**Urinary incontinence (UI) is not a normal part of aging and should be evaluated.**

### SCREENING

All older adults should have documented initial screening for UI:
- If screening is positive, then document targeted history and annual follow-up to determine whether UI is bothersome to patient or caregiver.
- If screening is negative, then rescreen every 2 years.

### CLASSIFICATION OF UI

#### STRESS

**HISTORY**
- Increased abdominal pressure (coughing, sneezing, lifting)
- Leakage can occur while sitting or standing

#### URGE

**HISTORY**
- Frequency
- Nocturia
- Dribbling
- Weak urinary stream
- Hesitancy
- Straining
- Urgency

#### OVERFLOW (BLADDER OUTLET OBSTRUCTION)

**HISTORY**
- Frequency
- Nocturia
- Dribbling
- Weak urinary stream
- Hesitancy
- Straining
- Small-volume leakage
- High PVR

#### OVERFLOW (DETRUSOR UNDER-ACTIVITY)

**HISTORY**
- Frequency
- Nocturia
- Dribbling
- Weak urinary stream
- Hesitancy
- Small-volume leakage
- High-PVR

### ETIOLOGY*

- Impaired pelvic support
- Failure of urethral closure (trauma, anti-incontinence surgery, urethral atrophy, status post-prostatectomy, atrophic vaginitis)
- Detrusor overactivity: age-related, idiopathic, nervous system lesion, bladder irritation
- Detrusor hyperactivity with impaired contractility
- Benign prostatic hypertrophy (BPH)
- Prostate cancer
- Urethral stricture
- Anti-incontinence surgery
- Cystocele
- Rectocele
- Vaginal prolapse
- Fibrosis of detrusor muscle
- Peripheral neuropathy (diabetes mellitus, B12 deficiency, alcoholism)
- Damage to spinal detrusor afferent nerves (disc herniation, spinal stenosis, tumor, degenerative neurologic disease)

*Mixed etiologies are most common

### HPI

<table>
<thead>
<tr>
<th>GENERAL</th>
<th>RED FLAG SYMPTOMS</th>
<th>LOWER TRACT</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onset</td>
<td>Sudden onset</td>
<td>Frequency</td>
<td>Medical conditions (see below)</td>
</tr>
<tr>
<td>Frequency</td>
<td>Pelvic pain</td>
<td>Nocturia</td>
<td>Medications</td>
</tr>
<tr>
<td>Volume</td>
<td>Hematuria</td>
<td>Slow stream</td>
<td>“How does this affect your life?”</td>
</tr>
<tr>
<td>Timing</td>
<td></td>
<td>Hesitancy</td>
<td></td>
</tr>
<tr>
<td>Precipitants</td>
<td></td>
<td>Dribbling</td>
<td></td>
</tr>
<tr>
<td>(caffeine,</td>
<td></td>
<td>Interrupted voiding</td>
<td></td>
</tr>
<tr>
<td>diuretics, cough, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### PAST MEDICAL HX/REVIEW OF SYSTEMS

- Cardiovascular: arteriovascular, heart failure, venous insufficiency
- Metabolic: diabetes mellitus, hypercalcemia, Vitamin B12 deficiency
- Neurologic: cerebrovascular disease, delirium, dementia, multiple sclerosis, normal-pressure hydrocephalus, Parkinson’s, spinal stenosis
- Psychiatric: affective disorder, anxiety disorder, psychosis, alcoholism
- Pulmonary: chronic cough
- Gastrointestinal: constipation
- Urologic/gynecologic: surgeries, trauma
- Musculoskeletal: mobility impairment

### SOCIAL HX

Alcohol intake, social support, home environment

### MEDICATIONS

Angiotensin-converting enzyme (ACE) inhibitors, anticholinergics, antidepressants, antipsychotics, nonsteroidal anti-inflammatory drugs, sedative hypnotics, thiazolidinediones, calcium channel blockers, loop diuretics, opioids, α-adrenergic agonists, α-adrenergic blockers, GABA-ergics
### PHYSICAL EXAM
Document targeted physical examination:
- Functional status
- Mental status
- Abdominal exam (bladder distention)
- Cardiovascular (edema, heart failure)
- Neurologic (cognition, Babinski sign, evidence of neuropathy)
- Rectal exam (mass, tone, sensation, prostate nodules)
- Vaginal exam (mucosa, prolapse)

### FURTHER TESTING
- Postvoid residual (PVR)
- Bladder diary (http://kidney.niddk.nih.gov/kudiseases/pubs/diary/index.htm)
- American Urological Association BPH Symptom Index score (http://www.adultpediatricuro.com/apuauss.pdf)
- Cystoscopy and urine cytology if there is pelvic pain or hematuria that does not clear after treatment of urinary tract infection
- Urodynamic testing
  - Unclear etiology of UI
  - Preoperative for women undergoing surgery for stress UI

### LABS
- Urinalysis (at initial evaluation or if increased symptoms)
  - Note any hematuria or glucosuria
- Urine culture (if evidence of pyuria or hematuria)
- Serum creatinine:
  - Within 72 hours for PVR > 300 cc
  - Within 3 months for PVR between 200 and 300 cc

### NONPHARMACOLOGIC MANAGEMENT
- Classification and documentation of type and likely etiology of UI prior to treatment
- Treatment options should be discussed with new or symptomatic UI within 3 months of diagnosis
- Minimize contributing factors identified above
- Behavioral therapy:
  - Should be offered for cognitively intact, ambulatory adult with stress, urge, or mixed UI
  - Scheduled voiding (www.healthinaging.org/public_education/tools/Ultool10.pdf)
  - Pelvic muscle exercises (Kegel)
  - Biofeedback (referral to physical therapy or urology)
- Long-term (>1 month) urethral catheter for clinically significant urinary retention (document reason for use)

### PHARMACOLOGIC MANAGEMENT (FOR URGE OR MIXED UI)

<table>
<thead>
<tr>
<th>MEDICATION</th>
<th>DOSAGE</th>
<th>ADVERSE EVENTS (METABOLISM)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxybutynin</td>
<td>2.5–5 mg q8–12h</td>
<td>Dry mouth and constipation less with XL formulation than immediate release</td>
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<tr>
<td></td>
<td>5–20 mg/d</td>
<td>Gel: rotate sites to reduce skin irritation</td>
</tr>
<tr>
<td></td>
<td>1 g gel topically q24h</td>
<td>Patch: adverse events similar to those of placebo; may irritate skin (L)</td>
</tr>
<tr>
<td></td>
<td>3.9 mg/d (apply patch 2x/wk)</td>
<td></td>
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<tr>
<td>Tolterodine</td>
<td>2 mg q12h</td>
<td>Least constipating of oral agents</td>
</tr>
<tr>
<td></td>
<td>4 mg/d</td>
<td>P450 interactions (L, CYP3A4, CYP2D6)</td>
</tr>
<tr>
<td>Trospium</td>
<td>20 mg q12–24h (on empty stomach)</td>
<td>Dyspepsia, headache</td>
</tr>
<tr>
<td></td>
<td>60 mg/d (XR formulation)</td>
<td>Caution in liver dysfunction</td>
</tr>
<tr>
<td>Darifenacin</td>
<td>7.5–15 mg/d</td>
<td>Dose once daily at bedtime in patients ≥75 years old or with creatinine clearance (CrCl) &lt;30 mL/min</td>
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<tr>
<td></td>
<td></td>
<td>XR formulation not recommended if CrCl &lt;30 mL/min (L, K)</td>
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<tr>
<td>Solifenacin</td>
<td>5–10 mg/d</td>
<td>Gastric retention</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not recommended in severe liver impairment (L, CYP3A4, CYP2D6)</td>
</tr>
<tr>
<td>Fesoterodine</td>
<td>4–8 mg/d</td>
<td>Same as darifenacin</td>
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<tr>
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<td></td>
<td>Maximum dose 5 mg if CrCl &lt;30 mL/min or moderate liver impairment (L, CYP3A4)</td>
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<tr>
<td></td>
<td>Maximum dose 4 mg if CrCl &lt;30 mL/min (L, CYP3A4, CYP2D6)</td>
<td></td>
</tr>
</tbody>
</table>

*Class adverse events: dry mouth, blurry vision, dry eyes, delirium/confusion, constipation

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

### SURGICAL MANAGEMENT
For stress incontinence:
- Retropubic suspension
- Sling procedure
- Periurethral bulking agent

### FOLLOW-UP
Response to treatment should be documented within 3 months