Definition

Urinary incontinence (UI) is an involuntary loss of urine. It is a common problem: more than 200 million people worldwide are unable to control when they urinate.

Some people find this slightly bothersome. Others find it totally debilitating. It is always embarrassing. Like other sensitive issues, it can be difficult to talk about. This is one of the reasons why less than 10 percent of people who suffer from incontinence decide to seek medical help. If you have UI, you do not have to suffer in silence. Just see your doctor.

Fortunately UI can be treated. Most patients treated for UI are either cured, or their symptoms are improved significantly.

Even if treatment is not entirely successful due to the influence of other conditions, careful management can definitely help patients feel more comfortable and improve their quality of life. It is not a condition you have to live with.

Who can suffer from UI

Both men and women can suffer from UI, but there are gender differences. The incidence is higher in women, who suffer from the disorder almost twice as often as men.

In adulthood women are more likely to experience UI because the anatomy of their urinary tract is more prone to it, and because of the stress caused by pregnancy and childbirth.

In men, prostate problems such as benign prostatic hyperplasia can cause UI.

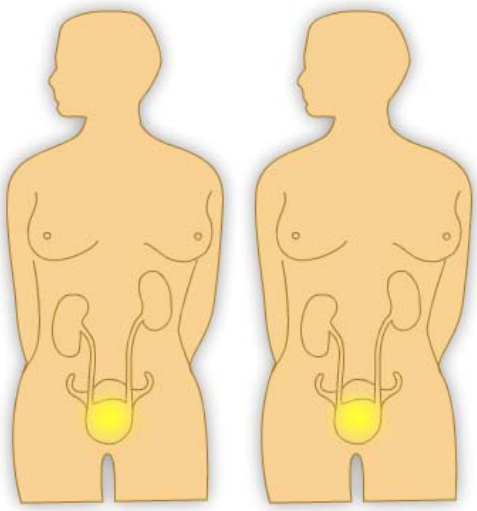
Nerve damage is another condition that can lead to UI in men and women.

The prevalence of UI increases with age, but it is important to be aware that UI is not an inevitable part of the normal aging process. UI can affect men and women regardless of their age. The mean prevalence is about 20–30%, with an increase up to 30–40% in middle age. The overall incidence of urinary incontinence increases progressively with age, reaching 30–50% in the elderly.

In childhood, nocturnal enuresis, also known as bedwetting, is more common in boys, but girls also can have this problem.

Incontinence, both daytime and nighttime, also affects a high percentage of children. Some 10–20% of 5-year-olds and 5–7% of 10-year-olds experience nighttime incontinence.

As you can see, you are not alone. If you are experiencing UI symptoms, you should make an appointment with a urologist.



How urination Works

Bladder

The urinary bladder is a round organ that lies in the lower abdomen. It stores and expels urine, the fluid produced after the kidneys filter your blood. Storage and urination are complex activities and involve the coordination and correct functioning of nerves, muscles, the spinal cord and the brain.

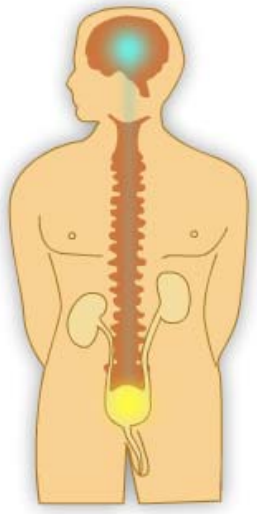
Usually, when the bladder is about 75% full, the nerves inside it send a message to the brain. In response, the bladder signals the muscles in its wall – called detrusor muscles – to contract so that it empties its contents through the urethra. But this is not an automatic process: usually you can wait until it is a socially opportune moment and a toilet is available. Before ordering the bladder to contract, your brain signals the muscles surrounding the bladder – called sphincter muscles – to relax. When these muscles relax, the detrusor muscles are ready to contract and release the urine.

Urination

The process of voiding or excreting urine from the bladder has two different phases:

1. **Filling.** While filling, the bladder walls stretch to store the increasing amount of urine. Normally, an adult's bladder stores between 350 and 550 ml, but when there is nearly 200 ml of urine you may feel the need to urinate.

2. **Emptying**: When your bladder becomes full, the detrusor muscles contract while the sphincter muscles that control the flow of the urine through the urethra relax to help empty the bladder. This process is controlled by the nervous system, allowing urination to be delayed if it is not convenient to go to a bathroom.



Causes of UI

There are numerous diseases that can cause UI. For example, people who have had diabetes for several years may develop nerve damage that affects the voiding process. Conditions like multiple sclerosis can cause damage in the nerves that control bladder function. Spinal cord injury interrupts the nerve signals required for bladder control. Neural birth defects, such as spina bifida, can lead to a lack of control over urination.

In men, the enlargement of the prostate is another cause of UI.

In women, the stress caused by pregnancy and childbirth is a risk factor.

Subtypes of UI
UI can be classified into several subtypes:

Overactive Bladder (OAB), also known as urge incontinence or neurogenic bladder, is the most commonly reported form of urinary incontinence, affecting one in six adults. Although it occurs more often in women as they get older, it can affect males and females regardless of their age.

Urgency, urinary frequency and leakage are OAB symptoms that are caused by uncontrolled contractions of bladder muscles. Unrelated to bladder urinary volume, there are spontaneous detrusor muscle contractions, leading to loss of urine.

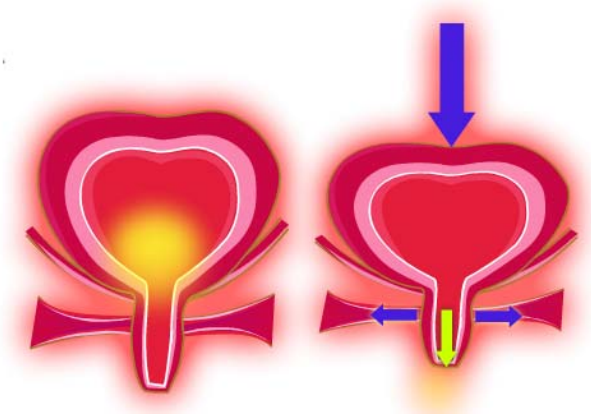
There are multiple causes of OAB: neurological conditions such as multiple sclerosis, Alzheimer's or Parkinson's disease; urinary infections in the bladder or kidneys; problems in the prostate in men; and gynecological problems in women.

Stress incontinence (SI) is another common subtype of urinary incontinence. It is involuntary leakage of urine while doing activities that apply pressure to the bladder, such as exercising, coughing, sneezing, laughing or lifting. It occurs when the weakened pelvic floor muscles supporting the bladder move downward and prevent the muscles that ordinarily hold the urethra shut from contracting fully.

It is more common in women, since it is caused by weakened pelvic and sphincter muscles, problems that often result from physical changes occurring during pregnancy, childbirth and menopause (the decrease in estrogen after menopause can weaken the sphincter muscle). Other gynecological problems are risk factors for this subtype of UI, as is obesity.

Men can have trouble emptying their bladder if an enlarged prostate is blocking the urethra, caused by different conditions such as benign prostatic hyperplasia (a noncancerous overgrowth of the prostate gland), prostate cancer or prostate surgery.

Diabetes and spinal cord injury can also cause this type of incontinence.



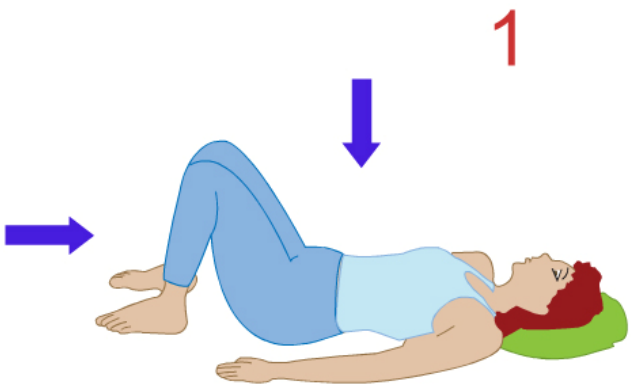
Mixed incontinence refers to the coexistence of more than one type of incontinence, generally stress and urge incontinence. It is the most common subtype of UI in women.

Nocturnal enuresis is any involuntary loss of urine during sleep. It is more common in children and elderly patients. Babies are not born with the ability to control their urinary process. As they grow, they develop the muscle control required.

Overflow incontinence. Patients with overflow incontinence cannot completely empty their bladder. Urine is left in the bladder – referred to as residual urine – which leads to frequent urination. There is also an impaired contractile capacity of the bladder generally caused by weak bladder muscles or nerve damage. Benign prostatic hyperplasia is another cause of this subtype of incontinence, which occurs more often in men.

Functional incontinence is the most common type of incontinence among elderly patients whose urinary system work correctly, but they are unable to reach the toilet in time, due to limitations in movement, thought or communication.

Temporary incontinence is a reversible condition that may be triggered by infections in the urinary tract or vagina,
lower urinary tract tumors, or severe constipation. Urinary incontinence can also occur in women with a urinary fistula, which may develop following surgical trauma, obstructed labor, pelvic malignancy or radiation therapy. Finally, it may also be caused by certain medications, such as diuretics; sleeping pills; muscle relaxants; narcotics, such as morphine; antihistamines; antidepressants; antipsychotic drugs; or calcium channel blockers.



Treatment

Urine leakage can in most cases be stopped or reduced after the doctor finds the cause, but no single treatment works for every person with UI. Urologists are able to choose the best solution for each patient according to three options for treatment: behavioral approaches, medicine and surgery.

Behavioral therapy

Simple behavioral modifications are often the first approach to therapy and are very effective in many cases. These include modifying the diet, reducing liquids before bedtime, and bladder control training using several methods: pelvic floor muscle exercises and biofeedback are the most important.

Pelvic floor muscle exercises, also known as Kegel exercises, help to strengthen the muscles around the urethra so that urine stays inside the bladder longer and is less likely to leak, even under pressure. These exercises are easy to do. If your doctor suggests you to practice Kegel exercises, you can work with a specially trained therapist who will teach you several exercises like squeezing and holding muscles for a certain count, and then relaxing them. Repeating this pelvic floor muscle training several times each day will help you improve your bladder.

Biofeedback helps you become more aware of signals from your body, particularly from the lower urinary tract. This may help you regain control over the muscles in your bladder and urethra. Biofeedback can be used to help teach pelvic muscle exercises. When combined, biofeedback and pelvic muscle exercises can lessen or eliminate stress and urge incontinence.

Electrical stimulation is useful for nerve problems. This method uses electrical impulses to stimulate the nerves that control the bladder and sphincter muscles.

Medication

Behavioral therapy alone might not be enough to control UI symptoms. Several medications are available for treating incontinence, depending on what is causing the problem.

Anticholinergic prescription medication is often used to help treat the bladder symptoms. This type of medication is used to reduce bladder muscle contractions when the bladder is only partially full. With medication, the bladder muscle relaxes appropriately, letting the bladder fill more completely. As a result, patients may experience fewer urges, less need to use the bathroom, and fewer accidental leaks.

Other medications strengthen muscle contractions at the outlet of the bladder, tighten muscles in the bladder and urethra to cut down leakage, or relax the urinary sphincter.

In some cases a type of **antidepressant** is useful to relax muscles and block nerve signals that produce bladder contractions. These medications are also prescribed to treat bedwetting in children.

Estrogens also may be helpful for some women after menopause.

A **nasal spray** that causes the patient to produce less urine is used for day leakage and bedwetting.

Antibiotics are used if UI is due to urinary tract infections.

Minimally Invasive Treatments

Injections with space-filling materials

A newer technique involves injecting some agents such as collagen around the urethra to support and compress the sphincter muscle. These substances are space-filling materials used mainly to treat stress incontinence in men and women. They are injected into the tissue around the urethra to add bulk and keep the sphincter muscles closed in order to prevent leaking. A needle is inserted through the urethra and the bulking agent is injected into the area around the bladder neck to tighten it. The whole procedure is performed with local anesthesia or sedatives.

Devices

There are various devices to treat urinary incontinence. These options include:

Pessary. This is a stiff ring that is inserted into the vagina to hold up the bladder and prevent stressleakage.

Bladder neck support for women. A prosthesis is inserted into the vagina to elevate the bladder neck and restore the normal anatomical relationship between the bladder and urethra. It is inserted and removed daily by the patient.

Artificial urinary sphincter for men. The device is inserted under the skin of the penis to close the urethra. By pressing a valve, the artificial sphincter is inflated to stop urine and deflated to allow urination.

Urethral insert. A small device is inserted into the urethra, and removed every time the patient goes to the toilet.

Urine seal. This is a pad that is placed over the urethra opening. The device is removed for urination and thrown away.

Surgery

When all other approaches fail, surgery may be considered as the final option for treatment of urinary incontinence.

In some cases, UI due to weakness of the sphincter can be corrected by strengthening the muscle with surgery.

Conclusions

Urinary incontinence is a treatable disease. It is not necessary to wait until it affects your quality of life. Seek medical help and take charge of your independence.

Bibliography

1. Urinary Incontinence, Timely Topics in Medicine.
Available free online for TTM users:
http://www.ttmed.com/urology/Backgrounders.aspx?ID_VD=G9mBRxWnTLY%3d&ID_CNT=0DzriSjh53yMLEHbd5HqKw%3d%3d

2. Urinary Incontinence. National Kidney Foundation
Available online:
http://www.kidney.org/atoz/atozItem.cfm?id=79

3. Urinary Incontinence. Mayo Clinic.
Available online: http://www.mayoclinic.org/urinary-incontinence/types.html#stress#stress

4. Overactive Bladder**.** Astellas
Available online: http://www.vesicare.com/bladder_symptoms/is_this_me.html

5. Urinary Incontinence in Men. National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health.
Available online: http://kidney.niddk.nih.gov/kudiseases/pubs/uimen/

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