

Lower urinary tract symptoms in men

What are lower urinary tract symptoms?

Lower urinary tract symptoms (LUTS) are storage, voiding and postmicturition symptoms affecting the lower urinary tract. LUTS can significantly reduce men's quality of life and may point to serious pathology of the urogenital tract^[1]. Prevailing guidelines suggest that the pathogenesis of LUTS is multifactorial and can include one or several diagnoses, commonly benign prostatic obstruction, nocturnal polyuria and detrusor muscle instability^[2].

LUTS are common and not necessarily a reason for suspecting prostate cancer. Patients tend to fall into three categories:

- Mild symptoms: mainly require reassurance and exclusion of cancer or risk of future complications.
- Troublesome symptoms, suitable for medical treatment.
- Those requiring surgical treatment.

Who gets lower urinary tract symptoms? (Epidemiology)

- Lower urinary tract symptoms are a common problem, especially for older men. It has been reported that 30% of men over the age of 65 suffer from potentially troublesome LUTS. The prevalence of storage symptoms increases from 3% in men aged 40-44 years to about 40% in those aged 75 years or older^[3].
- One study found that the prevalence of nocturia in men aged over 85 was about 69% compared to 49% in women^[4].

- Around one third of men will develop urinary tract (outflow) symptoms, of which the principal underlying cause is benign prostatic hyperplasia (BPH).
- Once symptoms arise, their progress is variable and unpredictable with about one third of patients improving, one third remaining stable and one third deteriorating.

Risk factors for lower urinary tract symptoms^[5]

Risk factors associated with lower urinary tract symptoms include:

- Increased serum dihydrotestosterone levels.
- Obesity.
- Elevated fasting glucose.
- Diabetes.
- Fat and red meat intake.
- Inflammation, which increases the risk.

Vegetables, exercise and non-steroidal anti-inflammatory drugs (NSAIDs) appear to decrease the risk. Moderate alcohol intake appears to decrease the risk of BPH but increases the risk of developing LUTS^[6].

Lower urinary tract symptoms

See also the separate [Genitourinary History and Examination \(Male\)](#) and [International Prostate Symptom Score \(I-PSS\)](#) articles.

- Filling symptoms: urinary frequency, urgency, dysuria, nocturia.
- Voiding symptoms (previously 'obstructive'): poor stream, hesitancy, terminal dribbling, incomplete voiding, overflow incontinence (occurs in chronic retention).
- Also enquire about: haematuria, fever, loin and pelvic pain, past history of renal calculi, past history of urinary tract infections (UTIs), sexual/erectile difficulties, constipation, medications and bone pain.
- Signs: palpable bladder, rectal examination (prostate: size, tenderness, nodules), check for loin pain and/or renal masses, perineal sensation.

- LUTS include frequency, urgency, hesitancy, dysuria, haematuria, reduced flow, dribbling, nocturia, incontinence and pelvic pain.
- Some patients develop acute retention.
- Others develop chronic retention with overflow incontinence and, on rare occasions, acute kidney injury.

Tumours localised to the prostate are unlikely to cause bladder outflow obstruction and any LUTS developing in early prostate cancer are usually due to coincidental BPH^[7].

Assessment^[1] ^[2]

- General medical history to identify possible causes and comorbidities, including a review of all current medication (including herbal and over-the-counter medication).
- Examination of the abdomen, including external genitalia and a digital rectal examination.
- Examination should include blood pressure, signs of uraemia, enlargement of the bladder, kidneys and the prostate gland and palpable nodes.
- Urine dipstick test to detect blood, glucose, protein, leukocytes and nitrites.
- Men with bothersome lower urinary tract symptoms should complete a urinary frequency volume chart and a validated symptom chart – eg, the International Prostate Symptom Score (I-PSS).
- Renal function tests (serum creatinine test, estimated glomerular filtration rate) should only be performed if renal impairment is suspected.

Referral for specialist assessment^[8]

Refer men for specialist assessment if they have^[1] :

- Bothersome lower urinary tract symptoms that have not responded to conservative management or drug treatment.
- LUTS complicated by recurrent or persistent UTIs.
- Urinary retention.

- Renal impairment thought to be due to lower urinary tract dysfunction.
- Suspected urological cancer.
- Stress urinary incontinence.

Other indications for referral include immediate referral for acute retention of urine and acute kidney injury and urgent referral (to be seen within two weeks) for visible haematuria and culture-negative dysuria^[8] .

Specialist assessment^[1]

- Flow-rate and post-void residual volume measurement.
- Urinary frequency volume chart.
- Cystoscopy and/or ultrasound imaging of the upper urinary tract only when clinically indicated – eg, history of: recurrent infection, sterile pyuria, haematuria, profound symptoms, pain or chronic retention.
- Multichannel cystometry if men are considering surgery.
- Offer pad tests only if the degree of urinary incontinence needs to be measured.
- Consider prostate specific antigen (PSA) testing if:
 - LUTS are suggestive of bladder outlet obstruction secondary to prostate enlargement.
 - The prostate feels abnormal on rectal examination.
 - The patient is concerned about prostate cancer.

Differential diagnosis^[2]

- BPH with obstruction.
- Detrusor muscle weakness and/or instability.
- UTI.
- Chronic prostatitis.

- Urinary tract stones.
- Malignancy: prostate cancer or bladder cancer.
- Neurological disease - eg, multiple sclerosis, spinal cord injury, cauda equina syndrome.
- Polyuria (eg, secondary to diabetes mellitus, excessive fluid intake, diuretics, etc).

Lower urinary tract symptoms: treatment and management^[2] ^[8]

For men whose lower urinary tract symptoms are not bothersome or complicated, it is reasonable to offer 'watchful waiting' (WW). This involves giving reassurance and information and advice on lifestyle measures such as:

- Fluid intake (moderation of fluid intake is important but excessive reduction of fluid intake can cause a worsening of symptoms and increased risk of infection).
- Reduction in the intake of fluids containing alcohol, caffeine and artificial sweeteners together with avoidance of carbonated drinks is often advised.

Other helpful measures may include:

- Distraction techniques, such as breathing exercises, squeezing the penis and perineal pressure, which may all help to take the mind off the urge to micturate.
- Optimising medication to ensure that drugs promoting urinary frequency are kept to a minimum.

The patient should be reviewed if symptoms change or become worse.

- For men with mild or moderate bothersome lower urinary tract symptoms, discuss active surveillance (reassurance and lifestyle advice without immediate treatment and with regular follow-up) or active intervention (conservative management, drug treatment or surgery).

- Offer men considering treatment for LUTS an assessment of their baseline symptoms with a validated symptom score – eg, I-PSS.
- Surgical treatment is generally reserved for men who have failed or are unable to tolerate drug treatment, or for those who have developed complications.

Conservative management^[3]

Storage symptoms

- Overactive bladder (OAB): supervised bladder training, advice on fluid intake, lifestyle advice and, if needed, containment products.
- Supervised pelvic floor muscle training for men with stress urinary incontinence caused by prostatectomy. Advise men to continue the exercises for at least three months before considering other options.
- Do not offer penile clamps.
- Containment products: for men with storage LUTS (particularly urinary incontinence):
 - Temporary containment products (eg, pads or collecting devices) to achieve social continence until a diagnosis and management plan have been discussed.
 - External collecting devices (sheath appliances, pubic pressure urinals) before considering indwelling catheterisation.

Voiding symptoms

- Consider intermittent bladder catheterisation before indwelling urethral or suprapubic catheterisation if LUTS cannot be corrected by less invasive measures.
- Bladder training is less effective than surgery.
- Men with postmicturition dribble should be shown how to perform urethral milking.

Drug treatment^[2] ^[3] ^[8]

- Offer drug treatment only to men with moderate-to-severe lower urinary tract symptoms (equivalent to an International Prostate Symptom Score of 8 or more) when conservative management options have been unsuccessful or are not appropriate. An alpha-blocker (alfuzosin, doxazosin, tamsulosin or terazosin) should be tried.
- The patient should be reviewed at 4–6 weeks, then every 6–12 months to monitor for adverse effects.
- Do not offer homeopathy, phytotherapy or acupuncture.
- Overactive bladder: offer an anticholinergic.
- Mirabegron, a selective beta₃ agonist, can be used second-line, for patients in whom anticholinergics are ineffective, cannot be tolerated or are contra-indicated.
- LUTS and a prostate estimated to be larger than 30 g or PSA greater than 1.4 ng/mL and high risk of progression: offer a 5-alpha reductase inhibitor (5-ARI).
- Bothersome moderate-to-severe LUTS and a prostate estimated to be larger than 30 g or PSA greater than 1.4 ng/mL: consider an alpha-blocker plus a 5-ARI. Treatment should be continued for at least one year.
- Storage symptoms despite treatment with an alpha-blocker alone: consider adding an anticholinergic. Caution should be exerted in patients suspected of having bladder outlet obstruction.
- Consider offering a late afternoon loop diuretic for nocturnal polyuria.
- Consider offering oral desmopressin for nocturnal polyuria if other medical causes have been excluded and the man has not benefited from other treatments. Measure serum sodium three days after the first dose. If serum sodium is reduced to below the normal range, stop desmopressin treatment.
- If LUTS do not respond to drug treatment, discuss active surveillance (reassurance and lifestyle advice without immediate treatment and with regular follow-up) or active intervention (conservative management or surgery).

- Do not offer a phosphodiesterase-5 (PDE5) inhibitor just for the purpose of alleviating LUTS, except as part of a randomised controlled trial.

Management of retention

- Acute retention (see also the separate [Acute Urinary Retention](#) article):
 - Immediately catheterise men with acute retention.
 - Offer an alpha-blocker to men before removing the catheter.

- Chronic retention (see also the separate [Chronic Urinary Retention](#) article):
 - Chronic urinary retention is defined as residual volume greater than 1 litre or presence of a palpable/percussable bladder.
 - Serum creatinine (renal function tests) and imaging of upper urinary tract.
 - If there is impaired renal function or hydronephrosis:
 - Catheterise.
 - Consider offering catheterisation before offering surgery. Consider offering self-administered or carer-administered intermittent urethral catheterisation before offering indwelling catheterisation
 - Surgery. If surgery is not suitable, continue or start long-term catheterisation. Consider offering intermittent self-administered or carer-administered catheterisation instead of surgery in men whom you suspect have markedly impaired bladder function.
 - Normal renal function and no hydronephrosis:
 - If there are no bothersome LUTS then treat as for impaired renal function or hydronephrosis.
 - If there are bothersome LUTS then consider offering surgery on the bladder outlet without prior catheterisation. If surgery is not suitable, continue or start long-term catheterisation. Consider offering intermittent self-administered or carer-administered catheterisation instead of surgery in men whom you suspect have markedly impaired bladder function.

Surgery^[1]

Surgery for voiding symptoms

- Offer surgery only if voiding symptoms are severe or if drug treatment and conservative management options have been unsuccessful or are not appropriate.
- Surgery for voiding lower urinary tract symptoms presumed secondary to benign prostate enlargement:
 - All: monopolar or bipolar transurethral resection of the prostate (TURP), monopolar transurethral vaporisation of the prostate (TUVVP) or holmium laser enucleation of the prostate (HoLEP).
 - Estimated prostate size smaller than 30 g: transurethral incision of the prostate (TUIP) or transurethral needle ablation (TUNA) as an alternative to TURP. Both treatments, however, have a higher recurrence rate than TURP.
 - Estimated prostate size larger than 80 g: TURP, TUVVP or HoLEP, or open prostatectomy as an alternative.

Surgery for storage symptoms

If offering surgery for storage symptoms, consider offering only to men whose storage symptoms have not responded to conservative management and drug treatment.

- Detrusor overactivity (do not offer myectomy to manage detrusor overactivity):
 - Cystoplasty: the man must be willing and able to self-catheterise. Serious complications include bowel disturbance, metabolic acidosis, mucus production and/or mucus retention in the bladder, UTI and urinary retention.
 - Bladder wall injection with botulinum toxin (botulinum toxin does not currently have UK marketing authorisation for this indication). The man needs to be willing and able to self-catheterise.
 - Implanted sacral nerve stimulation.
- Stress urinary incontinence:
 - Implantation of an artificial sphincter.

- Intractable urinary tract symptoms if cystoplasty or sacral nerve stimulation are not clinically appropriate or are unacceptable to the man: consider offering urinary diversion.

Long-term catheterisation and containment

- Consider offering long-term indwelling urethral catheterisation if medical management has failed and surgery is not appropriate and the man:
 - Is unable to manage intermittent self-catheterisation; or
 - Has skin wounds, pressure ulcers or irritation that are being contaminated by urine; or
 - Is distressed by bed and clothing changes.
- Indwelling catheters for urgency incontinence may not result in continence or the relief of recurrent infections.
- Prostatic stents may be considered as an alternative to indwelling catheters.
- Permanent use of containment products should only be considered after assessment and exclusion of other methods of management.

Experimental treatments

Ethanol injections and botulinum toxin injections have been explored as potential treatments for lower urinary tract symptoms in patients with benign prostatic obstruction, but more robust evidence is required^[9].

Lower urinary tract symptoms: prognosis^[2] ^[3]

- Some men with lower urinary tract symptoms (LUTS) have persistent and progressive problems over a long period of time, whilst in others they resolve spontaneously.
- Observational studies suggest that few men with LUTS will progress to complications, such as acute urinary retention, renal insufficiency, or kidney stones.

- Data from observational studies conducted mainly in prostate specific antigen (PSA) screening populations suggest that men with self-reported LUTS are not at increased risk of having advanced or potentially fatal prostate cancer compared with men without LUTS.
- Men with LUTS and large prostates are at significant risk of disease progression, particularly if they have additional risk factors such as age >70 years or significantly reduced flow rate. These men will benefit from treatment with lifestyle advice and 5-alpha reductase inhibitors (5-ARIs) ^[10] .
- 5-ARIs reduce the risk of acute urinary retention and the likelihood of prostatectomy by 50-60% compared with placebo.
- The combination of 5-ARI and alpha-blocker is more effective in delaying the clinical progression of the disease and in improving LUTS and maximal urinary flow rate, than either drug alone.
- After six months of treatment with a 5-ARI, PSA levels will be reduced by 50%. Therefore, PSA values for patients on long-term therapy should be doubled to allow appropriate interpretation and avoid masking the early detection of localised prostate cancer.

Further reading

- [Prostate cancer risk management programme: overview](#); Public Health England
- [Smith DP, Weber MF, Soga K, et al](#); Relationship between lifestyle and health factors and severe lower urinary tract symptoms (LUTS) in 106,435 middle-aged and older Australian men: population-based study. PLoS One. 2014 Oct 15;9(10):e109278. doi: 10.1371/journal.pone.0109278. eCollection 2014.
- [Zhang AY, Xu X](#); Prevalence, Burden, and Treatment of Lower Urinary Tract Symptoms in Men Aged 50 and Older: A Systematic Review of the Literature. SAGE Open Nurs. 2018 Dec 26;4:2377960818811773. doi: 10.1177/2377960818811773. eCollection 2018 Jan-Dec.
- [Ali M, Landeira M, Covernton PJO, et al](#); The use of mono- and combination drug therapy in men and women with lower urinary tract symptoms (LUTS) in the UK: a retrospective observational study. BMC Urol. 2021 Sep 2;21(1):119. doi: 10.1186/s12894-021-00881-w.

Disclaimer: This article is for information only and should not be used for the diagnosis or treatment of medical conditions. Egton Medical Information Systems Limited has used all reasonable care in compiling the information but makes no warranty as to its accuracy. Consult a doctor or other healthcare professional for diagnosis and treatment of medical conditions. For details see our [conditions](#).

| | | |
|-------------------------------------|---|--------------------------|
| Authored by: | Peer Reviewed by: Dr Colin Tidy, MRCGP | |
| Originally Published: 20/11/2023 | Next review date: 19/11/2021 | Document ID: doc_2399 |

View this article online at: patient.info/doctor/lower-urinary-tract-symptoms-in-men-pro

Discuss Lower urinary tract symptoms in men and find more trusted resources at [Patient](#).



To find out more visit www.patientaccess.com
or download the app



Follow us

