KNGF Guideline
on Stress Urinary Incontinence

KNGF Guideline
Supplement to the Nederlands Tijdschrift voor Fysiotherapie
Vol. 121 • No. 3 • 2011

Version 1.0 Danish version for review • 2013

Postal address
P0 Box 248, NL-3000 AE Amersfoort

www.kngf.nl
www.defysiotherapeut.nl
info@kngf.nl

Edited by
A.T.M. Bernards
L.C.M. Berghmans
I.C. Van Heeswijk-Faase
E.H.M.L. Westerik-Verschuuren
I. de Gee-de Ridder
J.A.M. Groot
M.C.P. Slieker-ten Hove
H.J.M. Hendriks

KNGF Guideline on Stress Urinary Incontinence

Danish Version:
Postal address
Holmbladsgade 70, 2300 Kbh. S

For the Danish adjustements
Ulla Due
Sigrid Tibæk
Sanne Valbjørn
Vibeke Colstrup

The guideline is summarised in a quick card, which is written in Danish (2013). All components of the guideline can be downloaded from www.fysio.dk

KNGF Guideline on Stress urinary incontinence

Practice Guideline

A.T.M. Bernards[I], L.C.M. Berghmans[II], I.C. Van Heeswijk-Faase[III], E.H.M.L.Westerik-Verschuuren[IV], I. de Gee-de Ridder[V], J.A.M. Groot[VI], M.C.P. Slieker-ten Hove[VII] H.J.M. Hendriks[VIII]

A. Introduction

This KNGF Guideline describes the physical therapy treatment of women and men with stress urinary incontinence (SUI) or mixed incontinence with SUI as the predominant component. The guideline is supplemented by a *Review of the Evidence*, which sets out and explains the choices made as regards the definition of the health problem at hand, its diagnostics and treatment, as well as offering background information to support the Practice Guideline.

Introduction to the Danish version

This version of the KNGF guideline for physiotherapy for women and men with stress urinary incontinence has been adapted and adjusted to Danish clinical practice with the use of the evaluation and adaptation instrument AGREE II. The sections on referral have been adjusted to fit Danish law. Subjective measurement tools have been changed because the originally described tools have not been translated or validated in Danish. We have removed the measurement tool assessing pelvic organ prolapse in women and also the use of a pad test since these examinations are not part of a Danish physiotherapist's clinical practice. We recommend that these examinations, if needed, are performed by other health professionals. Furthermore, we have chosen to add more information regarding epidemiology and aetiology of SUI in men and we have divided the examination of the pelvic floor muscle function into a female part and into a male part. Since the modified Oxford grading scale is generally used in Danish clinical practice, we have added this instrument as an option for evaluating muscle strength for both sexes.
Finally, wherever possible, we have shortened the text.

A.1 Objective and target group

The *KNGF Guideline on SUI* is intended for physical therapists with special interest in pelvic floor muscle treatment involved in the evaluation, diagnosis and treatment of urinary incontinence. The physical therapist must have proven specific knowledge and an understanding of this group of patients, and have a suitable attitude towards them. Physical therapists engaging in internal examinations and treatments of patients with SUI must be aware of this requirement, based on the current Danish National Board of Health letter.
The Association of Danish Physiotherapists regards these as 'special procedures' (including internal examination of the vagina or anus by the introduction of one or two fingers or a sensor into the vagina or anus), which means that they are subject to special conditions. The Danish Obstetric and Gynaecological Physical Therapy Society recommends that members are registered on a list at their home page and that physiotherapists follow the recommendations described by the Danish Department of Health in 1989 regarding internal examination of the pelvic floor muscles (see www.gynobsgruppen.dk).
Danish physical therapists are allowed to perform internal examinations, physiotherapeutic diagnosis and treatments after full verbal information. If the physical therapist finds that a signed 'informed consent' from the patient to the internal examination is needed, an example of this can be downloaded from the homepage of The Danish Obstetric and Gynaecological Physical Therapy Society: www.gynobsgruppen.dk.

A.2 Development

The guideline consists of three components: the actual *Practice Guideline, a Review of the Evidence and a quick card* in Danish summarising the guideline. The clinical problem definition has been formulated by a team of experts on the subject, who have also selected and evaluated the scientific evidence.
The guideline is being introduced and disseminated using a chosen implementation strategy. The guideline is structured on the basis of the stages mentioned in the 'Methodical Approach of the Physiotherapeutic Health Care Process' docu-

I. Arnold TM Bernards, MD. Dutch Institute of Allied Health Care, Amersfoort and Institute of Health Studies, Han University of Applied Sciences, Nijmegen, The Netherlands.

II. Bary LCM Berghmans, Ph.D MSc RPT. Clinical epidemiologist, pelvic physical therapist, health scientist, organizational director Pelvic care Center Maastricht, Maastricht University Medical Center, Maastricht, The Netherlands.

III. Ingrid C van Heeswijk-Faase, MSPT. Pelvic physical therapist, Bekkenfysiotherapie-Zoetermeer, Zoetermeer.

IV. Elisabeth HML Westerik-Verschuuren MSPT. Pelvic physical therapist, Medisch Spectrum Twente, Enschede Coordinator Curriculum and Evaluation SOMT Pelvic Physiotherapy, Amersfoort, The Netherlands.

V. Ineke de Gee-de Ridder, MSPT. Pelvic physical therapist, Het Kruispunt, Heemskerk, The Netherlands.

VI. Joke A.M. Groot, MSPT. Pelvic physical therapist, VU University Medical Center, Amsterdam, BekQ up Amsterdam, Pelvic care Center Hageman, Heemstede, The Netherlands.

VII. Marijke C.Ph. Slieker-ten Hove, Ph.D, MA, PPT. Pelvic physical therapist and researcher, Department of Physical Therapy and Pelvic Floor Centre Erasmus MC, University Medical Centre, Rotterdam, ProFundum Institute, Dordrecht, The Netherlands.

VIII. Erik Hendriks, Ph.D, MSc PT. Senior researcher, Health scientist & Epidemiologist, Faculty of Health, Medicine and Life Sciences. Department of Epidemiology, Maastricht University, Co-director and Programme manager Clinical Guidelines and Quality of Care, Centre for Evidence Based Physiotherapy (CEBP), Maastricht, The Netherlands

ment. Further information is presented in the *Review of the Evidence*.

A.3 Definition of SUI

The International Continence Society (ICS) and the International Urogynecological Association (IUGA) define urinary incontinence as a 'complaint of involuntary loss of urine'. The ICS/IUGA define SUI as 'involuntary loss of urine on effort or physical exertion, or on sneezing or coughing'. They also suggest using the term 'activity-related incontinence' when talking to patients, to avoid confusion with psychological stress (1).
SUI occurs as a result of a dysfunctional urethral closure mechanism. The resulting involuntary loss of urine can affect someone's participation in social life (participation problems) to a variable extent.

A.4 Epidemiology

Involuntary loss of urine is a common problem. The exact number of Danish people suffering from it is unknown but is believed to be similar to the findings of other Western and Scandinavian countries (2-4). Reported prevalence figures for SUI in women vary from 10 to 40%, a variation which is explained by differences between study populations and the use of different definitions of SUI in different studies (5). About 20% of women with incontinence problems seek professional help. The annual incidence of SUI ranges from 7 to 11% (5).

The prevalence of SUI among men aged up to 65 years is lower than among women, ranging from 0.9 to 5% (6, 7). For men of all ages the prevalence of SUI ranges between 6% (8) and 50% (9-11) depending on the population. For men > 65 years in a community dwelling, setting a prevalence of 8% has been reported (2, 12).

A.5 Aetiology

Two mechanisms combine to ensure urinary continence, an intrinsic and an extrinsic mechanism. The former is the urethral closure mechanism, while the latter is the pelvic floor function. The pelvic floor has a supportive function. SUI can develop if one or both of these mechanisms demonstrate a dysfunction. The intrinsic closure mechanism involves the tunica mucosa, the tunica spongiosa and the tunica muscularis. Aetiological factors contributing to the development of urethral closure dysfunction include atrophy of the tunica mucosa and the tunica spongiosa (e.g. postmenopausal) (13) (14, 15) or a dysfunctional tunica muscularis (e.g. due to catheterization). Oestrogen deficiency can cause the loss of supportive tissue around the urethra, reducing the closing function of this tissue.
Aetiological factors contributing to dysfunction of the supportive extrinsic mechanism include weak pelvic floor muscles and ligaments (which may be congenital or may have been caused or aggravated by pregnancy and/or vaginal delivery) (15-21), vacuum or forceps delivery (17, 20, 22, 23), episiotomy and/or pudendal block (18, 22) and advanced maternal age at first delivery (24, 25). Parity plays major a role – with the risk of SUI development increasing after a first vaginal delivery and even more after three or more deliveries (21, 26-28) – as does a prolapse. Overweight ($25 \leq BMI < 30$) (13, 28-30), especially obesity ($BMI \geq 30$) (24, 31-34) and urinary tract infections increase the risk of SUI, which also increases with age (19, 25), showing a peak at the age of 45-50 years. The risk decreases somewhat after the menopause (13, 15).
For men as well as for women with chronic obstructive pulmonary disease (COPD), the increasing abdominal pressure when coughing increases the risk of SUI (14, 35). Meanwhile, SUI in men is more often a result of iatrogenic surgery treatment for benign prostate hyperplasia (BPH) or prostate cancer (36). Transurethral resection of prostate (TURP) in treatment of BPH is associated with a risk of SUI immediately after the surgery which decreases within 1-3 months postoperative (37-40), while radical prostatectomy is the most comment aetiology of SUI in men (5, 11). Other risk factors among both men and women are age-related changes, and neurogenic and psychiatric diseases (41) .

A.6 Prognosis

Many of the aetiological factors increasing the risk of developing SUI also affect the persistence of the incontinence problems. Pregnancy-related factors such as the number of pregnancies, or delivery-related factors such as a prolonged second stage of labour or a perineal rupture reduce the chances of spontaneous recovery and of recovery after physical therapy. The chances of recovery can also be considerably reduced by severe prolapse (POP-Q stage 3 or 4) (42).
Negative predictors for recovery from SUI include overweight, the presence of other diseases or disorders, such as diabetes mellitus (risk of neuropathy), cardiovascular diseases, psychological strain and patient-perceived low physical condition. The chances of a favourable outcome of physical therapy are also small if the patient has previously been unsuccessfully treated for SUI by a pelvic physical therapist, or if their current SUI is very severe. Patients with a higher educational level have a greater chance of recovery (42).
Risk factors for persistent SUI in men are transurethral resections of prostate (TURP) (5, 11, 38) and radical prostatectomy (43, 44).

A.7 Referral versus direct access to physical therapy

In Denmark patients are usually referred to a pelvic physical therapist with a letter of referral either from the general practitioner or from the medical specialist (e.g. a urologist or a gynaecologist) but patients can also consult a pelvic physical therapist in the primary sector directly.
In Denmark pelvic physical therapists work in three different sectors:

- In hospitals: Referral/a specialised rehabilitation plan is required from a medical specialist (e.g. a urologist or a gynaecologist)
- In the municipality: A referral or a common rehabilitation plan is required from a medical specialist (a hospital gynaecologist or urologist) or from Continence Teams.
- Private practitioner: A referral is required from the general practitioner, private gynaecologist or from the patient directly

Physiotherapists collaborate with general practitioners and specialists through reciprocal referrals after consultation with – and with the consent of – the patient.

A.7.1 Referral

The Danish Association of Physiotherapists and Fagforum for Gynobs-fysioterapi recommend that the letter of referral should include at least the following information:

- Date of referral and personal details: name, social security number, address and telephone number
- Information about social life: such as work situation, partner, sports activities etc.
- Diagnosis or presumptive diagnosis and severity of urine loss

- Diagnostic findings: whether the patient is able to voluntarily and/or involuntarily contract or relax their pelvic floor muscles, and some indication of the functioning of the pelvic floor muscles
- Contraindications to internal examinations to assess the pelvic floor muscle function
- The presence and grading of prolapse and/or other urogynaecologically relevant problems in the pelvis
- The information from the patient's micturition diary
- Any previous interventions
- Use of medication (i.e. drugs that may relate to the incontinence and may affect the treatment outcome).
- Information about anal incontinence: such as kind of anal incontinence, frequency and severity of problems, relationship with SUI and affection of quality of life.
- Possible causative (aetiological) and prognostic factors, such as rupture during vaginal delivery, damaged pudendal nerve, diabetes mellitus, prior urogynaecological surgery, psychological condition (such as known sexual problems maybe caused by sexual traumas/abuse), etc.
- Information about sexual problems: such as leakage during participation in sexual activity (intercourse, orgasm). Any affection of quality of life.

If some of the necessary medical data are missing, the therapist should contact the patient's general practitioner or specialist, with the patient's consent.
After referral, no specific screening is required and the evaluation and the diagnostic process can be started immediately. The therapist should, however, continue to be attentive to any signals (red flags) during the evaluation, diagnostic and therapeutic process that may require contact with the referring doctor.

A.7.2 Direct access to physical therapy

In Denmark patients are allowed to present directly to a pelvic physical therapist at their private practitioner or in the community without a letter of referral. As a result, the systematic approach described in this guideline also includes a screening process.
The screening process involves asking specific questions, performing tests or using other diagnostic procedures to determine within a limited period of time whether the patient exhibits a pattern of signs and symptoms that is compatible with the individual physiotherapist's area of competence.

This screening process consists of four components:

Presentation: The pelvic physical therapist should ask for the necessary medical data, such as use of medication, other pathology, or prior surgery. If the information is incomplete or insufficiently clear, the physiotherapist may ask for supplementary information from the general practitioner, with the patient's consent.

Problem identification: The patient's presenting problem should be identified by assessing their main complaints, the course of the complaints, and the objective of the therapy (45–49).

Screening for pathology requiring urgent medical attention.
The physical therapist decides whether the patient's signs and symptoms are alarming or reassuring, based on age and sex, available incidence and prevalence data, the development of the problem and the current signs and symptoms, in order to decide whether to continue with further physical therapy examinations without consulting the general practitioner or gynaecologist (50). The pelvic physical therapist should focus on advanced clinical reasoning in order to reveal typical patterns and identifying possible 'red flags' (alarm signals).

Red flags in stress urinary incontinence
- unexplained incontinence
- pain while urinating
- loss of blood
- signs of inflammation
- infections
- fever
- (nocturnal) perspiring
- signs of general malaise or psychological distress
- severe loss of weight
- any neurological signs

Information and advice:
At the end of the screening process, the physical therapist should inform the patient of the findings. If there are signs of pathology requiring urgent medical attention, the physical therapist should advise the patient to consult their general practitioner.
The physical therapist should also inform the patient if the findings fit in with the normal pattern for SUI.
If the pattern indicates pure SUI without any red flags, there is no need to contact the patient's general practitioner, and the further diagnostic process can be initiated immediately.

Symptoms of SUI

Symptoms of SUI

Stress (urinary) incontinence is defined as: complaint of involuntary loss of urine on effort or physical exertion (e.g. sporting activities), or on sneezing or coughing. The definition of "activity-related incontinence" might be preferred since the loss of urine occurs at moments of increased intra-abdominal pressure, without the patient feeling the urge to empty their bladder and without pain (1).

B. Diagnostic process

The aim of the diagnostic process in physical therapy is to examine the type and severity of the patient's health problem and to assess the extent to which it can be modified (45, 50). During the diagnostic process, the therapist describes the health problems in terms of impairments of body structures and body functions, limitations of activities and restrictions of participation, and identifies relevant personal and environmental factors.
This method of identifying and recording the problems makes it possible to monitor changes over time, and to use the data as an evaluation instrument to measure the effect of the care provided by the therapist (45).
The terms 'impairment', 'limitations of activity' and 'restrictions of participation' (51) do not, however, provide any information about the nature of the underlying disorder and/or disease processes responsible for the SUI, nor about their possible modifiability.
This means that the physical therapist must also use the process of physical therapy evaluation and diagnosis to collect

information that will allow conclusions to be drawn about the nature and modifiability of the factors responsible for the development of SUI.
This requires an analysis of the way the problem developed and identification of the aetiological factors and the extent to which the SUI can be modified, based on prognostic factors. The necessary information can be obtained by means of history-taking, the patient's self-reports, questionnaires, micturition diaries and the therapist's own physical examination (external and internal) of the patient. We recommend using standardised questionnaires to collect data, such as the ICIQ-UI-SF (52, 53) or the DAN-PSS questionnaire (54-56) (see Annex 2 and 3).
In the analytical stage, the pelvic physical therapist then establishes the physical therapy diagnosis, based on the patient's presenting complaints and the information collected during the history-taking and physical examinations. The therapist decides, on the basis of the diagnosis, whether physical therapy is indicated and whether the patient can be treated in accordance with the guidelines. The therapist then draws up a treatment plan in consultation with the patient.
The information obtained about the nature, severity and modifiability of the individual patient's health problems can be used to establish the prognosis and the objectives of the physical therapy treatment, in terms of reducing impairments, limitations of activities, and restrictions of participation, or, in other words, improving body functions, activities and participation.

Box 1. Assessing the type, course and severity of the urinary incontinence and to confirm the type of incontinence

Urinary signs and symptoms can be described as urinary incontinence symptoms, bladder storage symptoms, voiding and post-micturition symptoms and/or as sensory symptoms. This structure is recommended for use during history-taking (1, 57, 58).
Urinary incontinence (symptom): complaint of involuntary loss of urine.

- **Stress (urinary) incontinence:** complaint of involuntary loss of urine on effort or physical exertion (e.g. sporting activities), or on sneezing or coughing. N.B. the term "activity-related incontinence" might be preferred in some languages to avoid confusion with psychological stress.
- **Urgency (urinary) incontinence:** complaint of involuntary loss of urine associated with urgency
- **Postural (urinary) incontinence:** complaint of involuntary loss of urine associated with change of body position, e.g. rising from a seated or lying position
- **Nocturnal enuresis:** complaint of involuntary urinary loss of urine which occurs during sleep
- **Mixed (urinary) incontinence:** complaint of involuntary loss of urine associated with urgency and also with effort or physical exertion or on sneezing or coughing.
- **Continuous (urinary) incontinence:** complaint of continuous involuntary loss of urine
- **Insensible (urinary) incontinence:** complaint of urinary incontinence where the woman has been unaware of how it occurred.
- **Coital incontinence:** complaint of involuntary loss of urine with coitus. This symptom might be further divided into that occurring with penetration and that occurring at orgasm.

Bladder storage symptoms:

- **Increased daytime frequency** (Normally defined as > seven micturitions during wakening hours)
- **Nocturia** (complaint of interruption of sleep one or more times because of the need to micturate)
- **Urgency for urine** (complaint of a sudden, compelling desire to pass urine which is difficult to defer)
- **OAB:** Overactive bladder (OAB, urgency) syndrome: urinary urgency, usually accompanied by frequency and nocturia, with or without urgency urinary incontinence, in the absence of urinary tract infection or other obvious pathology

Sensory symptoms:

- **Increased bladder sensation:** complaint that the desire to void during bladder filling occurs earlier or is more persistent than previously experienced. N.B. This differs from urgency by the fact that micturition can be postponed despite the desire to void.
- **Reduced bladder sensation:** complaint that the definite desire to void occurs later to that previously experienced despite an awareness that the bladder is filling
- **Absent bladder sensation:** complaint of both the absence of the sensation of bladder filling and a definite desire to void

Voiding and post-micturition symptoms

- **Hesitancy:** complaint of a delay in initiating micturition
- **Slow stream:** complaint of a urinary stream perceived as slower compared to previous performance or in comparison with others
- **Intermittency:** complaint of urine flow that stops and starts on one or more occasions during voiding
- **Straining to void:** complaint of the need to make an intensive effort (by abdominal straining, Valsalva or suprapubic pressure) to either initiate, maintain, or improve the urinary stream
- **Spraying (splitting) of urinary stream:** complaint that the urine passage is a spray or split rather than a single discrete stream
- **Feeling of incomplete (bladder) emptying:** complaint that the bladder does not feel empty after micturition
- **Need to immediately re-void:** complaint that further micturition is necessary soon after passing urine
- **Postmicturition leakage:** complaint of a further involuntary passage of urine following the completion of micturition
- **Position-dependent micturition:** complaint of having to take specific positions to be able to micturate spontaneously or to improve bladder emptying, e.g. leaning forwards or backwards on the toilet seat or voiding in the semi-standing position
- **Dysuria:** complaint of burning or other discomfort during micturition. Discomfort may be intrinsic to the lower urinary tract or external (vulvar dysuria)
- **Urinary retention:** complaint of the inability to pass urine despite persistent effort

B.1 History-taking

History-taking is used to clarify and supplement the information from the presentation/referral stage or the screening process.

The questions have the following aims.

1. Assessing the type, course and severity of the urinary incontinence and to confirm the type of incontinence (is it really a case of stress urinary incontinence? See Text Box 1. (1))
2. Assessing the severity of the health problem by identifying the impairment(s) (such as loss of urine when coughing), limitations (including aspects of hygiene) and restrictions of participation (such as social isolation). See Text Box 2.
3. Identifying the possible nature of the underlying disorder by assessing the potential causative or risk factors (such as the course of deliveries). See Text Box 3.
4. Identifying local factors (such as uterine prolapse) that can influence the prognosis by adversely affecting the recovery and adjustment processes. See Text Box 4.
5. Identifying other factors (such as overweight) that can influence the prognosis by adversely affecting the recovery and adjustment processes. See Text Box 5.
6. Personal aspects (such as what the patient has done so far to cope with the problems). See Text Box 6.

Box 2: Assessing the severity of the health problem by identifying the impairment(s) (such as loss of urine when coughing), limitations (including aspects of hygiene), and restrictions of participation (such as social isolation) (including use of urinary incontinence products):

- The amount of urine lost on each occasion (stream+++, trickle ++, drops +)
- The frequency of losing urine (once or more times a day)
- The time of the day when loss of urine occurs (morning, afternoon, evening or night and relationship with different activities such as sports, work, garden work, house keeping, participation in sexual activities, etc.)
- Whether any urinary incontinence pads are being used (how frequently changed; using mini, midi or maxi size)
- Frequency of going to the bathroom and reasons for doing so (fear of leakage, increased micturition frequency)
- Any consequences of loss of urine for daily life (work, sports, housework, family life, social life and sex life)

We recommend that patients be always asked to complete the ICIQ-UI-SF or the DAN-PSS questionnaire (54-56) (see Annex 2 or 3) during history-taking.

Box 3. Identifying the possible nature of the underlying disorder by assessing aetiological factors

- The moment when the complaints started and their further course (during pregnancy, after delivery, after a prolapse, after surgery, postmenopausal, etc.)
- Number and course of deliveries (duration of pushing, baby's birth weight, size/diameter of the baby's head, forceps or vacuum delivery, perineal tearing, caesarean section)
- Abdominal/pelvic surgery (vaginal or abdominal hysterectomy, sling or suspension surgery, anterior or posterior colpoplasty, prostate surgery, sphincter surgery), surgery for herniated lumbar disc, possible denervation problems)
- Traumas
- Congenital disorders

Box 4. Identifying local prognostic factors that can adversely influence the recovery and adjustment processes

- Constipation problems and/or anal incontinence problems
- Complaints before, during, or after menstruation
- Use of diuretics
- Vaginal wall defects or urogenital prolapse, as diagnosed by a doctor

Box 5. Identifying other prognostic factors that can adversely influence the recovery and adjustment processes

- Overweight ($25 \leq BMI < 30$) (BMI = weight in kilogrammes divided by square of height in metres) or obesity ($BMI \geq 30$)
- Other disorders or complaints (cardiovascular diseases; neurological disorders; back, pelvic, and/or hip problems; diabetes; COPD)
- Use of medication (psychotherapeutic agents, sympathomimetics/sympathocolytics, parasympathomimetics/parasympathocolytics or oestrogens).
- Coughing related to smoking or chronic obstructive pulmonary disorder
- Bladder irritants
- History of recurring urinary tract infections

Box 6. Identifying personal factors

- How the patient is coping with their complaints, their understanding of the problem, perceptions, fears, 'illness beliefs' (i.e. the patient's ideas and views about the incontinence problem itself, its causes, possible consequences, chances of recovery, what they can do about it themselves and what help can be expected from other care providers) (36, 59)
- Any previous diagnostics and treatments the patient has had
- Use of incontinence products
- Use of incontinence-related medication
- Patient's objectives and expectations
- Patient self-efficacy vs. the problem
- Cognitive status (is the patient able to remember and follow instructions?)

The physical therapist designs a strategy for examination and possible physical therapy intervention(s), based on the information gained from the history-taking plus the information provided by the referring doctor. The therapist proposes this to the patient and discusses possible alternatives with them.
If the strategy involves any 'special procedures', the patient should be informed about the nature of the possible examinations and treatment options. The information shall enable the patient to make an informed decision about further physical examinations and treatment. We recommend asking the patient to sign an 'informed consent' form whenever necessary.

B.2 Physical examination

The severity of the SUI does not depend only on the condition of the pelvic floor muscles but it is also influenced by the patient's respiration, movement patterns, and general physical and psychological status. Any distortion of structures due to pelvic organ descent can mask symptoms. It is therefore important to not only examine the patient locally (i.e. their abdominal and pelvic region), but also to assess their general state of health. General examination is not a part of this guideline but it is expected that the physical therapist performs relevant global physical examinations if needed.
Not all physical therapists are licensed to carry out internal examinations and treatments of patients with pelvic floor problems. This guideline describes the assessment and treatment that physical therapists with special interest and education may perform. The possible external assessment of the pelvic floor muscle function in vulnerable patients is described in a separate section. For simplicity, the chapter on examination is divided into a female examination and a male examination.

The physical examination consists of inspection at rest and during movement, palpation and assessment of pelvic floor muscle function during activity, and has the following objectives:
- to assess the extent of voluntary control over the pelvic floor
- to assess pelvic floor muscle function
- to assess whether and to what extent other parts of the musculoskeletal system influence the function of the pelvic floor muscles (not included in this guideline), e.g. abdominal wall, pelvic girdle pain, low back pain
- to identify any local and other (i.e. general) unfavourable prognostic factors (see above)
- Symptom evaluation/quantification

B.2.1 Inspection

Inspection at rest
The pelvic physical therapist should wear gloves and apply hygienic procedures as outlined in the National Standards.

General men and women:
- general impression
- gait observation and identification of any mobility limitations
- posture
- respiration (respiratory pattern and vocal behaviour)

Local/regional:
- observing the abdominal and pelvic region
- local examination of genito-anal region

See Box 7 for examinations.

Box 7. Examinations – 'inspection at rest' Women

Initial position of patient: supine, with knees bent and spread (lithotomy position).

Inspecting the upper thighs, the skin of the perineal region and the outer labia
Note any skin irritations

Inspecting the perineum, the vulva and the entrance and distal part of the vagina
This requires spreading the outer and inner labia. Gel or lukewarm water may be used.
- Inspect the perineum, note any rupture scars or scars due to episiotomy, atrophy of the pelvic floor muscles, ectopic placement of anus, shortened perineum
- Locate the urethral opening (look for urethral damage)
- Inspect the entrance to the vagina
- Note any signs of infection (red and dry instead of pink and moist)
- Finding of abnormal tissue requires a referral back to the patient's GP

Inspecting the vagina
Note:
- Any signs of anterior or posterior vaginal wall defects, uterine prolapsed. Observe at rest and with cough or strain
- oestrogen status

Inspecting the anus
Note any signs of:
- haemorrhoids
- patulous anus (visible anal sphincter damage)
- soiling
- ectopic placement
- fissures

Box 7.1 1. Examinations – 'inspection at rest' Men

Initial position of patient: supine, with knees bent and legs apart (lithotomy position) or side lying on the left side with legs bent.

Inspecting the upper thighs, the skin of the perineal and perianal region.
Note any skin irritations

Inspecting the perineum
- Inspect the perineum, note any skin irritation

Inspecting the anus
Note any signs of:
- haemorrhoids
- patulous anus (visible anal sphincter damage)
- soiling
- ectopic placement
- fissures

Inspection during movement

See Box 8 for examinations.

Box 8 Examinations – 'inspection of PFM activity'

Inspection/observation during contraction and relaxation of pelvic floor muscles (60-62)
Use a standardised protocol and procedure to briefly explain to the patient what the internal examination entails and why it is necessary, and instruct them how to tighten their pelvic floor muscles. Then ask them to contract and relax their pelvic floor muscles. Give the patient enough opportunity (e.g. by allowing them to practice three times) to achieve conscious, voluntary pelvic floor contraction before scoring the results. Record the initial position, the circumstances and the time of examination.
Ask the patient to contract their pelvic floor muscles as best they can. If necessary, they should be asked to imagine that they are trying to stop themselves from breaking wind (63).
Record:
whether voluntary contraction results in

- perineal elevation (cranial elevation of vulva, perineum and anus)
- perineal descent (caudal movement of the perineum is dysfunctional)
- extra-pelvic muscle activity (visible co-contractions of muscles not belonging to the pelvic floor)
- watch/palpate lower abdomen to identify increase in abdominal muscle activity which could indicate increase of intra-abdominal pressure

Ask the patient to relax their pelvic floor muscles after having tightened them.
Record:

- whether relaxation of the PFM is visible
- whether there is global relaxation
- whether abdominal muscles relax

Inspection/observation during coughing
Ask the patient to cough with sufficient force (meaning as hard as the patient can). Repeat the cough if any doubts about result of the test.
Record:

- reflex lift with cough or absence of reflex lift
- any bulging of pelvic floor organs beyond the introitus
- any urinary incontinence
- ask the patient to cough again but this time after voluntarily contracting their pelvic floor.

Observe whether there is any visible difference between the two tests.

Inspection/observation while patient strains (unconscious, involuntary relaxation)
Ask the patient to give a strong push.
Record:

- whether straining causes any movement downward. Straining should normally result in an unconscious, involuntary relaxation of the pelvic floor and the perineum should move in a caudal direction.

B.2.2 Functional examination

Limited examination of pelvic region
In vulnerable patients where undressing is not an option, it is possible to perform parts of the pelvic floor muscle function assessment through indirect palpation. The assessment is not optimal and the results of the examination must be evaluated with caution since clothing can make it difficult to judge the amount of movement (64). The patient's initial position is crook lying, with the patient in underwear. The therapist puts one hand on the patient's posterior perineum at the level of the anus, and one hand on the lower abdomen, with the thumb at the level of the pubis, and then asks the patient to successively:

a. voluntarily tighten their pelvic floor muscles
b. relax the pelvic floor muscles again
c. cough
d. voluntarily tighten the pelvic floor muscles and then cough (61, 62)
e. give a strong push

Functional examination of pelvic floor muscles using direct palpation

Box 9. Internal examination / functional examination of the pelvic floor muscles

The pelvic floor can be examined by vaginal or anal palpation in women.

Vaginal palpation is always attempted with one finger first to ensure that no pain is elicited from the palpation (64).

The woman's initial position for vaginal palpation: supine, with knees bent and legs apart. The pelvic physical therapist evaluates and records:

the tone of the levator ani muscle (65);

- 0 Muscle not palpable
- 1 Muscle palpable but very flaccid, wide hiatus, minimal resistance to distension
- 2 Hiatus wide but some resistance to distension
- 3 Hiatus fairly narrow, fair resistance to palpation but easily distended
- 4 Hiatus narrow, muscle can be distended but high resistance to distension, no pain
- 5 Hiatus very narrow, no distension possible, 'woody' feel, possibly with pain: 'vaginismus'

The pelvic physical therapist evaluates and records:

- scars (fibrotic tissue)
- pelvic floor muscle awareness (does the patient feel the presence of the examining finger?)
- altered sensation left/right (66)
- pain, ventral, left/right
- pain, dorsal, left/right
- Distinct trigger points left/right
- symmetry and atrophy of the m. levator ani and avulsion of levator ani on the inferior rami (66)
- whether the patient is wearing a pessary
- descending of the vaginal walls or the uterus

Women's initial position for anal palpation: supine with knees bent or left lateral position, with legs drawn up. To be able to judge muscle function of the anterior part of the external anal sphincter, the supine position is preferable. The physical therapist passes the finger through the anal canal and hooks it around the anterior part of the anorectum i.e. approximately 2-3 cm within the rectum.

The pelvic physical therapist evaluates:

- the resting tone of the anus as 'good or 'poor' (1)
- the degree of anal deficiency
- anorectal angle at rest
- anorectal angle during increase in intra-abdominal pressure
- anorectal angle during pelvic floor contraction (a tightening action around the therapist's index finger, and a drawing inwards of the finger as a result of the contraction should be expected (simultaneous contraction and elevation)

Vaginal or anal palpation is also used to assess whether the pelvic floor muscles contract and relax correctly during voluntary tightening and relaxation, during coughing and while straining.

Ask the patient to tighten their pelvic floor muscles as best they can. If necessary, they should be asked to imagine that they are trying to stop themselves from breaking wind.

Sufficient contraction is perceived by the pelvic physical therapist during intravaginal/anal palpation. During vaginal palpation, a lifting of the palpating finger pulpa in an anterior direction (towards the symphysis) should be expected. Record:

- vaginal or anal palpation: whether the pelvic floor moves in an anterior direction
- anal palpation: whether a circular contraction of the m. sphincter ani is present

Strength: Ask the patient to contract their pelvic floor muscles as forcefully as possible (2 x 3 times, each lasting 2-3 seconds and with a 10-second pause).

During vaginal palpation, record the average of three contractions for each side to be able to document if back to front movements are asymmetrical.

- a contraction score of absent, weak, normal, or strong (1, 62, 67)
- a score of 0-5 with the modified Oxford grading scale (68)

The modified Oxford grading system can also be used during anal palpation (68, 69).

Static endurance: Ask the patient to contract their pelvic floor muscles applying about half of their maximum strength (Borg scale) (70) and to hold this as long as possible (3 times, 10-second pause) as a test of endurance strength.

Record, as the average of three contractions:

- the average time, in seconds, that the patient is able to maintain the contraction.

Dynamic endurance: Ask the patient to tighten their pelvic floor muscles 10 times, briefly but forcefully (explosive strength).

Record:

- the number of times the patient is able to forcefully apply this brief contraction before fatigue
- a muscle power score of absent, weak, normal, or strong or using the modified Oxford grading scale
- whether the patient is able to contract their pelvic floor muscles without excessive contraction of other muscles such as abdominal muscles and gluteal and thigh muscles

Repeat both tests in standing to assess pelvic floor capacity against gravity.

Ask the patient to relax their pelvic muscles as fully as possible after the tightening.

Record:

- whether the relaxation can be felt
- a relaxation score in terms of absent, partial, or complete
- whether perineal descent with relaxation is beyond normal, i.e. lower than the ischial tuberosity

Ask the patient to cough with sufficient force, i.e. as hard as the patient can. Repeat the cough if any doubts about result of the test.

Record:

- involuntary contraction (a contraction preceding an increase in abdominal pressure) as present or absent (i.e. when a person coughs, their pelvic floor should not move in a caudal direction as a result of unconscious, involuntary contraction of the pelvic floor muscles). A minor ventral movement is regarded as normal. If the unconscious, involuntary contraction is dysfunctional, the therapist will feel a downward movement of the perineum (71), gaping and/or bulging of the vaginal entrance (possible prolapse), and/or loss of urine.

Box 9.1. Internal examination/functional examination of the pelvic floor muscles using direct palpation MEN

Record the average of three contractions. If further grading of function is needed, a score of function can be added. Function. Best of three attempts graduated on a 4-point ordinal scale [7] 0 = no PFM contraction; 1 = partial PFM contraction; 2 = PFM contraction + co-contraction with other related muscles; 3 = isolated PFM contraction (72)

· a contraction score of absent, weak, normal, or strong (1)

· a score of 0-6 with the modified 0xford grading scale for men

- Strength. Best of three attempts graded 0-6 (nil, flicker, weak, moderate, good, strong, very strong) on a Danish version of the modified 0xford scale (73, 74). The subject is instructed to perform a maximal voluntary contraction of the pelvic floor muscle without co-contraction of other related muscles (72).

Ask the patient to contract their pelvic floor muscles applying half of their maximum strength, and to hold this as long as possible (three times, 10-second pause) as a test of endurance strength. Record, as the average of three contractions:

- the average time, in seconds, that the patient is able to maintain the contraction.
- If only one assessment for static endurance is required, an alternative procedure can be chosen. Static endurance. Seconds measured on a stop watch. Instruction is to keep the contraction at 30% of maximum as long time as possible (Borg scale). Static endurance is the point of isometric fatigue where the muscle contraction can no longer be maintained at this level (72).

Ask the patient to tighten their pelvic floor muscles 10 times, briefly but forcefully (explosive strength). If ceiling effect is reached, an alternative assessment is possible.

Record:

- the number of times the patient is able to forcefully apply this brief contraction
- a muscle power score of absent, weak, normal, or strong or using the modified 0xford grading for men (72)
- whether the patient is able to contract their pelvic floor muscles without excessive contraction of other muscles (abdominal, gluteal and thigh muscles)

B.3 Measurement instruments

0bjective information can be obtained during the diagnostic process by using a number of recommended measurement instruments, questionnaires and tests. These provide objective measurements of the severity of the patient's health problems in terms of body function impairment, limitations of activities and restrictions of participation, as well as the impact of the health problem on the patient. They can also be used to evaluate the patient's recovery during and after the treatment.

B. 3.2. Micturition diary

A micturition diary (bladder diary) provides information about a number of variables relating to micturition, involuntary loss of urine and activities during which the loss of urine takes place (75).

The following variables are systematically recorded, preferably covering at least three consecutive days that are representative of the patient's daily activity patterns, for instance, two working days and one weekend day:

- the times when the patient drinks fluids and the amounts they consume
- what the patient drinks
- the level of urge to empty their bladder
- the time and amount of each micturition
- the moments when loss of urine occurs and the amounts of urine lost
- The activity/activities the patient was engaged in just before or during the loss of urine.

An example of a micturition diary is presented in Annex 4.

B.3.4 The ICIQ-UI SF and the DAN-PSS

Two different instruments have been chosen to assess how SUI is perceived by the patient (symptoms and impact) before and after treatment in this Danish version of the guideline. The ICIQ-UI SF (International Consultation on Incontinence Questionnaire –Urinary Incontinence- Short Form) is a one-page questionnaire which can be used to evaluate frequency, amount of leakage, interference because of leakage, and type of urinary incontinence before or after treatment in both men and women (52). The questionnaire has five items and a score between 0-21 can be obtained from four of the five items. Greater values indicate increased severity. The self-diagnostic item number five is not a part of the score.

The DAN-PSS (DANish -Prostata Symptom Score) can be used to assess symptoms and severity of LUTS (Lower Urinary Tract Symptoms) in both men and women before and after treatment (54-56).

DAN-PSS has 12 items divided into two parts, A and B. Part A items describe frequency of bladder storage and bladder voiding symptoms and their severity, while part B items describe the effects on daily life caused by the symptoms. A total score is obtained be multiplying scores from the A items with scores from B items. A score between 0-108 is possible. Greater values indicate an increased effect on daily life. The ICIQ-UI SF and the DAN-PSS are included as Annex 2 and 3.

B.3.5 Patient Global Index of Improvement (PGI-I)

The effect of treatment can be measured by asking patients how they perceive the effect of the treatment. The PGI-I is a simple validated questionnaire that enables patients to indicate what changes they have perceived as a result of the treatment (76).

The PGI-I instrument is included as Annex 5.

B.4 Analysis

The objective of the diagnostic process in physical therapy is not only to assess the severity of the patient's health problem, but also to try to establish the nature of the underlying disorder and/or the disease process that is causing the SUI, as well as to determine the extent to which these can be modified.
It is essential to identify the prognostic factors that can have local or general effects on the recovery and adjustment processes, in view of the potential influence these factors may have on the outcome of the physical therapy intervention.
There are several questions the physiotherapist should consider in the diagnostic process:

- Does the patient suffer from SUI and SUI-related health problems?
- How severe is the SUI? (Use questionnaires from Annex 2 and 3)
- Are the pelvic floor muscles dysfunctional due to weakness or is the dysfunction associated with non-relaxation (1)?
- Are there currently any local prognostic factors that can adversely affect the recovery and/or adjustment processes, and can these local impeding factors be modified by physical therapy?

B.5 Generating conclusions from the evaluation and diagnostic process

The severity of the SUI is important for the prognosis and the evaluation of the effect of the intervention, but has no implications for the treatment strategy.
After the diagnostic process has been completed and a diagnosis of SUI has been established, the nature of the underlying disorder is still not entirely certain for most female patients. Hence, it is impossible to say in advance or with absolute certainty whether and to what extent the SUI can be modified by physical therapy. A large proportion of women have no voluntary control of their pelvic floor muscles and learning to perform a correct pelvic floor muscle contraction can be an important aspect of early treatment (77).
SUI in men is usually not caused by a dysfunction of the pelvic floor muscles but is almost exclusively due to sphincter defects caused by trauma or surgical interventions (transurethral prostate resection or radical prostatectomy, radiotherapy). Pelvic floor muscle training may have an effect if there is a sphincter defect. Some men may not have voluntary control over their pelvic floor muscles, and may not know how to tighten them. The majority seem to learn through examination and regular pelvic floor muscle training (78).

Physiotherapists treating SUI need to be aware of the following three distinct categories of SUI:

- 1. SUI with pelvic floor muscle dysfunction
- 2. SUI without pelvic floor muscle dysfunction
- 3. SUI plus local and/or other (general) unfavourable prognostic factors that may have adverse local or general effects on recovery and/or adjustment processes, and which may or may not be modifiable by physical therapy interventions.

It is essential in the treatment process to consider the diagnostic findings and the effect of the chosen treatment. Evaluation is essential and should be re-evaluated regularly according to:
- change in PFM strength/endurance/specificity
- change in DAN-PSS
- change in ICIQ-UI-SF

B.6 Treatment plan

The goal of pelvic floor muscle training (PFMT) for patients with SUI is to improve their extrinsic support mechanism to such an extent that the pelvic floor provides enough support to prevent loss of urine associated with increased intra-abdominal pressure.
The evidence to support the recommendations in these guidelines is derived from systematic reviews by (46, 79-83) and reviews by Bø et al. (64) and Wilson et al. (84). All reviews include results of a number of high-quality RCTs.
The evidence supporting PFMT for incontinence in men due to prostatectomy is based on the Cochrane reviews by Moore et al. (85) and Hunter et al. (6), and reviews by Van Kampen (86).

The physical therapist formulates the objectives of the physical therapy treatment for each individual patient in terms of reducing the impairment(s), limitation(s) and participation restrictions; in other words, by improving body functions, activities and participation. The individual treatment goals are determined in consultation with the patient, on the basis of the information gained from the diagnostic process.
The general objective of the physical therapy intervention is to teach patients to adjust the physical condition of their pelvic floor to the actual strains that occur (i.e. peaks in intra-abdominal pressure). The physical therapist helps the patient to improve the physical condition of their pelvic floor by training the pelvic floor muscles (training produces structural changes). In addition, the therapist attempts as much as possible to eliminate the influence of factors impeding this adjustment process. Since the physical condition of the pelvic floor ideally matches the actual strain to which it is subjected, the exercises should aim not only to increase the physical condition of the pelvic floor, but also to maintain this condition ('use it or lose it'). This requires permanent active involvement on the part of the patient, and integration of the skills they have learned during the therapy into their everyday life; in other words, changes to the patient's lifestyle. The physical therapy interventions need to support this behavioural change.
In addition, it may be useful to improve the patient's general physical condition, to reduce the influence of other diseases and/or disorders on the continence mechanism.
The therapy starts with the therapist explaining the nature of the patient's problem to them and giving them information. The patient will be more motivated to start the therapy if they understand the normal anatomy and physiology, the influence of (mental) stress and relaxation on the functioning of the pelvic floor muscles, and the causes of stress urinary incontinence.

The treatment of patients with SUI is generally based on pelvic floor muscle exercises, combined with patient education and counselling. If other aspects of general health are included in the treatment plan, such as weight loss or fitness, the physiotherapist has to act on these outcomes. Then these outcomes need to be re-evaluated during the intervention.

B.6.1 1A Treatment plan for SUI with pelvic floor muscle dysfunction

Patient does not have voluntary control over their pelvic floor muscles

The patient is unable to identify their pelvic floor, is not aware of it and is unable to consciously, voluntarily contract and relax the pelvic floor muscles.

Objective

Ensuring the patient has voluntary control over their pelvic floor.

Therapy

Electrical stimulation (E-stim), biofeedback and/or digital facilitation by the pelvic physical therapist or the patient themselves, using tapping, gently tugging on the muscle, and possibly vibration. After the patient has achieved voluntary control over their pelvic floor, the focus shifts to PFMT and the patient doing the exercises as a home programme.

If the results of the physical therapy intervention are unsatisfactory, for example, due to the presence of a (central or peripheral) neurological problem that the pelvic physical therapist is unable to identify, the therapist must refer the patient back to the referring doctor. If the patient does achieve voluntary control, the therapist continues the treatment as described below.

Patient does not have involuntary control over their pelvic floor muscles

The pelvic floor muscles do not involuntarily contract when intra-abdominal pressure rises.

Objective

Compensation or adjustment.

Therapy

Exercising the 'knack', as a stabilizing contraction to compensate for the inadequacy of the involuntary contraction during coughing, lifting etc., with correct timing (87) .

Patient has voluntary control over their pelvic floor muscles

The patient is able to identify their pelvic floor, is aware of it, and is able to contract and relax the pelvic floor muscles consciously and voluntarily, but the pelvic floor muscles are too weak.

Objective

Complete recovery of pelvic floor muscle function.

Therapy

Training and controlling the pelvic floor muscle function by means of PFMTEs done by the patient at home. It begins with gravity-assisted training and then moves to become anti-gravity. A further option for some women may then be to use vaginal cones. Vaginal cones can be used in women who can actively contract the PFM. This is however not a good intervention if the PFMs are not strong enough to retain the cone in vagina; i.e. against gravity. The pelvic physical therapist starts the treatment by trying to achieve isolated pelvic floor muscle contractions. If the patient is able to achieve these, they then try to carry out single tasks (ADL functions) using voluntary control, followed by dual and then multiple tasks with voluntary control, and then the same tasks with involuntary control.

Other parts of the musculoskeletal system are adversely affecting pelvic floor muscle function

The functioning of the pelvic floor muscles is impeded by factors like respiratory dysfunction, problems in other parts of the musculoskeletal system, voiding posture, toileting regime or toileting behaviour.

Objective

Reducing or eliminating the adverse influence of respiratory dysfunction and/or problems in other parts of the musculoskeletal system, voiding posture, toileting regime or toileting behaviour, and improving the pelvic floor muscle function (88).

Therapy

Providing exercise therapy for these problems, including exercises to achieve a correct respiratory technique, relaxation and posture correction, effective use of pelvic floor muscles in trunk stabilisation, improving voiding posture, toileting regime and toileting behaviour, and instruction in correct lifting techniques. In addition, the patient is prescribed PFMEs and other exercises to improve their pelvic floor muscle function, which they can do without supervision.

B.6.2 2A Treatment plan for SUI without pelvic floor muscle dysfunction

If there is no pelvic floor muscle dysfunction, the SUI is presumably due to a dysfunctional intrinsic closure mechanism (internal sphincter). The therapy is intended to reduce the impairments and limitations of activities.

Objective

Compensation.

Therapy

Pelvic floor muscle training (PFMTs) and exercises the patient can do without supervision. In view of the cause of the complaints, the chances of full recovery with the help of PMFE are unpredictable.

It has been shown that PFM rehabilitation has an impact on the urethral sphincter (improving urethral sphincter volume) in women.

B.6.3 3A Treatment plan for SUI with unfavourable prognostic factors

Unfavourable prognostic factors are factors which can have adverse local or general influence on the recovery or adjustment processes. These factors may or may not be modifiable by interventions by a pelvic physical therapist.

Objective

Reducing the adverse influence of the factors as much as possible.

Therapy

The treatment focuses on reducing the adverse influence of modifiable unfavourable factors on an individual patient by:

- improving the patient's general physical condition, so as to reduce the effects of other diseases and/or disorders on

the continence status, and reducing the patient's overweight, smoking or alcohol consumption as an unfavourable prognostic factor for the effect of exercise therapy (89, 90);

Points for consideration
Some factors, such as cardiovascular diseases or changes in hormonal balance, cannot be modified by physical therapy. 0ther factors, such as ignorance, shame, avoidance behaviour and problems of (social) participation, can be modified by effective patient education and counselling by a physical therapist.

C.1 Treatment

C.1.1 Stages, objectives, and interventions

The analytical process allows a number of problem categories to be distinguished, about which the patient must be informed, using patient education materials.
-Expectations regarding treatment effect - patient and physical therapist
-Prognosis of treatment effect – favourable and unfavourable prognostic factors
-What is expected of the patient in terms of workload?
The therapeutic process is implemented based on the treatment plans that have been drawn up for the various specific problem categories and in cooperation with the patient.
These treatment plans must have a logical design in terms of structure and timing of the stages.

- The patient must be provided with information and instructions about their pelvic floor and lower urinary tract functions, using diagrams, drawings, pictures and models.
- The patient must be given a full explanation of the correct way to tighten their pelvic floor muscles. The patient must be given the opportunity to practice before the therapist assesses whether they are able effectively to contract their pelvic floor muscles. If the patient proves able to exercise under the therapist's supervision, they can then continue the exercises at home.
- If the patient is unable to contract their pelvic floor muscles, the therapist can use facilitating techniques such as: gently tugging on the muscle, tapping, massage and rapid stretching, or electrical stimulation and/or EMG biofeedback.
- If the patient is able voluntarily to contract their pelvic muscles, the therapist designs a programme of home exercises tailored to the individual situation of each patient based on the dysfunction discovered during the examination, for example, weak muscle strength, muscle endurance, involuntary response and/or coordination capacity to relax completely. In general the training should follow principal recommendations regarding progressive overload. This means that the training should gradually increase in relation to intensity or length of contractions, numbers of contractions, shortening of breaks between contractions, speed of contractions, etc., according to the individual goals set for the patient (91).
- The patient is asked to indicate how, when and where they intend to practice the exercises. The patient is given an exercise diary, unless use is made of computer-controlled biofeedback with data recording. If no biofeedback has been used so far, it may be useful to discuss with the patient whether this or the use of other electronic devices such as reminders on mobile phone, etc., might improve their motivation. This obviously presupposes the availability of such devices.

A lasting treatment result can only be achieved if the patient learns to integrate the skills they are taught during therapy into everyday life.

C.1.2 Duration and frequency of treatment

The duration and frequency of treatment will vary for individual patients but it has been shown that a more intense supervised intervention, for example, once a week for 12 weeks, seems to be more effective.
Duration and frequency are determined by the patient's specific treatment goals and problems, and their ability to understand the information and practice the exercises. Hence, this guideline can only provide rough indications (92).

The total duration of treatment will generally not exceed 3-6 months. Patients, who have a dysfunctional pelvic floor and have no voluntary control over their pelvic floor muscles, will require more intensive assistance in the first stage of treatment in order to achieve voluntary control as soon as possible. This may imply a higher treatment frequency at this early stage and the use of biofeedback and electrical stimulation.
If any prognostic factors for recovery are present that can be modified by physical therapy, their modification must be part of the treatment plan. 0nce the influence of unfavourable prognostic factors has been reduced, the effect of PFME mostly depends on the frequency and intensity of exercising, with or without supervision. 0nce the patient is able to do the exercises without supervision, the frequency of physical therapy sessions can be reduced, provided that the patient continues to do the exercises independently.

- The duration of treatment and frequency of supervised PFMT is adjusted to suit the individual patient.
- After the first 1-3 treatment sessions, evaluate the treatment and ask or assess whether the severity of the patient's incontinence problems has decreased, in terms of a lower score on the ICIQ-UI-SF or the DAN-PSS questionnaire.
- Reassess PFM function with the PFM evaluation tools to reorient rehabilitation.
- Assess progress when needed but at least after three months. By this time, clear progress should have been made. If offering training in groups, at least two individual evaluations during the training period should be offered.

C.1.3 Preventing pelvic floor insufficiency

An important goal of pelvic floor education is the prevention of pelvic floor insufficiency. Based on the aetiological factors that may be involved in the development of SUI, the therapist can assess which patients may benefit from preventive measures. The development of SUI is associated with a number of factors, such as 'congenital weakness of supportive tissues' or 'prolapse'. Another factor is pregnancy. Primary prevention, i.e. preventing SUI from developing, is an important issue in the pre- and postnatal care provided to women. Usually, however, pelvic physical therapists are only consulted after SUI has already developed. Pregnant women, especially those with UI risk factors, should be encouraged to be examined by a physiotherapist during pregnancy (93).

As a final part of the treatment, the physiotherapist must, if needed, inform the patient about incontinence aids such as disposable pads and reusable padded absorbent briefs and underwear. The physiotherapist may also instruct the female patient in the use of supporting devices such as incontinence pessaries and continence tampons during sports or heavy duty work. The male patient might need to learn about other incontinence products than pads such as urinals, penile clamps and catheters.

C.2 Evaluation

The patient's recovery must be evaluated after maximum three treatment sessions. This is because the treatment itself is regarded as a diagnostic instrument, since the diagnosis of SUI does not provide reliable conclusions about the nature of the underlying disorder or the presence of local impediments for recovery, and whether such local impediments are modifiable by physical therapy. We recommend always using a questionnaire for this assessment and objective instruments as described in this guideline.
If no substantial reduction of the severity of the incontinence is observed, the conclusion must be that there may be impediments to recovery that cannot be modified by physical therapy. An example of such an impediment is an intrapelvic fascia lesion. The results of pelvic floor muscle training may also be modest in the case of severe prolapse, which is a severe unfavourable prognostic factor. In both cases, the pelvic physical therapist must refer the patient back to their family doctor or specialist. Surgical intervention may then be an option.
Although, in these cases, pelvic floor muscle training has not had any obvious effect on the severity of the incontinence, the treatment may nevertheless have been useful, as a good physical condition of the pelvic floor is a favourable prognostic factor for postoperative recovery after surgical intervention.
Termination of the therapy must be followed by a final evaluation, once again using the recommended measurement instruments. The treatment goals that were defined must by then have been met. If not, then the patient must be able to continue the exercises without supervision.
The patient must be referred back to the referring doctor if there are complications (during the physical therapy treatment) or if the treatment goals have not been met (while the pelvic physical therapist estimates that the patient has achieved the best possible result).

C.3 Concluding the treatment, record-keeping and reporting

Upon terminating the treatment, the pelvic physical therapist must record at least the date and the reasons for termination (e.g. whether the goals have been achieved or not, or only partially). Any specific arrangements made with the patient (e.g. continuing to exercise at home) must also be recorded. The physical therapist should keep records during the entire treatment process according to Danish national legacy. vejledning om ordnede optegnelser/journalføring: https://www.retsinformation.dk/Forms/R0710.aspx?id=9876.
Any deviations from this guideline must be recorded, stating the reasons for doing so, as well as any contraindications for further physical therapy treatment.
Upon termination of the treatment, the physical therapist may report the results to the patient's general practitioner with the patient's consent. If the patient was referred by a specialist, the latter must also be informed. If applicable, details on aftercare (monitoring) must also be reported (se lov om patienters retsstilling, herunder samtykke, se kapitel 2, § 6 om selvbestemmelse:https://www.retsinformation.dk/Forms/R0710.aspx?id=87608).

Acknowledgments to the Dutch version

The draft guideline was commented on by a group of external experts. The guideline development team gratefully acknowledges the contributions by: Prof. A.L.M. Lagro-Jansen, on behalf of the Dutch College of General Practitioners; Dr. M.J.A. van der Weide, Chair of the *Afdeling Continentie Verpleegkundigen* en Verzorgenden (continence nursing section) of the Verpleegkundigen en Verzorgenden Nederland (Dutch association of nurses); Ms. E.M.J. Bols, Department of Epidemiology at Maastricht University; Prof. P.E.V. van Kerrebroeck, Head of the Department of Urology of Maastricht University Medical Center in Maastricht, and Dr. C.H. van der Vaart, gynaecologist at the Utrecht University Medical Center in Utrecht.

Acknowledgments to the Danish version

The Danish version of the guidelines was reviewed by a panel of international experts. We wish to thank Dr Wendy F Bower, Professor, Clinical Institute Aarhus University for her substantial help with the development and the review of the Danish version. We also wish to thank Chantale Dumoulin, pht, Ph.D., Associate Professor, School of rehabilitation, Faculty of Medicine, University of Montreal, Montreal, Canada, Canadian Research Chair Holder: Urogyneacological Health and Aging; Research Centre, Institut Universitaire de Gériatrie de Montréal, and Helena Frawley *PhD, FACP* Specialist Continence & Women's Health Physiotherapist, National Health & Medical Research Council Australia, Research Fellow, Senior Lecturer, School of Health Sciences, The University of Melbourne, Senior Research Consultant Allied Health, Cabrini Hospital Malvern, Australia, for their significant and very valuable contributions to the review.

Annex 1 Summary of recommendations

Introduction

The level of evidence of the conclusions based on the literature has been categorised on the basis of Dutch national agreements (EBRO/CBO). Four levels are distinguished, based on the quality of the articles, from which the evidence was obtained:
Level 1: one study at A1 level or at least two independent A2 level studies
Level 2: one study at A2 level or at least two independent B level studies
Level 3: one B or C level study
Level 4: expert opinion

Quality levels (intervention and prevention)

A1 Systematic review of at least two independent A2 level studies
A2 Randomised, double-blind, comparative clinical trial of good quality and sufficient sample size
B Comparative study not meeting all criteria mentioned under A2 (including case-control studies and cohort studies)
C Non-comparative study
D Opinions of experts, for example, the members of the guideline development team

If a systematic review comprised RCTs of moderate quality, the quality of the literature was classified as B rather than A1. Depending on the number of moderate quality (B-level) studies, the conclusion was allocated an evidence level of 2 (≥ 2 RCTs of moderate quality) or 3 (1 RCT of moderate quality). If a comparative study failed to meet any of the criteria for A2 level research, it was allocated a C quality status.

Summary of recommendations

Problem definition

1 Identifying aetiological factors
The therapist should systematically identify aetiological factors in order to assess the nature of the dysfunction of the continence mechanism. Level 1

Diagnostic process

2. Establishing the type of incontinence
   The guideline development team recommends using the ICS/IUGA terminology to establish the type of incontinence. Level 4

3. Palpation
   The guideline development team recommends the use of the assessment procedure described in the practice guideline to evaluate the pelvic floor muscle function. Level 2

4. Functional examination
   The guideline development team recommends that breathing patterns, postural control, voiding posture and toileting behaviour are examined in relation to the functioning of the pelvic floor muscles. Level 3

5. The use of validated instruments such as DAN-PSS and the ICIThe guideline development team recommends using the DAN-PSS or the ICIQ-short form 7 questionnaire to assess the changes in the patient's health status and the effect of physical therapy intervention Level 2 (Grade A, ICI 2009)

6. Quantifying the loss of urine
   The guideline development team recommends quantifying the loss of urine using the 24-hour pad test in case of uncertainty about the quantities of urine being lost. Level 3

7. Micturition diary
   The guideline development team recommends asking patients to keep a micturition diary in order to identify the severity of the loss of urine and to evaluate the results of treatment. Level 1

8. Patient Global Index of Improvement scale (PGI-I)
   The guideline development team recommends using the PGI-I to evaluate the health status improvement perceived by the patient after the intervention. Level 2

Therapeutic process

10. Information and advice
    The guideline development team recommends the use of anatomical plates and pelvic phantoms, as well as other educational materials, such as lifestyle advice. Level 4

11. Improving general physical condition
    The guideline development team recommends the inclusion in the treatment plan of interventions to improve the patient's general physical condition. Level 4

12. Frequency and performance of pelvic floor muscle training (PFMT)
    The guideline development team recommends treating SUI by means of daily PFMT with sufficient intensity and duration, while paying attention to the correct performance of the exercises and integrating the exercises into activities of daily life. Level 2

13. Selective contraction of pelvic floor muscles
    The guideline development team recommends combining pelvic floor muscle exercises with electrical stimulation or EMG biofeedback for the treatment of patients who are unable to voluntarily and/or selectively contract their pelvic floor muscles during their initial intervention. Level 4

Prevention

14. Pelvic floor muscle training to promote postoperative recovery after prostatectomy and to prevent urinary incontinence in late pregnancy or early postpartum period.
    The guideline development team recommends preoperative pelvic floor muscle education and training for men who will undergo prostatectomy.
    Level 2 (Centemero 2010, RCT, 1b, A)
    The guideline development team recommends pelvic floor muscle training in pregnancy to reduce risk of developing urinary incontinence in late pregnancy or in the puerperium. Level 1

Annex 2 ICIQ-UI-SF

1. Urinlækage-skema ICIQ-UI SF
Mange mennesker lækker ind imellem urin. Vi prøver at finde ud af, hvor mange der lækker urin, samt hvor meget det generer dem. Vi vil være taknemmelige, hvis du vil besvare nedenstående spørgsmål. Ved din besvarelse skal du tænke på, hvordan du gennemsnitligt har haft det over de **sidste 4 uger.**

1. Skriv venligst din fødselsdato / 20

2. Hvor tit lækker du urin? (sæt kryds i én boks)

☐	Aldrig	0
☐	Ca. 1 gang om ugen eller mindre	1
☐	2-3 gange om ugen	2
☐	Ca. 1 gang dagligt	3
☐	Flere gange om dagen	4
☐	Hele tiden	5

3. Vi vil gerne vide, hvor stor en mængde urin, *du tror*, du lækker. Du skal sætte kryds ud for den rubrik, der svarer til den mængde, du oftest lækkert (hvad enten du benytter beskyttelse eller ej)? (sæt kryds i én boks)

☐	Ingen	0
☐	En lille mængde	2
☐	En moderat mængde	4
☐	En stor mængde	6

4. Hvor meget generer urinlækagen dig i din dagligdag?
(Venligst indram et af numrene mellem 0 (slet ikke) og 10 (en hel del))

0	1	2	3	4	5	6	7	8	9	10
Slet ikke										En hel del

☐ ICIQ score: sum score 2+3+4

5. Hvornår lækker du urin? (sæt kryds i alle de bokse, som passer på dig)

☐ Lækker aldrig urin
☐ Lækker, før jeg kan nå på toilettet
☐ Lækker når jeg hoster eller nyser
☐ Lækker når jeg sover
☐ Lækker når jeg er fysisk aktiv
☐ Lækker når jeg er færdig med at lade vandet og har fået tøj på
☐ Lækker uden nogen som helst grund
☐ Lækker hele tiden

Mange tak fordi du ville besvare spørgeskemaet

Annex 3. DAN-PSS-1 Spørgeskema

DAN-PSS-1
Vandladningssymptomer og dets gener

Cpr nr	
Navn:	
Dato :	

Instruks

De efterfølgende spørgsmål tjener til at belyse Deres symptomer og gener.

Spørgeskemaet er opbygget, således at første spørgsmål (A) belyser et symptoms omfang og det efterfølgende spørgsmål (B) belyser, hvor meget De er generet *af symptomet*.

Skemaet udfyldes ved, at De for hvert af de 12 spørgsmål sætter et X for symptomets omfang og et for hvor meget, De er generet.

Spørgeskemaet bedes besvaret ud fra Deres tilstand gennem de sidste 2 uger.

(Skemaet vil ligesom andre lægelige oplysninger blive behandlet fortroligt).

1A Skal De vente på at vandladningen kommer i gang?

- ☐ Nej
- ☐ Sjældent
- ☐ Dagligt
- ☐ Hver gang

1B Hvis De skal vente på at vandladningen kommer i gang, hvor stor en gene er dette så for Dem?

- ☐ Ingen gene
- ☐ Lidt generende
- ☐ Moderat generende
- ☐ Meget generende

2A Synes De, at urinstrålen er:

- ☐ Normal
- ☐ Lidt slap
- ☐ Meget slap
- ☐ Dryppende

2B Hvis urinstrålen er slap, hvor stor en gene er dette så for Dem?

- ☐ Ingen gene
- ☐ Lidt generende
- ☐ Moderat generende
- ☐ Meget generende

3A Føler De, at De får tømt blæren helt ved vandladning?

- ☐ Ja, altid
- ☐ Oftest
- ☐ Sjældent
- ☐ Tømmes aldrig helt

3B Hvis De føler at blæren ikke tømmes helt ved vandladning, hvor stor en gene er dette for Dem?

- ☐ Ingen gene
- ☐ Lidt generende
- ☐ Moderat generende
- ☐ Meget generende

4A Skal De presse for at starte vandladningen og/eller holde vandladningen i gang?

- ☐ Nej
- ☐ Sjældent
- ☐ Dagligt
- ☐ Hver gang

4B Hvis De skal presse, hvor stor en gene er dette så for Dem?

- ☐ Ingen gene
- ☐ Lidt generende
- ☐ Moderat generende
- ☐ Meget generende

5A Hvor lang tid går der højst mellem hver enkelt vandladning, fra De vågner til De går i seng?

- ☐ Mere end 3 timer
- ☐ 2-3 timer
- ☐ 1-2 timer
- ☐ Mindre end 1 time

5B Er det en gene for Dem at De ofte skal lade vandet?

- ☐ Ingen gene
- ☐ Lidt generende
- ☐ Moderat generende
- ☐ Meget generende

6A Hvor mange gange skal De lade vandet om natten?

- ☐ 0 gange
- ☐ 1-2 gange
- ☐ 3-4 gange
- ☐ 5 gange eller mere

6B Hvis De skal lade vandet om natten, hvor stor en gene er dette for Dem?

- ☐ Ingen gene
- ☐ Lidt generende
- ☐ Moderat generende
- ☐ Meget generende

7A Oplever De en bydende (stærk) vandladiangs trang?

- ☐ Aldrig
- ☐ Sjældent
- ☐ Dagligt
- ☐ Hver gang

7B Hvis De har bydende (stærk) vandladningstrang, hvor stor en gene er dette for Dem?

- ☐ Ingen gene
- ☐ Lidt generende
- ☐ Moderat generende
- ☐ Meget generende

8A Er vandladningstrangen så kraftig at De ikke kan holde på vandet, indtil De når toilettet?

- ☐ Nej
- ☐ Sjældent
- ☐ Dagligt
- ☐ Hver gang

8B Hvis urinen løber fra Dem inden De når toilettet, hvor stor en gene er dette så for Dem?

- ☐ Ingen gene
- ☐ Lidt generende
- ☐ Moderat generende
- ☐ Meget generende

9A Gør det ondt eller svier, når De lader vandet?

- ☐ Nej
- ☐ Sjældent
- ☐ Dagligt
- ☐ Hver gang

9B Hvis det gør ondt eller svier når de lader vandet, hvor stor en gene er dette så for Dem??

- ☐ Ingen gene
- ☐ Lidt generende
- ☐ Moderat generende
- ☐ Meget generende

10A Drypper der urin, når De tror vandladningen er færdig (efterdryp)?

- ☐ Nej
- ☐ I Toilettet
- ☐ Lidt i bukserne
- ☐ Meget i bukserne

10B Hvis der drypper urin, når De tror vandladningen er færdig, hvor stor en gene er dette for Dem?

- ☐ Ingen gene
- ☐ Lidt generende
- ☐ Moderat generende
- ☐ Meget generende

11A Har De ufrivillig vandladning ved fysisk anstrengelse (f.eks rejse/sætte sig, gang, løft, host og nys)?

- ☐ Nej
- ☐ Sjældent
- ☐ Dagligt
- ☐ Hver gang

11B Hvis De har ufrivillig vandladning ved fysisk anstrengelse, hvor stor en gene er dette for Dem?

- ☐ Ingen gene
- ☐ Lidt generende
- ☐ Moderat generende
- ☐ Meget generende

12A Har De ufrivillig vandladning uden fysisk anstrengelse og uden trang (siven)?

- ☐ Nej
- ☐ Sjældent
- ☐ Dagligt
- ☐ Hver gang

12B Hvis urinen siver fra Dem uden trang og fysisk anstrengelse, hvor stor en gene er dette så for Dem?

- ☐ Ingen gene
- ☐ Lidt generende
- ☐ Moderat generende
- ☐ Meget generende

Annex 4

Væske og vandladningsskema

Navn:	
Dato :	

Vejledning i at udfylde skema

Formålet med at udfylde skemaet er at få overblik over, hvor meget du drikker pr. dag, hvor meget og hvor mange gange du tisser, samt hvor tit du lækker urin. Sidstnævnte omfatter at have ufrivillig vandladning/urinafgang, at have tisset eller dryppet i bukserne.

Skemaet vil give dig og din læge et godt grundlag for at se nærmere på, om der er vaner, du med fordel kan ændre – eller hvilken hjælp eller behandling du måske vil have gavn af.

Hvor lang tid og hvilke dage Du skal udfylde skemaet i tre døgn – dvs. både om dagen og om natten. Det er vigtigt, at du vælger tre typiske dage, og at du udfylder skemaet så nøjagtigt, som det nu er muligt.

Hvordan skal skemaet udfyldes Skriv klokkeslæt på det tidspunkt, du enten drikker et eller andet, går på toilettet eller har en ufrivillig vandladning/lækage.

Skriv, hvor meget du har drukket i milliliter.
Det kan være en hjælp at vide at:
1 øl = 330 ml
1 sodavand = 250 ml
1 glas = ca. 200 ml
1 kop = ca. 100–150 ml

Skriv – cirkamål – hvor meget du tisser, hver gang du går på toilettet. Brug f.eks. et billigt litermål.
Sæt kryds, når du har lækket urin. Der er tre afkrydsningsmuligheder. Sæt kryds i den kasse, der passer bedst til din situation:

- pludselig og voldsom vandladningstrang (forholdsvis stor mængde urin)
- host, løft, nys, løb, dans eller anden fysisk aktivitet (forholdsvis lille mængde urin)
- andet

Hvis du anvender bind eller bleer, skal du sætte kryds på de tidspunkter, hvor du skifter bind eller bleer.

Hvor mange ml går der på 1 dl og 1 liter
100 ml = 1 dl
10 dl = 1 liter
1000 ml = 1 liter

1. Døgn

Klokken	Drukket – i ml	Vandladning – i ml	Jeg lækkede urin i forbindelse med: (sæt kryds ved én af de tre muligheder)	Skiftet bind (sæt kryds)
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
	Total ml:	Total ml:	Antal gange jeg lækkede urin:	Antal bind:

2. Døgn

Klokken	Drukket – i ml	Vandladning – i ml	Jeg lækkede urin i forbindelse med: (sæt kryds ved én af de tre muligheder)	Skiftet bind (sæt kryds)
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
	Total ml:	Total ml:	Antal gange jeg lækkede urin:	Antal bind:

3. Døgn

Klokken	Drukket – i ml	Vandladning – i ml	Jeg lækkede urin i forbindelse med: (sæt kryds ved én af de tre muligheder)	Skiftet bind (sæt kryds)
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
			Pludselig og voldsom vandladningstrang Host, løft, nys, løb dans eller anden fysisk aktivitet Andet	
	Total ml:	Total ml:	Antal gange jeg lækkede urin:	Antal bind:

Annex 5

PGI-I Patient Global Index of Improvement scale

Patientens overordnede indtryk af forbedring (PGI-I) skala

Sæt kryds ud for det punkt der bedst beskriver hvordan din urininkontinens er nu, sammenlignet med hvordan den var før du fik behandling.

- ☐ Rigtig meget bedre
- ☐ Meget bedre
- ☐ Lidt bedre
- ☐ Ingen ændring
- ☐ Lidt værre
- ☐ Meget værre
- ☐ Betydelig værre

References for the Danish version

1. Haylen BT, de Ridder D, Freeman RM, Swift SE, Berghmans B, Lee J, et al. An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for female pelvic floor dysfunction. Neurourol Urodyn 2010;29(1):4-20.
2. Teunissen TA, van den Bosch WJ, van den Hoogen HJ, Lagro-Janssen AL. Prevalence of urinary, fecal and double incontinence in the elderly living at home. Int Urogynecol J Pelvic Floor Dysfunct 2004;15(1):10-3; discussion 13.
3. Hannestad YS, Rortveit G, Sandvik H, Hunskaar S. A community-based epidemiological survey of female urinary incontinence: the Norwegian EPINCONT study. Epidemiology of Incontinence in the County of Nord-Trondelag. J Clin Epidemiol 2000;53(11):1150-7.
4. Slieker-ten Hove MC, Pool-Goudzwaard AL, Eijkemans MJ, Steegers-Theunissen RP, Burger CW, Vierhout ME. Prevalence of double incontinence, risks and influence on quality of life in a general female population. Neurourol Urodyn 2010;29(4):545-50.
5. Hunskaar S, Burgio KL, Clark A, Lapitan MC, Nelson R, Sillén U. Epidemiology of urinary and faecal incontinence and pelvic organ prolapse. In: Abrams P, Cardozo L, Khoury S, Wein A, editors. Incontinence 3rd International Consultation on Incontinence. Plymouth: Health Publication Ltd; 2005. p. 255-312.
6. Hunter KF, Glazener CM, Moore KN. Conservative management for postprostatectomy urinary incontinence. Cochrane Database Syst Rev 2007(2):CD001843.
7. Maral I, Ozkardes H, Peskircioglu L, Bumin MA. Prevalence of stress urinary incontinence in both sexes at or after age 15 years: a cross-sectional study. J Urol 2001;165(2):408-12.
8. Hrisanfow E, Hagglund D. The prevalence of urinary incontinence among women and men with chronic obstructive pulmonary disease in Sweden. Journal of Clinical Nursing 2011;20(13-14):1895-905.
9. Penson DF, McLerran D, Feng Z, Li L, Albertsen PC, Gilliland FD, et al. 5-year urinary and sexual outcomes after radical prostatectomy: results from the prostate cancer outcomes study. Journal of Urology 2005;173(5):1701-5.
10. McGrother CW, Donaldson MM, Shaw C, Matthews RJ, Hayward TA, Dallosso HM, et al. Storage symptoms of the bladder: prevalence, incidence and need for services in the UK. BJU International 2004;93(6):763-9.
11. Sandhu JS. Treatment options for male stress urinary incontinence. Nat Rev Urol 2010;7(4):222-8.
12. Sims J, Browning C, Lundgren-Lindquist B, Kendig H. Urinary incontinence in a community sample of older adults: prevalence and impact on quality of life. Disability and Rehabilitation 2011;33(15-16):1389-98.
13. Waetjen LE, Ye J, Feng WY, Johnson WO, Greendale GA, Sampselle CM, et al. Association between menopausal transition stages and developing urinary incontinence. Obstet Gynecol 2009;114(5):989-98.
14. Maggi S, Minicuci N, Langlois J, Pavan M, Enzi G, Crepaldi G. Prevalence rate of urinary incontinence in community-dwelling elderly individuals: the Veneto study. Journals of Gerontology. Series A, Biological Sciences and Medical Sciences 2001;56(1):M14-8.
15. Kuh D, Cardozo L, Hardy R. Urinary incontinence in middle aged women: childhood enuresis and other lifetime risk factors in a British prospective cohort. J Epidemiol Community Health 1999;53(8):453-8.
16. Eftekhar T, Hajibaratali B, Ramezanzadeh F, Shariat M. Postpartum evaluation of stress urinary incontinence among primiparas. Int J Gynaecol Obstet 2006;94(2):114-8.
17. Meyer S, Schreyer A, De Grandi P, Hohlfeld P. The effects of birth on urinary continence mechanisms and other pelvic-floor characteristics. Obstet Gynecol 1998;92(4 Pt 1):613-8.
18. Viktrup L, Lose G, Rolff M, Barfoed K. The symptom of stress incontinence caused by pregnancy or delivery in primiparas. Obstet Gynecol 1992;79(6):945-9.
19. Altman D, Ekstrom A, Gustafsson C, Lopez A, Falconer C, Zetterstrom J. Risk of urinary incontinence after childbirth: a 10-year prospective cohort study. Obstet Gynecol 2006;108(4):873-8.
20. Arya LA, Jackson ND, Myers DL, Verma A. Risk of new-onset urinary incontinence after forceps and vacuum delivery in primiparous women. Am J Obstet Gynecol 2001;185(6):1318-23; discussion 1323-4.
21. Mason L, Glenn S, Walton I, Appleton C. The prevalence of stress incontinence during pregnancy and following delivery. Midwifery 1999;15(2):120-8.
22. Viktrup L, Lose G. The risk of stress incontinence 5 years after first delivery. Am J Obstet Gynecol 2001;185(1):82-7.
23. Dimpfl T, Hesse U, Schussler B. Incidence and cause of postpartum urinary stress incontinence. Eur J Obstet Gynecol Reprod Biol 1992;43(1):29-33.
24. Mishra GD, Hardy R, Cardozo L, Kuh D. Body weight through adult life and risk of urinary incontinence in middle-aged women: results from a British prospective cohort. Int J Obes (Lond) 2008;32(9):1415-22.
25. Baydock SA, Flood C, Schulz JA, MacDonald D, Esau D, Jones S, et al. Prevalence and risk factors for urinary and fecal incontinence four months after vaginal delivery. J Obstet Gynaecol Can 2009;31(1):36-41.
26. Groutz A, Fait G, Lessing JB, David MP, Wolman I, Jaffa A, et al. Incidence and obstetric risk factors of postpartum anal incontinence. Scand J Gastroenterol 1999;34(3):315-8.
27. Herrmann V, Scarpa K, Palma PC, Riccetto CZ. Stress urinary incontinence 3 years after pregnancy: correlation to mode of delivery and parity. Int Urogynecol J Pelvic Floor Dysfunct 2009;20(3):281-8.
28. Waetjen LE, Liao S, Johnson WO, Sampselle CM, Sternfield B, Harlow SD, et al. Factors associated with prevalent and incident urinary incontinence in a cohort of midlife women: a longitudinal analysis of data: study of women's health across the nation. Am J Epidemiol 2007;165(3):309-18.
29. Eason E, Labrecque M, Marcoux S, Mondor M. Effects of carrying a pregnancy and of method of delivery on urinary incontinence: a prospective cohort study. BMC Pregnancy Childbirth 2004;4(1):4.
30. Townsend MK, Danforth KN, Rosner B, Curhan GC, Resnick NM, Grodstein F. Body mass index, weight gain, and incident urinary incontinence in middle-aged women. Obstet Gynecol 2007;110(2 Pt 1):346-53.

31. Viktrup L, Rortveit G, Lose G. Risk of stress urinary incontinence twelve years after the first pregnancy and delivery. Obstet Gynecol 2006;108(2):248-54.
32. McGrother CW, Donaldson MM, Hayward T, Matthews R, Dallosso HM, Hyde C. Urinary storage symptoms and comorbidities: a prospective population cohort study in middle-aged and older women. Age Ageing 2006;35(1):16-24.
33. Deitel M, Stone E, Kassam HA, Wilk EJ, Sutherland DJ. Gynecologic-obstetric changes after loss of massive excess weight following bariatric surgery. J Am Coll Nutr 1988;7(2):147-53.
34. Dallosso HM, McGrother CW, Matthews RJ, Donaldson MM. The association of diet and other lifestyle factors with overactive bladder and stress incontinence: a longitudinal study in women. BJU Int 2003;92(1):69-77.
35. Torrisi G, Sampugnaro EG, Pappalardo EM, D'Urso E, Vecchio M, Mazza A. Postpartum urinary stress incontinence: analysis of the associated risk factors and neurophysiological tests. Minerva Ginecol 2007;59(5):491-8.
36. Ogden J. Health Psychology: a textbook. Buckingham-Philadelphia: Open University Press; 2000.
37. American Urological association. Guideline on the management of benign Prostatic hyperplasia (BPH). In; 2010.
38. Rassweiler J, Teber D, Kuntz R, Hofmann R. Complications of transurethral resection of the prostate (TURP)--incidence, management, and prevention. European Urology 2006;50(5):969-79; discussion 980.
39. Van Kampen M, De Weerdt W, Van Poppel H, Baert L. Urinary incontinence following transurethral, transvesical and radical prostatectomy. Retrospective study of 489 patients. Acta Urol Belg 1997;65(4):1-7.
40. Ficazzola MA, Nitti VW. The etiology of post-radical prostatectomy incontinence and correlation of symptoms with urodynamic findings. J Urol 1998;160(4):1317-20.
41. DuBeau CE, Kuchel GA, Johnson T, 2nd, Palmer MH, Wagg A. Incontinence in the frail elderly: report from the 4th International Consultation on Incontinence. Neurourol Urodyn 2010;29(1):165-78.
42. Hendriks EJ, Kessels AG, de Vet HC, Bernards AT, de Bie RA. Prognostic indicators of poor short-term outcome of physiotherapy intervention in women with stress urinary incontinence. Neurourol Urodyn 2010;29(3):336-43.
43. Gerullis H, Quast S, Eimer C, Bagner JW, Otto T. Sphincter lesions after radical prostatectomy-evaluation and classification. Journal of Endourology 2011;25(6):1075-80.
44. Johansson E, Steineck G, Holmberg L, Johansson JE, Nyberg T, Ruutu M, et al. Long-term quality-of-life outcomes after radical prostatectomy or watchful waiting: the Scandinavian Prostate Cancer Group-4 randomised trial. Lancet Oncol 2011;12(9):891-9.
45. Martin JL, Williams KS, Sutton AJ, Abrams KR, Assassa RP. Systematic review and meta-analysis of methods of diagnostic assessment for urinary incontinence. Neurourol Urodyn 2006;25(7):674-83; discussion 684.
46. Neumann PB, Grimmer KA, Deenadayalan Y. Pelvic floor muscle training and adjunctive therapies for the treatment of stress urinary incontinence in women: a systematic review. BMC Womens Health 2006;6:11.
47. Scottish Intercollegiate Guidelines Network. Management of urinary incontinence in primary care. A national clinical guideline. In. Edinburgh: Scottish Intercollegiate Guidelines Network; 2004.
48. Robert M, Ross S, Farrel SA, Easton WA, Epp A, Girouard L, et al. Conservative management of urinary incontinence. J Obstet Gynaecol Can 2006;28(12):1113-25.
49. National Collaborating Centre for Women's and children's Health. Urinary incontinence: The Management of Urinary incontinence in Women. London: RCOG Press; 2006.
50. Staskin D, Hilton P, Emmanuel A, Goode PS, Mills IW, Shull B. Initial assessment of incontinence. In: Abrams P, Cardozo L, Khoury S, Wein A, editors. Incontinence 3rd International Consultation on Incontinence. Plymouth: Health Publications Ltd.; 2005. p. 485-517.
51. WHO. International Classification of Functioning, Disability and Health. Geneva: World Health Organisation; 2001.
52. Avery K, Donovan J, Peters TJ, Shaw C, Gotoh M, Abrams P. ICIQ: a brief and robust measure for evaluating the symptoms and impact of urinary incontinence. Neurourol Urodyn 2004;23(4):322-30.
53. Klovning A, Avery K, Sandvik H, Hunskaar S. Comparison of two questionnaires for assessing the severity of urinary incontinence: The ICIQ-UI SF versus the incontinence severity index. Neurourol Urodyn 2009;28(5):411-5.
54. Meyhoff HH, Hald T, Nordling J, Andersen JA, Bilde T, Walter S. A new patient weighted symptom score (DAN-PSS-1). Clinical assessment of indications and outcomes of Transurethral prostatectomy for uncomplicated benign prostatic hyperplasia. Scandinavian Journal of Urology and Nephrology 1993;27:493-499.
55. Hansen BJ, Flyger H, Brasso K, Schou J, Nordling J, Andersen JT, et al. Validation of the self-administrated Danish Prostatic Symptom Score (DAN-PSS-1) system for use in benign prostatic hyperplasia. British Journal of Urology 1995;65:451-458.
56. Kay L, Stigsby B, Brasso K, Mortensen SO, Munkgaard S. Lower Urinary Tract Symptoms. A population survey using the Danish Prostatic Symptom Score (DAN-PSS-1) Questionnaire. Scandinavian Journal of Urology and Nephrology 1999;33:94-99.
57. Jarvis GJ. Urogynaecology Audit. In: Stanton SL, Monga AK, editors. Clinical Urogynaecology: Churchill Livingstone; 2000. p. 615-31.
58. Harvey MA, Versi E. Predictive value of clinical evaluation of stress urinary incontinence: a summary of the published literature. Int Urogynecol J Pelvic Floor Dysfunct 2001;12(1):31-7.
59. Cameron LD, Leventhal H. The self-regulation of health and illness behaviour. London and New York: Routledge; 2003.
60. Kegel AH. Progressive resistance exercise in the functional restoration of the pelvic floor muscles. American Journal of Obstetrics and Gynecology 1948;56:238-248.
61. Devreese A, Staes F, De Weerdt W, Feys H, Van Assche A, Penninckx F, et al. Clinical evaluation of pelvic floor muscle function in continent and incontinent women. Neurourol Urodyn 2004;23(3):190-7.
62. Slieker-ten Hove MC, Pool-Goudzwaard AL, Eijkemans MJ, Steegers-Theunissen RP, Burger CW, Vierhout ME. Face validity and reliability of the first digital assessment scheme of pelvic floor muscle function conform the new standardized terminology of the International Continence Society. Neurourol Urodyn 2009;28(4):295-300.
63. Crotty K, Bartram CI, Pitkin J, Cairns MC, Taylor PC, Dorey G, et al. Investigation of optimal cues to instruction for pelvic floor muscle contraction: a pilot study

using 2D ultrasound imaging in pre-menopausal, nulliparous, continent women. Neurourol Urodyn 2011;30(8):1620-6.
64. Bø K, Berghmans B, Mørkved S, Van Kampen M. Evidence-based Physical Therapy for the Pelvic Floor. Bridging Science and the Clinical Practice. First ed. London: Elsevier; 2007.
65. Dietz HP, Shek KL. The quantification of levator muscle resting tone by digital assessment. Int Urogynecol J Pelvic Floor Dysfunct 2008;19(11):1489-93.
66. Dietz HP, Shek C. Validity and reproducibility of the digital detection of levator trauma. Int Urogynecol J Pelvic Floor Dysfunct 2008;19(8):1097-101.
67. Messelink B, Benson T, Berghmans B, Bo K, Corcos J, Fowler C, et al. Standardization of terminology of pelvic floor muscle function and dysfunction: report from the pelvic floor clinical assessment group of the International Continence Society. Neurourol Urodyn 2005;24(4):374-80.
68. Laycock J, Jerwood D. Pelvic Floor Muscle Assessment: The PERFECT Scheme. Physiotherapy 2001;87(12):631–642.
69. Terra MP, Dobben AC, Berghmans B, Deutekom M, Baeten CG, Janssen LW, et al. Electrical stimulation and pelvic floor muscle training with biofeedback in patients with fecal incontinence: a cohort study of 281 patients. Diseases of the Colon and Rectum 2006;49(8):1149-59.
70. Munn J, Herbert RD, Hancock MJ, Gandevia SC. Resistance training for strength: effect of number of sets and contraction speed. Med Sci Sports Exerc 2005;37(9):1622-6.
71. Bump RC, Hurt WG, Fantl JA, Wyman JF. Assessment of Kegel pelvic muscle exercise performance after brief verbal instruction. Am J Obstet Gynecol 1991;165(2):322-7; discussion 327-9.
72. Tibaek S, Klarskov P, Lund Hansen B, Thomsen H, Andresen H, Schmidt Jensen C, et al. Pelvic floor muscle training before transurethral resection of the prostate: a randomized, controlled, blinded study. Scand J Urol Nephrol 2007;41(4):329-34.
73. Laycock J. Clinical evaluation of the pelvic floor. In: Schüssler B, Laycock J, Norton P, Stanton SL, editors. Pelvic floor re-education. 1 ed. London: Springer-Verlag; 1994. p. 42-48.
74. Dorey G. Pelvic Floor Exercises for Erectile Dysfunction. In. 1. ed. London: Whurr Publishers; 2004. p. 78-79.
75. Brown JS, McNaughton KS, Wyman JF, Burgio KL, Harkaway R, Bergner D, et al. Measurement characteristics of a voiding diary for use by men and women with overactive bladder. Urology 2003;61(4):802-9.
76. Yalcin I, Bump RC. Validation of two global impression questionnaires for incontinence. American Journal of Obstetrics and Gynecology 2003;189(1):98-101.
77. Moen MD, Noone MB, Vassallo BJ, Elser DM. Pelvic floor muscle function in women presenting with pelvic floor disorders. Int Urogynecol J Pelvic Floor Dysfunct 2009;20(7):843-6.
78. Overgard M, Angelsen A, Lydersen S, Morkved S. Does physiotherapist-guided pelvic floor muscle training reduce urinary incontinence after radical prostatectomy? A randomised controlled trial. Eur Urol 2008;54(2):438-48.
79. Berghmans LC, Hendriks HJ, Bo K, Hay-Smith EJ, de Bie RA, van Waalwijk van Doorn ES. Conservative treatment of stress urinary incontinence in women: a systematic review of randomized clinical trials. Br J Urol 1998;82(2):181-91.
80. Hay-Smith EJC, Bø K, Berghams LCM, Hendriks HJ, De Bie RA, van Waalwijk van Doorn ES. Pelvic floor muscle training for urinary incontinence in women. Cochrane Database of Systematic Reviews 2001(1):DOI: 10.1002/14651858.CD001407.
81. Hay-Smith EJ, Dumoulin C. Pelvic floor muscle training versus no treatment, or inactive control treatments, for urinary incontinence in women. Cochrane Database Syst Rev 2006(1):CD005654.
82. Dumoulin C, Hay-Smith J. Pelvic floor muscle training versus no treatment for urinary incontinence in women. A Cochrane systematic review. Eur J Phys Rehabil Med 2008;44(1):47-63.
83. Shamliyan TA, Kane RL, Wyman J, Wilt TJ. Systematic review: randomized, controlled trials of nonsurgical treatments for urinary incontinence in women. Ann Intern Med 2008;148(6):459-73.
84. Wilson PD, Berghmans B, S H, Hay-Smith J, Moore KH, Nygaard I. Adult conservative management. In: Abrams P, Cardozo L, Khoury S, Wein A, editors. Incontinence 3rd International Consultation on Incontinence. Plymouth: Health; 2005. p. 855-964.
85. Moore KN, Cody DJ, Glazener CM. Conservative management for post prostatectomy urinary incontinence. Cochrane Database Syst Rev 2001(2):CD001843.
86. Van Kampen M. Evidence for pelvic floor physical therapy in men. In: Bø K, Berghmans B, Mørkved S, Van Kampen M, editors. Evidence-based Physical Therapy for the Pelvic Floor. Bridging Science and Clinical Practice. Edinburgh: Elsevier Ltd.; 2007. p. 379-93.
87. Miller JM, Sampselle C, Ashton-Miller J, Hong GR, DeLancey JO. Clarification and confirmation of the Knack maneuver: the effect of volitional pelvic floor muscle contraction to preempt expected stress incontinence. Int Urogynecol J Pelvic Floor Dysfunct 2008;19(6):773-82.
88. Smith MD, Russell A, Hodges PW. Disorders of breathing and continence have a stronger association with back pain than obesity and physical activity. Aust J Physiother 2006;52(1):11-6.
89. Wing RR, Creasman JM, West DS, Richter HE, Myers D, Burgio KL, et al. Improving urinary incontinence in overweight and obese women through modest weight loss. Obstet Gynecol 2010;116(2 Pt 1):284-92.
90. Rortveit G, Subak LL, Thom DH, Creasman JM, Vittinghoff E, Van Den Eeden SK, et al. Urinary incontinence, fecal incontinence and pelvic organ prolapse in a population-based, racially diverse cohort: prevalence and risk factors. Female Pelvic Med Reconstr Surg 2010;16(5):278-83.
91. Dumoulin C, Glazener C, Jenkinson D. Determining the optimal pelvic floor muscle training regimen for women with stress urinary incontinence. Neurourol Urodyn 2011;30(5):746-53.
92. Imamura M, Abrams P, Bain C, Buckley B, Cardozo L, Cody J, et al. Systematic review and economic modelling of the effectiveness and cost-effectiveness of non-surgical treatments for women with stress urinary incontinence. Health Technol Assess 2010;14(40):1-188, iii-iv.
93. Hay-Smith J, Morkved S, Fairbrother KA, Herbison GP. Pelvic floor muscle training for prevention and treatment of urinary and faecal incontinence in antenatal and postnatal women. Cochrane Database Syst Rev 2008(4):CD007471.