when the child loses a drop of urine. In an outpatient setting, wearing a bed-wetting alarm is not recommended, because it is socially unacceptable if the child goes to school during the day. It is therefore advised to use the detector underwear only in a hospital setting.

A detector underwear can be replaced at home by underwear inspections (after every pee turn). This is also a good way to receive feedback on urination accidents. Wet underwear or pants are recorded in the voiding diary list as a small cloud or “W” for wet, and a dry part of the day deserves a small sun or “D” for dry. Notating the diary in this manner helps analyze the gradual process. For example, one could see an improvement from grade 3 to grade 1.

Keeping a voiding diary is more than just recording information. It is a feedback tool that makes the child aware of his or her peeing behavior while at the same time adds a competitive element. The facilitator will act as a coach and must incorporate a “race-type” feeling during the child’s treatment. In this way the child brings the avoiding and ignoring of urge signals to consciousness in order to reach the goal, which is good management and control of the bladder.

25.4.3 The Second Learning Element: How Should You Pee

The child will receive instructions on proper toilet, because good posture can best relax the pelvic region during urination (Fig. 25.2). Let the child listen to their stream of pee and explain to them that they can’t strain during urination and to keep the stomach relaxed. The child is instructed to let the urine fall or come out on its own.

Biofeedback of the Urination Pattern

In children with dysfunctional voiding and urge symptoms, the pelvic floor muscles are usually overactive. Biofeedback of the urination pattern is an essential learning element. Children learn to urinate with a relaxed pelvic floor. It certainly makes sense to explain toilet posture instructions repeatedly during training to achieve optimal relaxation of the pelvic muscles and prevent straining. Using a balloon as an example, it is possible to visualize the functions, straining and emptying of the bladder [13–15].

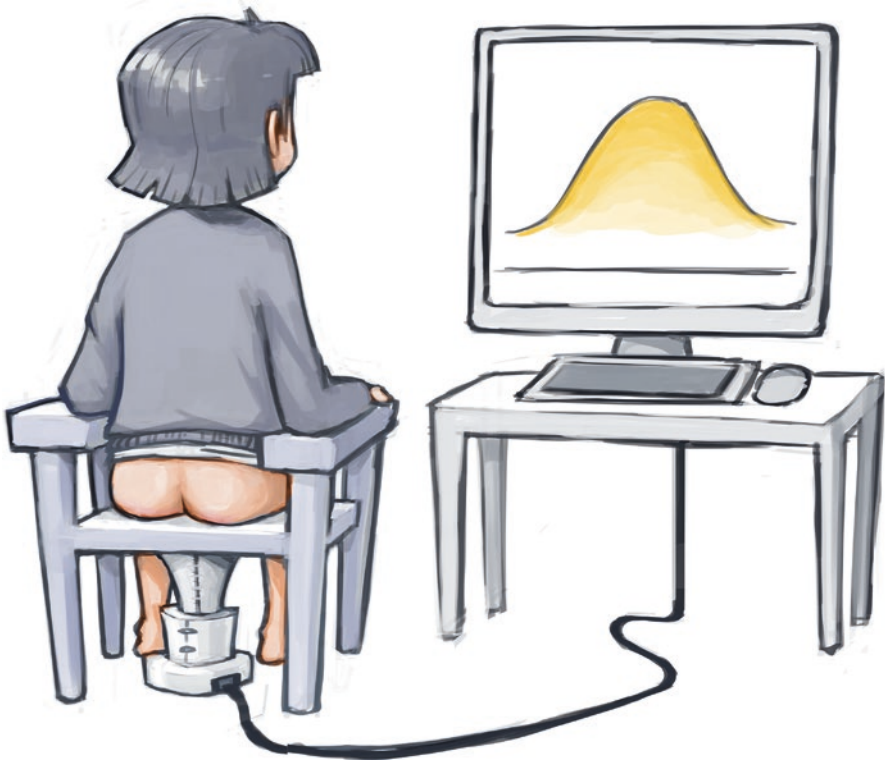


Fig. 25.3 Realtime uroflowmetry = biofeedback

The feedback from good urination can be given in two ways:

1. Flowmeter

The flowmeter (pee computer) (Fig. 25.3) measures the stream, speed, and volume during urination and can be used with or without the EMG (electromyogram). The flow curve can be used for diagnosis, and during training the curve is used as biofeedback. The child learns to recognize when they urinate incorrectly and will keep on trying (through a relaxed posture and possibly softly blowing or whistling) until they achieve a nice, continuous, bell-shaped curve (Fig. 25.4). Eventually the child learns to urinate with a relaxed pelvic floor and normal urine volume, and the straining and sloppy peeing is deliberately forgotten. Ultrasound can be used to check if the bladder is empty after urination. Using the EMG provides additional information on the use of the pelvic floor during urination. It should be noted that some EMGs give an unreliable picture, and analyzing of this biofeedback requires some experience [5].

2. Physiotherapy

When giving instructions about toilet posture and feedback through flowmetry yields insufficient results (or when a flow meter is not available), physiothera-

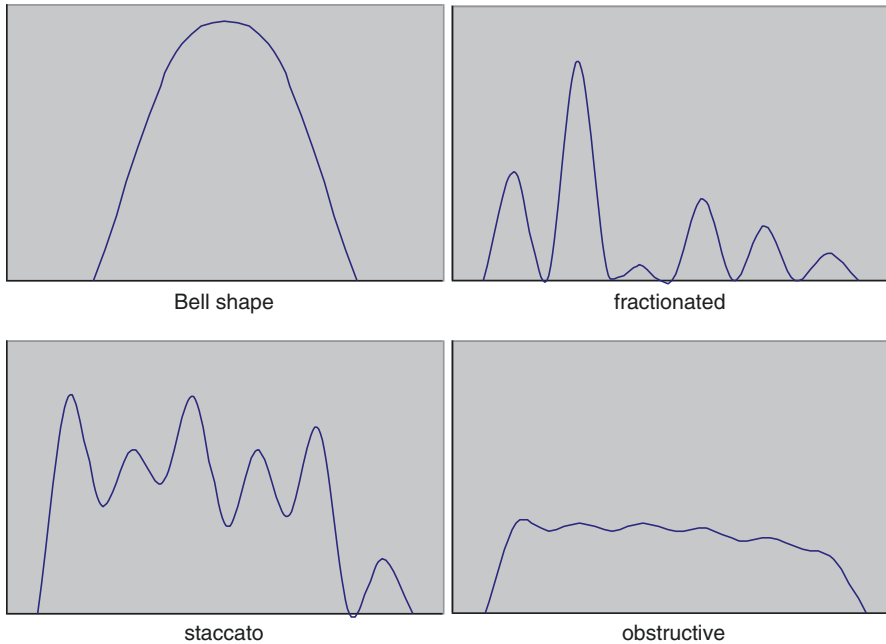


Fig. 25.4 Flowpatterns

peutic guidance can provide feedback on the manner of urination. The physiotherapist analyzes the movement patterns during micturition and looks at whether the child is physically capable of learning a new, correct motor program, that is, micturition with the pelvic floor relaxed and without abdominal straining. Experience shows that nearly all children over 6 years can learn how to use their pelvic floor muscles through exercise therapy. With older children, additional biofeedback can be attained using an anal pressure probe. The children receive low-frequency physiotherapy (one time per week/per 2 weeks) and have clear homework assignments, which they complete daily under the guidance of their parents [15, 16].

25.4.4 The Third Learning Element: How Often Should You Urinate

This third element is very essential to the training process. Children often have to learn a new micturition frequency. The frequency of urinations is made visible by having children keep voiding lists of every urination on the toilet and every time they wet their pants so that they become aware of the urinary frequency and wet accidents. Achieving good results gives the child motivation to continue. Depending on the form of functional incontinence, the child must learn to urinate more or less often. A normal urination frequency at a fluid intake of 1.5 L per day should be on average six to seven times. The micturition diary should serve not only as a

recording tool but also as immediate feedback for the child to see the results they have achieved so far. After about 3 weeks, results should show that a regular urination pattern is forming. The list can then be gradually reduced until the child can go to the bathroom six to seven times a day without using it. If the list is not being completed or no results are being achieved, training no longer makes sense, and the child should follow further consideration.

25.4.5 Timed Voiding

If children have the tendency to hold their pee endlessly, like with children who have hypoactive bladders or dysfunctional voiding, then an initially fixed time frame for urination is an important tool. These children need to learn to urinate when it's time to do so and not when they sense urgency. In this way, the child will not wait until the bladder is too full but will attempt to pee with a more relaxed pelvic floor. Toilet instructions should also be given so that the child won't strain just to produce urine. A watch can help to remind the child to go to the toilet. Some children don't get the feeling of urgency back and will need to urinate at set times for an extended period of time.

25.4.6 Small Bladder Volume

Children with extremely small bladder volume will have trouble holding their pee endlessly. They urinate very often high voiding frequency but it can be helpful to become dry for a period. When the child is confident that he or she can be dry, they then begin the second stage, which is training to increase bladder volume. The child is instructed to hold their pee as long as they can once a day and once a week after holding it for the maximum possible time, to measure bladder volume by capturing the urine. By making the result visible (recording the measurement and converting it into graphics), the child is motivated to keep practicing. With bladder volume build-up training, it is imperative to drink enough. The experience teaches children with overactive bladders that 1.5 L of fluid intake per day is an enormous quantity (they have usually become accustomed to not drinking a lot). In this case it can be chosen to increase the number of drinking cups (e.g., one additional cup every week). Many children will also be treated with anticholinergics in order to achieve the maximum effect of urotherapy.

25.5 Intensive Therapy: Group Training

Group training is for children who have the most persistent form of urinary incontinence and for whom outpatient training and drug treatments had no effect. The learning process includes the same three learning elements but is more intensive, and observation and feedback are given several times a day so that a change in behavioral response to pressure, urinary frequency, and method of urination is taught. This should ultimately lead to continence. Because of the intensive approach

and commitment, there is a greater chance of success [12–14, 19, 20]. It's important that the children are screened early to determine whether or not they can handle the learning process. Usually two till four children are being trained at the same time because of the solidarity-enhancing effect. In the beginning the children are helped and instructed by the therapist a lot. In the course of time, they have to try to do it by themselves more and more, so that when they are at home they can handle training instructions independently. In the clinical treatment course, a follow-up period of regular telephone contact is maintained between the child and the permanent trainer. The follow-up period is as important as the treatment period. During this period the child and parents are still being guided, while training is reduced slowly.

25.6 Rewards and Support

Finally, children do not need to be rewarded with gifts for performing the required tasks. Instead the reward lies in the confirmation that they have done well or not done well, to which they have the chance to do it better. It is necessary that the doctor and parents fully support the child. Through encouragement and positive assessment of the results, the child remains motivated to persevere. It's just like practicing sports, where you also need a coach to motivate you to keep going. It is important for parents to make clear that results can decline during exciting times like in a movie, new school, or birthdays. When parents and children know what to do in these situations, like tightening up training rules or taking a "training vacation" for a few days, it prevents a negative spiral in the sense of "see, it's not working."

25.7 Ending the Therapy

Urotherapy can be tried for an episode of 3 months. During this period, the child needs to be controlled regularly by the urotherapist. Weekly follow-up could be done by telephone, chat, or email. Counseling is a part of this follow-up, results should be evaluated, and instructions are repeated. Finally feedback takes place on the outpatient clinic. At these visits, uroflowmetry with ultrasound residual urine assessment is done. Training results can be assessed on the basis of the following ICCS criteria:

- No improvement (0–49% reduction of symptoms)
- Partial response (50–99% reduction of symptoms)
- Good response (100% improvement or first symptom occurs less than 1 time per month)

The success of treatment is not only dependent on the above criteria. Treatment success is determined especially by the extent that the child and parents are satisfied with the result. Treatment and cure are not synonymous. When urotherapy fails, it is important for the therapist to identify the cause or consult with the referring physician. It may be that the child is still too immature to complete the training.

Sometimes, there needs to be more psychological support. It is also possible that an underlying medical issue is the cause of the inability to maintain instructions [21].

25.8 The Role of the Therapist

The first step in any diagnostic and therapeutic process is to create a good relationship between the child and his or her parents. One should enquire and openly discuss all relevant facts, signs, and symptoms as well as subjective meanings and connotations. Next, the provision of information is essential. Parents as well as children need to understand what may be responsible for the bed-wetting. This should be provided in words and concepts that a child can absorb and in a format that is attractive. Increasing motivation and alleviation of stress and guilty feelings are all part of the dissemination of knowledge process. Counseling is already part of the treatment process, which has been defined as the provision of assistance and guidance in resolving personal, social, or psychological difficulties. Sometimes, it can be helpful to enhance the verbal counseling by other techniques, such as “demonstration” and “coaching.” Other techniques might include “modeling” and “role-playing.” The learning effect is much greater in these interactive forms of teaching than in solely verbal counseling.

25.9 The Role of the Parents

The success of the training and the proper execution of the instructions are partly dependent on the coach-like role of the urotherapist and the parents. The parents need to be explained what is incorporated in the coaching role. For parents of children with long-standing incontinence, this is not always easy. Parents generally have tried many options before they report to a pediatrician or specialist. Often they will do anything to get the child to stay dry. Some parents have dealt with this topic for years with their child. During the training the goal is for children to begin to sense themselves when they need to go, and with a little help from their surroundings, take the initiative to go to the toilet. The urotherapist can play a supporting role by providing parents explanations on how they should react to the urinary behavior and training efforts of the child. In this training the child is instructed to have the same type of commitment as when winning a contest. The contest “to keep the pants dry” is the ultimate end goal. The parents, just like with regular sports, must take on the role of the supporter by giving encouragement and feedback to the child every day. Children will be more committed and keep training for longer with a good support system.

In the training children have a degree of responsibility, but they cannot do it alone. Especially younger children, children with anxiety, and children with behavioral problems such as ADHD or ADD need support from parents [10]. Parents may need help when explained which comments work positively and which reactions stimulate performance anxiety. Parents should be warned that training takes a lot of time and effort, and it will affect daily routines. By comparing the training to a professional sport, where even participants in the Olympic Games have a coach,

facilitators, and supporters to achieve the best results, the child and parents can better understand the level of commitment that is expected to be maintained during the entire training program for “the bladder to become the boss.”

25.10 Results

A systematic review has shown that virtually no reliable studies exist concerning the best method of treatment of children with OAB [17]. The WHO-ICI refers to diverse studies about different forms of urotherapy [3]. These studies show that training produces very different positive outcomes. There are also many different program descriptions. Various combinations of cognitive training, biofeedback, central inhibition training, physical therapy, and fixed urination times are not supported by pharmacotherapy. Scientific evidence about the effectiveness of biofeedback in comparison with pharmacotherapy or placebo treatment is lacking almost entirely. The only randomized study found no difference in results between monotherapy with oxybutynin and biofeedback [14].

There are few controlled studies in the area of dysfunctional voiding (DV). A randomized prospective study shows that cognitive outpatient training for DV in 144 children has a success rate of 55%. Awareness of the problem is an important part of success [13]. Combined cognitive and biofeedback training in the clinical setting (in a retrospective study) saw this percentage rise to 68%, and in which children over 8 years old did significantly better [14]. Another prospective study examined the effect of both outpatient and inpatient bladder training in 60 children with urge incontinence and DV. The study revealed the same results. Sixty-four percent showed better or good results due to outpatient or inpatient urotherapy. Older children had better results than children under 8 years old [22]. A recent study to the effect of an inpatient cognitive and biofeedback training program for children with overactive bladder (OAB) after failed earlier treatment found a higher age during clinical training as a predictor for good training outcome [20].

There are a number of published, uncontrolled studies which report success rates of over 90% [19, 23]. The gold standard approach (according to WHO-ICI) is a combination of instruction, biofeedback, and physical therapy combined with pharmacological treatment of constipation and infections.

25.11 Drawbacks

It is the main task of the therapist to make a clear distinction between the different types of functional incontinence. An overactive bladder (OAB) requires a different focus in urotherapy than a child with dysfunctional voiding. A child with the DV generally recognizes urges but is used to continuously tightening the pelvic floor muscles and is not able to relax sufficiently during micturition. In this urotherapy the emphasis will be on timely visits to the toilet to prevent over-contraction of the

pelvic floor and makes relaxation more feasible. Moreover, this child will need to unlearn straining during urination with help from good toilet posture and biofeedback, while children with OAB must learn to suppress urges and assess when they need to go to the toilet before they lose urine.

The most difficult is the combination of a functional problem with toilet avoidance behavior. Even though the child appears cooperative, avoidance behavior can hinder the commitment needed to achieve good results.

Children who are gifted generally understand the instructions but are not accustomed to putting in much effort. Other skills are easy for them, and in order to learn this new skill, they must put in more than normal effort. Children who alongside incontinence issues also have behavioral problems such as ADHD or PDD-NOS will also have a lot of trouble putting in the necessary commitment. They find it difficult to keep up with all the instructions and particularly the concentration required to learn a new skill. If the symptoms do not improve through urotherapy, it is sometimes difficult to distinguish whether the cause of failure in treatment should be sought in the medical or behavioral problems of the child. It is important to make a clear distinction between the main problem and side issues. The correct exclusion of anatomical issues is the only fair way to say that the cause lies in behavioral aspects [10].

25.12 Intermittent Self-Catheterization

Children with an underactive bladder can have such an over-distended bladder that spontaneously urinating without straining is no longer possible. Even training cannot solve the problem of incomplete bladder emptying and incontinence overflow. The bladder needs to be emptied a few times a day with the aid of a catheter. This can be temporary, because through regularly emptying the bladder completely, the bladder is less overstretched and able to pull together again. Children of 6 years old can learn how to self-catheterize themselves well. This is recommended because self-catheterization is less painful and makes the child less dependent. Guidance in this process is very important to let the treatment integrate well into daily life. Afterwards training of urinary patterns with relaxed pelvic muscles will remain necessary [4, 5].

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