

# **Clinical Pearls:** **Diagnosis and Management of** **Urinary Incontinence** **in Midlife Women**

Mary F. Ackenbom MD, MSc

Clinical Associate Professor

Chief, Division of Urogynecology and Reconstructive Pelvic Surgery

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# Overview

- Review etiologies and types of urinary incontinence
- Discuss approaches to diagnosis of urinary incontinence
- Review treatment options for the main types of urinary incontinence

# Urinary Incontinence (UI)

- **Common condition characterized by some involuntary loss of urine**
  - 14-41% women aged 30-60 years
  - >50% women  $\geq$  60 years with overactive bladder symptoms
- **Incontinence remains underdiagnosed and undertreated**
  - ★ Only 25% of women seek care, half of those receive treatment
  - Untreated UI is associated with sleep disturbances, social isolation, depression, sexual dysfunction, falls, fractures

# Types of Urinary Incontinence (UI)

**Chronic urinary retention**—involuntary loss of urine when the bladder does not empty completely; associated with high residual urine volumes\*

**Coital urinary incontinence**—involuntary loss of urine with sexual intercourse

**Continuous urinary incontinence**—continuous involuntary loss of urine

**Extraurethral urinary incontinence**—urine leakage through channels other than the urethral meatus (eg, vesicovaginal, urethrovaginal, or ureterovaginal genitourinary fistulas; ectopic ureter)

**Functional urinary incontinence**—involuntary loss of urine that is due to cognitive, functional, or mobility impairments in the presence of an intact lower urinary tract system\*

**Insensible urinary incontinence**—involuntary loss of urine that occurs without awareness

**Mixed urinary incontinence**—involuntary loss of urine associated with urgency and with physical exertion, sneezing, or coughing

**Nocturnal enuresis**—involuntary loss of urine that occurs during sleep

**Occult stress incontinence**—stress urinary incontinence (see below) that is observed only after the reduction of coexistent pelvic organ prolapse

**Overactive bladder**—urinary urgency, typically accompanied by frequency and nocturia, with and without urge urinary incontinence in the absence of urinary tract infection or other obvious pathology

**Postmicturition leakage**—involuntary passage of urine after the completion of micturition

**Postural urinary incontinence**—involuntary loss of urine associated with change of body position

**Stress urinary incontinence**—involuntary loss of urine with effort or physical exertion (eg, sporting activities) or when sneezing or coughing

**Urgency urinary incontinence**—involuntary loss of urine associated with urgency or a sudden, compelling desire to void that is difficult to defer



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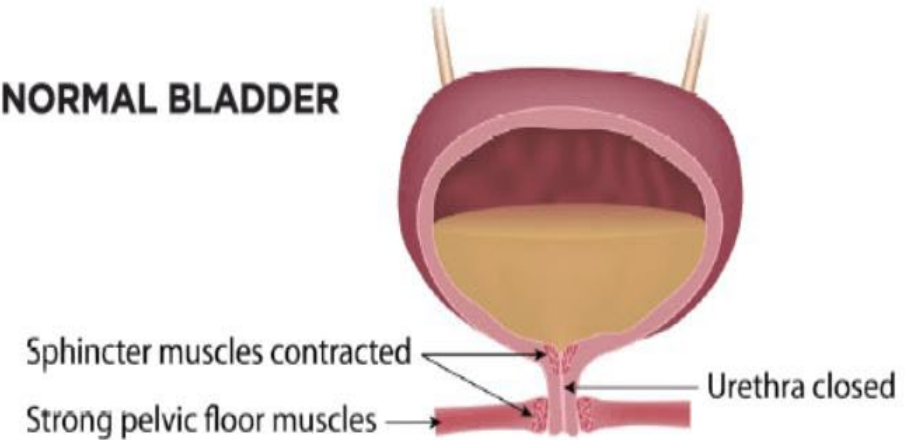
# Types of Urinary Incontinence (UI)

## Stress Urinary Incontinence (SUI):

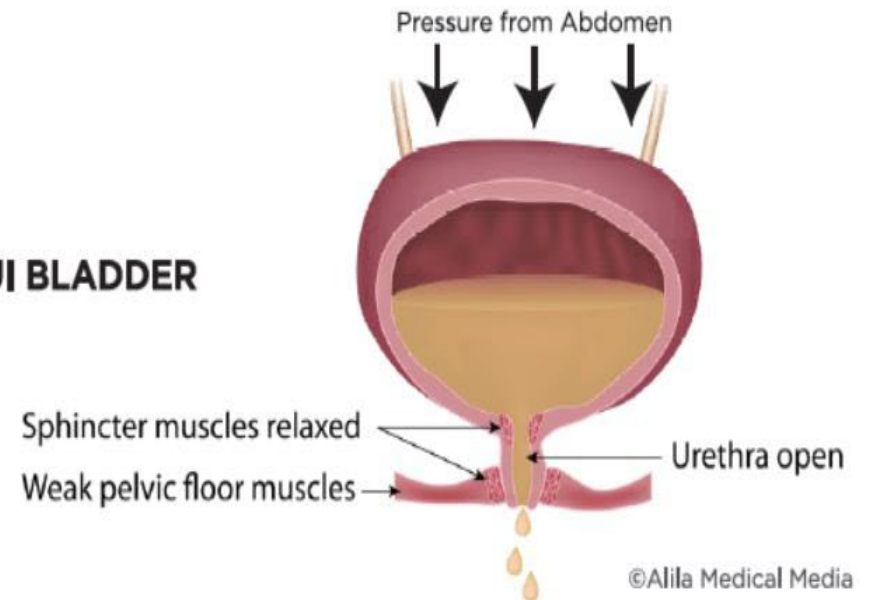
- Involuntary loss of urine with physical exertion, coughing, sneezing
  - (Anything that engages your abdominal muscles)



**NORMAL BLADDER**



**SUI BLADDER**



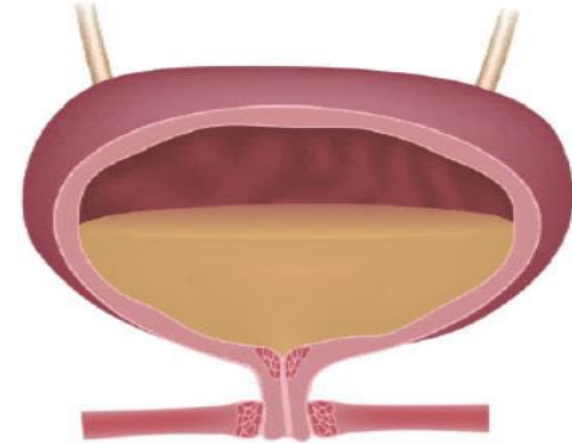
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# Types of Urinary Incontinence (UI)

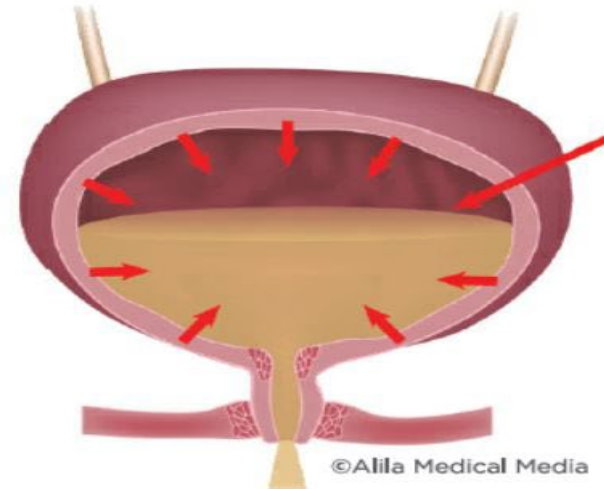
## Urgency Urinary Incontinence (UUI):

- Involuntary loss of urine associated with urgency or sudden, compelling desire to void that is difficult to defer

**NORMAL BLADDER**



**OVERACTIVE BLADDER**



The muscle that lines the bladder, called the detrusor muscle, squeezes down too often and too powerfully. This causes urine to come out at the wrong times. Common things that bring this on are hearing running water, putting your key in the door at home, or seeing the toilet.

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# Types of Urinary Incontinence (UI)

- **Mixed Urinary Incontinence**: Involuntary loss of urine associated with physical exertion, coughing, sneezing AND urgency
  - Stress Urinary Incontinence:
    - Involuntary loss of urine with *physical exertion, coughing, sneezing*
      - (Anything that engages your abdominal muscles)
  - Urgency Urinary Incontinence:
    - Involuntary loss of urine *associated with urgency or sudden, compelling desire to void that is difficult to defer*

# Etiologies of Urinary Incontinence (UI)

## Box 1. Differential Diagnosis of Urinary Incontinence in Women

### *Genitourinary Etiology*

- Filling and storage disorders
  - Urodynamic stress incontinence
  - Detrusor overactivity (idiopathic)
  - Detrusor overactivity (neurogenic)
  - Mixed types
- Fistula
  - Vesical
  - Ureteral
  - Urethral
- Infectious

Urinary tract infection

Vaginitis

- Congenital
  - Ectopic ureter
  - Epispadias

### *Nongenitourinary Etiology*

- Functional
  - Neurologic
  - Cognitive
  - Psychologic
  - Physical impairment
- Environmental
- Pharmacologic
- Metabolic



# Office Evaluation for Urinary Incontinence

- History
- Urinalysis
- Physical Examination
- Demonstration of Stress Incontinence
- Assessment of Urethral Mobility
- Postvoid residual volume measurement

# Office Evaluation for Urinary Incontinence

- **History**

- Characterization of incontinence
- Duration
- Precipitating events
- Fluid intake
- Pad use
- *Impact on activities of daily living*
- *Impact on quality of life*
- Thorough medical, surgical, gynecologic, neurologic hx
- Review medication list
- **Consider bladder diary**

# Office Evaluation for Urinary Incontinence

- Urinalysis
  - Rule out urinary tract infection
  - Assess for microscopic hematuria



# Office Evaluation for Urinary Incontinence

- Physical Examination
  - Goal: To exclude confounding or contributing factors to urinary incontinence or its management
- Pelvic examination
  - (ideally assessing for prolapse, levator muscle spasm, vaginitis/atrophy, fistulae, fecal impaction)

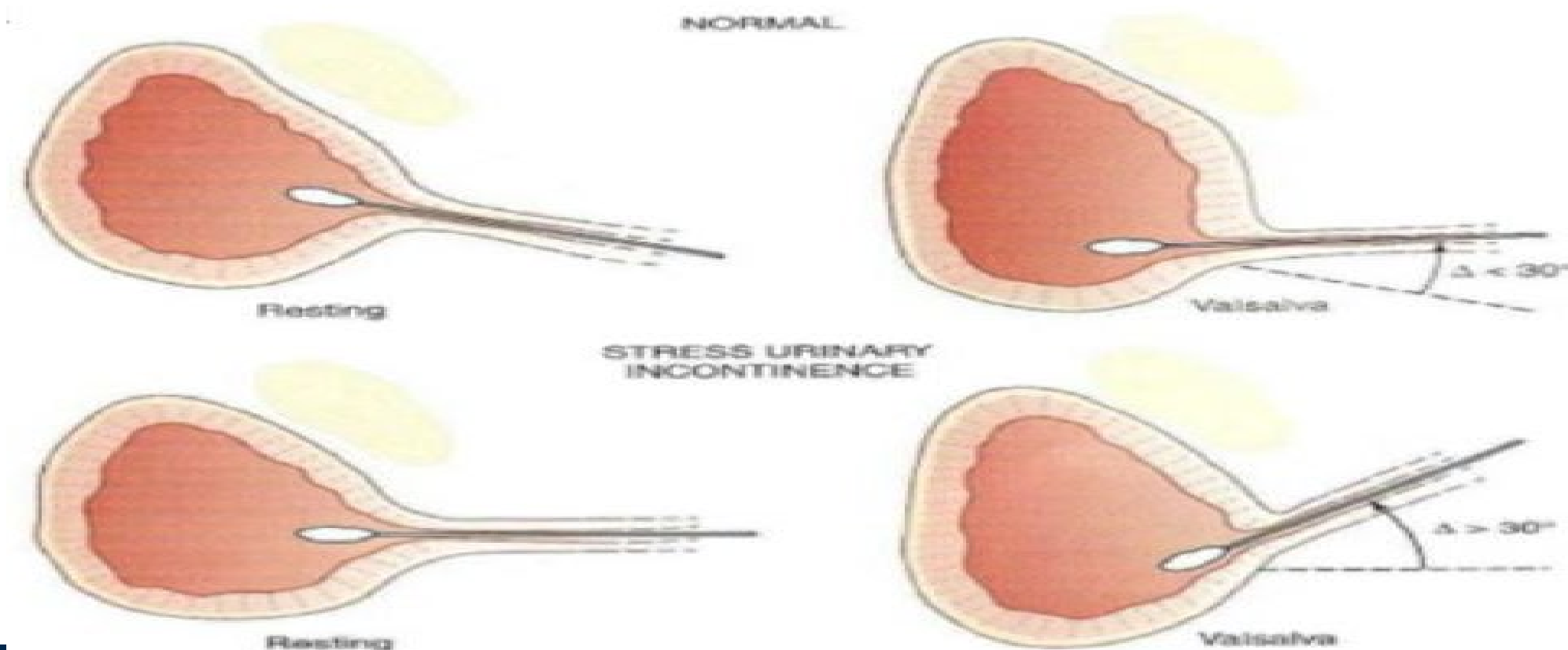
# Office Evaluation for Urinary Incontinence

- **Demonstration of Stress Incontinence**
  - Cough Stress Test
    - Ideally, both empty bladder and full bladder; supine and standing
    - \*\* May see when patient is changing positions in preparation for physical examination
    - If unable to visualize in office with standard examination and testing, consider urodynamic testing



# Office Evaluation for Urinary Incontinence

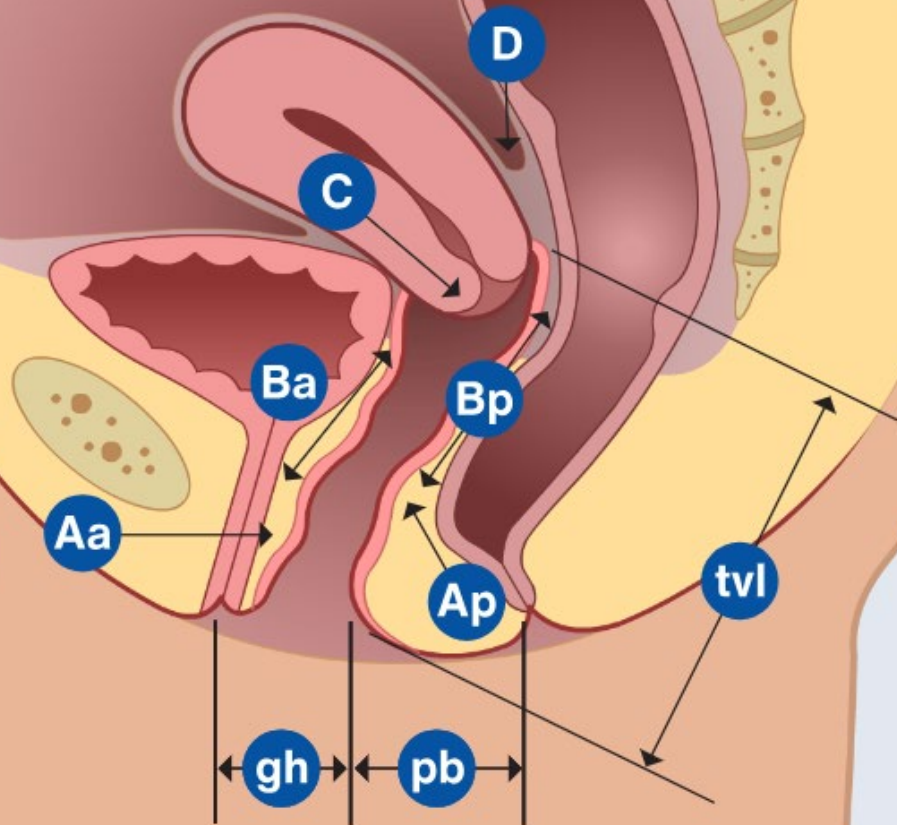
- Assessment of Urethral Mobility
  - Defined as resting angle or displacement angle of the urethra-bladder neck with maximum Valsalva



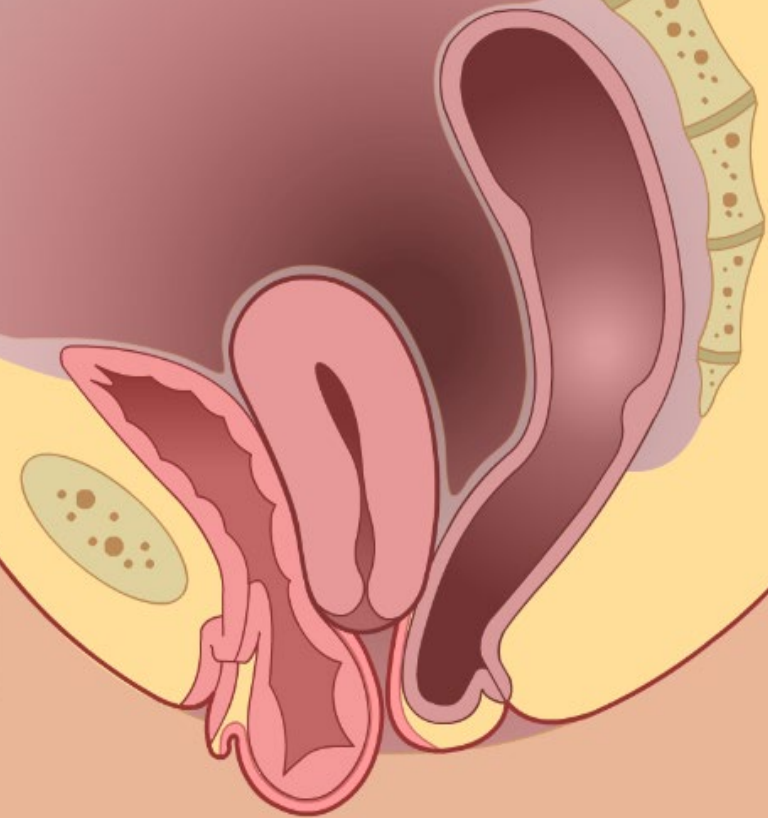
# Office Evaluation for Urinary Incontinence

- Postvoid residual (PVR) volume measurement
  - Adequate bladder emptying – PVR < 150 mL
  - When elevated - may indicate chronic urinary retention
    - May be associated with pelvic organ prolapse
  - Consider evaluation of bladder emptying mechanism with urodynamics if not associated with prolapse

Supported Pelvis



Prolapse; Increased risk for urinary retention



# Treatment for Stress Urinary Incontinence (SUI)

## Stress Urinary Incontinence

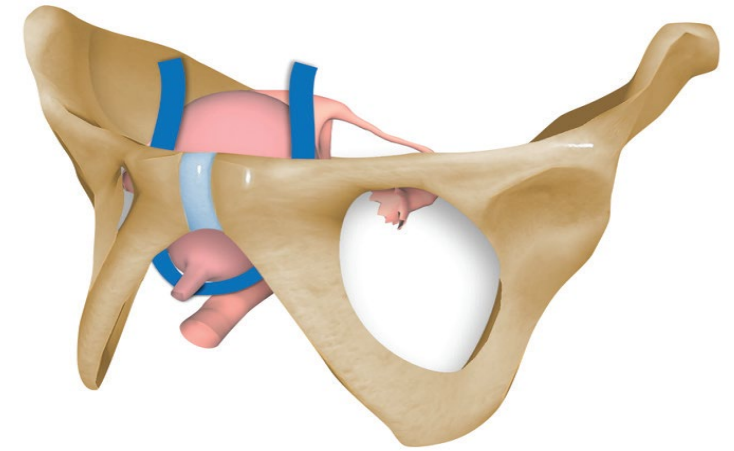
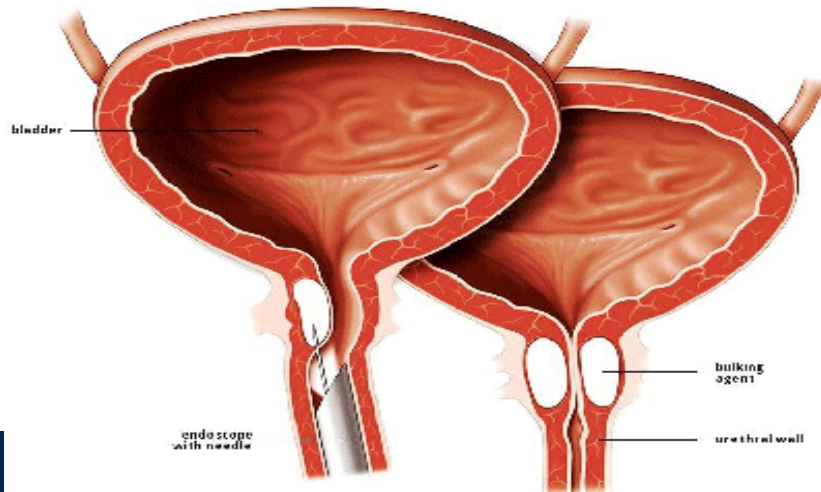
- Behavioral modifications/Fluid management
- Pelvic Floor Physical Therapy (PFPT)
- No pharmacologic agents
- Incontinence pessary
  - Option for those who are seeking intervention with improvement of symptoms right away
- Surgery



# Treatment for SUI

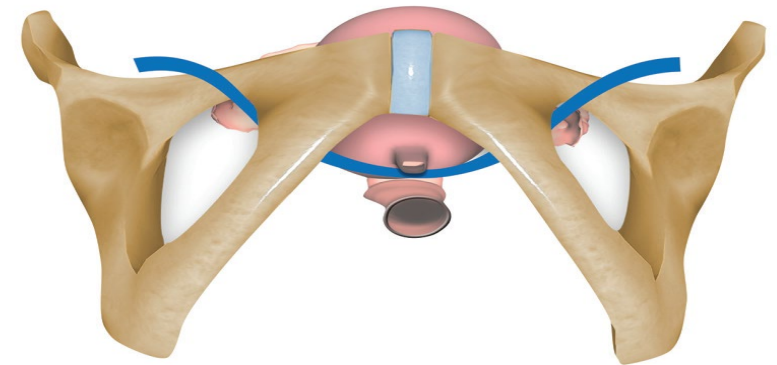
## Stress Urinary Incontinence

- Surgery
  - Midurethral sling\* (70-89.1% efficacy)
  - Burch Urethropexy (70-80% efficacy)
  - Pubovaginal sling (70-80% efficacy)
  - Urethral bulking injection\* (30-70% efficacy)



The placement of the retropubic sling is like a U

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The placement of the transobturator is a "smile"

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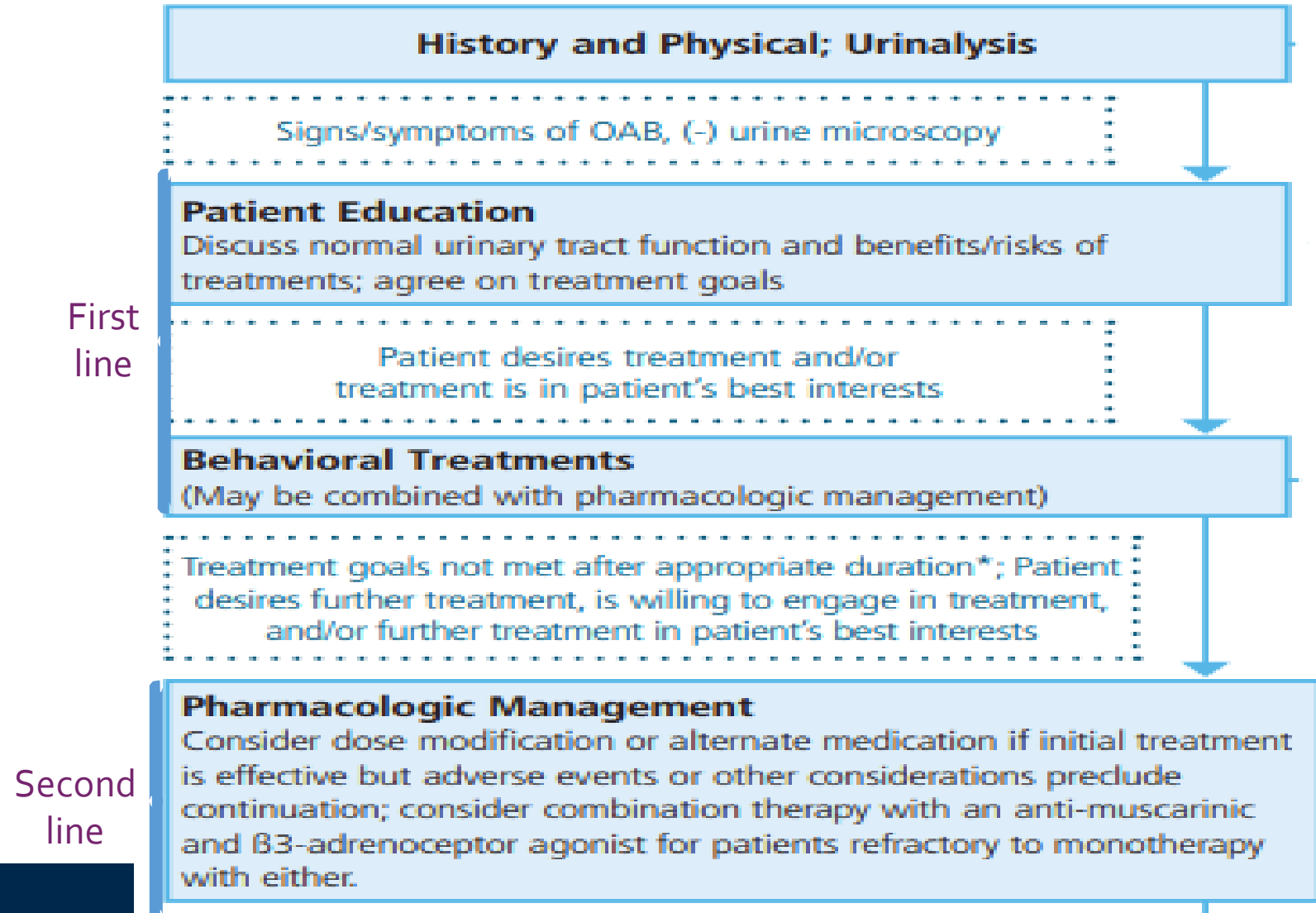




# What is urgency urinary incontinence (UUI)?

- defined as the involuntary leakage of urine, associated with a sudden compelling desire to void

## What are the initial treatments for UUI?



# Treatment for Urinary Incontinence: Urgency Urinary Incontinence:

- Behavioral Modifications/Fluid Management
  - Reduce excessive fluid intake (rec: 50-60 oz per day)
  - Weight loss: RCT found 6 month intensive weight loss program → 47% reduction of symptoms (*8% weight loss in overweight and obese patients*)
  - Avoid bladder irritants
    - Smoking Cessation: Smokers (3x greater odds) vs. nonsmokers to have overactive bladder
  - Nighttime/early-morning incontinence – fluid restriction 4 hours prior to bedtime
- Timed voiding

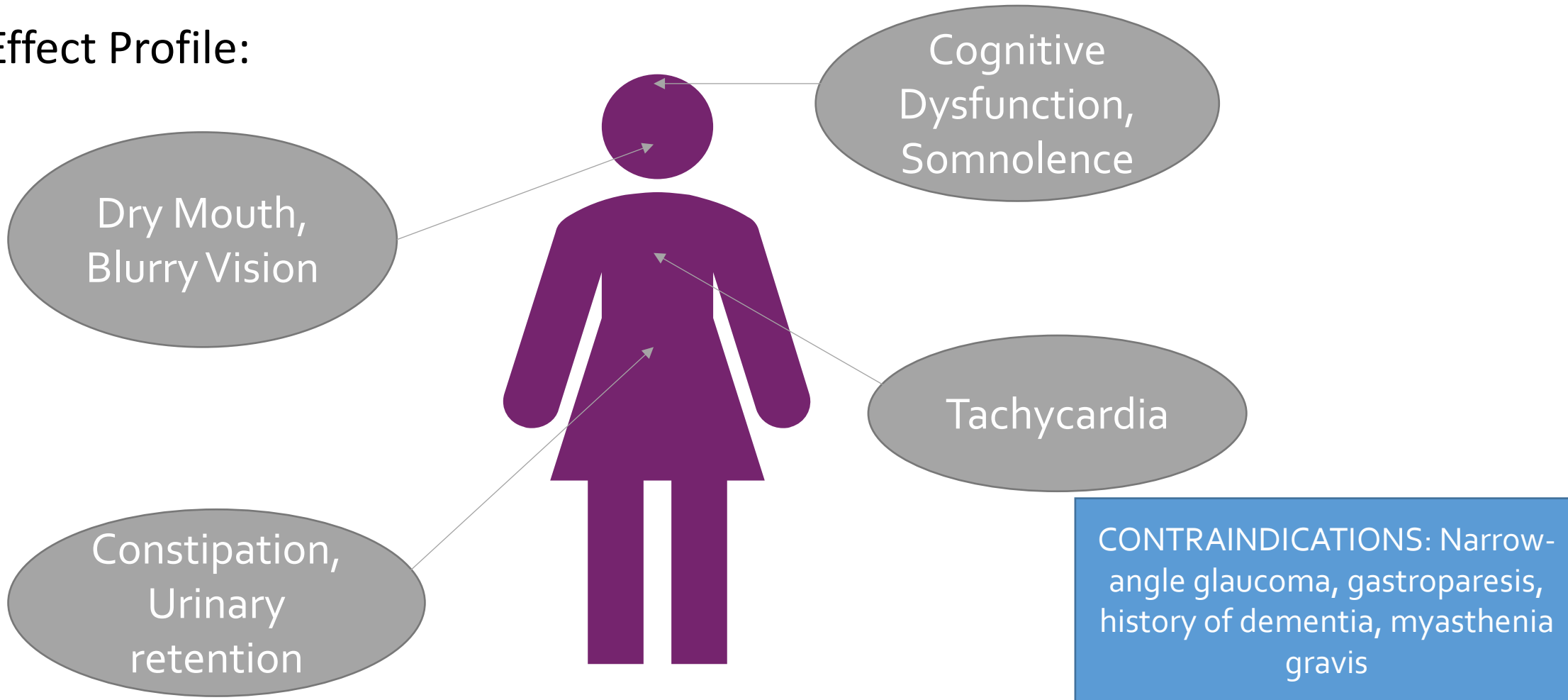
# Treatment for Urinary Incontinence: Urgency Urinary Incontinence:

- Pelvic floor physical therapy
  - Large systematic review of RCTs in women with UI; studies with one arm including PFPT published between 2001 and 2014
  - Any UI: PMPT groups two times more likely to report cure or improvement than women in control groups (67% vs. 29%, RR 2.39, 95%CI 1.64 – 3.47; 2 trials, moderate quality evidence)
  - Women with UI: more satisfied; sexual function outcomes better
- **Take home: PFPT can cure or improve symptoms of SUI and generally UI**
- **More studies on long-term effectiveness is needed**

PELVIC FLOOR PHYSICAL  
THERAPY IS  
MORE THAN KEGELS!!!

# Anticholinergics for Urgency UI

- Side Effect Profile:



- Adherence rates are low; discontinuation due to bothersome side effects is common (50% at 6 months; 36% at 12 months)

# Treatment for Urgency Urinary Incontinence

- Pharmacologic Intervention
  - Anticholinergics
    - Bothersome side effects
    - Suboptimal long-term continuation rates
  - Beta-3 adrenergic agonists
    - SE: headache, congestion, hypertension
    - Avoid in patients with severe uncontrolled hypertension, end stage renal disease, significant liver impairment
      - Second generation – Vibegron – does NOT interact with cytochrome P450 enzymes

Mirabegron (Myrbetriq), Vibegron (Gemtesa)

# Treatment for Urinary Incontinence

## Refractory Urgency Urinary Incontinence

- Percutaneous Tibial Nerve Stimulation
- Intravesical Onabotulinumtoxin A Injection
- Sacral Neuromodulation

\*\* Similar efficacy amongst these (70-80%)

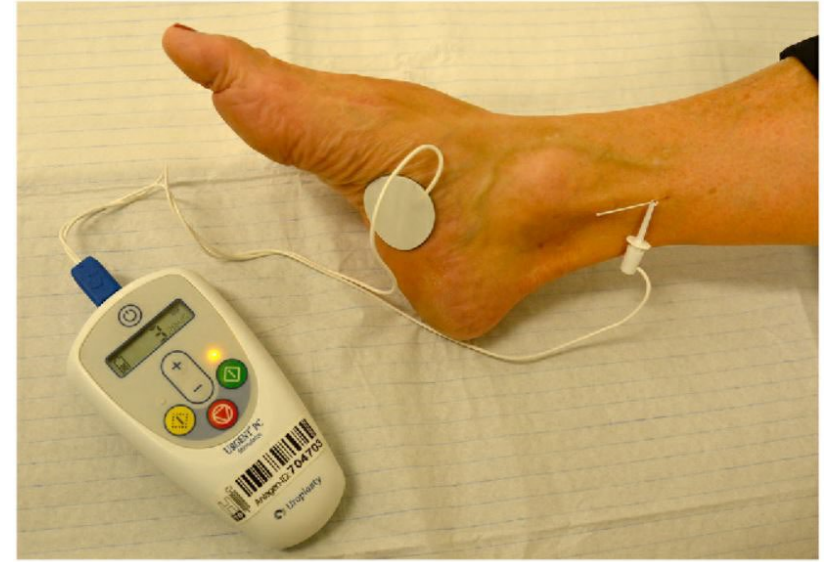
If with persistent symptoms or interested in procedural intervention, refer to Urogynecology or Female Urology



# Treatment for Refractory UUI/OAB

## Refractory Urgency Urinary Incontinence

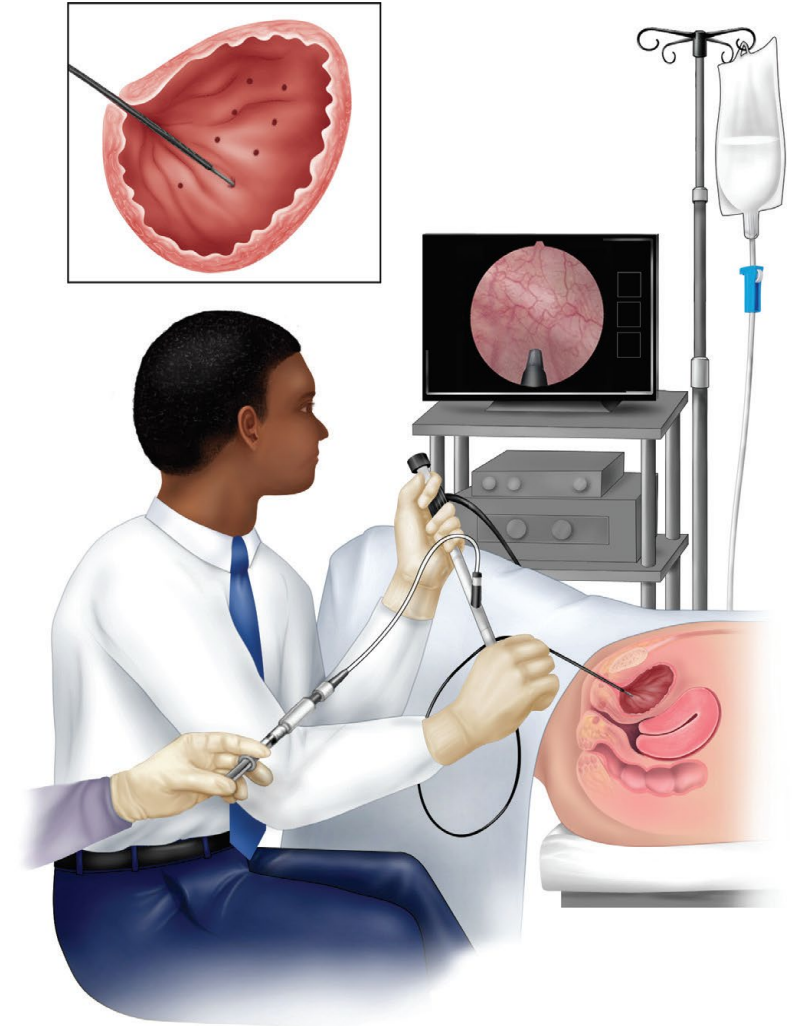
- Percutaneous Tibial Nerve Stimulation
- Small needle placed near tibial nerve
- Impulses travel to the sacral nerve roots to modulate nerves and prevent bladder spasms
- No major side effects have been reported
- Time intensive: 30 minute weekly treatments for 12 weeks, then monthly



# Treatment for Refractory UUI/OAB

## Refractory Urgency Urinary Incontinence

- Bladder onabotulinumtoxin A injection
- Risk of urinary retention/UTIs
  - CISC teaching prior to procedure
- Lasts 5-12 months
- Higher dry rates compared to antimuscarinics (27% v 13%)



# Treatment for Urinary Incontinence

## Refractory Urgency Urinary Incontinence

- Sacral Neuromodulation
- Exact mechanism unknown; modulates reflex pathways affecting bladder storage and emptying
- 2 stages:
  - 1) trial phase – electrode placement
  - 2) implantation of pulse generator
- Move to stage 2 if at least 50% improved
- ~~Avoid in women who need back imaging (MRIs)~~ Now MRI compatible

# Pearls/Considerations with management of UI

- Urinary incontinence impacts many women, but they don't always bring this up to health care professionals
  - Please screen your patients
- Differential diagnoses to consider are broad
- Treatment options vary:
  - consider patient's history, risk for adverse outcomes, and personal goals when making treatment plan

# Questions/Comments



Email: [Ackenbom@med.umich.edu](mailto:Ackenbom@med.umich.edu)

X/Twitter: [@maryackebom](https://twitter.com/maryackebom)

LinkedIn: [www.linkedin.com/in/maryackebommd](https://www.linkedin.com/in/maryackebommd)