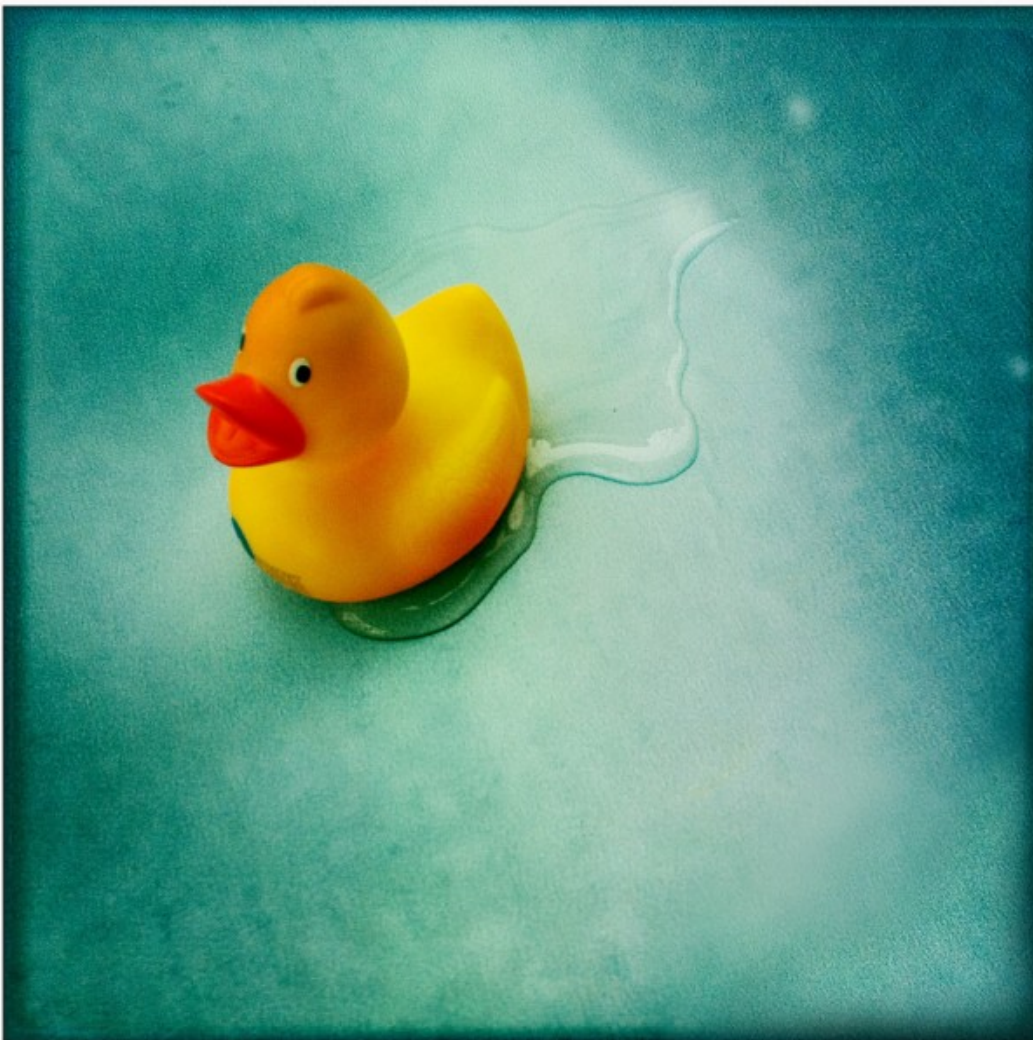


Urinary Incontinence- Types

[See online here](#)

Urinary incontinence is considered a taboo and is associated with many stereotypes. Not only the elderly, but younger people may be affected by involuntary urination as well. The taboo of micturition problems causes intense mental stress, the feeling of shame, in addition to sexual problems, to the point of social isolation. Thus a comprehensive knowledge of the different types of urinary incontinence and the subsequent target-oriented therapy is crucial to making a diagnosis so that patients are relieved from their psychological stress.



Types of Urinary Incontinence

The different **types of incontinence** include:

- Stress incontinence
- Urge incontinence
- Overflow incontinence
- Reflex incontinence
- Extraurethral incontinence
- Functional incontinence

Urinary incontinence refers to the involuntary loss or leakage of urine. The condition frequently occurs in elderly and affects women more frequently than men. Although incontinence can be a symptom of a large number of conditions, it commonly results from prostatic diseases or their treatment in men, and the common causes in women include dysfunction of the bladder or pelvic floor muscles, associated with pregnancy, childbirth, or menopause.

Incontinence is diagnosed when even only 1 drop of urine is voided

involuntarily. In order to diagnose a patient with the different types of incontinence, an extensive analysis of the incontinence and medical history is the 1st step towards identification.

Stress Incontinence

Patients who suffer from stress incontinence or effort incontinence in the initial stages lose small amounts of urine when coughing, sneezing, laughing, and during light physical activity. As a rule, the cause is a **defective sphincter mechanism** which is induced by a change of the angle between the bladder and the urethra. As soon as the intra-abdominal pressure is increased, involuntary micturition ensues. Three degrees of severity are discriminated:

1. Micturition when coughing, sneezing, and laughing
2. Micturition during physical work, running, and stair climbing
3. Micturition when lying

The most common causes comprise injuries resulting from childbirth or surgery, intra-abdominal pressure increase caused by tumors or pregnancy, pelvic floor disorders, and uterine prolapse.

In order to diagnose a prolapse of the uterus, a gynecological examination is performed. The altered angle between the bladder and urethra is visualized in a lateral cystogram with the help of an ultrasound or X-ray imaging. Urodynamic testing is also used for diagnosis.

Treatment of stress incontinence

- When insufficient strength of the pelvic floor muscles is the cause of the stress incontinence, regular **pelvic floor exercise** (Kegel exercise) helps to alleviate the condition and strengthening the pelvic floor, which may also be achieved with magnetic pelvic floor stimulation.
- Additionally, weight reduction and estrogen administration may lead to the desired result. Estrogen may be applied systemically or locally in the form of a vaginal tablet.
- The pharmaceutical treatments include duloxetine which increases the activity of the external urethral sphincter, α -sympathomimetic drugs like midodrine which increase the tone of the smooth muscles, and β -sympathomimetic drugs which strengthen the contraction of the skeletal external urethral sphincter.

- Surgery aiming to normalize the angle between bladder and urethra might be necessary for the 2nd degree of severity or higher. Three different types of operation are available:
 - **Marshall-Marchetti-Krantz (MMK) procedure:** Suspension of the urethra and the bladder at the pubic bone or the fascia behind it.
 - **TVT** (tension-free vaginal tape): Fixation of a synthetic tape at the abdominal wall which is positioned underneath the urethra.
 - **Artificial urinary sphincter:** Only performed in men. The sphincter is artificially replaced by a sac which is regulated by a pressure pump placed in the scrotum.

Note: No urge to urinate and failing activity of the detrusor urinae muscle.

Urge incontinence

In case of urge incontinence or overactive bladder (OAB), even a lightly filled bladder results in a desire to urinate. Based on the cause of the urge incontinence, the 3 types of urge incontinence include:

- Motor urge incontinence
- Sensory urge incontinence
- Idiopathic urge incontinence

The **cause of motor urge incontinence is the hyperexcitability of the detrusor urinae muscle** resulting in the involuntary contraction of the bladder due to triggers like psychovegetative stress such as anxiety or disorders of the central nervous system (brain, spinal tumors, Parkinson's disease, Alzheimer's disease, and long-standing alcohol abuse), whereas bladder infections, urinary calculi, radiation damage, or other **alterations of the bladder induce sensory urge incontinence**. Since often no cause for the urge incontinence is found, this case is referred to as idiopathic urge incontinence.

Note: The detrusor urinae muscle is dysfunctional, but the sphincter is intact.

The bladder contractions are visualized with the help of a urodynamic examination, urinary tract infections are tested with urinalysis, and urinary calculi are eliminated from the diagnosis with the help of cystoscopy.

Treatment of urge incontinence

- When a urinary tract infection is diagnosed, appropriate medication is prescribed.
- In the case of idiopathic urge incontinence, a systematic bladder retraining is assigned initially.
- Additionally, muscle relaxants, antispasmodics, or tricyclic antidepressants may alleviate the problem.

A combination of stress and urge incontinence is referred to as **mixed incontinence**. The pattern of mixed stress and urge incontinence is the most common presentation in the elderly and especially women.

Overflow incontinence

When the bladder is overly full, overflow incontinence or chronic urinary retention occurs, i.e. the pressure in the bladder exceeds the pressure with which the urethra is closed. As

a rule, this is the case **when the bladder outlet is constricted**, which may be induced by tumors in the lesser pelvis, [diabetes mellitus](#), medication, or spinal anesthesia.

An unwanted side effect of overflow incontinence is the urinary tract infection because the bladder cannot be completely voided due to increasing overexpansion of the bladder wall and an ensuing hypoactive detrusor urinae muscle. This may lead to chronic kidney disease and uremia as a result of the reflux of urine in the kidneys and urethra.

Treatment of overflow incontinence

- Overflow incontinence may be treated with the removal of the source which blocks voiding.
- The insertion of a suprapubic or transurethral catheter
- Medication to relax the sphincter (alpha-adrenergic antagonists)

Men with prostate hypertrophy and people with long-lasting diabetes mellitus are particularly prone to developing overflow incontinence.

Note: The mechanism for blocking the urethra is intact, and the voiding of the bladder is disturbed.

Reflex Incontinence

Reflex incontinence or neurogenic hyperactivity of the detrusor muscle is diagnosed when the **interaction between the sphincter mechanism and the central control of the urinary bladder is defective**. Even external tactile stimuli may trigger the micturition reflex.

This neurogenic disorder is caused for instance, by spinal disc herniation, paraplegia, myelitis, tumors in the spine, deformities like myelomeningocele or spina bifida occulta. Neurogenic hyperactivity of the detrusor muscle may also be a side effect of disorders of the nervous system like Parkinson's disease, diabetes mellitus, multiple sclerosis, etc.

Medical treatment with anticholinergic agents or self-catheterization are possible treatments for reflex incontinence.

Extraurethral incontinence

In the case of extraurethral urinary incontinence, **micturition takes place through the rectum or the vagina**. It is usually caused by a fistula between the bladder and the vagina or the bladder and the colon. The fistula is formed due to radiation of tumors or conditions like Crohn's disease.

The fistula is visualized for diagnosis with the help of a gynecological examination, cystoscopy, or lateral cystogram using a contrast medium.

If possible, the fistula should be resected by surgery and the affected organs are reconstructed subsequently.

Functional Incontinence

Because the involuntary voiding of urine constitutes the definition of incontinence, functional incontinence is included in a complete listing of all types of incontinence. Here, micturition is induced by a strong urge to urinate. The causes, in this case, are external factors like the absence of a toilet, immobility, or mental disorders.

Drugs that Contribute to Urinary Incontinence

The treatment of all types of incontinence involves addressing the issue of medications that can affect incontinence. Large number of drugs can contribute and worsen urinary incontinence. Modification of dose, frequency, timing or their removal if possible can reduce the symptoms of incontinence. These drugs include:

- Diuretics
- Anticholinergics
- Psychotropic drugs
- Tricyclic antidepressants
- Antipsychotics
- Sedative-hypnotics
- Narcotic analgesics
- Alpha-adrenergic blockers
- Alpha-adrenergic agonists
- Cholinesterase inhibitors
- Angiotensin-converting enzyme inhibitors
- Calcium channel blockers, gabapentin, pregabalin, and glitazones
- Alcohol

Legal Note: Unless otherwise stated, all rights reserved by Lecturio GmbH. For further legal regulations see our [legal information page](#).

Notes