



## Understanding and Managing Female Urinary Incontinence in a Primary Care Setting

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### Goals

- Recognize and counsel female patients with Urinary Incontinence
- Describe the different types and presentations of female incontinence
- Institute an appropriate work-up
- Select and institute initial treatment
- Be aware of referral options for patients who require additional work-up or treatment

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### Epidemiology

- Very Common but underreported
- Current estimates: 10-60% nonpregnant women greater than age 20
- US National Health and Nutrition and Examination Survey (NHANES) 9.6 million women >50yrs, and women >60yrs 50-70%
- Nurses Health Study data at least 1/3 have symptoms monthly

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## Quality of Life and Impact

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- Depression and anxiety
- Work impairment, social isolation, and disability
- Sexual and relationship dysfunction
- Societal costs \$26.3 billion (2005 data JAMA) \$66 billion in (2007 NIH)
- 75% in routine care (absorbent pads/ diapers and laundry)
- Increased caregiver burden resulting at least 10% of all nursing home admissions
- Morbidity- increased infections (UTI, perineal) and fractures (falls)

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## Risk Factors

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- Age
- Obesity
- Parity
- Mode of birth
- Family history (especially urgency incontinence)
- Medical comorbidities and medication
- Diet/smoking
- High impact exercise

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## Types of Urinary Incontinence

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### Stress Urinary Incontinence

- Involuntary loss of urine associated with increased abdominal pressure
- Activity related (cough/sneeze, laughing, exercise, trampolines)
- Related to a loss of mechanical support of the urethra
- "garden hose" analogy
- Urethral hypermobility
- May be related to chronic pressure (chronic cough, COPD, obesity) or trauma (vaginal childbirth and obstetrical injury)
- Intrinsic sphincteric deficiency (urodynamic diagnosis) Can occur with the presence or absence of urethral hypermobility. Typically severe and difficult to treat

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## Types of Urinary Incontinence

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### Urgency Urinary Incontinence

- Urge to void immediately preceding or concurrent with an involuntary loss of urine
- More common in older women
- "Overactive bladder" refers to urinary urgency with or without incontinence
- May have a component of nocturia ( > 2 times/night)
- Thought to arise from detrusor overactivity that leads to uncontrolled detrusor spasms
- Can be associated with spinal cord injury, CNS disorders (stroke, dementia, Parkinson's disease), and other bladder disorders

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## Types of Urinary Incontinence

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### Overflow Incontinence

- Continuous leaking or dribbling in the setting of incomplete bladder emptying
- Patients describe symptoms of intermittent stream, hesitancy, multiple voids, and frequency
- Bladder outlet obstruction (prolapse, pelvic masses, overcorrected incontinence surgery, urethral masses/stricture, and Fowler's syndrome)
- Detrusor underactivity

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## Evaluation

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- Ask! Patients won't usually initiate the discussion
- History, Physical exam (pelvic), U/A and culture
- Classify the type of incontinence and most bothersome symptoms (helps direct treatment)
- Consider other systemic issues such as recurrent UTI, Hematuria without infection, mental status changes, gait changes/ lower extremity weakness, pelvic organ prolapse
- Voiding diaries and pad/garment counts
- Cough stress test
- Post void residual (< 100cc nml, >500cc place catheter and refer)

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### Evaluation — Additional Considerations

- Medications
- Previous treatment (medications, surgery, pelvic floor physical therapy)
- Urodynamic testing
- Cystoscopy
- Imaging

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Effect of selected medicines and other agents on bladder function		
Medicines and other agents		
		Effect on bladder function
<b>Adrenergic</b>	<p>α<sub>1</sub>-blockers (eg, terazosin, alfuzosin, tamsulosin, silodosin)</p> <p>α<sub>2</sub>-blockers (eg, iminoxan, medixet, moxonidine, rilmenidine, guanfacine, dexmedetomidine)</p>	Increased contractility via adrenergic effect
<b>Anticholinergic</b>	<p>Anticholinergics (eg, oxybutynin, tolterodine, trospium, darifenacin, fesoterodine, solifenacin, tiotropium, ipratropium, ipratropium bromide, ipratropium inhalation solution, ipratropium nasal solution)</p>	Decreased contractility
<b>Antidepressants*</b>	<p>Tricyclic antidepressants (eg, amitriptyline, nortriptyline, imipramine, desipramine, doxepin, protriptyline, trimipramine)</p> <p>Serotonin reuptake inhibitors (eg, sertraline, paroxetine, fluoxetine, venlafaxine, desvenlafaxine, duloxetine, milnacipran, levomelevitin)</p> <p>SSRIs (eg, escitalopram, citalopram, fluoxetine, sertraline, paroxetine, fluvoxamine, venlafaxine, desvenlafaxine, milnacipran, levomelevitin)</p> <p>SNRIs (eg, venlafaxine, desvenlafaxine, milnacipran, levomelevitin)</p>	Decreased contractility via anticholinergic effect
<b>Cardioactive†</b>	<p>β-blockers (eg, metoprolol, atenolol, carvedilol)</p> <p>Calcium channel blockers (eg, verapamil, diltiazem)</p> <p>Diuretics (eg, furosemide, bumetanide)</p>	Decreased contractility via adrenergic effect
<b>Chemotherapy</b>	Cisplatin	Decreased contractility via anticholinergic effect
<b>Diuretics</b>	<p>Osmotic (eg, mannitol, sorbitol, polyethylene glycol)</p> <p>Loop (eg, furosemide, bumetanide)</p> <p>Thiazide (eg, hydrochlorothiazide, chlorthalidone, metolazone, acetazolamide)</p> <p>Distal renal tubule (eg, acetazolamide)</p> <p>Osmotic (eg, mannitol, sorbitol, polyethylene glycol)</p>	Decreased contractility via adrenergic effect
<b>Other</b>	<p>Antipsychotics (eg, haloperidol, risperidone, olanzapine, clozapine, quetiapine, lurasidone, aripiprazole, ziprasidone, levomelevitin, cariprazine, pimavanserin)</p> <p>Antipsychotics (eg, haloperidol, risperidone, olanzapine, clozapine, quetiapine, lurasidone, aripiprazole, ziprasidone, levomelevitin, cariprazine, pimavanserin)</p> <p>Antipsychotics (eg, haloperidol, risperidone, olanzapine, clozapine, quetiapine, lurasidone, aripiprazole, ziprasidone, levomelevitin, cariprazine, pimavanserin)</p> <p>Antipsychotics (eg, haloperidol, risperidone, olanzapine, clozapine, quetiapine, lurasidone, aripiprazole, ziprasidone, levomelevitin, cariprazine, pimavanserin)</p>	Decreased contractility via adrenergic effect

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### Physical Exam — Prolapse

**POP-I Staging Criteria**

Stage	Criteria
Stage 0	An, Ap, Bx, Bp = < 3 cm and C or D = Bf = -2 cm
Stage I	Stage 0 criteria met and leading edge < 1 cm
Stage II	Leading edge > 1 cm but ≤ 1 cm
Stage III	Leading edge > 1 cm but < Bf - 2 cm
Stage IV	Leading edge = Bf - 2 cm

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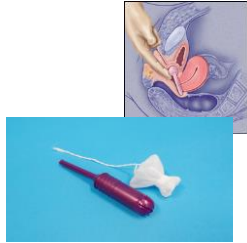
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### Treatment: Stress Incontinence (Non-Surgical)

- Kegel Exercises
- Timed voiding to maintain empty bladder
- Weight reduction
- Active management of constipation
- Over-the-counter devices
- Pelvic floor physical therapy
- Pessaries



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### Treatment: Stress Incontinence (Surgical/Device-Driven Interventions)

- Periurethral bulking agents
- Mid urethral slings \*\*\*
- Autologous slings
- Retropubic suspensions (Burch, MMK)
- Intravesical balloon (long term data lacking)
- Pulsed magnetic stimulation of the pelvic floor (limited data/cost)
- Transurethral radiofrequency collagen denaturation (experimental)

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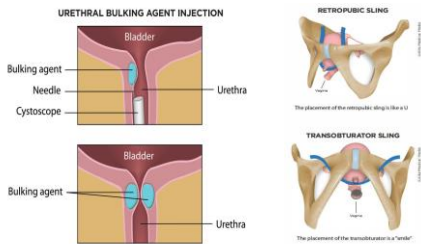
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### Treatment: Stress Incontinence (Surgical/Device-Driven Interventions)



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**Treatment: Urgency Incontinence (1st Line Non-Surgical)**

- Fluid restriction (65-100oz/ day)
- Timed voiding (every 2-3 hours on the clock)
- Treatment of vulvovaginal atrophy
- Avoidance of bladder irritants (caffeine, smoking, carbonated drinks)
- Pelvic floor exercises and physical therapy
- Consider pharmacologic therapy

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**Treatment: Urgency Incontinence (Pharmacologic Therapy)**

- Anticholinergic/ antimuscarinic agents
- Largest and oldest drug class
- Block muscarinic receptor stimulation by acetylcholine decreasing smooth muscle contractility of the bladder
- Side effects generally the limiting factor with patient acceptance
- Dry mouth/eyes, constipation, and somnolence
- Benefits: cost, availability
- Increased risk of dementia and cognitive impairment

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**Treatment: Urgency Incontinence (Pharmacologic Therapy)**

- Beta-3 agonists
- Newest drug class (mirabegron and vibegron)
- Stimulate the beta-3 receptor responsible for bladder relaxation
- Side effects headache, GI irritation, rhinorrhea (minimal compared to antimuscarinics)
- Hypertension a concern with mirabegron but not noted with vibegron
- Cost is the major limiting factor with patient acceptance
- Mirabegron slated to be available as a generic this year

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**Treatment: Urgency Incontinence (Advanced Therapies)**

- Patients must qualify with failed conservative and pharmacologic therapy
- Botulinum injection into the detrusor muscle (cystoscopy)
  - Local anesthesia in office setting common
  - Onset of action about 2 weeks
  - Duration 3-12 months (most require reinjection every 8-12 months)
  - Can receive up to 400u/ year (100u standard each session)
  - Increased risk of urinary retention (intermittent self catheterization)
  - Increased risk of UTI

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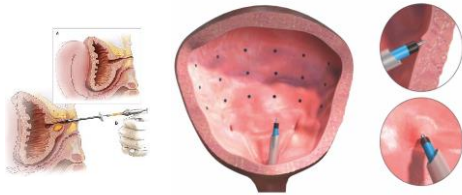
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**Treatment: Urgency Incontinence (Advanced Therapies)**



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**Treatment: Urgency Incontinence (Advanced Therapies)**

- Percutaneous stimulation of the tibial nerve
- Implantable tibial nerve stimulator
- Initial therapy is weekly for 3 months, then monthly
- Both more effective than behavioral modifications and medication with optimal duration of therapy undetermined at this time
- Efficacy of about 60%
- Combination therapy with anticholinergics adds no benefit

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**Treatment: Urgency Incontinence (Advanced Therapies)**

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- Sacral nerve neuromodulation
- Implanted wire lead in the S3 foramen
- Initial office based "percutaneous nerve evaluation" PNE
- Must demonstrate > 50% improvement to proceed with permanent implant placed in an out-patient setting
- Reported benefits: Improvement > 50% 80-90% at 2 years and cure rates of 60-90%
- Added benefit: most effective therapy of fecal incontinence
- Batteries lasting more than 15 years and now MRI compatible

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**Treatment: Urgency Incontinence (Advanced Therapies)**

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**Treatment: Follow-Up**

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- Patients managed with behavioral / dietary/ fluid modification initially monthly until stable and satisfied, then every 6-12 months
- Patients managed with medications initially every 1-2 months until stable and satisfied, then every 3-6 months
- Patients managed with devices (pessaries and OTC devices) monthly until stable and satisfied, then every 1-3 months for the first year. Pelvic exams/ cleanings every 2-3 months
- Encourage patients to call for an appointment with any concerns or worsening/ return of symptoms

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**When to Refer to Urogynecology**

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- Recurrent or failed initial therapy, particularly mixed incontinence
- Prior pelvic surgery or radiation
- Presence of pelvic floor prolapse
- Recurrent UTIs or hematuria
- Obstructed voiding
- Bladder Pain Syndrome (Interstitial Cystitis)
- Any time you don't feel comfortable or suspect a more complicated condition

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**Contact Information**

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**OU Health Physicians — Women's Pelvic and Bladder Health Clinic**  
825 NE 10th Street, Suite 5D  
Oklahoma City, OK 73104  
Referral Line: 405-271-9493  
Fax Line 405-271-2233

OU Health is on Epic!

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