



Urinary Incontinence

Table of contents

What is urinary incontinence?	3
Causes of urinary incontinence	3
Types of urinary incontinence	3
Stress urinary incontinence	3
Urgency urinary incontinence	4
Mixed incontinence	4
Talking to your doctor	4
Assessment and diagnosis	4
Medical history	4
Physical examination	5
Patient questionnaire	5
Bladder diary	5
Urine test	5
Assessment of residual urine	5
Pad test	5
Urodynamic evaluation	5
Cystoscopy	6
Imaging	6
Self-management	6
Lifestyle advice	6
Bladder training	6
Pelvic floor muscle exercises	7
Drug treatment	7
Muscarinic receptor antagonist	7
Mirabegron	8
Oestrogen	8
Desmopressin	8
Duloxetine	8
Surgical treatment for women	8
Surgical treatment for men	13
Stress urinary incontinence after prostate surgery	18
Second-line treatment for urgency urinary incontinence ..	19
Botulinum toxin	19
Nerve stimulation	19
Bladder surgery	20
Living with urinary incontinence	21
Glossary	23

This leaflet contains general information about the diagnosis and treatment of urinary incontinence. If you have any specific questions about your individual medical situation you should consult your doctor or other professional healthcare provider. No leaflet can replace a personal conversation with your doctor.

This information was produced by the European Association of Urology (EAU) in collaboration with the EAU Section of Female and Functional Urology (ESFFU), and the European Association of Urology Nurses (EAUN).

You can find this and other information on urological diseases at our website: <http://patients.uroweb.org>

This information was updated by the EAU Patient Information Working Group, January 2020.

Series contributors:

Prof. Dr. Frank van der Aa	Leuven (BE)
Dr. Jean-Nicolas Cornu	Paris (FR)
Ms. Sharon Holroyd	Leeds (UK)
Prof. Dr. José Enrique Robles	Pamplona (SP)
Ms. Eva Wallace	Dublin (IE)

Chapter *Surgical treatment for women* was updated March 2018 by the EAU Patient Information Working Group:

Dr. Jan-Peter Jessen	Sindelfingen (DE)
Dr. Ricardo Pereira e Silva	Lisbon (PT)

Urinary incontinence

What is urinary incontinence?

Urinary incontinence is any involuntary or unwanted loss of urine and is considered a medical condition. The risk of developing incontinence increases with age, but younger people may also develop it. Women are more likely to suffer from this condition than men.

Incontinence is common and causes distress and embarrassment. Many people go without treatment because they feel uncomfortable discussing incontinence with their doctor. If incontinence affects your quality of life, it is important to seek medical advice. In most cases, incontinence can be treated or cured with various treatment options. These include pelvic floor exercises, drug treatment, or surgery. Together with your doctor you can discuss which treatment is best for you.

Diagnosis of urinary incontinence

Urinary incontinence is a problem that needs to be diagnosed correctly so that you get the appropriate treatment. This section lists the different tests your doctor may need to assess your situation. It offers general information about diagnosis and assessment of urinary incontinence. Keep in mind that situations can vary in different countries and hospitals.

Medical history

Your doctor might take a medical history to understand what type of urinary incontinence you have. As part of the medical history your doctor might ask about any other conditions you may have, or medication you take. This can be related to the incontinence or have an effect on your symptoms.

Your doctor may ask you:

- If you take any medication
- If you smoke
- When and how much you drink
- If you drink much coffee or alcohol
- If you ever had surgery
- To describe your bowel habits
- If you have ever been pregnant
- If you have entered menopause

Your doctor might also ask you about the impact of incontinence on your daily life, for example:

- How often you go to the toilet
- How often you have urine leakage
- If you leak urine when you laugh, cough, or sneeze
- If you wake up at night to urinate
- If you need to hurry to reach the toilet in time when you feel the urge to urinate
- If your bladder does not feel empty after urinating
- The doctor may also ask you about your sex life and your treatment wishes.

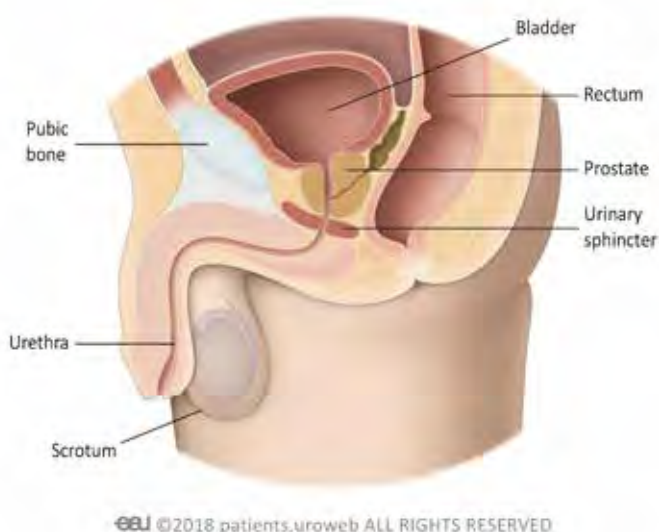


Fig. 1a: The male lower urinary tract.

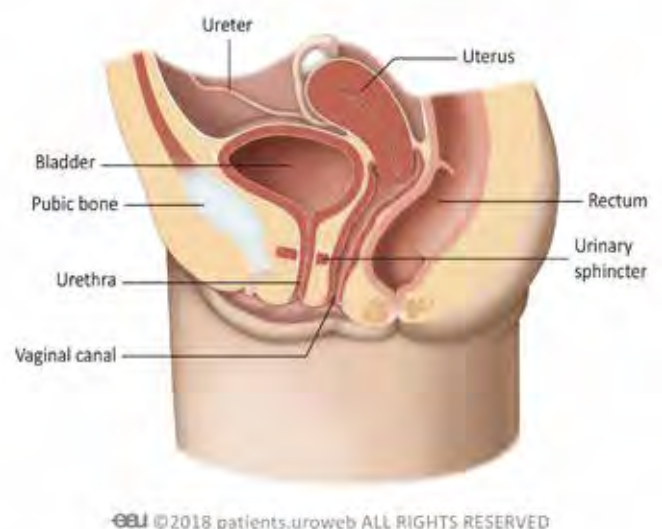


Fig. 1b: The female lower urinary tract.

Physical examination

The doctor may perform a physical examination of your abdomen to detect an enlarged bladder. He or she may ask you to cough with a full bladder, in order to see if you suffer from stress urinary incontinence (SUI). The doctor also needs to test how well the pelvic floor muscles work. For men, this is done through a digital examination of the rectum and the prostate (Fig. 2). Women may get a gynaecological examination.

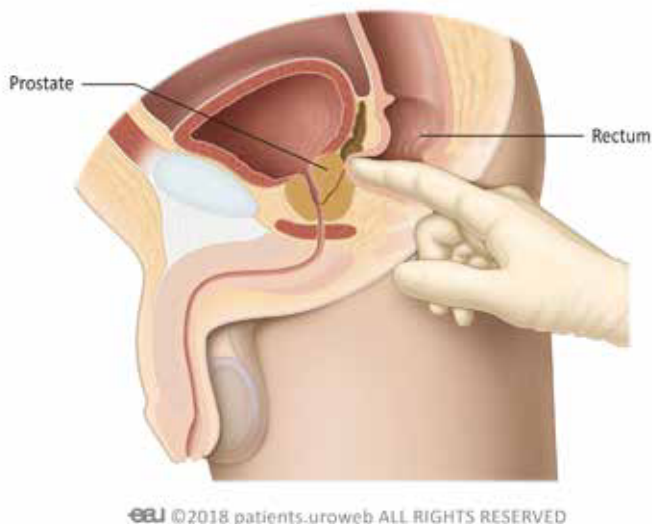


Fig. 2.: Digital rectal examination male

Patient questionnaires

The doctor may ask you to fill out a questionnaire to better understand your symptoms and how they affect your everyday life. Questionnaires can also be used to monitor your symptoms over time, so you may need to fill them out more than once.

Urine test

You may need to give some of your urine for testing. The test will show if you have a urinary tract infection.

Bladder diary

Your doctor may ask you to keep a bladder diary for a few days. Here you will note down how much you drink, how often you urinate, and how much urine you produce. The bladder diary is important because it helps your doctor to understand your symptoms better.

Assessment of residual urine

- Residual urine is the amount of urine that is left in the bladder after urinating. It is also known as post-void residual urine (PVR). It is usually measured with the help of an ultrasound.

- Residual urine can worsen incontinence and may point to other urological conditions, such as a urinary tract infection. It can also help your doctor to better understand the causes of your incontinence.

Pad test

Your doctor may also need to know the weight of the pads that you wear during a period of time, which is called the pad test. Your doctor will explain in detail how to perform the test. A pad test is not always easy to do, and your doctor will need your full cooperation.

Urodynamic evaluation

A urodynamic evaluation might be necessary to get more information about your urination cycle and how your bladder muscles and urinary sphincter work. Urodynamic evaluation may consist of uroflowmetry or invasive urodynamic tests.

Uroflowmetry

Uroflowmetry consists of electronically recording the rate of your urine flow. It is easily done in privacy at the hospital or clinic. You will urinate into a container, called a uroflowmeter. This test helps your doctor to check whether there is any obstruction to the flow of urine out of the bladder.

Invasive urodynamic tests

If you are scheduled to undergo surgery for urinary incontinence, an invasive urodynamic test may be done. The test may also be needed when your diagnosis is uncertain.

During an invasive urodynamic test, your doctor or nurse inserts catheters in your urethra and rectum to measure the pressure in your bladder and abdomen. The bladder is slowly filled with sterile water through the catheter in the urethra. This is done to simulate the filling of the bladder with urine. When your bladder is full, you will urinate into a uroflowmeter.

The test results are shown on a screen which is connected to the catheters.

Cystoscopy

With a cystoscopy, the doctor can look inside the urethra and the bladder with the help of a small camera. Cystoscopy is not a common test during initial assessment for urinary incontinence. It may be needed when you suffer from other symptoms, such as blood in the urine or if your diagnosis is unclear.

Imaging

The doctor or nurse may scan your urinary tract with ultrasonography or magnetic resonance imaging. However, imaging is not a common test during the initial assessment for incontinence.

Treatment options urinary incontinence

There are many different ways of coping with urinary incontinence. Seek help if your symptoms bother you: consult your family doctor, general practitioner, or a urologist. It may be uncomfortable to discuss your condition with a doctor, but it is the most effective way to deal with your concerns.

Treatment for urinary incontinence depends on the type of incontinence, how severe it is, and what may cause it. There is no single solution to incontinence that works for everyone. Discuss with your doctor or specialist nurse which measures can help you. It is common to try different options to figure out which one works best for you.

Sometimes, conservative measures can significantly improve your condition and lead to a better quality of life. These measures include lifestyle changes, bladder training and pelvic floor muscle exercises. Other treatment options, such as medication and surgery, should be considered if conservative management is not effective.

The most used drugs to treat urinary incontinence are the antimuscarinic (or anticholinergic) drugs and mirabegron. Both intent to ameliorate urgency urinary incontinence. In some cases, other drugs like desmopressin, duloxetine or vaginal oestrogens could be appropriate. Discuss with your doctor if some of these drugs can help you and which benefits and adverse effects you can expect with any of them.

Surgical treatment for urinary incontinence

Sometimes conservative or pharmacological treatment do not improve your urinary incontinence. In these cases, other treatment options are available. Together with your doctor you can decide which approach is best for you and which are the expected benefits and side effects that you can expect with every one of the different options.

Surgical treatment options for urgency urinary incontinence are:

- Botulinumtoxin bladder injection: injection in your bladder wall a substance that avoid involuntary contraction of your bladder.
- Nerve stimulation (neuromodulation): electrical pulses to stimulate the sacral nerves, which control the bladder behaviour.
- Surgery to increase bladder volume. This represents the last choice, only when all other treatments have failed, and it is rarely performed nowadays. If this surgery is recommended, you will need to discuss its implications and side effects with your doctor, because they can be significant.

Surgical treatment options for stress urinary incontinence:

- Suburethral slings: sling placed under your urethra.
- Bulking agents: a substance injected into your urethra to increase its resistance.
- External compression devices: devices that compress your urethra to avoid leakage.

Second-line treatment for urgency urinary incontinence

Sometimes self-management or the drugs your doctor prescribed do not improve your urgency urinary incontinence (UUI). In these cases, other treatment options are available. Together with your doctor you can decide which approach is best for you.

Common second-line treatment options for UUI are:

- Botulinumtoxin bladder injection
- Nerve stimulation, also known as neuromodulation
- Surgery to increase bladder volume

Bladder surgery

In case your symptoms have not improved with drug or other treatments, you may need surgery on your bladder. The goal of the procedure is to increase the capacity of the bladder. This will reduce the pressure in the bladder as it fills so that it can hold more urine.

The doctor makes an incision in your lower abdomen and uses a piece of your bowel to increase the size of the bladder. This procedure is called bladder augmentation or cystoplasty, and is rarely performed nowadays (Fig. 3). If this surgery is recommended, you will need to discuss its implications and side effects with your doctor because they can be significant.

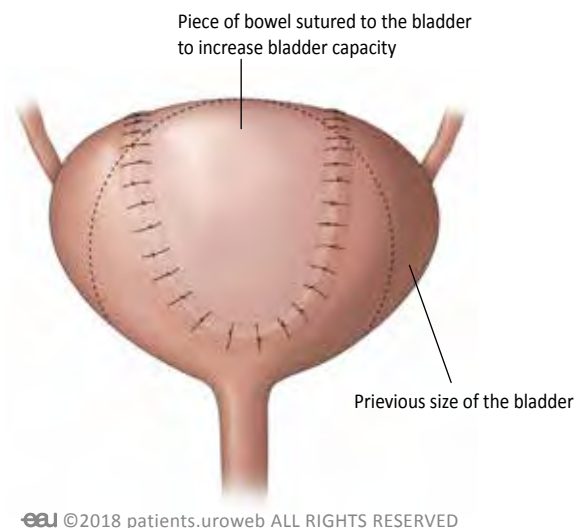


Fig.3: Bladder surgery to increase the size of the bladder.

General information about urinary incontinence

Causes of urinary incontinence

Some of the causes of urinary incontinence are:

- Hormone deficiencies
- Weak pelvic floor muscles
- Childbirth
- Pelvic surgery
- Urinary tract infections
- Neurological diseases
- Benign prostatic enlargement
- Prostate surgery

Urinary incontinence becomes more common with increasing age. However, it should not be seen as a normal part of ageing.

Types of incontinence

There are different types of urinary incontinence, depending on how and when you lose urine.

Stress urinary incontinence

Stress urinary incontinence (SUI) means that you lose urine during certain activities, like:

- Coughing, sneezing, or laughing
- Exercise like running or jumping
- Lifting heavy things such as groceries

This happens because during these kinds of activities the pressure on your bladder increases. If your urethra or urinary sphincter are weak, they cannot resist the pressure of a full bladder, and will leak urine.

Stress urinary incontinence

Stress urinary incontinence (SUI) means that you lose urine during certain activities, like:

- Coughing, sneezing, or laughing
- Exercise like running or jumping
- Lifting heavy things such as groceries

This happens because during these kinds of activities the pressure on your bladder increases. If your urethra or urinary sphincter are weak, they cannot resist the pressure of a full bladder, and will leak urine.

Urgency urinary incontinence

Urgency urinary incontinence (UUI) happens when you get a sudden need to urinate which you cannot postpone. The bladder muscle involuntarily contracts and you urinate when you do not want to.

Mixed incontinence

Your doctor may diagnose you with mixed urinary incontinence if you suffer from both SUI and UUI symptoms.

Talking to your doctor

Talking about incontinence issues with a urologist may be uncomfortable, but it is important to do so. Untreated urinary incontinence can lead to health problems like infections, skin rashes, or sexual dysfunction. It can also cause stress, depression, low self-esteem, or shame. These problems can lead to isolation and affect your work and social life.

The doctor can help to improve your symptoms or even cure your condition. Your doctor needs to find out which type of incontinence you have and what causes it. This will help to find the right treatment.

It can be useful to prepare some questions before you make an appointment. Examples of questions you can ask during consultation are:

- Why is this happening to me?
- Is there a cure for my problem?
- What tests do I need?
- Which treatment option would you recommend for me and why?
- What will happen in the next months and years if I do not get treatment?
- What will happen in the next months and years if I do get treatment?
- Will medication help with my incontinence?
- Are there any side effects to the medication?
- Do I need surgery?
- What surgical options are there for me?
- How soon can I expect a result from the treatment?
- How often will I have to go back to the doctor?

You do not need to ask all of them. Choose the ones you think are most important to you.

Urinary incontinence after prostate surgery

Prostate surgery increases the risk of stress urinary incontinence (SUI). This is because the prostate surrounds the urethra, helping it to resist the pressure of a full bladder. If your prostate is partially or completely removed this may have an effect on how much pressure the urethra can resist.

There are several treatment options to improve SUI after prostate surgery. The most common treatments are:

- Pelvic floor muscle exercises
- Sling implantation
- Artificial compression devices (balloon insertion)
- Artificial Urinary Sphincter implantation (AUS)

Living with urinary incontinence

Urinary incontinence can be an embarrassing and isolating condition that affects your physical and psychological health. Although it is not life-threatening, it usually has a negative impact on your quality of life. Incontinence can affect your social life, your work, and your sex life. It causes physical and emotional discomfort, and can lead to low self-esteem.

Urinary incontinence can make you feel powerless. Having unwanted urine leakage in a public place can be upsetting and embarrassing. This could lead to fear of leaving the house, and a sense of isolation which prevents you and your loved ones from fully enjoying life.

There are many causes of incontinence. Some can be cured, and others can be managed. Social attitudes to urinary incontinence can make it difficult to talk about it, even to your closest friends. Looking for professional help can take your mind off your situation, and allow you to better cope with the condition.

How can I get help?

There are specialist doctors and nurses who can help you with your incontinence problem. Health care professionals are there to help you find a solution to your urinary incontinence problem. Do not be afraid to ask for their help.

How can I deal with incontinence in my daily life?

General lifestyle changes can help manage your symptoms and improve your quality of life. Follow the advice of your doctor or nurse.

Try to make sure you always know where the nearest toilet is. Never be afraid or embarrassed to ask where the toilet is when you are away from home.

Plan to empty your bladder every 2 to 4 hours and before going to bed at night. Install a night-light and grab bars in your bathroom to help prevent falls when you are in a hurry. There are many products to help contain urine leakage, such as pads, drip collectors, and external collection devices. Discuss with your doctor or nurse which type of continence product best fits your lifestyle needs.

There are many absorbent pads available to help you manage urine loss. There are different products for men and women. Most products are no bulkier than normal underwear, and you can wear them easily under everyday clothes. Absorbent incontinence pads are different from menstrual pads, ask if you are unsure about which product to use. Regularly change your pad to keep the groin area clean and as dry as possible. This will help prevent skin irritation and control odour. Pads are

generally available at pharmacies, supermarkets, and medical supply stores.

Men who have problems with dribbles of urine can use a drip collector, or a small pad. Drip collectors are worn over the penis and held in place by your underwear. Men also have the option to wear an external adhesive device over the penis, attached to a leg bag and worn under the trousers.

How can I deal with incontinence at work?

It can be stressful to have to work when you worry about your incontinence. There are certain things you can do to make you feel more in control and worry less:

- Make sure you always have plenty good-quality pads at work
- Invest in odour preventers. Ask your pharmacist or doctor about these
- Wear your favourite perfume. It will not prevent the odour, but you will feel better
- Avoid drinking too much during working hours
- Avoid caffeinated drinks
- If you are in a meeting, only take sips of water rather than cups of coffee or tea
- Try to use the toilet before you feel your bladder is full. Standing up with a full bladder may cause urine leakage
- Try to use the toilet every 3 or 4 hours
- Wear dark coloured clothes. Lighter-coloured clothes may show stains more easily
- Have an extra set of clothes at work
- If recommended by your doctor, try to do your pelvic floor exercises during work hours

How can I deal with incontinence while travelling?

Travelling, especially long distances, can be difficult when you suffer from urinary incontinence. To make travel more comfortable you can:

- Try to pre-book a seat near a toilet on trains and planes
- When travelling by car, plan toilet breaks throughout the trip
- Try sitting on cushions to prevent vibrations
- Avoid drinking too much, especially coffee, alcohol, and tea, right before and during travel
- Wear loose clothes for comfort
- Wear protective pads if necessary

How does urinary incontinence affect my sex life?

It can be difficult to feel attractive and confident when you do not always feel in control of your body. Fear of having urine leakage during sex can lead to avoiding being intimate. Low self-esteem, depression, or anxiety related to incontinence can also affect your sex life.

Communication is essential. Otherwise you may be deprived of affection and nurturing when you need it most. Discuss your wishes and needs with your partner. You could also consider attending a local support group to get help and support with any difficulties that you are experiencing.

How does a catheter affect my daily life?

It may sometimes be necessary to have a catheter in order to prevent urine leakage. You can be taught how to insert an intermittent catheter to empty your bladder every couple of hours. In other cases, it may be necessary to have an indwelling catheter in place.

Having a catheter does not mean you cannot be sexually active. Both men and women can have sex with a urinary catheter in place. For men, the tubing can be bent backwards and folded next to the penis, and a condom could be applied to keep it in place. For women, the tubing can be taped to the thigh out of the way. Make sure the tube is not blocked.

* The underlined terms are listed in the glossary.

Glossary of terms

Anaesthesia (general, spinal, or local)

Before a procedure you will get medication to make sure that you don't feel pain. Under general anaesthesia you are unconscious and unaware of what is happening to you. Under spinal or local anaesthesia you will not feel pain in the part of your body where the procedure is done. Anaesthesia wears off gradually after the procedure.

Benign prostatic enlargement (BPE)

An enlargement of the prostate related to hormonal changes with age.

Bladder

Organ which collects urine from the kidneys.

Bladder neck

The group of muscles that connect the bladder to the urethra. These muscles contract to keep the urine in the bladder, and relax to let the urine pass to the urethra.

Bladder wall

The different layers of tissue that shape the bladder.

Catheter

A hollow flexible tube to insert or drain fluids from the body. In urology, catheters are generally used to drain urine from the bladder.

Contraindications

Any symptoms or conditions that make a certain treatment option undesirable.

CT-scan

Imaging technique that makes a series of x-ray images of the body. CT stands for Computed Tomography

Cystoscope

A type of endoscope which is used in the urethra (see also Endoscope, Urethra).

Cystoscopy

A procedure in which the doctor looks inside your body with a cystoscope inserted through the urethra see also Cystoscope, Urethra).

Detrusor

A smooth muscle found in the bladder wall. The detrusor muscle remains relaxed to allow the bladder to store the urine, and contracts during urination to release the urine.

Endoscope

A tube-like instrument to examine the inside of the body. Can be flexible or rigid.

Fatigue

This means you feel more tired than usual, you are out of energy, and it doesn't get better after you sleep. You may also experience pain in your joints, muscles, and chest.

First-line treatment

The first treatment given for a disease. It is often part of a standard set of treatment options.

Gynaecological

Having to do with the health of the female reproductive system, including the vagina, uterus and ovaries, and the breasts.

Imaging

Taking images of the body with ultrasound, x-ray or other scanning techniques.

Invasive

Any procedure in which the doctor inserts instruments into the body, or parts of the body.

Indwelling catheter

A tube placed in the urethra and bladder to help you urinate.

Intermittent catheter

A tube placed in the urethra and bladder to help you urinate. An intermittent catheter is manually placed and removed several times a day, to empty the bladder fully.

Labia

The inner and outer folds of the vulva, on either side of the vagina.

Glossary of terms

Laparoscopic surgery

A minimally-invasive surgical technique in which the surgeon does not need to cut through skin and tissue. Instead, the surgeon inserts the surgical instruments through small incisions in your abdomen.

Ligament

A short band of tough, flexible fibrous tissue which connects two bones or cartilages, or holds together a joint.

Minimally-invasive procedure

A surgical procedure where there is no need to make an incision in the body.

Mixed urinary incontinence

Having symptoms of both stress urinary incontinence and urgency urinary incontinence.

MRI scan

Magnetic Resonance Imaging is a technique in which strong magnetic fields and radio waves are used to make images of the body.

Neurogenic lower urinary tract dysfunction

A complication in the lower urinary tract caused by problems in the nervous system that influence its activity.

Nocturia

The need to wake up at night to urinate.

Oestrogen

The main female sex hormones which control female characteristics of the body and are important to the reproductive and menstrual cycle.

Open surgery

A surgical procedure in which the surgeon cuts skin and tissues to have direct access to the structures or organs.

Overactive Bladder Symptoms

A collection of urinary storage symptoms, including urgency, incontinence, frequency, and nocturia.

Pad test

During the pad test your doctor asks you to wear an absorbent pad. Usually the test lasts between 1 and 24 hours. You have to weigh the amount of urine absorbed by the pad.

Pelvic floor muscles

Muscles that support the pelvic organs, including the bladder and rectum.

Perineum

The area between the anus and the scrotum or vulva.
Pessary A small soluble block that is inserted into the vagina to treat infection or as a contraceptive. Can also refer to an elastic or rigid device that is inserted into the vagina to support the uterus.

Physical

Having to do with or affecting the body.

Post void residual urine (PVR) The amount of urine left in the bladder after urination.

Prostate

The gland which produces the fluid which carries semen. It is located in the male lower urinary tract, under the bladder and around the urethra (see also Bladder, Lower urinary tract, Urethra).

Prostatectomy

A surgical procedure in which part of the prostate is removed.

Radical prostatectomy

A surgical procedure in which the entire prostate is removed.

Retropubic

Behind the pelvic bone.

Rectum

The final section of the large intestine, ending at the anus.

Second-line treatment

Treatment that is given when initial treatment does not work, or stops working.

Stress urinary incontinence (SUI)

When your urethra or urinary sphincter cannot resist the pressure of a full bladder. As a result, you lose urine when the pressure on your lower urinary tract suddenly increases. This can happen during activities like coughing, sneezing, or laughing, exercise like running or jumping, or carrying heavy things like groceries.

Glossary of terms

Scrotum

A pouch of skin containing the testicles.

Titanium port The non-metallic part of an Artificial Urinary Sphincter (AUS) that serves to adjust the pressure of the device.

Transobturator

Through the natural space in the hip bone.

Urethra The tube which carries urine from the bladder and out of the body.

Urethral wall

The layer of tissue that shapes the urethra.

Urgency

The sudden need to urinate.

Urgency incontinence

Urgency urinary incontinence (UUI) happens when you get a sudden need to urinate which you cannot postpone. The bladder muscle contracts and you urinate when you do not want to.

Urinary frequency

The need to urinate more often than usual, generally more than 8 times a day.

Urinary incontinence

Involuntary loss of urine.

Urinary sphincter

The muscles used to control the exit of urine in the bladder, through the urethra. When either one of the muscles contracts, the urethra is sealed shut.

Urinary tract

The organ system which produces and transports urine through and out of the body. It includes two kidneys, two ureters, the bladder and the urethra. The urinary tract is similar in men and women, only men have a longer urethra.

Urination cycle The urinary cycle has two phases. One is when the bladder fills up, and it is followed by the urination phase, where the bladder empties.

Urine leakage

The accidental escape of urine from the bladder.

Urodynamic test

Urodynamics is generally used as a collective term for all tests of bladder and urethral function. It is widely used to direct decisions about treatment and provide prognostic information.

Uroflowmeter

A special funnel that is used during a uroflowmetry test. The funnel is connected to a measuring instrument that calculates the amount of urine, rate of flow in seconds, and length of time until you finish urinating.

Ultrasonography

Imaging technique that uses high-frequency sounds to make an image of the inside of the body (See also ultrasound).

Vagina The muscular tube leading from the external genitals to the cervix of the uterus in women.

Vulva

The female external genitals.

European Association of Urology

PO Box 30016

NL-6803 AA ARNHEM

The Netherlands

e-Mail: info.patientinformation@uroweb.org

Website: patients.uroweb.org