

Lower urinary tract symptoms in women

What are lower urinary tract symptoms?

Lower urinary tract symptoms (LUTS) are the name given to a group of symptoms including dysuria and incontinence. The term was first coined in the 1990s to describe symptoms in men which had previously been known as prostatitis, to aid recognition that these symptoms were not always attributable to prostate problems and to reduce unnecessary prostate surgery. It was then widened to cover a "non-sex-specific, non-organ-specific group of symptoms, which are sometimes age-related and progressive".^[1] Nevertheless the term LUTS is more often applied to men, and the National Institute for Health and Care Excellence (NICE) has produced guidelines on the topic which only apply to men.^[2]

An underlying cause is often not found. LUTS come and go and will spontaneously resolve in nearly half of all cases. Experts recommend making a specific diagnosis when possible and treating any underlying cause.^[3] However, some urologists also urge doctors not to over-investigate women and to offer appropriate reassurance if there is no reason to suspect serious underlying disease.^[4] In 2002, the International Continence Society divided LUTS into three categories:^[3]

- Storage symptoms: eg, frequency, urgency, dysuria, nocturia, stress incontinence, urge incontinence.
- Voiding symptoms: eg, poor stream, hesitancy, terminal dribbling, overflow incontinence (due to chronic urinary retention). Voiding symptoms are generally more common in men.
- Postmicturition symptoms: eg, incomplete emptying, postmicturition dribble.

More detailed information on the specific causes and symptoms of LUTS in women can be accessed by following the links from this article.

How common are lower urinary tract symptoms? (Epidemiology)

LUTS in women are extremely common. One large population study in the UK, the USA and Sweden found that in women aged ≥ 40 :^[5]

- 76.3% had at least one LUTS at least "sometimes".
- 52.5% had at least one LUTS at least "often".
- 75.8% reported waking at least once during the night to pass urine.

Other studies have found that:^[6]

- Women complain of more storage symptoms than voiding symptoms, whereas men are more likely to have voiding symptoms.
- Women are more likely to have both storage and voiding symptoms, or all three types of symptoms combined.

Urinary incontinence in general has a prevalence in women of 25–45%. Prevalence of overactive bladder (OAB) is reported as between 7.7% and 31.3%, and increases with age.^[7]

Risk factors for urinary incontinence^[8]

- Age.
- Pregnancy.
- Obesity.
- Long term residence in a care facility.
- Dementia.
- Constipation.
- Faecal incontinence.
- High impact physical activity.
- Pelvic organ prolapse.
- Stroke.

- Parkinson's disease.
- Multiple sclerosis.
- Diuretic use.
- Caffeine consumption.

Presentation of lower urinary tract symptoms

See also the separate [Genitourinary History and Examination \(Female\)](#), [Gynaecological History and Examination](#) and [Voiding Difficulties](#) articles.

LUTS describes a number of different symptoms which may present singly or in typical groups:

- Symptoms associated with overactive bladder: urgency, frequency, nocturia, urge incontinence.
- Symptoms associated with infection: dysuria, urinary frequency, haematuria.
- Urinary incontinence: stress incontinence, urge incontinence or mixed.
- Voiding symptoms: urinary retention, poor stream, hesitancy, intermittent stream, straining, terminal dribble.
- Postmicturition symptoms: postmicturition dribble, feeling of incomplete emptying.
- Symptoms associated with sexual intercourse: dyspareunia, vaginal dryness, incontinence.
- Symptoms associated with genitourinary prolapse: feeling of "something coming down", low backache, heaviness, dragging sensation, stress incontinence.
- Genital and lower urinary tract pain: pain may be associated with bladder filling, micturition and postmicturition, or continuous.
- Genitourinary pain syndromes and lower urinary tract dysfunction (LUTD): symptom syndromes suggestive of LUTD may be those of an OAB or of bladder outlet obstruction.

Voiding symptoms may co-exist with storage symptoms as well as symptoms associated with urinary incontinence. Often women have a spectrum of different urinary symptoms, which relate to both storage and voiding, which may be multifactorial in origin or be related to one another. [6]

Differential diagnosis

- Mostly storage/filling symptoms:
 - [Urinary tract infection \(UTI\)](#): the most common cause of filling symptoms in all ages.
 - Pregnancy.
 - Anxiety.
 - [OAB](#) (idiopathic detrusor muscle overactivity): causes storage symptoms and urge incontinence.
 - [Urinary incontinence](#) (stress incontinence, urge incontinence, overflow incontinence, mixed urinary incontinence).
 - [Interstitial cystitis](#).
 - Postmenopausal urogenital atrophy.
 - Bladder [tumour](#) or [stone](#).
 - [Genital prolapse](#) or pelvic mass.
 - Neurological disease – eg, [multiple sclerosis](#).

- Mostly voiding symptoms:
 - Age-related detrusor muscle weakness.
 - Obstruction: **acute urinary retention**, **chronic urinary retention**. Causes of urinary outflow obstruction include urethral stricture, urethral wall diverticulum, peri-urethral fibrosis, pressure effects from pelvic masses or constipation.
 - Urethritis and other genitourinary infections.
 - **Urethral syndrome**: unknown cause; associated with urethral tenderness, dysuria, frequency and incomplete voiding.
 - Stress incontinence is usually due to a combination of internal sphincter incompetence and urethral hypermobility. Additional factors such as mobility and diuretics may exacerbate symptoms.
- Side-effects of medication may be responsible for a variety of LUTS – for example:
 - Diuretics, alcohol and lithium may cause urgency and frequency.
 - Anticholinergics (eg, tricyclic antidepressants) may cause urinary retention with overflow.
 - Alpha-blockers may cause urinary incontinence.
- **Polyuria** – eg, **chronic kidney disease**, **diabetes mellitus**, **diabetes insipidus**, hypercalcaemia.

Investigations

These will depend on the individual presentation. Diagnosis may be obvious and require confirmation (eg, a midstream specimen of urine (MSU) for a UTI) or a full and detailed assessment:

- Urine: urinalysis, MSU, pregnancy test, cytology for unexplained microscopic haematuria, early morning urine samples for mycobacteria.

- Renal function and electrolytes, fasting blood glucose.
- Frequency volume chart, bladder diary.
- Genitourinary swabs.
- Intravenous pyelogram (IVP).
- Renal and/or postmicturition ultrasound.
- Urodynamic studies: subtracted cystometry, uroflowmetry voiding, video urodynamics.
- Cystoscopy.

If there are no urodynamic abnormalities of either the detrusor or the outlet which can be detected by full evaluation (including urinary flow studies, postmicturition residual volume and comprehensive urodynamic evaluation) then factors unrelated to the lower urinary tract may be responsible for the voiding symptoms.

Referral

Reasons for referral include:

- Further investigation if the cause is not apparent.
- Symptoms persisting despite thorough assessment, advice and treatment in primary care.
- Persistent haematuria.
- Any other indication or concern of a possible serious cause. Arrange urgent referral for any suspicion of malignancy, including:^[9]
 - Anyone aged 45 and over with unexplained visible haematuria (without UTI, or which persists after treatment of a UTI).
 - Anyone aged 60 and over with unexplained non-visible haematuria and either dysuria or a raised white cell count on a blood test. (Consider non-urgent referral for anyone over 60 with recurrent or persistent non-explained UTIs.)
 - Abdominal or pelvic mass.

- Genital prolapse.
- Patient concern and/or distress.

Lower urinary tract symptoms treatment

Management is usually dependent on the cause.

General

- Advise women to reduce intake of caffeine-containing drinks.^[10]
- Cranberry juice is commonly advocated to prevent UTIs but latest reviews suggest it does not help prevent recurrence.^[11]
- Bladder emptying after sexual intercourse can prevent UTIs (if ineffective, antibiotics can also be prescribed).
- There is evidence for efficacy in pelvic floor muscle training for symptoms associated with genital prolapse.^[12] There is also evidence suggesting that osteopathic manipulative treatment has similar efficacy.^[13]
- Ring pessaries may be useful where surgery for prolapse is not possible.
- Women with urinary incontinence with a BMI over 30 kg/m² should be advised to lose weight.^[14]
- OAB may be treated in the first place with bladder training. This should be offered to all women with urge or mixed incontinence as first-line treatment for a minimum of six weeks.^[14]
- Practical help may be required (usually via specialist incontinence nurses) with pads, catheters, etc, in some cases.

Pharmacological

- Treat infection with antibiotics.

- Antimuscarinic drugs – eg, oxybutynin, tolterodine and darifenacin are used with bladder training to treat OAB and have long-established efficacy.^[15] Tolterodine has fewer side-effects than oxybutynin. Be aware that antimuscarinic drugs MAY worsen cognitive function in the elderly. Mirabegron may be used where antimuscarinics are ineffective or contra-indicated but not in women with severe hypertension, and blood pressure should be monitored in all.^[16] ^[17]
- Botulinum toxin may be used in overactive bladder syndrome.^[14]
^[18]
- Duloxetine is licensed for moderate to severe stress urinary incontinence in women. It should not be offered as a first-line treatment but it may be offered as second-line therapy if a women is unsuitable for surgical treatment or prefers pharmacological treatment.
- Tricyclic antidepressants may be useful for nocturia in some, although may contribute to LUTS in others.
- Hormone replacement and topical oestrogen may be useful for nonspecific urinary tract symptoms in postmenopausal women.
- Desmopressin may be used in situations such as primary nocturnal enuresis or diabetes insipidus. It may be used to reduce nocturia in women with urge incontinence or OAB who find nocturia troublesome. It should be avoided in those over 65 years with cardiovascular disease or hypertension.^[14]
- Tamsulosin (an alpha-adrenergic blocker) is effective in the treatment of women with LUTS, but safety remains unclear.^[19]

Surgical^[14]

Surgical options for stress incontinence include:^[14]

- Colposuspension (open or laparoscopic).
- Autologous rectus fascial sling.
- Retropubic mid-urethral mesh sling.

There is concern over the use of mesh procedures. All the procedures listed above are effective but there is limited evidence on long-term adverse effects and complications.

Percutaneous sacral nerve stimulation may be used for OAB if conservative measures fail.

Augmentation cystoplasty should be restricted to the management of idiopathic detrusor overactivity in women whose condition has not responded to conservative management and who are willing and able to self-catheterise. There is a small increased risk of malignancy and lifelong follow-up is needed.

Complications

LUTS in women can have a profound effect on quality of life.

Prevention of lower urinary tract symptoms

Good obstetric management and pelvic floor care after childbirth.

Further reading

- [International Painful Bladder Foundation \(IPBF\)](#)

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