

LOWER URINARY TRACT SYMPTOMS IN MEN

AGS Geriatrics Evaluation and Management Tools (Geriatrics E&M Tools) support clinicians and systems that are caring for older adults with common geriatric conditions.

From the AMERICAN GERIATRICS SOCIETY

Geriatrics Evaluation & Management Tools

EPIDEMIOLOGY	Lower urinary tract symptoms (LUTS) develop in over half of men >60 years old.				
SCREENING	<p>If a man complains of new or worsening urinary incontinence or LUTS, then proceed with a thorough evaluation.</p> <table border="1"> <thead> <tr> <th>Bladder Storage Symptoms</th> <th>Voiding Symptoms</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> ▪ Frequency ▪ Urgency ▪ Nocturia </td> <td> <ul style="list-style-type: none"> ▪ Hesitancy ▪ Intermittency ▪ Weak stream ▪ Incomplete emptying </td> </tr> </tbody> </table>	Bladder Storage Symptoms	Voiding Symptoms	<ul style="list-style-type: none"> ▪ Frequency ▪ Urgency ▪ Nocturia 	<ul style="list-style-type: none"> ▪ Hesitancy ▪ Intermittency ▪ Weak stream ▪ Incomplete emptying
Bladder Storage Symptoms	Voiding Symptoms				
<ul style="list-style-type: none"> ▪ Frequency ▪ Urgency ▪ Nocturia 	<ul style="list-style-type: none"> ▪ Hesitancy ▪ Intermittency ▪ Weak stream ▪ Incomplete emptying 				
DIFFERENTIAL DIAGNOSIS OF LUTS	<ul style="list-style-type: none"> ▪ Polyuria (can be due to excess fluid intake, CHF, diuretics, etc) ▪ Benign outlet or prostatic obstruction ▪ Genitourinary tract malignancies such as prostate cancer ▪ Diabetes mellitus ▪ Urinary tract infection (UTI) ▪ Sexually transmitted infections ▪ Neurologic disorders ▪ Kidney or bladder stones ▪ Medication adverse effects 				
HISTORY	<ul style="list-style-type: none"> ▪ Obtain the American Urological Association Symptom Index (AUA SI) score. 				
PAST MEDICAL HISTORY	<ul style="list-style-type: none"> ▪ Inquire about neurologic conditions that can affect the urologic system. ▪ Inquire about prior urologic, neurosurgical, orthopedic, or general surgery procedures that can affect innervation of the bladder or urethral sphincter. 				
MEDICATIONS	<ul style="list-style-type: none"> ▪ Review medications (including over-the-counter) for potential contributors to LUTS (diuretics, anticholinergics, antihistamines, nasal decongestants, opioids). 				
PHYSICAL EXAMINATION	<ul style="list-style-type: none"> ▪ Abdominal examination ▪ Rectal examination documenting prostate size, tenderness, and nodularity 				
DIAGNOSTIC TESTS	<ul style="list-style-type: none"> ▪ Obtain a urinalysis (UA) to evaluate for UTI, hematuria, and glycosuria. <ul style="list-style-type: none"> ▪ Obtain a urine culture if UA demonstrates pyuria or hematuria. ▪ Routine measurement of serum creatinine levels is not indicated in initial evaluation of men with LUTS secondary to benign prostatic hyperplasia (BPH). ▪ Additional optional tests can be considered when the diagnosis is uncertain or invasive treatment is planned. <ul style="list-style-type: none"> ▪ Postvoid residual urine volume (often done by office or bedside bladder scan) ▪ Simple uroflow or pressure flow study ▪ Cystoscopy 				
NONPHARMACOLOGIC MANAGEMENT	<ul style="list-style-type: none"> ▪ Teach urgency control strategy: don't rush to bathroom, stay still and repeatedly contract pelvic floor muscles (like holding in flatus); once urgency under control, then go to bathroom. ▪ For men with dementia: prompted voiding by caregiver every 2–3 hours while awake (try for 3 days, continue if helps). ▪ For nocturia: shift fluids from 2–3 hours before bedtime and during the night to earlier in daytime. ▪ Reduce fluid intake only if excessive (>2 L/day unless perspire excessively). ▪ Reduce or eliminate caffeine. ▪ Quit smoking. ▪ Encourage weight loss if obese. ▪ Sit to void to empty better. ▪ For nocturnal enuresis, decrease oversedation at bedtime, including alcohol. ▪ Consider sleep apnea if snoring history or nocturnal polyuria (24-hour voided volumes are helpful). ▪ Discontinue or change timing of diuretics (eg, use after work or social activities but several hours before bedtime). 				

**PHARMA-
COLOGIC
MANAGEMENT**

Provide information on benefits and harms of treatment to men with moderate to severe symptoms (AUA SI score ≥8) who are bothered enough to consider therapy.

Interventions	Rationale	Possible Indications
<p>α-Adrenergic antagonists</p> <ul style="list-style-type: none"> Long-acting, selective for α1: terazosin, doxazosin Long-acting, selective for α1a: tamsulosin, silodosin, alfuzosin Prazosin is not recommended for BPH but is important to identify because additional α-blockers should not be added in those taking this drug. 	<p>Relaxation of smooth muscle in hyperplastic prostate tissue, prostate capsule, and bladder neck decreases resistance to urinary flow.</p>	<ul style="list-style-type: none"> The effectiveness of the four α-adrenergic antagonists appears to be similar. Adverse effects: dizziness, mild asthenia, headaches, postural hypotension (reduced with careful dose titration, not present with selective α1a subtypes), rhinitis, abnormal ejaculation, intraoperative floppy iris syndrome
<p>5α-Reductase inhibitors</p> <ul style="list-style-type: none"> Finasteride Dutasteride 	<p>Reduced tissue levels of dihydrotestosterone result in reduced size of prostate gland.</p>	<ul style="list-style-type: none"> Indicated (alone or in combination with α-adrenergic antagonist) for patients with LUTS associated with demonstrable prostatic enlargement based on volume measurement, PSA level as a proxy for volume, and/or enlargement on DRE Improvement may not be evident for up to 6 months.
<p>Muscarinic receptor antagonists</p> <ul style="list-style-type: none"> Darifenacin Fesoterodine Oxybutynin Solifenacin Tolterodine Trospium 	<p>Muscarinic receptors present on bladder urothelial cells and in peripheral and central nervous systems (eg, parasympathetic nerves innervating detrusor muscle).</p>	<ul style="list-style-type: none"> Symptoms of overactive bladder in absence of obstruction; may reduce urgency incontinence, frequency, and urgency-related voiding, and improve overall perception of bladder problems. Not all antimuscarinics have been tested in older men. Adverse effects: might decrease bladder emptying and precipitate urinary retention
<p>Beta-3 agonist</p> <ul style="list-style-type: none"> Mirabegron 	<p>β-3 adrenoceptors are predominant β receptors expressed in smooth muscle cells of detrusor; their stimulation is thought to induce detrusor relaxation.</p>	<ul style="list-style-type: none"> Symptoms of overactive bladder, including micturition frequency, urgency, and urgency incontinence Adverse effects: hypertension, UTI, headache, nasopharyngitis
<p>PDE5i</p> <ul style="list-style-type: none"> Tadalafil 	<p>Reduce smooth muscle tone of detrusor, prostate, and urethra; may alter reflex pathways in spinal cord and neurotransmission in urethra, prostate, or bladder; could reduce chronic inflammation in prostate and bladder.</p>	<ul style="list-style-type: none"> LUTS in men with or without erectile dysfunction Adverse effects: contraindicated in patients using nitrates, nicorandil, doxazosin, or terazosin; contraindicated with unstable angina, myocardial infarction (<3 mo), stroke (<6 mo), NYHA stage >2, hypotension, poorly controlled blood pressure, hepatic or renal insufficiency, or anterior ischemic optic neuropathy

**SURGICAL
MANAGEMENT**

Provide information on benefits and harms of treatment to men with moderate to severe symptoms (AUA SI score ≥8) who are bothered enough to consider therapy.

Interventions	Rationale	Possible Indications
<ul style="list-style-type: none"> Transurethral incision, vaporization, resection etc. of the prostate Open prostatectomy 	<ul style="list-style-type: none"> Removal or expansion of periurethral prostate tissue reduces obstruction to urinary flow. 	<ul style="list-style-type: none"> Patient preference Dissatisfaction with conservative treatment Refractory urinary retention Renal dysfunction Recurrent UTI induced by BPH

REFERRAL

Indications for referral to urologist for evaluation according to AUA guidelines:

- Digital rectal examination suggesting prostate cancer
- Hematuria
- Recurrent infections
- Palpable bladder
- History or risk of urethral stricture
- Neurologic disease raising the likelihood of a primary bladder disorder
- Abnormal PSA levels (see *Choosing Wisely*)
- Persistent bothersome LUTS despite optimizing nonpharmacologic and pharmacologic management

**CHOOSING
WISELY**

- Do not order creatinine or upper-tract imaging for patients with BPH.
- Do not routinely screen for prostate cancer using a PSA test or digital rectal examination. Offer PSA screening for detecting prostate cancer only after engaging in shared decision making.