

### EPIDEMIOLOGY, CLASSIFICATION:

Lower urinary tract symptoms (LUTS) are common in women and cause a great deal of distress, as well as significant costs.

The average estimated prevalence in women is 66.6%, but varies according to the definition used and population studied.

**Storage symptoms:** frequency, urgency, nocturia and urinary incontinence (UI) (stress UI [SUI], urgency UI [UUI] and mixed UI [MUI]).

**Voiding symptoms:** hesitancy, intermittency, slow stream, straining, splitting or spraying of the urinary stream and terminal dribble.

**Post-micturition symptoms:** post-void dribbling and feeling of incomplete bladder emptying.

Lower urinary tract symptoms are often broadly classified into clinical syndromes such as overactive bladder (OAB), underactive bladder (UAB), UI, nocturia or dysfunctional voiding.

### DIAGNOSTIC EVALUATION:

- Medical history and physical examination:** Clinical history and examination is fundamental and the first step to the process of clinical evaluation. The history should include a full evaluation of LUTS, as well as sexual, gastrointestinal and neurological symptoms. In women with UI, the type, timing and severity of UI should be made. Quantification of all symptoms is important.

Recommendation	Strength rating
Take a complete medical history including symptoms and comorbidity and perform a focused physical examination for evaluation of women with LUTS.	Strong

- Patient questionnaires:** Validated condition-specific symptom scores assist in the screening for and categorisation of LUTS and measure their severity. Both condition-specific and general health status questionnaires measure current health status and change following treatment. Patient questionnaires cannot replace a detailed patient consultation and should only be used as part of a complete medical history.

Recommendation	Strength rating
Use a validated and appropriate questionnaire as part of the standardised initial assessment and follow-up of female LUTS.	Strong

- Bladder diaries:** Bladder diaries of 3–7-days duration are reliable tools for objective measurement of mean voided volume, day- and night-time frequency, and UI episode frequency and are sensitive to change.

Recommendations	Strength rating
Ask patients with LUTS to complete a bladder diary as part of the standardised assessment of female LUTS.	Strong
Use a bladder diary with a duration of $\geq 3$ days.	Strong

- Urinalysis and urinary tract infection (UTI):** Urinalysis should be done in women with LUTS to assess for the presence of bacteriuria.

Recommendations	Strength rating
Perform urinalysis as a part of the initial assessment of patients with LUTS.	Strong
If UTI is present with LUTS, reassess the patient after treatment.	Strong
Do not routinely treat asymptomatic bacteriuria in elderly patients to improve UI.	Strong

- Post-void residual (PVR) volume:** It is a measure of voiding efficiency, and results from a number of contributing factors. Large post void residual volumes are commonly associated with LUTS.

Recommendations	Strength rating
Measure post-void residual (PVR) volume in patients with LUTS during initial assessment.	Strong
Use ultrasound to measure PVR volume.	Strong
Monitor PVR volume in patients receiving treatments that may cause or worsen voiding dysfunction.	Strong
Provide bladder volume efficiency as an additional parameter when measuring PVR volume.	Weak

- Urodynamics:** These studies provide comprehensive analysis of the lower urinary tract function. There may be inconsistency between history and urodynamic results. Most urodynamic parameters show variability within the same session and over time

Recommendations	Strength rating
Adhere to good urodynamic practice standards as described by the International Continence Society when performing urodynamics in patients with LUTS.	Strong
Do not routinely carry out urodynamics when offering treatment for uncomplicated stress urinary incontinence.	Strong
Do not routinely carry out urodynamics when offering first-line treatment to patients with uncomplicated overactive bladder symptoms.	Strong
Perform urodynamics if the findings may change the choice of invasive treatment.	Weak
Do not use urethral pressure profilometry or leak point pressure to grade severity of urinary incontinence as they are primarily tests of urethral function.	Strong

- Pad testing:** A standardized 24-hour pad test can diagnose UI accurately. A change in leaked urine volume on pad tests can be used to measure treatment response.

Recommendations	Strength rating
When a pad test is performed, use a standardised duration and activity protocol.	Strong
Use a pad test when quantification of urinary incontinence is required, especially to assess response to treatment.	Weak

- Imaging:** There is no consistent evidence that routine urinary tract imaging is useful in the evaluation or management of LUTS.

Recommendation	Strength rating
Do not routinely carry out imaging of the upper urinary tract or lower urinary tract as part of the assessment of LUTS.	Strong

- Urinary biomarkers and microbiome:** While urinary microbiome differences have been found to be associated with different types of LUT dysfunction in women, their diagnostic accuracy and validity have not been established.

Recommendation	Strength rating
Do not routinely use urinary biomarkers or estimation of the urinary microbiome in the diagnosis and management of LUT disease in women.	Strong