

What Is Urinary Incontinence (UI)?

Urinary incontinence is defined as the complaint of any involuntary leakage of urine.

Urinary incontinence (UI) has a severe impact on the quality of life of women, affecting their psychological health, social function, body image and overall well being. This means it can effect a women's quality of life in many ways to include personal relationships and physical limitations.

What are the different types of urinary incontinence?

UI is further categorised into stress urinary incontinence (SUI), urge urinary incontinence (UUI), mixed urinary incontinence (MUI), overflow urinary incontinence and true urinary incontinence (e.g. vesico-vaginal fistula or abnormal leakage of urine due to a tract which connect the bladder and vagina directly). Overflow urinary incontinence is less common and is associated with overdistention of the bladder.

The three most common types are SUI, UUI and MUI.

Stress urinary incontinence

SUI is the complaint of involuntary leakage of urine during activities such as on effort or exertion, or on sneezing or coughing or laughing.

Urge urinary incontinence

UUI is the complaint of involuntary leakage accompanied by or immediately preceded by the urge to urinate (urgency).

Mixed urinary incontinence

MUI is the complaint of involuntary leakage associated with urgency and also with exertion, effort, sneezing or coughing which is a combination of stress and urge urinary incontinence.

How common does urinary incontinence occurs?

In some European countries a prevalence of 15-40% has been reported and in the United States prevalence is as high as 37%. Minimal data is available for UI prevalence studies in the Republic of South Africa or other less developed countries. It has been suggested that the prevalence of incontinence and urinary dysfunction globally is lower in Black and Asian women than in White women. In contradiction in the Western Cape the prevalence of daily UI in Black women was 17.2%, Cape Coloured women 12.8% and White women 13.2%. In the world literature looking at prevalence rates of different types of UI is as follows:

SUI was reported more commonly at 49%,

MUI at 29%,

UUI at 22%.

What causes urinary incontinence?

Stress urinary incontinence

Major risk factors include advanced age, pregnancy and childbirth, obesity and genetic factors. Also, any factor that increases intra-abdominal pressure such as chronic cough, heavy lifting and constipation. Controversy still exists regarding the effect of menopause and previous hysterectomy.

Urge urinary incontinence

Most commonly unknown (see later)

How does the bladder work?

The main function of the bladder is to store urine until it is convenient to urinate to enable the bladder to empty again. The urine is produced in the kidneys and received from the kidneys via the ureter.

The neurological supply to the bladder is complex. For the bladder to fill and store urine, and then for micturition to take place a complex interaction with coordination between the brain and peripheral nerve supply to the bladder, urethra and pelvic floor muscles is required.

During the filling phase of the bladder the detrusor bladder muscle is relaxed and the urethral sphincter muscle contracted to assure continence of urine. When the bladder become full with the sensation to pass urine, the opposite is required. To pass urine a contraction of the detrusor bladder muscle and relaxation of the urethral sphincter muscle at the same time is required.

Detrusor overactivity/Overactive bladder:

Detrusor over-activity is an urodynamic (special investigation when bladder fills and empty) observation characterised by involuntary bladder muscle (detrusor) contractions. Clinically detrusor over-activity refers to the overactive bladder with clinical symptoms that include urgency, with or without incontinence, as well as frequency and nocturia.

Urgency refers to a sudden and intense need to pass urine and occurs even when the bladder is not full. If the urine cannot be hold and leakage of urine occurs prior to arrival at the toilet it is called urge urinary incontinence.

Frequency refers to going to the toilet many times and usually more than 8 times.

Nocturia refers to waking up more than 1 at night to go and void

This clinical syndrome of urgency, frequency and nocturia in the presence of urge urinary incontinence is called Overactive bladder wet and Overactive bladder dry in the absence of urge urinary incontinence

Detrusor over-activity can be qualified according to causes such as:

neurological causes

non-neurological causes and

idiopathic

Neurological causes include diseases such as multiple sclerosis, stroke and Parkinson's disease. The non-neurological causes include increased age, bladder outlet obstruction and pelvic floor disorders. Outlet obstruction in women is uncommon compared to men. The most common obstructive causes are the complication of stress urinary continence surgery or severe genital prolapse. Genital prolapse and more specific prolapsed of the bladder by itself can cause mechanical kinking or obstruction of the bladder neck.

Idiopathic detrusor over-activity also requires the exclusion of all other causes to include cancer of the bladder, urinary tract infection, radiation to the bladder, bladder stones, bladder growths and previous bladder surgery.

Thus the clinical symptoms of urgency, frequency and nocturia is known as the over active bladder and, no cause can be identified in as many as 90% of the cases.

Evaluation and diagnosis of urinary incontinence:

It is important to distinguish between the different types of UI. Your physician will ask questions about the activities which cause leakage and will ask specific questions about your bladder, fluid intake and general health. You will then be examined to include an examination of the abdomen and a gynaecological assessment to see if there are any other problems such as prolapse. During this examination pelvic floor muscle tone will be evaluated as well as a cough test to see if stress urinary incontinence is present.

What special investigations may be required?

i) Bladder diary:

You may be asked to fill in a frequency volume chart (a bladder/urinary diary) where you keep a record for 48 hours of how much you drink, how much and how often you pass urine, and the amount of leakage. A urinary diary will help to assess the symptoms and severity of UI and exclude excessive urination (>2.8l urine voided /24h).

ii) Baseline investigations

Baseline investigations include urine analysis, post-void residual (< 50ml urine staying behind in bladder after voiding is normal) and, if needed, a blood glucose level. No sophisticated roynamics are necessary at this time.

The initial assessment should identify if you have:

Complex UI

- suspected voiding problems
- significant pelvic organ prolapse
- UI after previous therapies(incontinence surgery, pelvic irradiation, radical pelvic surgery)

UI associated with

- Pain,
- Haematuria (blood in the urine),

- Recurrent bladder infections

Main groups of UI

If you are being found with the above mentioned symptoms, complex UI, increased post void residual and no response to initial therapy, you most likely require referral for specialized treatment with a specialist and most commonly it will be either a gynaecologist or urologist or urogynaecologist. (Table 1)

iii) Urodynamic studies

Your specialist may decide to perform urodynamic studies. This investigates the bladder's ability to fill and empty and attempt to identify the cause of the incontinence. Also a cystoscopy with visualization of the interior of the bladder may be needed to rule out bladder pathology such as stones and polyps (growths)

Treatment

With the diagnosis of SUI, UUI and MUI the first line of therapy is conservative treatment. This includes lifestyle intervention, a pelvic floor muscle retraining programme and bladder retraining with the help of a physiotherapist and more specifically continence devices for SUI and pharmacotherapy for UUI and MUI.

i) Lifestyle intervention

Your doctor will advise to stop smoking, lose weight, avoid caffeine and correct any constipation in an attempt to avoid chronic straining. Fluid restriction is advised with abnormally high fluid intake and is considered in elderly women with nocturia who have a high evening fluid intake.

ii) Pelvic floor excersises/ Bladder retraining

Pelvic floor muscle retraining (PFMT) programmes have been shown to be effective more so if you are referred to a physiotherapist with a special interest in this field. You will be taught how to contract and relax the pelvic floor muscles. Pelvic floor muscle retraining should include three sets of eight to twelve slow velocity maximal contractions, sustained for 6-8 seconds, and performed three to four times per week and continued for at least 15-20 weeks. Should this prove to be effective the most important factor is to continue the PFMT programme for the rest of your life.

Bladder retraining is effective treatment for women with SUI, UUI and MUI. Bladder training aims to restore control of bladder function. Key elements include a scheduled voiding regimen with gradually progressive voiding intervals, urgency controls strategies using distraction and relaxation techniques, self-monitoring of voiding behaviour and positive reinforcement provided by your clinician or physiotherapist. A combination of PFMT and bladder retraining was found to be more effective than either alone.

iii) Continence devices

Devices that support the bladder neck are available for the treatment of SUI. The ring pessary which fit in the vagina is effective and helps to control leakage. These types of devices are more suitable for women with minor degrees of SUI or awaiting surgical treatment

Pharmacotherapy:

Pharmacological therapy is an effective primary treatment for UUI and the overactive bladder. However, it should be emphasised that pharmacological therapy on its own is less effective than when combined with bladder retraining.

The medications are designed to enable you to hold on for longer, reduce how often you need to go to the toilet both during the day and the night and to reduce leaking.

The medications do cause commonly side effects such as dry mouth in some people and sometimes you might need to try several different drugs before you find one that suits you.

Constipation can also be a problem and this can be treated both by diet and medically so that you can still enjoy the good effects of the medication for your overactive bladder. However if the vision become blurry it can be a more serious side effect of the medication and it should be discontinued

Sometimes your bladder may improve after a few months treatment enabling you to come off the medication, however, many women does have to stay on the medication for the longer term in order to control their symptoms.

Surgery for Stress incontinence

When conservative treatment fails surgery is the best treatment for stress urinary incontinence.

Burch colposuspension:

Many operations were described in the past of which the Burch colposuspension, and major abdominal operation, became the gold standard until the end of the 1990's. This operation can also be performed by laparoscopy surgery which avoids a large abdominal surgical incision.

Midurethral sling surgery:

Currently the most common operation for Stress urinary incontinence is the midurethral sling where the permanent sling material is placed under the mid urethra. Support under the mid urethral area is important to maintain urinary continence. The sling can be placed in three different manners, but in each an incision over the midurethra in the vagina is required. Three routes for the placement of the sling are available.

i) Retrobubic route where the sling is placed under the midurethra and runs retropubically to exit through 2 small incisions above the pubic bone

ii) Transobturator route where the sling is placed under the midurethra and exit through the thigh folds on the left and the right side

iii) Single incision where the sling is placed under the midurethra and anchored into the tissues with no exit wounds.

The success rate is between 80 – 90%, but the single incision route has the least been study and need further evaluation.

This operation is not indicated for urge urinary incontinence. However urge symptoms can improve, but on the other hand de novo urge symptoms can occur. The reason why this happens is not clear. Your doctor will advise you on what activities are acceptable after the surgical procedure.

Bulking agents:

This is an injection available with different substances and is performed by placing a needle through the skin by the urethra or via needle introduced into the urethra. This is an attempt to increase the closure pressure of the urethra and can be performed under local or general anaesthesia. A 2nd injection is commonly needed. However this procedure has not a very good success rate compared to surgery and is indicated for a small selected group of patients