

# URINARY INCONTINENCE

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

<b>BACKGROUND</b>	<ul style="list-style-type: none"> <li>Urinary incontinence (UI) affects 15%–30% of all adults ≥ 65 years old and 60%–70% of long-term care residents.</li> <li>Although common, UI is <b>not</b> a normal part of aging and should be evaluated.</li> </ul>				
<b>SCREENING</b>	<p>All older adults should have documented initial screening for UI.</p> <ul style="list-style-type: none"> <li>If screening is positive, then document targeted history and physical and offer treatment.</li> <li>If screening is negative, then rescreen every year. Consider rescreening sooner if worsening functional decline or increase in risk factors.</li> </ul>				
<b>CLASSIFICATION OF UI</b>		<b>STRESS</b>	<b>URGE</b>	<b>BLADDER OUTLET OBSTRUCTION (OVERFLOW)</b>	<b>DETRUSOR UNDERACTIVITY (OVERFLOW)</b>
	<b>HISTORY</b>	<ul style="list-style-type: none"> <li>Increased abdominal pressure (coughing, sneezing, lifting, exercising)</li> </ul>	<ul style="list-style-type: none"> <li>Urgency</li> <li>Frequency</li> <li>Nocturia</li> <li>Difficulty holding</li> </ul>	<ul style="list-style-type: none"> <li>High post-void residual (PVR)</li> <li>Frequency</li> <li>Nocturia</li> <li>Weak urinary stream</li> <li>Hesitancy</li> <li>Straining</li> <li>Frequent small-volume leakage</li> </ul>	<ul style="list-style-type: none"> <li>High PVR</li> <li>Frequency</li> <li>Nocturia</li> <li>Weak urinary stream</li> <li>Hesitancy</li> <li>Frequent small-volume leakage</li> </ul>
	<b>ETIOLOGY*</b>	<ul style="list-style-type: none"> <li>Impaired pelvic floor support</li> <li>Failure of urethral closure (trauma, failed surgery, urethral atrophy, prostate procedures, atrophic vaginitis)</li> <li>Obstetric injury</li> </ul>	<ul style="list-style-type: none"> <li>Detrusor over activity: age related, idiopathic, upper motor neuron lesion, bladder irritation</li> <li>Detrusor hyperactivity with impaired contractility (urge incontinence + detrusor underactivity)</li> </ul>	<ul style="list-style-type: none"> <li>Benign prostatic hyperplasia (BPH)</li> <li>Urethral stricture</li> <li>Anti-incontinence surgery</li> <li>Severe pelvic organ prolapse (rare)</li> </ul>	<ul style="list-style-type: none"> <li>Peripheral neuropathy (diabetes mellitus, B<sub>12</sub> deficiency, alcoholism)</li> <li>Damage to spinal detrusor afferent nerves (disc herniation, spinal stenosis, tumor, degenerative neurologic disease)</li> <li>Fibrosis of detrusor muscle</li> </ul>
*Overlapping etiologies are most common (mixed = stress + urge)					
<b>HISTORY OF PRESENT ILLNESS</b>	<b>GENERAL</b>	<b>RED FLAG SYMPTOMS</b>	<b>LOWER TRACT</b>	<b>OTHER</b>	
	<ul style="list-style-type: none"> <li>Onset</li> <li>Frequency</li> <li>Volume of urine lost</li> <li>Timing</li> <li>Precipitants (caffeine, diuretics, cough, etc)</li> </ul>	<ul style="list-style-type: none"> <li>Sudden onset</li> <li>Pelvic (or abdominal) pain</li> <li>Hematuria</li> <li>Dysuria</li> <li>Severe straining</li> <li>Inability to void</li> </ul>	<ul style="list-style-type: none"> <li>Frequency</li> <li>Urgency</li> <li>Nocturia</li> <li>Hesitancy</li> <li>Weak stream</li> <li>Intermittent stream</li> <li>Dribbling</li> </ul>	<ul style="list-style-type: none"> <li>Medications</li> <li>Congestive heart failure</li> <li>Diabetes</li> <li>Constipation</li> <li>Obesity</li> </ul>	
<b>PAST MEDICAL HISTORY</b>	<ul style="list-style-type: none"> <li>Neurologic: cerebrovascular disease, delirium, dementia, multiple sclerosis, normal-pressure hydrocephalus, Parkinson disease, spinal stenosis</li> <li>Urologic/gynecologic: surgeries, trauma</li> </ul>				
<b>SOCIAL HISTORY</b>	Caffeine intake, social support, home environment (including environmental barriers), tobacco use				
<b>MEDICATIONS</b>	Sedating: sedative hypnotics, opioids, antipsychotics, antidepressants; Sensory: GABA-ergics; Edema: NSAID; calcium channel blockers; Urgency: loop diuretics; Sphincter tone: alpha-adrenergic agonist or blockers; Cough: ACE inhibitors				
<b>PHYSICAL EXAMINATION</b>	<ul style="list-style-type: none"> <li>Functional status</li> <li>Cognitive evaluation (delirium screening if indicated)</li> <li>Cardiovascular (edema, heart failure)</li> </ul>	<ul style="list-style-type: none"> <li>Neurologic (signs of Parkinson disease, neuropathy)</li> <li>Rectal exam (mass, tone, volitional contraction, sensation, prostate nodules, fecal load)</li> <li>Vaginal exam (mucosa, prolapse, volitional contraction)</li> <li>Musculoskeletal (mobility and dexterity)</li> </ul>			

## FURTHER TESTING

- Depression screening
- Post-void residual (PVR) measurement may be considered in patients with prior urinary retention, longstanding diabetes, recurrent UTIs, severe constipation, complex neurologic disease, higher than routine risk for prostate enlargement and in women with marked pelvic organ prolapse or who have had prior surgery for UI.
- Bladder diary (<http://kidney.niddk.nih.gov/kudiseases/pubs/diary/index.htm>)
- American Urological Association BPH Symptom index score
- Cystoscopy and urine cytology if there is pelvic pain or hematuria that does not clear after treatment of UTI
- Urodynamic testing or cystoscopy
  - Unclear etiology of UI (or belief that UI is due to severe BPH)
  - When empiric treatment has failed and the patient would consider invasive or surgical therapy

## LABORATORY TESTING

- Urinalysis (at initial evaluation or if increased symptoms)
  - Note any hematuria or glucosuria.
  - Do not treat asymptomatic bacteriuria with antibiotics (particularly in established UI).

## NONPHARMA-COLOGIC MANAGEMENT

- Classification and documentation of type and likely etiology of UI before treatment
- Minimize contributing factors identified in history of present illness, medications, physical exam, and laboratory testing.
- Behavioral therapy management in a stepped approach
  - Prompted voiding is primary approach for patients with cognitive impairment. Try for 3 days and continue only if improves quality of life for patient and caregiver. Also useful for cognitively intact patients with voiding interval more than q2hr.
  - Taper caffeine intake. Increase fluids if inadequate; decrease if excessive altering the timing of fluid intake as needed.
  - Pelvic floor muscle exercises and bladder control strategies for stress, urge, and mixed UI.
    - Squeeze as you sneeze, cough, or lift.
    - Stay still and contract muscles rapidly 4 times to reduce urgency before going to the bathroom (“freeze and squeeze”).
    - Contract muscles as you stand up from bed or chair—prevents sudden urine loss.
    - Contract muscles after voiding, urethral stripping in men, to prevent post-void dribbling.
- Vaginal pessary can be useful for pelvic organ prolapse and stress incontinence.
- Urinary catheter at least 3–4 weeks for urinary retention; eliminate contributing factors, consider starting  $\alpha$ -blocker, then voiding trial (fill to sensation to void and remove catheter). Replace catheter and refer to Urology or Urogynecology if fails.
- Absorbent products (pads, pull-ups, underpads) and skin care products—no-rinse cleansers and ointment or creams. *Candida* infections common in obese and diabetic patients and require specific antifungal creams or systemic treatments.

## MEDICATION DOSAGE ADVERSE EVENTS (METABOLISM)

Try behavioral therapies first and add medications only if needed. Combination of behavioral therapy with medication is significantly better for improving quality of life.

MEDICATION	DOSAGE	ADVERSE EVENTS (METABOLISM)
Alfuzosin <sup>a</sup>	■ 10 mg/d at bedtime	■ (L) CYP3A4
Doxazosin <sup>a</sup>	■ 0.5–8 mg/d at bedtime	■ (L) CYP3A4, CYP2D6, CYP2C19
Silodosin <sup>a</sup>	■ 8 mg/d at bedtime	■ CrCl 30–50 mL/min, give 4 mg/day; avoid if CrCl <30 mL/min ■ Retrograde ejaculation ■ (L) CYP3A4
Tamsulosin <sup>a</sup>	■ 0.4–0.8 mg/d at bedtime	■ Give 30 minutes after same meal every day. ■ Less orthostasis ■ (L) CYP3A4, CYP2D6
Terazosin <sup>a</sup>	■ 1–10 mg/d at bedtime	■ (L)
Darifenacin <sup>b</sup>	■ 7.5–15 mg/d	■ Gastric retention ■ Not recommended in severe liver impairment (L, CYP3A4, CYP2D6)
Fesoterodine <sup>b</sup>	■ 4–8 mg/d	■ Maximum dose 4 mg if CrCl <30 mL/min (L, CYP3A4, CYP2D6)
Oxybutynin <sup>b</sup>	■ 2.5–5 mg q6–12h ■ 5–20 mg/d (XL formulation) ■ 3% gel topically q24h ■ 3.9 mg/24h (apply patch 2x/wk)	■ Dry mouth and constipation less with XL formulation than immediate release ■ Gel: rotate sites to reduce skin irritation ■ Patch: adverse events similar to those of placebo; may irritate skin (L)
Solifenacin <sup>b</sup>	■ 5–10 mg/d	■ Same as darifenacin ■ Maximum dose 5 mg if CrCl <30 mL/min or moderate liver impairment (L, CYP3A4)
Tolterodine <sup>b</sup>	■ 1–2 mg q12h ■ 2–4 mg/d (LA formulation)	■ Least constipating of oral agents
Trospium <sup>b</sup>	■ 20 mg q12–24h (on empty stomach) ■ 60 mg/d (XR formulation)	■ Caution in liver dysfunction ■ Dose once daily at bedtime in patients $\geq$ 75 years old or with CrCl <30 mL/min ■ XR formulation not recommended if CrCl <30 mL/min (L, K)
Mirabegron <sup>c</sup>	■ 25–50 mg/d	■ Hypertension ■ Has not been shown to have cognitive adverse effects ■ Increases levels of digoxin and CYP2D6 substrates (eg, metoprolol, venlafaxine, desipramine, dextromethorphan)
Vibegron <sup>c</sup>	■ 75 mg/d	■ Increases levels of digoxin ■ Has not been shown to have cognitive adverse effects

<sup>a</sup> Alpha blockers: for treatment of lower urinary tract symptoms (benign prostatic hyperplasia) in men. Adverse events include orthostatic hypotension, dizziness, fatigue.

<sup>b</sup> Muscarinic receptor antagonists: adverse events include dry mouth, eyes, and skin; GERD; and constipation. Confusion or worsened cognition may occur in patients with mild cognitive impairment or dementia.

<sup>c</sup> Beta-3 agonist

Abbreviations: L = metabolized in liver; K = metabolized in kidney

## FOLLOW-UP

- Response to treatment should be documented within 3 months. Behavioral treatments are followed up at least monthly for 2 or 3 visits.
- For patients who do not improve adequately, surgical management can be considered.