

D-A-CH Vereinigung der Urotherapie e. V. (publisher)



# Urotherapeutic guideline Urotherapy before and after radical prostatectomy for non-invasive prostate cancer

2024

including recommendations and questionnaires

## Urotherapeutic guideline

## Urotherapy before and after radical prostatectomy for non-invasive prostate cancer

2024

issued by

**D-A-CH Vereinigung der Urotherapie e. V.** 

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January 2024

## Gender declaration

In principle, the guideline includes all genders, even if the terminology does not address this in detail.

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The citation method is based on the Oxford system.

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## I. Foreword

Radical prostatectomy is considered the treatment of choice for localized prostate cancer. In surgical radical prostatectomy, the prostate is completely removed. In addition to radiotherapy, it is often used for localized prostate cancer. Nevertheless, it can be associated with undesirable consequences such as urinary incontinence and erectile dysfunction. Like other cancers, prostate cancer must also be regarded as a chronic health disorder and therefore has a considerable impact on health-related quality of life (HRQL). In addition to dealing with the cancer diagnosis itself, the undesirable consequences of the operation have an impact on HRQL. The expertise of various professional groups and disciplines flows into the support and therapy of the affected men and their relatives, both in terms of physical and psychological well-being. The quality of the cooperation depends, among other things, on whether there are agreements in terms of content, structure, and organization.

The guideline is intended as a recommendation for urotherapists, nursing staff, physiotherapists, and doctors involved in promoting continence in patients before and after a radical prostatectomy.

This is an initial version, based on the S2k level of the AWMF, which was developed by an initiative of urotherapists with different basic professions as part of a working group.

Key recommendations are formulated in this guideline. Information on formal evidence has been omitted. The key recommendations are divided into 3 levels:

- strong recommendations (should or should not)
- recommendations (should or should not)
- recommendation open (may be considered)

The key recommendations were developed on the basis of systematic literature searches in the following databases: Cochrane library, PubMed, Google scholar, Livivo (Central Library of Medicine).

The working group of urotherapists, supported by the D-A-CH Vereinigung der Urotherapie e. V., has set itself the goal of jointly promoting and supporting the development and updating as well as the use of scientifically based and practicable guidelines relating to urotherapeutic treatment options with the guideline program conservative therapies before and after radical prostatectomy. This program is based on the medical-scientific findings of the professional association and the consensus of medical experts, users and those affected, as well as on the set of rules for the development of guidelines. In order to reflect the current state of medical knowledge and to take medical progress into account, this guideline is regularly reviewed and updated (at the discretion of the D-A-CH Association of Urotherapy e. V.). The application of the AWMF (Association of the Scientific Medical Societies in Germany) guidelines should form the basis for the development of a highquality guideline. As this guideline is an important instrument for quality assurance and quality management in therapy before and after radical prostatectomy, it should be incorporated into everyday care in a targeted and sustainable manner. Active implementation measures and evaluation programs are therefore an important part of promoting the guideline program. The aim of the program is to create professionally and financially secure conditions for the development and provision of higher quality guidance in Germany, Austria and Switzerland in the medium term. This guideline not only serves the structured transfer of knowledge, but can also support urotherapeutic measures in shaping the structure of the healthcare system with the promotion of urinary continence and thus find its place in it.

## **II. Scope and purpose**

Objectives and questions

The guideline on conservative forms of therapy before and after radical prostatectomy, taking into account localized prostate cancer, is an interdisciplinary and consensus-based instrument for guiding clinical management after the diagnosis has been confirmed and for improving the therapeutic course of prostate cancer. Doctors, nurses and therapists should be supported by the guideline in deciding on therapeutic measures. The guideline is intended to help ensure appropriate, individualized healthcare before and after surgery. It is still the task of the guideline to offer urotherapists, nursing staff, physiotherapists and doctors evidence-based measures in the support of men before and after radical prostatectomy. This also applies in particular to the information, advice, guidance and training provided by specialized staff, which forms the basis of urotherapeutic care. In addition to contributing to appropriate healthcare, the guideline is also intended to provide the basis for individually tailored, high-quality therapy. The aim is to promote and restore urinary continence in patients who have undergone radical prostatectomy at an early stage and thus have a positive impact on their quality of life. After promoting urinary continence, this goal also applies to postoperative erectile dysfunction. The implementation of guideline-based treatments is intended to prevent or minimize the undesirable consequences of surgical treatment of prostate cancer.

The following recommendations are aimed at urotherapists and all professional groups involved in rehabilitation in the context of radical prostatectomy. Other addressees of this guideline are higher-level organizations (e.g. health insurance funds and medical self-administration institutions) and the interested professional public.

## III. Definitions: Prostate cancer, incontinence, erectile dysfunction, urotherapy

#### **III.1** Prostate cancer

Prostate cancer is a malignant tumour and the most common cancer in Germany and the third most common cause of cancer death in men. Approximately 65,000 new cases are diagnosed each year. The risk of developing the disease increases with age. The disease occurs less frequently before the age of 50. The cancer can occur in various areas of the prostate (Lorch/Alberts 2015; Oncology Guidelines Programme 2021; Cancer Information Service (KID)/German Cancer Research Centre (DKFZ) 2020 & 2021). The most common form is a cancer originating from glandular epithelia (adenocarcinoma). Sarcomas are rarely detected. The tumour develops completely independently of - but often simultaneously with - benign prostatic hyperplasia (Gasser 2015, p. 110).

A distinction is made between 3 tumour stages: localised, locally advanced and metastatic advanced prostate carcinoma (Oncology 2021 guideline programme).

Studies have not clearly shown that inflammation of the prostate (prostatitis) is the cause of this cancer. However, there were indications that could be interpreted as a link between chronic inflammation of the prostate and the development of this type of cancer.

Initially there are usually no symptoms. Prostate cancer becomes clinically manifest through its tumour growth, which impedes drainage, or rarely through metastatic pain (lumbago, sciatica) as the first symptom of the disease (Gasser 2015, p. 110).

The exact aetiology of prostate cancer is not known (Graefen 2014, p. 218).

Men should be made aware that age is the most important risk factor for the occurrence of prostate cancer (German Cancer Society 2022). Genetic factors also play a role in the development of prostate cancer. 10 to 15 % of all prostate cancers are hereditary (genetic) (Graefen 2014, p. 218).

There are a number of indications that genetic factors, environmental influences and diet play a significant role in the development of prostate cancer. Various studies have identified a number of other possible risk factors: Obesity, low vitamin D levels and diet may play an important role in this. Obesity appears to be associated with a reduced risk of non-aggressive but a higher risk of aggressive prostate tumours (Vutuc et al. 2010). The World Cancer Research Fund International (2018, p. 7) assessed the current evidence on various risk factors (obesity, beta-carotene, high intake of dairy products and calcium, vitamin E, selenium). The results are presented under V. 2.2.

## **III.2** Urinary incontinence

The International Continence Society (ICS) refers to urinary incontinence as a symptom characterized by any involuntary leakage of urine (Abrams et al. 2003; D'Ancona et al. 2019). There is consensus among scientific experts on this definition. For this reason, the use of the definition is recommended.

Urinary incontinence is divided into different forms.

After radical prostatectomy, men develop stress incontinence, the etiology of which is not yet clear. Causes can be changes in the bladder neck, in the area of the autonomic nerves or in the sphincter muscle (e.g. injuries). In addition, many men develop urge incontinence in the form of an overactive bladder. The urge symptoms are usually overcome within a year (Stief o. Dat.; Bauer/Rutkowski 2022).

The incidence rate is assessed differently in the literature. According to Krull et al. (2019), it is between 6 and 69 %. Bauer & Rutkowski (2022) differentiate the incidence rate according to the forms of incontinence, which they state at 5 to 48% for stress incontinence, while 2 to 77% of those affected have symptoms of an overactive bladder. New onset of detrusor overactivity and sphincter insufficiency due to direct injury are the main causes of incontinence after radical prostatectomy (Borkowetz 2018, p. 1252)

## **III.3** Erectile dysfunction (ED)

The term "erectile" refers to the ability to achieve an erection, while the term "dysfunction" refers to a functional disorder (Duden online 2022). It is therefore an erectile dysfunction. In medicine, "erectile dysfunction" is defined as a persistent inability, i.e. lasting more than 6 months, to achieve and maintain a satisfactory erection during sexual intercourse. The term "impotence" is used colloquially.

Erectile dysfunction can occur without a recognizable cause, be the result of a disease (e.g. diabetes mellitus, arteriosclerosis, polyneuropathy, hypertension) or an undesirable effect of medication (e.g. antihypertensives, antidepressants). It can be the result of injuries in the pelvic area and can also occur following surgery (rectum, prostate). The causes must be identified before initiating therapy. Erectile dysfunction has an impact on the physical and psychosocial health of the men affected as well as their relationship and their social environment (Federal Ministry of Social Affairs, Health, Care and Consumer Protection 2020; Haensch et al. 2018; Tiemann 2022).

#### **III.4** Urotherapy

Originating in pediatrics, urotherapy has also established itself in Germany for the treatment of people of all ages with urinary disorders and incontinence (Janhsen et al. 2007). The ICCS (International Childrens Continence Society) defines urotherapy as a conservative, non-surgical and non-pharmacological treatment concept (Neveus et al. 2006; Hoebeke 2006).

Urotherapy stands for the rehabilitation of the lower urinary tract and provides holistic care for those affected in the form of information, advice, guidance and training (Hellstrom et al. 1987; Gitschel et al. 2013, p. 80– 81). It includes the diagnosis, treatment and care of people with functional, organic or neurological disorders of bladder and bowel emptying. Once the disorder has been properly diagnosed, treatment must be tailored to the patient's personal situation and individual capabilities. The aims of urotherapy include demystifying the problem, promoting continence, encouraging self-management and supporting family members and relatives, including during surgical and drug therapy. Due to the complexity of the problems, urotherapists work in an interdisciplinary team that includes doctors from various specialties, psychologists and physiotherapists (Janhsen-Podien 2019; D-A-CH Association of Urotherapy R. A. (DACH) 2020).

To date, there has been no evaluative German study on the special continence counseling provided by professional nurses in hospitals in the context of radical prostatectomy (Hayder/Schnepp 2014).

In the area of children, consensus has been reached on diagnostics and therapy by the Continence Training Consensus Group (KgKS) since it was founded in 2003 (KgKs 2022). This work is only just beginning for urotherapists working with adults.

In addition to the high prevalence of the disease, the pathogenesis of urinary incontinence in particular speaks for a standardized urotherapeutic treatment approach. Instruments must be developed to ensure uniform, verifiable quality of urotherapeutic support.

## IV. Epidemiology and therapy of prostate cancer

Prostate cancer is the most common cancer in men in Germany, accounting for 25.4% of all diagnosed cancers. Every year, around 65,000 men in Germany are newly diagnosed with this tumor. The average age of onset is around 69 years.

By 2050, the proportion of over-60s in Germany is expected to rise to around 28 million (37% of the total population), which is twice as high as today. An increase in prostate cancers is to be expected to the same extent. The diagnosis, treatment and aftercare of prostate cancer must take this demographic development into account (2019 oncology guideline program, p. 24).

Radical prostatectomy is the treatment of choice for localized and locally advanced prostate cancer (Wirth/Fröhner 2014, p. 576 f.).

Although this treatment method is considered the gold standard by many experts, it involves significant risks that can lead to a reduction in urinary continence and erectile function in affected men postoperatively (2019 Oncology Guidelines Programme, p. 102 ff.).

In addition to the absence of tumors, quality of life plays a central role in the evaluation of treatment success.

Urinary incontinence and erectile dysfunction have a negative impact on quality of life (Börgermann et al. 2010, p. 484; John/Maletzki 2015, p. 4; Rick et al. 2015. p. 6/p. 8).

In addition to these prostate-specific problems, however, general health-related impairments are also important.

Patients also report significant impairments in other areas of life. The affected men suffer more from fatigue and sleep disorders. Increased emotional stress is also often evident. These are particularly pronounced before therapy. All these problems need to be discussed with those affected at an early stage and the therapeutic options need to be identified.

A chronic illness "affects your love life; it affects your finances, your circle of friends, your work: it affects the quality of quiet time together, it affects the way you relax, everything! There is nothing that is not affected by that" (Corbin/Strauss 2004, p. 33).

The impairments experienced by those affected do not therefore relate exclusively to physical symptoms, e.g. pain or loss of physical integrity, and functional disorders, e.g. reduced performance or loss of social role. In addition, emotional well-being is also influenced by the effects of the health disorder and therapy on sexuality. The extent to which the impairments are perceived individually does not depend exclusively on the severity of the health disorder, but is significantly influenced by other factors, e.g. coping strategies or social support. Social support and sexual therapy interventions can have a positive effect.

Approximately 1/3 of the men affected need help due to psychological and/or sexual problems and/or information about the health system and/or health issues (Steginga et al. 2001).

For various reasons, however, those affected are reluctant to address problems themselves or report on their extent. This counteracts active coping. Active inquiry is a supportive measure, because active coping has a positive effect on coping with the health situation.

Adequate therapy before and after radical prostatectomy for non-invasive prostate cancer must be carried out in accordance with the guidelines (2021 Oncology Guideline Program). Advice on the stresses and side effects of the therapy forms the basis of a holistic treatment concept (Holze et al. 2012, p. 146 f.).

## V. Urotherapy before and after radical prostatectomy for non-invasive

#### prostate cancer

Urotherapy is a concept for a holistic view of people with functional, organic or neurological disorders of bladder and bowel emptying. The need for urotherapeutic support varies according to the different phases of coping with the health disorder. These begin with the confrontation with the diagnosis and include acute treatment, rehabilitation and support beyond, especially if the oncological health disorder causes corresponding disorders.

## V.1 Treatment guidelines based on treatment pathways

In hospitals, treatment pathways became necessary due to the Diagnosis Related Groups (DRGs), in particular to optimize processes in order to reduce the length of stay.

However, they are also seen as a desirable tool by patients, as they allow processes to be optimized on the basis of defined treatment goals, thereby improving quality and making services transparent (Hellmann 2010, p. 5). The following treatment pathways were developed by urotherapists from this perspective. Its aim is to ensure urotherapeutic support throughout the entire course of treatment.

#### V.1.1 Treatment procedure for preoperative continence training

In 2015, the WHO placed person-centered care at the heart of healthcare services. This includes healthcare institutions incorporating users' ideas, knowledge, preferences and individual needs into treatment (WHO 2015).

Patient education is a planned, organized learning experience aimed at adapting people's behaviour or attitudes towards their health disorder or improving surgical outcomes (Huber 2019; McDonald et al. 2014).

Information at the right time in the course of the health disorder contributes to greater involvement in decisionmaking, greater satisfaction, improved adherence to treatment and reduced anxiety (Fletcher et al. 2016, p. 383 ff.).

Preoperative education contributes to less anxiety, there is a lack of evidence for the existence of effects on health literacy. By health literacy, it is meant the knowledge, motivation and competence to find, assess and apply health information and thus develop the ability to act (Huber 2019; Santa Mina et al. 2014; Schaeffer et al. 2008).

Support for the men and their relatives begins even before the operation date in a situation in which the affected men are confronted with the start of surgical therapy after the initial diagnosis shock. Already at this stage, the course is set for active coping through information, training and counseling as well as the establishment of continuous urotherapeutic support. Despite criticism of the quality and heterogeneity of the studies (Waller et al. 2015), the effect of training, including preoperative training, is positively assessed in the literature with

regard to how affected people deal with the challenges of diagnosis, treatment and their consequences (Albaugh et al. 2017; Zellner et al. 2017; Huber et al. 2015; Alanzi 2014; Waller et al. 2015; Singh et al. Chang et al. 2016).

As part of a comprehensive urotherapeutic concept, patients are offered the opportunity to take part in a 90minute training course at the clinic 2 weeks before the date of the operation. In addition to answering questions, the aim of the course is to familiarize participants with and practice pelvic floor awareness and controlling the pelvic muscles.

The anatomy and physiology of the prostate and bladder as well as the pelvic floor and the urethral sphincter are explained using images and a pelvic floor model. This acquired knowledge about the ability to target areas of the body that many men knew little about beforehand is intended to empower and motivate men to apply what they have learned in the preoperative phase at home as well. The following training content is taught:

- to feel and control the urethral sphincter,
- to relax and sensitively perceive the pelvic floor,
- to support breathing,
- getting out of bed physiologically from the side,
- Thrombosis prophylaxis by activating the calf pump.

As there are no pain symptoms before the operation and there are no functional disorders, e.g. due to swelling in the operation area, it is easier for those affected to feel the external urethral sphincter due to the intact anatomy. This promotes motivation.

The offer includes that those affected can bring their partners to the training appointment.

By providing information in a calm environment, a trusting relationship can be established with the patient in which even difficult topics can be addressed directly. This lays the foundation for a sustainable working relationship throughout the course of treatment.

#### V.1.2 Treatment process in an acute care hospital

The individual needs of the men affected change over the course of treatment. The guiding principle is: "specific situation/right time" (Wennerberg et al. 2021; National Institute for Health and Care Excellence (NICE) 2021). In the preoperative phase, the focus is on dealing with the cancer itself and preparing for the operation and its adverse effects (urinary incontinence, ED). Postoperatively, there is a need for information on behavior in relation to excretion and upcoming examinations. Increasingly, the confrontation with a new life-changing situation begins, as the perception of masculinity is redefined (Kong et al. 2017; National Institute for Health Research 2017). The affected men experience physical, psychological, sexual and social changes as a result of the operation, which have to be processed during the rehabilitation phase.

Continuous urotherapeutic care and education also support those affected during this phase. This results in the following structure:

- At the first post-operative contact provides information on intimate and catheter care and drinking behavior. Stool-regulating measures are also addressed.

- On the second visit, the patient receives advice on aids and their cost coverage. The affected man receives samples of various incontinence products.

At the next visit, they will be informed about the upcoming cystogram and the micturition behavior after catheter removal. Exercise instructions for activating the urethral sphincter are explained once again and handed out in written form. Information on follow-up treatment is integrated into the consultations depending on the willingness of the person concerned. During all contacts, the urotherapist asks about the current state of health and addresses individual questions. If necessary, the urotherapist establishes contact with other members of the multi-professional, interdisciplinary team (e.g. urologists, physiotherapists, psycho-oncologists). The urotherapist documents the content and results of the interventions. The documentation is accessible to all members of the multi-professional, interdisciplinary team involved in the therapy.

## V.1.3 Treatment process at the specialist clinic for uro-oncological rehabilitation and followup treatment (AHB)

Particularly in the case of oncological diseases, discharge from hospital is followed by follow-up treatment in a specialised rehabilitation clinic in order to speed up the recovery and convalescence process. Follow-up treatment takes place shortly after discharge from the clinic. As a rule, patients who have undergone radical prostatectomy are admitted to follow-up treatment (AHB) after a short stay at home - a maximum of 2 to 4 weeks. The focus is on providing assistance in dealing with the sometimes unavoidable physical consequences of prostate cancer treatment. This includes urinary incontinence and erectile dysfunction as well as coping with psychological or social problems and returning to work (Heuveling 2021). Prior knowledge of pelvic floor training, the provision of aids and behaviors related to urinary incontinence, erectile dysfunction and a healthy lifestyle must be recorded (Rick et al. 2015). Due to the cancer diagnosis and the associated coping with the disease, some information obtained in acute care is forgotten. As part of the admission interview, including the medical examination, the treatment plan for the stay in the rehabilitation clinic is individually tailored to the person concerned and determined. The members of the multi-professional team are assigned different tasks. One focus is on continence training by specialized physiotherapists. Urotherapeutic education is essential to make it easier for those affected to deal with the frequent secondary disorders of urinary incontinence and erectile dysfunction in their daily lives. This means that the use of special aids and adaptation of behavioral patterns can make social life and relationships easier. It is possible to deal with the taboo topics of urinary incontinence and erectile dysfunction efficiently and in a resource-saving manner through urotherapeutic education in a group counseling session with the option of subsequent individual counseling, and to improve the quality of life of those affected.

The urotherapist documents the content and results of the interventions. The documentation is accessible to all members of the multi-professional, interdisciplinary team involved in the therapy (Friedl-Huber et al. 2007).

## V.2 Urotherapeutic education

Essentially, there is a need for information on the disease, treatment and its side effects as well as treatment options, but also on coping with the disease and self-care. Education includes the assessment of individual needs that change over the course of the illness or therapy (Cockle-Hearne/Faithfull 2010; Ronco et al. 2012; Paterson et al. 2014; Dautel 2015; Gordon et al. 2019). What is important is the individual life situation of the person concerned, including their working environment.

Relatives also have a specific need for health information relating to care in the various phases of the illness and therapy and also a need for information on coping with the illness and on the state of health or recovery process (Antony/Flaschberger 2021, p. 12 ff.; Northouse et al. 2007; Green et al. 2019; Center for Quality in Care 2016).

Urotherapeutic education uses (nursing)scientific knowledge and pedagogical knowledge. Their content is evidence-based.

#### V.2.1 Education/Behavioural training

Prostate cancer and the associated therapy require those affected to take appropriate self-care over a long period of time. The healthcare professions can support the development of appropriate skills and thus strengthen self-care (Wennerberg et al. 2021, p. 6; Ernstmann et al. 2016; Gröndahl et al. 2019; Hedden et al. 2017; Naegele 2006 a/b; National Institute for Health and Care Excellence (Nice) 2021; Schäfer/Abt-Zegelin 2009).

The comments on education include statements by various authors, even if they are not explicitly used as sources here (see also bibliography).

Urotherapeutic interventions incorporate aspects of cognitive behavioral therapy (Wachs 2018, p. 34). They support changes in strategies for dealing with and coping with health problems (Mahrer-Imhof/Bruylands 2014, p. 286).

This includes lifestyle changes, such as pelvic floor support, more exercise, the distribution of fluid intake throughout the day, adjusting excretory behavior or weight reduction. Studies on the effect of lifestyle changes have focused on elderly people and people with urge incontinence. Studies on the effects on male stress incontinence are currently inadequate. However, behavioural therapy is also recommended for this target group (Bauer et al. 2015, p. 891). Davis et al (2019) find that some cancers have an increased risk of late and long-term effects after therapy and include prostate cancer patients (e.g. urinary incontinence, erectile dysfunction, the condition). They also criticize the lack of support for those affected in the post-treatment phase and argue that planned, individual support should be provided to help those affected cope with the problems and promote their self-care skills (ibid. p. 9).

#### V.2.2 Nutrition and drinking behaviour

The World Cancer Research Fund International (2018) found that there is strong evidence that obesity increases the risk of developing prostate cancer, while beta-carotene intake has no substantial effect. Little evidence was noted regarding the increased risk of disease due to high intake of dairy products and calcium. There is also little evidence regarding the effects of low levels of vitamin E and selenium (ibid., p. 7 ff.).

Obesity is also described as a risk in other publications (Jing et al. 2008; Soljanek et al. 2008).

In principle, there are no special "cancer diets" and no specific dietary requirements for men with prostate cancer. However, a healthy diet can have a positive influence on tumor treatment.

Nutritional supplements are only necessary in the case of proven deficiencies, they are not generally recommended. After therapy, the general dietary recommendations apply, such as a stable, normal body weight, generally little, especially little red meat, plenty of whole grain products, legumes, fruit and vegetables. Less salt and sugar, careful preparation of food, sufficient drinking, taking your time when eating and enjoying your meal (German Cancer Research Center (DKFZ)/Cancer Information Service 2017 & 2022; German Nutrition Society 2017; German Nutrition Society o. Dat.)

A change in diet can help to prevent other health problems that could occur independently of the cancer (e.g. cardiovascular diseases).

The diet and lifestyle can be actively influenced by those affected. This strengthens their motivation and sense of self.

#### V.2.3 Continence Training Introduction

During a prostatectomy, the sphincter muscle between the prostate and bladder is also removed. The pelvic floor must compensate for this deficit through targeted training in conjunction with the remaining sphincter muscle. The causes of post-prostatectomy incontinence are multifactorial. Nahon (2021, p. 89) cites sphincter dysfunction, detrusor muscle overactivity, low bladder compliance and postoperative changes in sensations.

Other causes include weakness or flaccidity of the urethral sphincter, destruction of structures that support the bladder neck and surgical damage to the pelvic floor muscle (ibid.).

Baunacke et al. (2021, p. 2934) find that half of men with post-prostatectomy incontinence experience moderate to major problems and significant impairment of mental health and quality of life without appropriate treatment.

Continence training is a multi-modal concept. It includes behavioral therapy including pelvic floor training with or without electrostimulation and/or instrumental biofeedback, bladder control measures, fluid management and keeping bladder diaries (Goode et al. 2011, p. 159; Soto Gonzales et al. 2020; Zellner 2011, p. 441).

The decisive factor here is which measures are indicated at which point in time (pre- or postoperative or in the further course). The importance of prehabilitation, i.e. preparing for postoperative changes and learning appropriate strategies by introducing pelvic floor training while concentrating on the relevant muscles and bladder dysfunction, is described in the literature as being more effective when no pain or swelling has yet developed. This is considered to be conducive to an improved continence outcome (Hall et al. Chang et al. 2016; Nahon 2021).

#### V.2.3.1 Micturition diary/micturition training

The instruments used are named according to the information recorded, in line with the International Continence Society (ICS): Micturition calendars are used to record the times of micturition, while micturition logs also document the micturition volumes and micturition diaries also record the times and associated drinking volumes, bladder symptoms and incontinence episodes. Urge symptoms, the use of pads and bowel habits can also be monitored. This allows them to relate the various parameters and describe the situation in more detail (Deutsche Gesellschaft für Geriatrie 2019, p. 14; Nahon 2021, p. 90; ICS 2017). Micturition diaries are not only a diagnostic tool, but also the basis of micturition training (German Geriatric Society 2019).

The International Continence Society recommends keeping micturition diaries for 3 days (Abrams et al. 2017, p. 2615). The guidelines of the European Association of Urology Nursing reflect this (Nambiar et al. 2018).

In the first post-operative weeks, the focus is on sparing the anastomosis. The filling of the bladder should not be too high. Specific recommendations vary in practice. This includes, for example, emptying the bladder every 2 hours during the day and every 3 to 4 hours at night for the first 2 to 4 weeks. During rehabilitation, it may be recommended to empty the bladder only when there is an urge to urinate in order to slowly increase the bladder volume. Due to the urge symptoms, this often leads to emptying every two hours.

After prostatectomy, men often develop counterproductive coping strategies, such as reducing fluid intake or frequent urination, to reduce incontinence episodes. In fact, the resulting reduction in bladder capacity leads to worsening urge and urge incontinence (Nahon 2021, p. 90).

#### V.2.3.2 Pelvic floor training for incontinence

Pelvic floor muscle training is an established conservative treatment for post-prostatectomy incontinence (Mungrovan et al. 2016, p. 1). Pelvic floor training should begin in the preoperative phase (Chang et al. 2016, pp. 460–467; Hall et al. 2020). Nahon (2021, p. 91) reflects this and names specific goals of the training in the preoperative phase. Preoperative training means that patients activate their pelvic floor muscles in an adapted way before the activities that trigger urinary incontinence (Mungrovan et al. 2016, p. 225). Schmuck (2017, p. 17) assumes that what is learned during training is immediately incorporated into the action mode and that undesirable behavior is avoided through knowledge and the memory effect. The experience of being able to actively prevent urinary incontinence can lead to a reduction in stress.

Knowing about the specific damage and implementing this knowledge in adequate guidance for those affected is crucial for the effectiveness of pelvic floor training. A thorough medical history includes statements about

the main problems, the type of incontinence and its impact on physical well-being, quality of life and severity based on objective measurements of urinary leakage (micturition diaries, pad test). Furthermore, the medical and surgical history is also collected.

Physiotherapists with appropriate additional qualifications and experience can obtain further information through physical examinations by visual inspection, palpation or transperineal ultrasound. The pelvic floor muscle contractions, the movements of the penis and perineum as well as the bulbospongiosus muscle are assessed. Ultrasound is also used to give the patient a visual representation of their pelvic floor activity.

Digital rectal examinations can also be used in cases of pelvic floor overactivity, but not as part of the assessment of urinary incontinence due to the associated activation of the posterior pelvic floor (Nahon 2021, p. 89–90).

The effectiveness of pelvic floor muscle training depends on the quality of instruction, monitoring of implementation and further support. Nahon (ibid.) explains that the main focus in men after prostatectomy must be on the striated muscles of the sphincter. They are therefore instructed to focus their attention on the anterior pelvic floor and to activate it. When successful, they can tighten this area before increasing abdominal pressure without using maximum force or rapid contractions. Slowly increasing holding time at submaximal level meets the requirements of the striated muscles. Terzoni et al. (2015) also focus on predictive pelvic floor activation before everyday activities, such as getting up or coughing.

The training of the therapists and the motivation of those affected are the prerequisites for the effectiveness of pelvic floor training. Any active training strengthens the muscles, but the question remains as to whether the pelvic floor is strengthened or whether the large muscles in the thighs, buttocks or abdomen, i.e. muscles that are inefficient for continence, are addressed instead. This can result in painful myalgias ("sore muscles") and even a deterioration in continence performance. In this situation, inadequate contraction due to insufficient voluntary control of the pelvic floor and sphincter muscles combined with simultaneous contraction of the muscles that are inefficient for continence can lead to overlapping of the already poor pelvic floor signals (Tries 1990).

#### V.2.3.3 Electrical stimulation/biofeedback as part of continence training

Biofeedback is used to raise awareness of physiological processes that normally take place unconsciously via visual and acoustic signals. It gives patients and therapists the opportunity to demonstrate the effectiveness of the exercises and the progress and improvement made. This can encourage the active participation of those affected. Pressure and electromyography (EMG) are used as parameters.

Electrostimulation is a conservative form of therapy for weak, atrophic muscles. Electrostimulation has also been used in the treatment of urinary incontinence since 1952 (Huffman et al., 1952). Effective contraction of the pelvic floor muscles prevents contractions of the buttocks, abdomen and adductor muscles. Pelvic floor training must be adapted individually for each patient and only when the patient has safely had high-quality contractions can electrostimulation or biofeedback be used (Soto González et al. 2020, p. 2).

Electrical stimulation of the pelvic floor activates the afferents of the pudendal nerve, which in turn leads to activation of the efferents of the pudendal and hypogastric nerves. This results in contraction of the striated periurethral muscles and the striated pelvic floor muscles. Electrostimulation is a passive training of the pelvic floor muscles with the aim of improving the urethral closure mechanism and thus gives those affected the opportunity to localize the muscles of the levator ani through passive training.

Stimulation frequencies of 20-50 Hz with a pulse duration of 0.1-0.3 milliseconds are used for stress incontinence. The application should not be unpleasant or painful for the person concerned. The exercise units are

between 15 and 20 minutes, once or twice a day over a period of 6-12 weeks with re-evaluation, after which a further prescription is possible for up to 6 months (Engels 2013).

Many manufacturers offer the devices as a combination of electrostimulation and biofeedback. In this way, the effects of both individual procedures are combined where indicated. The biofeedback procedure actively involves the patient in the therapy, the additional electrical impulses promote awareness of the weakened muscles and provide targeted support for the patient's therapy.

The benefits of electrostimulation and biofeedback are evaluated differently in the literature. Goode (2011) sees no increased effectiveness of additional biofeedback or electrostimulation in addition to behavioral therapy measures for incontinence that persists for more than 1 year postoperatively. Nahon (2021, p. 90) describes the evidence for additional electrical stimulation as not strong. For other authors, electrostimulation and biofeedback are part of the multimodal concept (Soto Gonzalez et al. 2020; Zellner 2011, p. 441). However, they only used both after extensive training and after the patient was capable of "high-quality contraction" (Soto Gonzales et al. 2020. p. 3). Or the combination of "qualified physiotherapy, electrostimulation and/or apparative biofeedback and application training under everyday conditions" and tactile guidance by the physiotherapist or the patient themselves is emphasized in order to correct incorrect activation of the pelvic floor (Zellner 2011, p. 441–442). Zellner also used whole-body vibration as an alternative in a randomized controlled study (ibid. p. 443–444).

Biofeedback can also help to improve muscle strength, and electrotherapy can also be used as a supplement if active tensing of the sphincter muscles is no longer possible (Pages 2004, p. 33, Prostate Cancer Foundation Australia 2022). Rick et al. (2015, p. 6) advocate electrostimulation for third-degree incontinence and recommend endoscopic video biofeedback spincter training if there is insufficient improvement (ibid.).

Pelvic floor training is the first option for post-prostatectomy incontinence. Cochrane analyses from 2004 and 2007 as well as several RCTs agree that pelvic floor muscle training improves the continence situation more quickly. Long-term measurements do not confirm this initial success (Börgermann et al. 2010). The causes of this should be researched in greater depth and consequences should be drawn for therapeutic support.

The loss of physical self-control and the need to temporarily rely on incontinence aids lead to emotional stress for the patients affected. The experience of urinary incontinence is often difficult to cope with. Self-esteem and quality of life are sometimes massively affected, making social and professional reintegration more difficult. It is not surprising that urinary incontinence plays a major role in the rehabilitation of those affected and is often more stressful than dealing with the diagnosis of cancer. Besides mobility restrictions, depressive moods of varying degrees of severity are often observed. For the affected persons, there is an urgent desire for rapid improvement of what they perceive as a degrading situation.

Reports of spontaneously improved continence performance in a few weeks or months are often not accepted. The affected persons want to actively participate in the recovery process and are highly motivated (Börgermann 2010).

In summary, it can be said that pelvic floor muscle training is an effective measure for post-prostatectomy incontinence if it is learned under the guidance of specially trained experts and continuously monitored. A one-time consultation is not effective. The effectiveness of the treatment can only be achieved by guiding and monitoring the activated muscles through visual inspection, palpation or transperineal ultrasound. The study situation on the efficiency of the additional use of biofeedback and/or electrostimulation is inhomogeneous. There are, however, similarities in the need for guidance and support from specially trained experts.

#### V.2.3.4 Erectile function training

"Erectile dysfunction (ED) is defined as a persistent or recurring inability to achieve or maintain sufficient rigidity of the penis for sexual intercourse" (Weißbach/Boedefeld 2016, p. 157). Although erectile dysfunction

has a significant impact on mental health and quality of life, it seems that a third of all men are affected with moderate to severe problems, but the interest in sexual activity has never been touched by appropriate therapy(Baunacke et al. 2021, p. 2934). Apparently, erectile dysfunction is treated poorly and not early enough (Dyer et al. 2019).

The affected patients think they need more advice and treatment than urologists (Oncology 2021 guideline program, p. 254).

The need for active consultation is undisputed in the literature.

Early initiation of therapy from the time of catheter removal or within the first postoperative month is recommended in order to promote cavernous oxygenation and prevent fibrosis. Another aim is to maintain the function of the erectile tissue (Bannowsky et al. 2011, p. 425–427).

Post-operative erectile dysfunction is related to age and pre-operative erectile function (International Consultation for Sexual Medicine (ICSM) 2015, in: Sokolakis 2020, p. 1542).

In principle, medicinal, instrumental and physiotherapeutic therapies are used. The decision on therapy is always made on an individual basis and takes into account concomitant internal diseases, e.g. coronary heart disease or hypertension. This results in the need for interdisciplinarity in rehabilitation (Oncology Guideline 2021, p. 253).

There is no therapeutic gold standard, as the study results are contradictory and the quality of the evidence is low (Sokolakis 2020, p. 1542–1543; Salonia et al. 2017 a/b).

The fourth International Consultation on Sexual Medicine (ICSM 2015) presents 9 recommendations for sexual rehabilitation after radical prostatectomy, but disagrees on the timing and manner of penile rehabilitation (Sokolakis 2020). PDE-5 inhibitors are used with some success in post-prostatectomy dysfunction and maintain corpora cavernosa structure and penile size, but do not improve spontaneous erection. Treatment with a vacuum erection device also preserves the structure of the penis. ICSM therefore emphasizes the need to provide detailed information to those affected in order to prevent unrealistic expectations,

There are therefore only weak recommendations in the relevant guidelines. This also applies to the S3 guideline on prostate cancer, in which the first therapeutic option is a PDE-5 inhibitor and, if ineffective, "intracavernous injections or intraurethral prostaglandins (alprostadil) or vacuum erection assist systems are considered in combination with physiotherapeutic ED training, taking patient preference into account" (Guideline on Oncology 2021, p. 251). More invasive measures such as the implantation of erectile tissue prostheses are only used after unsuccessful attempts at drug therapy (Bannowsky et al. 2011, p. 425–427).

Pelvic floor training can improve erectile function, probably by improving vascular regulation in the crura penis through targeted training of the ischiocavernosus and bulbocavernosus muscles.

Training and advice are needed on the possibilities of penile rehabilitation by maintaining the elasticity of the vessels and penile tissue. This may also require the use of vacuum pumps or pharmacological support (Hodges et al. 2019, p. 14).

#### V.2.3.5 Electrical stimulation/biofeedback as part of erectile function training

The previously mentioned shortcomings in the evidence or contradictory research results also apply to electrostimulation and biofeedback in the context of erectile function training. In two smaller randomized studies, special physiotherapeutic training plus electrostimulation or biofeedback are attributed positive results (Guideline Oncology 2021, p. 253). Conservative therapies in the context of penile rehabilitation include pelvic floor training, electrostimulation and biofeedback. The effectiveness of these conservative therapies for sexual dysfunction after prostatectomy is unknown (Kannan et al. 2019, p. 1299).

Pelvic floor training supplemented by biofeedback can improve erectile function in men. However, the evidence is limited. This also applies to the combination of pelvic floor training and electrostimulation. The latter is only recommended for the therapy of severely ill people (Kannan et al. 2019, p. 1307).

# V.2.3.6 Urotherapeutic tasks in continence training and erectile function training and cooperation with physiotherapists

Continence training and erectile function training require both educational and communication skills as well as specialist knowledge of pelvic floor training, including accompanying therapies.

Urotherapists train those affected on the anatomy and physiology of the excretory and sexual organs and provide information on therapeutic options. As part of the multimodal continence concept, they advise on behaviors or lifestyle habits that have a beneficial effect on incontinence. These include the amount they drink, their diet, obesity, how they handle alcohol and caffeine, their elimination behavior and the use of aids (Müller et al. 2010, Soto González et al. 2020, p. 2). Urotherapists participate in other diagnostic (e.g. micturition diary) and therapeutic processes (e.g. collaboration with medical and physiotherapeutic colleagues). They support men before and after a prostatectomy in all phases of coping with their health situation.

Pelvic floor training and erectile function training require specialized knowledge that urotherapists do not generally have, but which they can only acquire through appropriate additional qualifications.

Physiotherapists with appropriate additional qualifications and therefore specialized knowledge of the function of the different structures of the male pelvic floor and male sexual organs as well as diagnostic skills, e.g. manual palpation or the use of ultrasound, can provide targeted and effective guidance and support for pelvic floor training in individual or group training sessions (Rick et al. 2015, p. 6; Pages 2004). They know when most premature urine loss occurs (Mungovan et al. 2016, p. 1), and therefore adapt the instructions as part of pelvic floor training so that the sustained contraction of the pelvic floor muscles is practiced during sitting and walking postures.

The so-called "guided by a therapist pelvic floor muscle exercise (GPFME)", i.e. pelvic floor exercises supervised by physiotherapists, are recommended by various organizations, e.g. the Prostate Cancer Foundation Australia (2022) or the International Continence Society (ICS) (Abrams et al. 2017, p. 1595). The ICS sees evidence for the GPFME at level B.

Urotherapists and physiotherapists ensure a good flow of information through appropriate documentation and discussions.

#### V.2.4 Skincare

Incontinence is also a shameful issue in the treatment of prostatectomized patients, which limits their quality of life and can become a health, emotional, economic and social burden. This can be a considerable burden not only for the person affected, but also for caregiving relatives, as intimate boundaries are crossed.

Health problems such as skin damage and infections are a challenge that requires appropriate skin care.

Cleaning and care of the skin as well as changing pads and underwear are time-consuming, but necessary, as urine and stool can damage the skin.

Patients and their relatives should acquire a basic knowledge of incontinence, skin care, aids, secondary problems and nutrition as well as drinking behavior through good advice. It is important for those affected or their relatives to monitor and care for their skin, especially if they are aware of co-morbidities such as diabetes mellitus or particular medications (e.g. cortisone/immunosuppressants). Excessive washing with soap and water should be avoided as it removes natural moisture and attacks the skin's protective barrier. Cleansing with lukewarm water is usually sufficient and gentler on the skin. Products that are pH-neutral and moisturizing, or appropriate cleaning cloths, are ideal. Afterwards, the skin should be dried without rubbing and, if necessary, an appropriate care product should be applied. Specific barrier creams or care products containing zinc are suitable for the intimate area. If you have skin irritations, you should seek advice from a qualified care professional. Incontinence products must be changed whenever necessary and after every bowel movement (Bliss et al. 2007; Raepsaet 2021; Beeckmann et al. 2016; Hayder-Beichel 2015; Hayder-Beichel 2022; Bruhn 2013).

#### V.2.5 Provision of medical aids, financing and management of medical aid provision

Health insured persons are entitled to a supply of medical aids. The legal requirement is § 33 of the Fifth Social Code (SGB V). Another basis for the insured person's claim against their health insurance fund is the list of medical aids published by the National Association of Statutory Health Insurance Funds (GKV-Spitzenverband). The costs of aids not listed here are only reimbursed by health insurance companies in rare exceptional cases. The AWMF S2k guideline "Provision of medical aids", which was published for the first time in July 2020 under the leadership of the German Society of Urology, should also be taken into account. The aim of this guideline and the legally prescribed discharge management in hospitals and rehabilitation facilities is to counteract the occurrence of interruptions in care on discharge through targeted preparation and counseling of patients and relatives, through coordination with aftercare providers and through an improved exchange of information between those involved in the discharge process. In all phases of therapy and activities during the discharge process, this requires a focus on the life requirements of the patient in the post-inpatient setting. Professional advice from qualified staff is particularly important here.

Adequate provision of incontinence aids aims to enable those affected to participate in the social life of the community and thus generate quality of life and prevent secondary diseases. There are no standard solutions in view of the anatomical and disease-related variety of conditions and different continence profiles. It is necessary to provide medical care that meets the individual requirements of each patient.

For the target group described in the guideline, particular attention is paid to the provision of absorbent and draining continence aids as well as the vacuum pump as a therapeutic approach for erectile dysfunction.

All incontinence products are subject to the regulations of the Medical Devices Act, the Robert Koch Institute and the manufacturer's instructions for use, which influence the selection, application and duration of use. The systematic, structured list of aids from the GKV-Spitzenverband provides a good overview of all reimbursable aids.

Absorbent continence aids must be of sufficient quality and provided in sufficient quantities despite the current flat rates for care. Incontinence products should offer the patient safety, dryness, protection against odors and maximum skin compatibility, while being comfortable and discreet to wear.

Permanent bladder catheters, ISC, urinary condoms, catheter valves and urine collection bags require more intensive instruction and training for patients and users by the specialist staff caring for them. They must be sufficiently and continuously trained, the level of knowledge must correspond to the current product range and the applicable legal requirements must be known. This is the only way to offer patient-oriented, optimal care that enables the patient to achieve the maximum possible quality of life.

Vacuum suction pumps consist of a manually or electrically operated suction pump, which generates a vacuum in a plastic cylinder. The plastic cylinder is first rubbed over the penis, which had previously been rubbed with a lubricant. The vacuum transports blood into the erectile tissue, which causes the veins to squeeze and thus maintains the erection. The stiffness of the penis is maintained by a tension ring previously applied to the base of the cylinder, which should not be left in place for longer than 30 minutes due to the possibility of ischemic

damage to the penile skin. There is a higher risk of hematoma formation if anticoagulants are taken regularly. Most health insurance companies cover the costs if there is a proven organic cause of the erectile dysfunction. In case of doubt, the health insurance company should be consulted before a prescription is issued. When purchasing a vacuum pump by yourself, pay attention to the CE mark, place of manufacture and any dealer certifications. The patient should receive instructions on how to use the pump.

The reimbursement policy of the health insurance funds is not uniformly regulated nationwide and can also differ within the individual health insurance funds. Under these conditions, it is important to find a suitable and, if possible, cost-neutral solution for and together with the person concerned.

The patient can fill out appropriate questionnaires to support the process. In general, costs for needs that deviate from standard care are not covered by health insurance.

There is an increased potential for counseling, especially for the patients affected here, who not only have to live with a life-threatening diagnosis, but are also exposed to particular psychological and physical stress due to a therapy that impairs their bodily functions. The focus may not only be on the compensation of urinary incontinence as an accompanying symptom, but also on the erectile dysfunction that often occurs during the course of the disease, which plays a minor role in the acute phase of treatment, but may become more important as the disease progresses. Patients should be sensitively informed and advised on the subject of sexuality right from the start of treatment, and suitable aids (e.g. vacuum pump) and treatment options can be presented.

The affected persons rightly hope to receive prompt, effective and competent advice in order to be able to cope as well as possible with the accompanying symptoms of their underlying illness and therapy.

## V.3 Therapy options after follow-up treatment

After the initial occurrence of cancer and completion of primary therapy and rehabilitation, long-term effects and late effects or even a recurrence can occur. Medical advances have increased the chances of survival, but regular medical check-ups are still required. This post-operative care should be continued until the risk of recurrence of the disease has decreased significantly. This depends heavily on the stadium of the tumor at the time of surgery. As a rule, this is 5 years. More than half of long-term survivors experience physical problems during this time, and more than 40% express non-medical problems (German Cancer Society 2018).

In some cases, survivors associate the follow-up appointments with fear and uncertainty. The follow-up care should not only serve to monitor the course and follow-up observation of the health disorder, but also to detect recurrences and consequences of the primary therapy at an early stage and to strengthen personal responsibility (Kalusche-Bontemps 2015, p. 19).

Representative bodies and self-help organizations complain about the lack of longer-term support services for long-term survivors. In 2019, there were more than 4 million long-term survivors in Germany whose first illness was more than 5 years ago (Life after cancer! e. V. 2019).

Urotherapists can be the point of contact throughout the entire course of the health disorder, but there is currently a lack of appropriate conditions and structures for the implementation of this function.

#### V.3.1 Support groups

Definitions, advantages and disadvantages of self-help groups

In German-speaking countries there is no standard definition of the term "self-help groups", while in Englishspeaking countries more differentiated terms are used to differentiate the structures. For example, a distinction is made between self-help groups, which are groups set up and led by those affected themselves, and support groups, which are led or accompanied by experts (Hayden 2012, p. 47). In the further course, the terms are used according to this differentiation see also GKV 2020, p. 9). The main advantages of participating in self-help groups are overcoming isolation and loneliness through contact with others who share the same fate. Expressions of negative feelings, fears or worries are met by listeners with a deeper understanding of the situation. This communication in itself can help those affected to cope by opening up new perspectives and developing coping strategies. The social network and social activities are constantly expanding. They also have broader access to information and different perspectives on health issues. This results in an emancipation from the information monopoly of the professional groups in the healthcare sector (Hayden 2012, p. 47 ff.). Improvements in subjective well-being, self-esteem and health-promoting behavior are also reported in connection with participation in self-help groups. Another effect can be the more targeted use of professional help and greater adherence to therapy (Borgetto 2007, p. 7).

Nevertheless, there are also disadvantageous aspects, e.g. the fact that participants in the self-help group are at different stages of the health disorder and are confronted with correspondingly different prognoses or focus on problems that others were previously unaware of. This can be rather unsettling (Hayden, p. 47 ff.).

Nevertheless, the overall benefits of participating in a self-help group outweigh the disadvantages, both for those affected and their relatives themselves, but also for the cooperation between them and the healthcare professions, as the existing motivation to deal with the health situation and the higher level of information form a good basis, especially since the urotherapeutic goals also include improved health literacy.

The largest association The largest association in this field is the German Prostate Cancer Self-Help Association (BPS), in which around 200 groups are organized (Vahlensieck 2007, p. 80 ff.; Federal Association for Prostate Cancer Self-Help e. V. 2022). In addition to providing concrete support for the affected persons and their relatives in the local self-help groups, the Federal Association works together with urologists, oncologists and various (specialist) associations (German Cancer Society, German Cancer Aid or the German Continence Society) at national level and also maintains international contacts. Public relations work and representation of members' interests vis-à-vis institutions and politics are also included (Vahlensieck 2007, p. 80 ff.).

Cooperation can consist of both direct and indirect cooperation. Indirect cooperation includes, for example, mutual recommendation (self-help groups by urotherapists, urotherapists by members of the self-help group), displaying information material or passing on addresses.

Direct forms of cooperation include, for example, participation of urotherapists in group meetings, lectures on specific topics, counselling services (e.g. group consultation hours), help with setting up groups and organizational support, visits by members of self-help groups to patients in institutions (e.g. pre-operative), joint public relations work, participation of urotherapists in self-help committees/advisory boards and corresponding participation of self-help members in quality circles (Borgetto 2005, p. 55).

#### V.3.2 Rehabilitation sport/exercise therapy

Sport and exercise are accompanying therapeutic interventions in the multimodal therapy concept for prostate cancer patients.

The clinically relevant effects of exercise therapy interventions have been proven across all phases of oncological treatment in numerous "high quality trials", systematic reviews and meta-analyses. In addition to the positive effects on treatment-specific side effects, symptoms of lack of exercise can be prevented and the health-specific quality of life improved (Baumann et al. 2017).

International experts met in the USA in 2018 for the "International Multidisciplinary Roundtable on Exercise and Cancer Prevention and Control", organized by the American College of Sports Medicine (ACSM). During the two-day event, the aim was to revise the exercise recommendations for cancer survivors based on the latest research findings. The experts concluded in their evaluations that physical training and necessary physical tests are safe for cancer survivors and that everyone affected should avoid inactivity. In addition, the scientists and doctors prepared a list of cancer-related health impairments such as anxiety, depressive symptoms, fatigue,

physical performance, lymphedema and quality of life, for which exercise with high clinical relevance represents a therapeutic benefit for the patient (Campbell et al. 2019).

Several studies have been published in recent years which have also been able to prove the positive effects of exercise and physical activity in men with prostate cancer, e.g. "Effects of a 15-Month Supervised Exercise Program on Physical and Psychological Outcomes in Prostate Cancer Patients Following Prostatectomy": The ProRehab Study (Zopf et al. 2015).

The importance of regular physical activity in the presence of cancer was significantly underestimated until a few years ago. In the meantime, there are special offers for men with prostate cancer that take into account the problems of the disease and its consequences.

Recommended forms of exercise are: Gymnastics for strengthening, strength training on large equipment, endurance sports such as hiking, swimming, Nordic walking and cross-country skiing or ball games, preferably without physical contact, e.g. volleyball, soccer and field hockey (German Cancer Aid/German Cancer Society 2021, p. 39-42).

Special individual sports therapy has been proven to improve physical fitness and quality of life, often leading to a decrease in fatigue symptoms and a reduction in depressive symptoms. There are also positive effects in terms of prognosis, freedom from recurrence and overall mortality, particularly in breast cancer, colon cancer and prostate cancer, although so far only in cohort studies. Many studies show that regular training should be done as early as possible. The basis of sports therapy is a combination of regular endurance training (moderate to intensive), accompanied by targeted strength exercises and coordination training (Krebs et al. 2018).

A general recommendation as to when which type of sport is the right one or how long you should avoid certain forms of exercise cannot be given. It should be a sport that is fun for those affected, easy to integrate into their everyday lives, individually adapted to the respective resilience of the men affected and with the lowest possible risk potential. In principle, consultation with the doctors involved in the treatment (urologist, oncologist, cardiologist, sports physician) should always take place before starting any sporting activity (German Cancer Aid/German Cancer Society 2021, p. 18-22).

Based on the Cochrane reviews published since 2017, there is evidence of positive effects of exercise interventions in the treatment of people with cancer. Nevertheless, the overall evidence base is still insufficient to draw robust conclusions. For the future, there is still an intensive need for high-quality research to generate a trustworthy evidence base (Braun et al. 2020).

#### V.4 Discharge management/transfer management

According to the National Expert Standard for Discharge Management in Nursing (German Network for Quality Development in Nursing (DNQP) 2019, p. 12), particular functional limitations are one of the criteria for assessing the need for discharge. This results in a need for discharge planning for the target group described in the guideline.

The terms: Transition care/care transition/transition management/discharge management are not uniformly defined. By discharge management/transition management, we mean the efforts of all those involved in the treatment process to avoid interface problems across facilities and sectors through cooperation and a regulated flow of information. This means that the necessary services can be provided promptly and in line with demand, ensuring continuity and quality of care (Brandt 2005, p. 172 ff.; Vogelbusch/Töpfer 2017, p. 331). The right to adequate supplementary care is laid down by law (Brandt 2005, p. 20 ff.; Hesse/Klewer 2013, p. 153 ff.). There is a distinction between indirect and direct discharge management. The former takes place via a central point, the latter via the previous practitioners themselves. Both forms have advantages and disadvantages. The overall advantages cited are the corresponding competencies of the discharge managers, clear responsibilities, fixed contact persons and few interfaces (Vogelbusch/Töpfer 2017; p. 334). Due to their professional and organizational competence, their experience with teamwork and their knowledge of the current patient situation, urotherapists can make a significant contribution to discharge management or carry it out independently.

Hesse and Klewer (2013, p. 156) advocate fixed contact persons with known contact details, standardized transition forms in the aftercare facilities and the establishment of cross-professional quality circles and regional networks for transition management.

Successful discharges and transfers are based on differentiated assessments that map individual support needs (German Hospital Institute (DKI) 2008, p. 35), e.g. the need for assistive devices.

Schaeffer (2008) emphasizes the need to understand discharge planning not as a singular activity prior to the transition to another institution or discharge, but as an aspect of systematic care planning.

Cooperation between the providers involved (doctors, outpatient services, rehabilitation facilities, etc.) is almost inevitable (DKI 2008, p. 94 ff.)

Clinical pathways as interdisciplinary, evidence-based treatment plans can be used for patient-oriented care management, as they describe diagnostic and therapeutic measures and assign them to a time schedule (Klauber et al. 2021, p. 70).

This enables forward-looking care planning, also with regard to future interfaces, and can also be used to evaluate individual progression. The final evaluation of 48 hours after discharge from hospital listed in the National Expert Standard Discharge Management in Nursing (DKI 2008, p. 94 ff.) can be applied to transfer situations. Standardized telephone interviews (guidelines) and/or standardized surveys of those affected can be used as instruments (ibid.).

#### V.5 Documentation and evaluation

Evaluations are necessary in order to check whether the planned scope, timing and quality of the interventions meet the needs and requirements of the people concerned, both during the ongoing process and at the end of a support program. They help to identify gaps in supply (in good time) and take appropriate countermeasures or generally improve processes. Evaluations can be standardised (e.g. with questionnaires) or informal (see DKI 2008, p. 90 ff.).

There are many aspects to urotherapeutic support for men before and after radical prostatectomy. Therefore, documentation and evaluations are necessary at various levels: in relation to the specific consequences of the therapy such as incontinence and erectile dysfunction, the outcome of consultations, the quality of the transition and also in relation to the overall management of the health disorder.

Instruments must be chosen specifically for the objectives of monitoring and evaluation. Different instruments are required for the documentation and evaluation of education than, for example, for the evaluation of therapeutic measures for incontinence and erectile dysfunction or the evaluation of discharge and transition management. Established, validated instruments should be used whenever possible.

Suitable established instruments can be found in guidelines relevant to the target group, national expert standards, specifications for certified centers or scientific literature (Frankland et al. 2017, p. 5; Goode et al. 2011, p. 3; McCaughan et al. 2018, p. 143).

Documentation and evaluations include both physical, psychological and social aspects. On the one hand, these are recorded by means of physical examinations, scales and questionnaires.

As the focus has always been on recording physical aspects, there are also numerous examples in the area relevant to urotherapists, e.g. the micturition diary, the number of pads required, measurement results of urodynamics, sonographic residual urine determination, electromyography, rectal manometry or sphincter tone (Goode et al. 2011; Delbrück et al. 2013, p. 1).

Quality of life surveys are now also well established.

On the other hand, patient-reported outcome measures (PROMs) are less established, although they are equally valuable.

Steinbeck et al. (2021, p. 15 ff.) rightly criticise the fact that those affected have not yet been sufficiently involved in the design and evaluation themselves. Meanwhile, there are questionnaires that record the patient's view of their quality of life, everyday functions, disease-related symptom burden and general condition. These should not be collected exclusively at the end of treatment, but continuously throughout the process (ibid.). The Martini-Klinik in Hamburg was a pioneer in the recording of PROMs in Germany and has now established their recording in its IT system. They are collected continuously during the course of treatment (Steinbeck et al. 2021, p. 92).

Urotherapeutic interventions focus on the (health-related) quality of life of those affected. Quality of life is a subjective concept. PROMs are also important instruments in urotherapeutic support from this perspective.

The importance of self-efficacy expectations for the therapeutic process has also received little attention to date. A large number of instruments are described in the English-language literature that focus more on the experience of the health situation and its psychosocial effects, e.g. unmet needs, self-efficacy expectations, communication about the state of health, etc (McGaughan et al. 2018, p. 143; Frankland et al. 2017, p. 4 ff.).

#### V.5.1 Formulation of near and long term goals

## Urotherapeutic short- and long-term goals for rehabilitation after radical prostatectomy in relation to urinary incontinence:

#### Table: Short-term and long-term goals (own representation)

Key: Short-term goal: always relates to the inpatient stay, long-term goal: relates to the rehabilitation phase after the inpatient stay in the acute hospital

#### Area: Short-term goal / long-term goal

#### Perception of the urethral sphincter

- understands the training content for continence counselling
  - can apply the training content independently in everyday life

#### Strengthening the urethral sphincter muscle

- Be able to specifically innervate the sphincter muscle (e.g. exercises to tighten the pelvic floor)

#### Strengthening the sphincter muscle

- Improving continence
- Promotion/preservation of individual resources and abilities (enabling those affected to participate in therapeutic measures)

#### Improvement of continence cave!

- With limited basic requirements such as:

- Ambiguity
- iatrogenic complication
- Tumor spread
- cognitive impairment

- linguistic barrier
- Get to know and apply care aids
- Knowledge of tools for conservative complementary care
- uses aids professionally and hygienically

#### Support and acceptance

- is willing to accept help
- develops their own coping strategy

#### Information on everyday behaviour

- identify individually adapted options (training and advice)
- can cope with his everyday life in a way and manner that is satisfactory to him

#### Skin ratio

- is well informed about the importance of intact skin conditions
- intact skin conditions

#### Catheter care

- understands the need for individual catheter care and is able to perform it independently
- Low-germ environment reduces the risk of infection

#### V.5.2 Standardised questionnaires

Assessment instruments must meet scientific quality criteria.

The International Continence Society (ICS) (2017) advocates questionnaires with objective (e.g. micturition diary) and subjective (PROs = patient-reported outcomes) statements to record symptoms and levels of suffering.

Standardized questionnaires are mentioned in the guidelines of the professional associations, e.g. in the oncology guideline program or in the guidelines of the European Association of Urology (EAU) (Nambiar et al. 2018; Oncology Guideline Programme 2014, p. 34; Oncology Guideline Programme 2021, p. 269; Resnick et al. 2015).

For men before and after prostatectomy, these include, for example, the German version of the General Health Questionnaire (GHQ), the International Prostate Symptom Score (IPSS), the International Index of Erectile Function (IIEF), the German version of the International Consultation on Incontinence Questionnaire Urinary Incontinence - Short Form (ICIQ-UI-SF) and others. (IIEF), the German version of the International Consultation on Incontinence Questionnaire Urinary Incontinence - Short Form (ICIQ-UI-SF) and others.

The EORTC QLQ-C30 questionnaire and the FACT are among the most frequently used instruments in oncology, as are distress thermometers and the HADS-D (Oncology Guideline Programme 2014, p. 34, 49). The national expert standard for the promotion of urinary continence contains the continence profiles (DNQP 2014).

Since urotherapy is part of a multi-professional, interdisciplinary team and the documentation should be accessible to all team members, the assessment tools must be harmonised within the field of work.

## VI. Conclusion/Overview

This first guideline by and for urotherapists was developed using the current evidence base, where available. The consensus process initially took place in the responsible expert group. It is to be expanded to include consensus procedures with representatives of the professional group and experts from various specialist disciplines involved in the diagnosis and treatment of men before and after radical prostatectomy. The feasibility of the recommendations will then be tested in a practical project.

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## VIII. Appendix

- A Prostate cancer pathophysiology and etiology/epidemiology information sheet
- B Overview of the recommendations of the guideline
- C Clinical pathway urotherapy radical prostatectomy
- D Members of the guideline group
- E Declaration of interests and handling of conflicts of interest
- F Questionnaire to evaluate the guideline: Patients
- G Questionnaire to evaluate the guideline: Team

# Appendix A: Information sheet on pathophysiology and aetiology/epidemiology in prostate cancer

Information for patients, relatives and all those involved in therapy on researched factors that can influence the development of prostate cancer and the course of the disease. Lifestyle adaptation/nutrition discussion guide

Pathophysiology

It has been proven that prostate cancer almost always originates from glandular epithelia (adenocarcinoma). Sarcomas are rarely detected. The tumour develops completely independently of - but often simultaneously with - benign prostatic hyperplasia (Gasser 2015, p. 110).

Studies have not clearly shown that inflammation of the prostate (prostatitis) is the cause of this cancer. However, there is evidence to suggest a link between chronic inflammation of the prostate and the development of this type of cancer.

Initially there are usually no symptoms. Prostate cancer becomes clinically manifest through its tumour growth, which impedes drainage, or rarely through metastatic pain (lumbago, sciatica) as the first symptom of the disease (Gasser 2015, p. 110).

Etiology

(Causes of the emergence of a disease)

The exact aetiology of prostate cancer is not known (Graefen 2014, p. 218).

Men should be made aware that age is the most important risk factor for the occurrence of prostate cancer (German Cancer Society et al. 2019, p. 25). Genetic factors also play a role in the development of prostate cancer. 10-15% of all prostate cancers are hereditary (genetic) (Graefen 2014, p. 218).

Epidemiology

(Exploring the factors that influence health conditions.)

There are a number of indications that genetic factors, environmental influences and diet play a significant role in the development of prostate cancer. Various studies have identified a number of possible risk factors.

Obesity, vitamin D and diet can play an important role in this (Vutuc et al. 2010).

Obesity

Obesity and prostate cancer are linked in Western industrialized countries.

Although older studies on this connection were not conclusive, studies on people with the disease showed that obesity is associated with a reduced risk of non-aggressive tumors but a higher risk of aggressive tumors.

#### Influence of vitamin D

Vitamin D is an essential vitamin. The interest in vitamin D as a risk factor for prostate cancer is based on several epidemiological observations (limited to one area): Male populations living in northern latitudes with less sun exposure have a higher rate of the disease; African-Americans, whose melanin in the skin blocks UV radiation and thus inhibits the activation of vitamin D, have the highest rate of the disease worldwide in the same observed time period. Also, a diet rich in calcium, which lowers vitamin D levels, would be associated with a higher risk of prostate cancer; Japanese whose diet is rich in vitamin D due to the high proportion of fish have a lower risk of prostate cancer.

However, a large number of studies have not yet been able to establish a clear link between vitamin D blood serum levels and the risk of developing prostate cancer.

#### Nutrition

Prostate cancer is often described as a disease of Western industrialized countries. The diet in Western countries is characterized by a high content of animal fats and proteins (protein) and a lower proportion of fibre. This is in contrast to the Asian diet, which is low in animal fats and rich in fruit and vegetables - thus also a logical explanation for the lower incidence of prostate cancer in Far Eastern countries. Fat consumption, in particular the consumption of unsaturated fatty acids, and the occurrence of prostate cancer, which leads to death, are closely linked worldwide. Epidemiological data indicate a link between diet, certain environmental factors and the risk of developing prostate cancer.

#### Appendix B: Overview of the recommendations of the guideline

Recommendation V.1.1: The urotherapeutic support begins with standardized preoperative continence training.

- Recommendation V.1.2: Post-operative urotherapeutic support is provided in the context of three contacts with a proportion of standardized content, but above all content geared to the individual needs of those affected. If necessary, further individual contacts will be agreed. The urotherapist contributes to the flow of information between the members of the multi-professional, interdisciplinary team by documenting their activities and involving individual members of the team as required.
- Recommendation V.1.3: The urotherapeutic support should be continued in rehabilitation. The urotherapist contributes to the flow of information between the members of the multi-professional, interdisciplinary team by documenting his/her activities and involving individual members of the team as required.
- Recommendation V.2.1. a): Urotherapeutic education uses aspects of cognitive behavioral therapy and learning theory to support people in adapting their behavior.
- Recommendation V.2.1. b): Urotherapeutic support covers all phases of coping with the disease
- Recommendation V.2.2: The urotherapist informs patients about the basics of nutrition and discusses ways of adapting their diet. In the event of current problems in the area of nutritional status and/or malnutrition, he/she establishes contact with an expert.
- Recommendation V.2.8: Urotherapists inform and advise those affected and their relatives about legal requirements for the provision of aids, draining and absorbent incontinence products and the tasks of home care companies
- Recommendation III. 2: The definition of the International Continence Society ICS is used to describe urinary incontinence.
- Recommendation III. 3: The term "erectile dysfunction" is used when there is an inability to achieve and maintain a satisfactory erection for more than 6 months.
- Recommendation V.3.3: As an accompanying therapy, aerobic endurance training, moderate strength training and coordination training are recommended for men with prostate carcinoma, started at an early stage, individually tailored and carried out under therapeutic guidance.
- Recommendation III. 4: The following definition should be used: Urotherapy is a conservative, non-surgical and non-pharmacological treatment concept. It stands for the rehabilitation of the lower urinary tract and provides holistic care for those affected in the form of information, advice,

guidance and training and includes the diagnosis, treatment and care of people with functional, organic or neurological disorders of bladder and bowel emptying.

- Recommendation IV: Urotherapists should provide continuous support for the men with the disease and their relatives from the preoperative stage onwards.
- Recommendation V.4: a) If structures for discharge management are in place in the urotherapists' field of work, they participate in discharge management by contributing their specialist expertise, documenting their work consistently, cooperating with the treating team and contributing to the development of suitable instruments (e.g. clinical pathways)
  - b) If there are no structures for discharge management in the urotherapists' field of work, urotherapists establish the flow of information to all those involved in the treatment. To this end, they develop their own instruments (e.g. treatment pathways, standardized transition forms, etc.) and actively support the establishment of a network.
- Recommendation V.4.2: Urotherapists should advise affected individuals and/or their relatives on assistive devices at an early stage and provide them with samples of assistive devices or initiate them through cooperation with suitable specialists. In doing so, they ensure product-neutral advice.



patients

## Appendix C: Clinical pathway for urotherapy radical prostatectomy

## Appendix D: Members of the guideline group

#### Constitution of the guideline group

Barbara Schilcher	Pediatric nurse, nursing service manager, nursing consultant, urotherapist, lecturer, coordinator of the guideline group
Cornelia Bartsch	Nurse, Urotherapist
Antje Brosemann	Nurse, urotherapist, stoma care expert, continence, wound
Galina Garbolinski	Nurse, urotherapist, continence specialist, bowel manager, continence care manager in the home care sector
Heiko Kreß	Nurse, urotherapist, specialist for stoma care (StomaCert), wound therapist (ICW)
Guido Pflüger	Nurse, urotherapist, team leader urological outpatient clinic and urological endoscopy
Doris Scholt	Nurse, specialist nurse for intensive care and anesthesia, teacher for nursing professions, MScN
Kirsten Unruh	Nurse, urotherapist, pelvic floor instructor BeBo©

#### Accompanying subject matter experts:

Sabine Irmer	Urotherapist, expert in bladder and intestinal emptying disorders, state-certified gym- nastics teacher				
Judith Elliott	Lecturer M. A. health education, B. Sc. Physiotherapy, urotherapist				
Mathias Berauer	Quality management officer Halberstadt AMEOS Clinic, academic teaching hospital				
Dr. med. Per Friedrichs	en Chief Physician Urology and Pediatric Urology, Halberstadt AMEOS Clinic, Academic Teaching Hospital				
Dr. med. Evangelos Ge	orgas Specialist in Urology, Palliative Medicine, Andrology and Drug Tumour Therapy, FEBU, FECSM, Neuss Urological Centre				
Dr. med. Dittmar Freihe	err Grote Senior Physician in the Department of Urology and Paediatric Urol- ogy at the Itzehoe Clinic				
Antonia Jeziorowski	Specialist in Urology, Department of Urology, Clinic Fürth				
Dr. med. Fabian Queiße	ert Head of Continence and Neurology, UKM University Hospital Münster, Westphalian Wilhelms University Münster				
Hans-Jürgen Schulz	Head of self-help group prostate cancer, Neuss				

#### Representativeness of the guideline group: Occupational groups involved

Health and nursing with the training of a urotherapist

Physiotherapists with further training as urotherapists

Specialist in urology

Representativeness of the guideline group: Participating specialist societies, working groups and associations: D-A-C-H Association of Urotherapy e. V.

## Appendix E: Declaration of interests and handling of conflicts of interest \* (current year and up to 3 years in the past)

Name/Qualifica- tion/ Position	Advisory and/or expert opinion work	Collaboration in a scientific advisory board	Paid training and/or lecturing activities	Paid author and/or co- author	Research projects/clinica I research	Collaboration in the Guideline Working Group	Indirect interests	Topics with conflict of interest/conseque nces and how to deal with them
Doris Schölt,	Yes, WB	no	Yes, WB Urotherapist/	no	no	honorary	D-A-CH	
MScN, former	Urotherapist		Urotherapist Conference				Vereinigung	
pedagogical head of WB Urotherapist							der Urotherapie e.V.	
Wosor Links								
Heiko Kreß,	no	no	Yes, in-house, (Fürth	no	no	honorary	D-A-CH	
nurse, urotherapist, wound therapist (ICW), ostomy care specialist (ostomy cert), Fürth Clinic			Clinic)				Vereinigung der Urotherapie e. V., ICW Initiative Chronische Wunden e. V.	
Antje Brosemann, Nurse Urotherapist Nursing Expert Stoma, Continence and	no	no	Yes, WB Urotherapist Weser Links Clinic	no	no	honorary	D-A-CH Vereinigung der Urotherapie e.V.	

\* Based on the AWMF recommendations on conflicts of interest and the corresponding sample form (https://www.awmf.org/regelwerk/erklaerung-von-interessen-und-urngang- mit-interessenkonflikten).

Name/Qualification/ Position	Advisory and/or expert opinion work	Collaboration in a scientific advisory board	Paid training and/or lecturing activities	Paid author and/or co- author	Research projects/clinica I research	Collaboration in the Guideline Working Group	Indirect interests	Topics with conflict of interest/conseque nces and how to deal with them
Guido Pflüger, Team Leader Urological Endoscopy and Outpatient Clinic, Urotherapist Itzehoe Clinic Clinic for Urology and Pediatric Urology	no	no	no	no	no	honorary	D-A-CH Vereinigung der Urotherapie e. V.	
Galina Garbolinski, Nurse, urotherapist, external care representative	no	no	Yes, healthcare conferences	no	no	honorary	D-A-CH Vereinigung der Urotherapie e. V.	
Cornelia Barsch, exam. nurse, urotherapist, Halberstadt AMEOS Clinic	no	no	Yes, lecturer activity Publicare, Coloplast	no	no	honorary	D-A-CH Vereinigung der Urotherapie e.V,.	
Kirsten Unruh, nurse, urotherapist, pelvic floor therapist according to the BeBo® concept, Itzehoe Clinic for Urology and Pediatric Urology	no	no	no	no	no	honorary	D-A-CH Vereinigung der Urotherapie e. V.	
Barbara Schilcher, Urotherapist, Head of Nursing, Lecturer in Nursing	no	no	Yes, lecturer activity Wellspect, Fresenius	no	no	honorary	D-A-CH Vereinigung der Urotherapie e. V.	