

# Female Urinary Incontinence

*We Don't Ask, They Don't  
Tell: How to Fix the Leak*

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System

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# Objectives

- Obtain a proper history and physical
- Differentiate between types of incontinence
- Describe the treatment options
- Know when to refer a patient to a specialist

# Workshop Overview

- Urinary Incontinence – Setting the scene
- Treatment options – What we can offer
- Referral to specialist – When to know to refer

# Meet the patient - Linda

- Linda is a 31-year-old white female, G2P2, complaining of wetting herself
- Embarrassed and has stopped going to the gym or running, something she really enjoys

# Discussion 1

# Overview of Urinary Incontinence

Sonya Borrero, MD MS

# Prevalence

- Increases with age (but it is not a part of normal aging)
- 25-30% of community dwelling older women
- 50% of nursing home residents; often associated with dementia, fecal incontinence, inability to walk and transfer independently

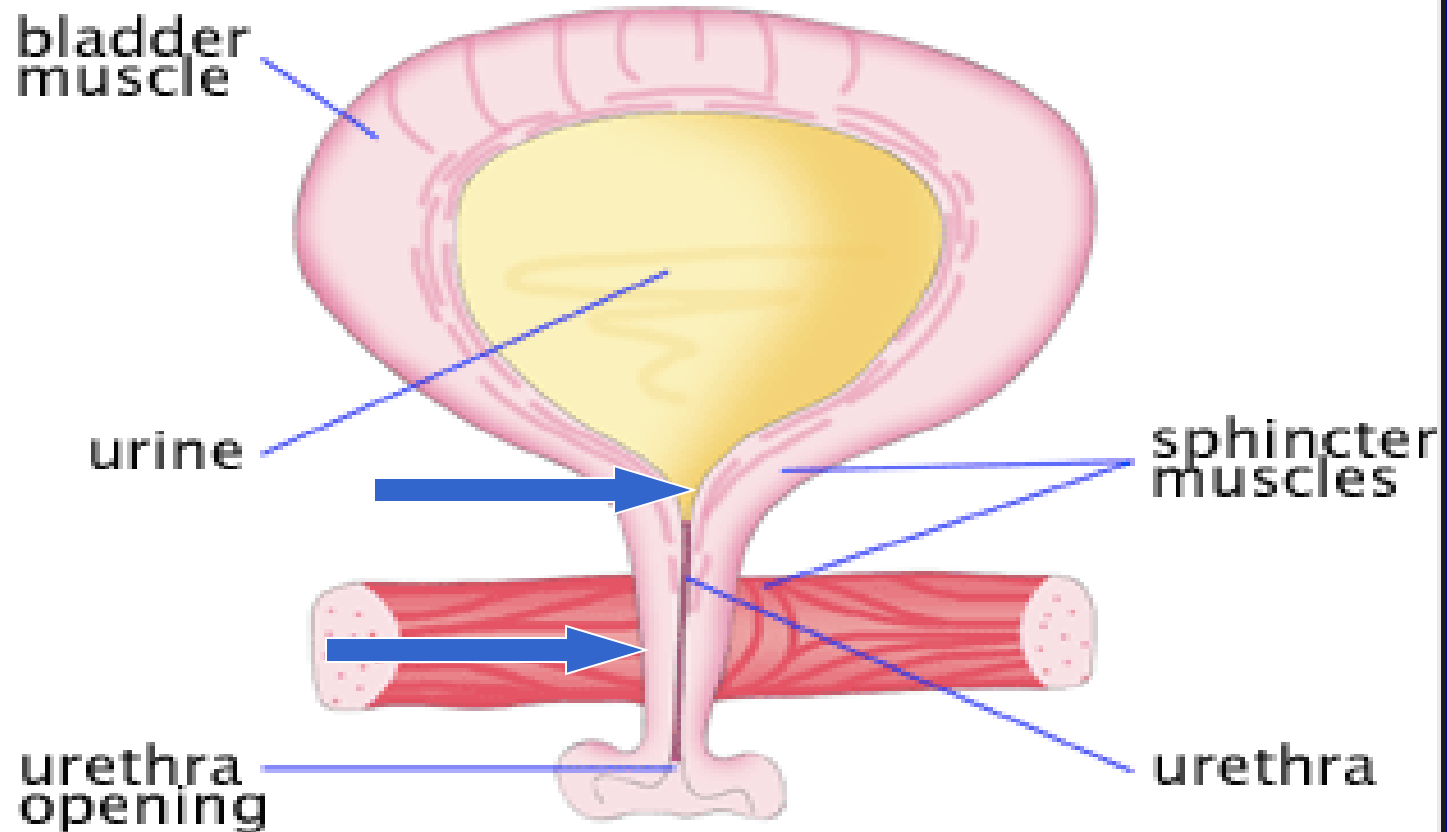


# Impact

- Underreported and underdiagnosed
- 32% of PCPs routinely ask about symptoms
- 50-75% of patients do not report symptoms
- Major economic and psychosocial burden
  - \$19 billion/year

# Anatomy

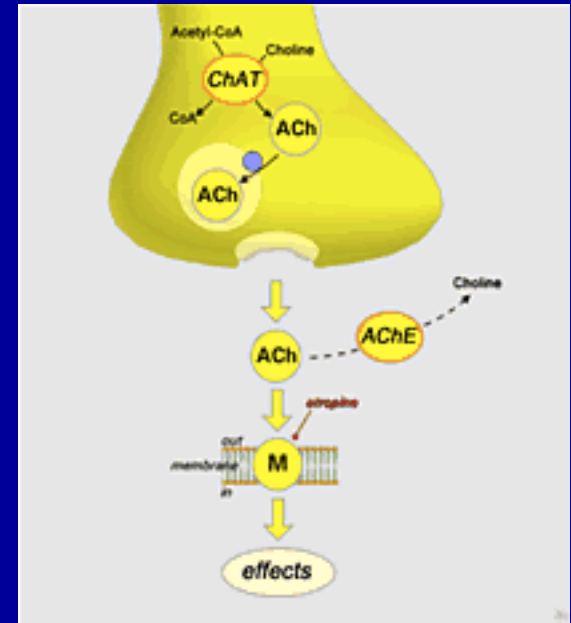
## *Bladder and Sphincter Muscles*



*Image Source: National Kidney and Urological Diseases Information Clearinghouse.*

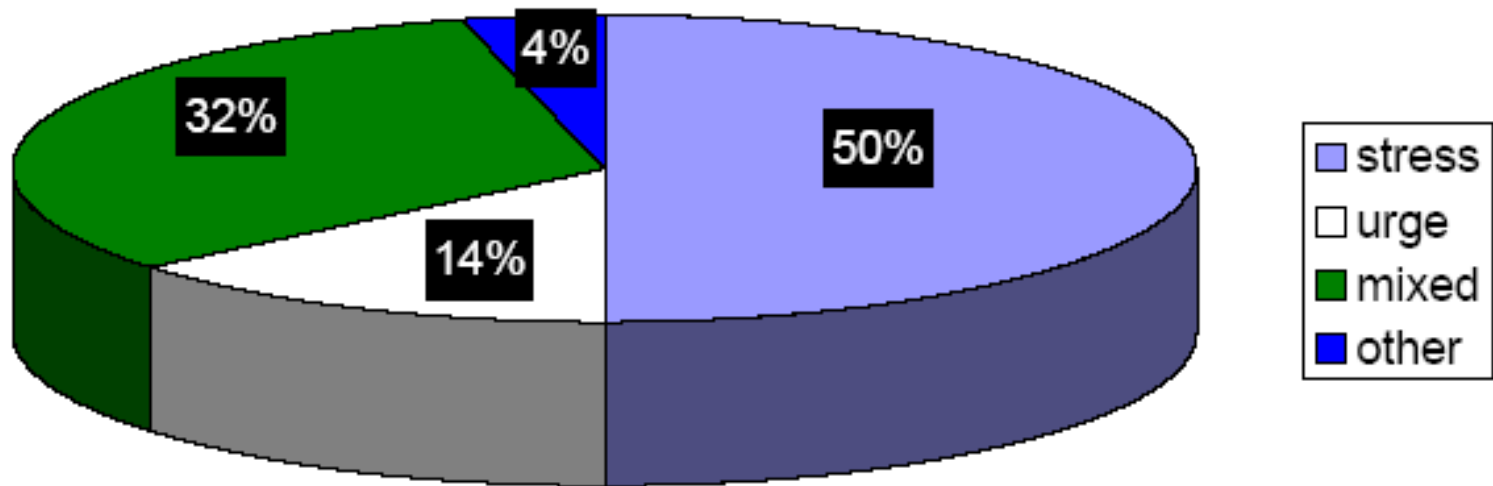
# Normal Bladder Function

- Normal bladder contraction is caused by release of ACh from cholinergic nerves
- Stimulation of muscarinic receptors on the detrusor smooth muscle



# Types of Urinary Incontinence

# Prevalence in women



# Stress Incontinence

- Increase in abdominal pressure causes loss of urine
  - Abdominal pressure caused by coughing, laughing, sneezing, running, lifting, walking



# Risk factors for Stress Incontinence

- Pregnancy and childbirth
- Menopause: loss of intrinsic urethral tone
- Hysterectomy: nerve/muscle damage
- Obesity

# Urge Incontinence

- Overactive Bladder (OAB)
  - Urgency
  - Frequency
  - Nocturia
  - With or without incontinence





# Risk Factors for OAB

- Age (>65)
- Neurological illness
  - Stroke, MS, Parkinson's, Spinal Cord injury
- Bladder obstruction
- Pelvic organ prolapse
- UTI
- Stress incontinence
- Often unknown

# Habits which may worsen OAB (and we can control)

- Excessive fluid intake
- Alcohol
- Caffeine
  - Diuretic effect
  - Increases bladder contractions
  - Irritates bladder nerves
- Carbonated beverages
- Smoking
  - Nicotine may cause bladder contractions
  - Coughing may stimulate bladder contractions

# Mixed Incontinence

- Mixed symptoms of urge and stress UI
- Diagnostic dilemma due to both symptoms
- Usually one predominant symptom and aim to treat the worst UI symptom

# Obtaining a History



# Screening

- Recommended that all women be specifically be asked about UI
- Particularly important for women who have had children, comorbid conditions assoc with UI and over age 65

# Screening Questions

- “Do you ever leak urine/water -
  - when you don’t want to?
  - when you cough/laugh/exercise?
  - on the way to the bathroom?”
- “Do you ever use pads, tissue or cloth in your underwear to catch urine?”

# History

- History can be very helpful with diagnosis
- Focus on medical, neurologic, genitourinary history
- Review voiding patterns/fluid intake
- Voiding diary
- Review medications (Rx and non-Rx)
- Explore symptoms (duration, most bothersome, frequency, precipitants)
- Assess mental status and mobility

# Medications related to UI

- Alpha-agonists
- Anticholinergics
- BZDs
- TCAs
- Diuretics
- ACE-I





# PHYSICAL EXAM

# Physical Exam

- Comprehensive and “above the waistline” to be included
- CV - volume overload
- Abdomen - masses and tenderness
- Extremities - joint mobility, function, venous stasis
- Rectal exam - masses, fecal impaction

# Physical Exam

- Inspect vaginal mucosa
  - Atrophy, vault stenosis, inflammation
- Bimanual exam - masses or tenderness
- With two fingers posteriorly in the vagina 2-4cm from the hymenal ring, ask patient to contract the muscles used to “hold their urine” or “to avoid passing gas”
  - Ability to contract
  - Strength of contraction
  - Duration of contraction

# Physical Exam

- Pelvic organ prolapse - herniation of the pelvic organs to or beyond the vaginal walls
  - Rectocele
  - Cystocele
  - Enterocele
  - Uterine Prolapse

# Back to Linda...

- Admits to incontinence with coughing and sneezing since vaginal deliveries
- Physical examination – all within normal limits
- Labs – normal urinalysis, normal post void residual
- Voiding Diary

# Discussion 2

# Treatment of Incontinence

Rachel Hess, MD, MS

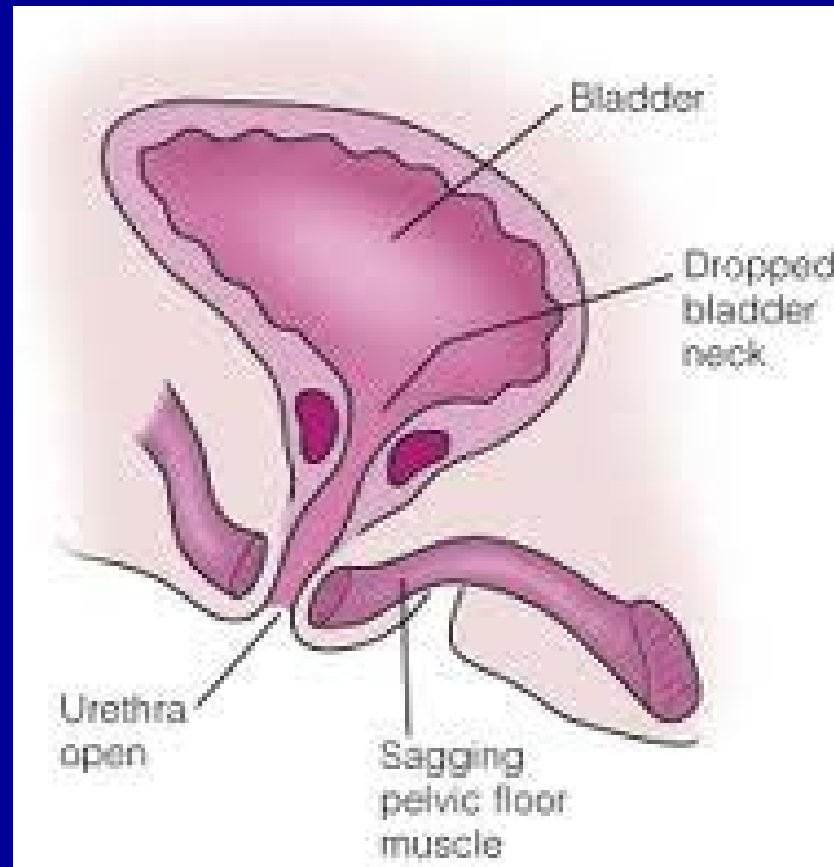
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# Disclosures

- I have received investigator initiated grant funding from Pfizer as part of a multisite study looking at diagnosis and treatment of urgency urinary incontinence in primary care.

# Stress Urinary Incontinence



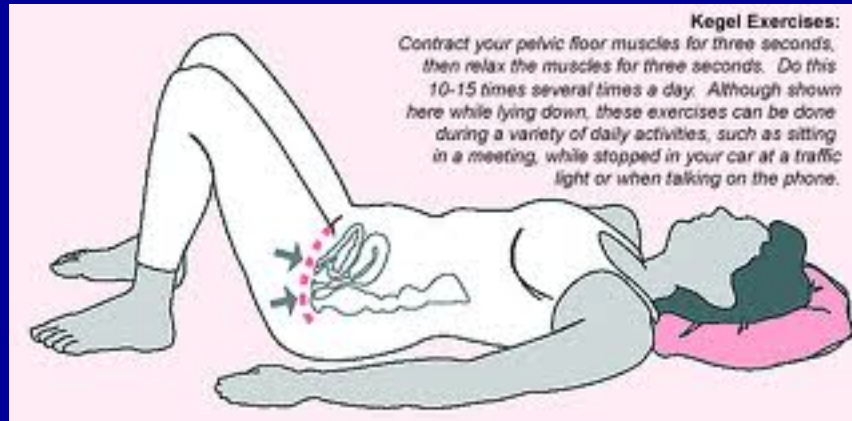
# SUI Treatment Options

- Conservative treatment
  - Lifestyle advice
  - Pelvic floor exercise
- Medications
- Surgery

# Lifestyle Advice



# Pelvic Floor Exercise





# Medication





# Urgency Urinary Incontinence

# UUI Treatment Options

- Conservative treatment
  - Lifestyle modification
  - Bladder training
- Medication
- Surgery



# Lifestyle Advice

- Weight loss
- Fluid Management
- Timed Voiding
- Bladder Training
- Pelvic Floor Muscle Exercises



# Bladder Training

- Patient is instructed to void every hour during the day
- The interval is increased by 15-30 minutes per week
- Goal to reach 2-3 hour voiding intervals

# Medication

- Antimuscarinics
  - Good efficacy (about 30% reduction in incontinence episodes compared to placebo)
  - Blocks acetylcholine from binding to the muscarinic receptors on the detrusor muscle to decrease the contraction of the bladder
  - Side effects: dry mouth, constipation, blurred vision (M3), cognitive dysfunction, memory loss, attention deficit, cardiovascular (M1 & 2—less common)

# Discussion 3

# Advanced treatments for (stress) incontinence

Briar Duffy, MD

# Urodynamic evaluation

- Testing imprecise
  - Not standardized/reproducible, artificial lab situation, poor sensitivity/specificity
- Indications are controversial
  - Diagnosis of type of incontinence unclear
  - Symptoms do not correlate with exam
  - Treatment failure
  - May be done prior to surgery (most controversial)

# Non-invasive



- Pessaries—ring or dish shaped
  - May increase maximum urethral closure pressure or increase functional urethral length
  - Inexpensive, safe
  - Successful fit: 71-89%
    - More likely to fit: no hysterectomy or prolapse surgery
    - Less likely: posterior prolapse, vaginal length < 6cm, genital hiatus > 4cm
  - Continue to use after 6 months: 55-89%

Incontinence dish with support; incontinence ring

# Choosing a pessary



- Largest pessary that the patient can wear comfortably is generally the most effective
- Examiner's finger should pass easily between the pessary and the vaginal wall
- In office, patient should:
  - Cough to test for any leakage of urine
  - Stand, sit, squat and perform Valsalva's maneuvers to be sure that the device will not become dislodged
  - Try to void. If unable to void with the pessary in position, the device should be removed and the patient should be fitted with the next smaller size



# Pessary next steps

- Follow-up
  - Remove pessary to examine vagina for irritation, pressure sores or allergic reaction; clean pessary with soap/water
  - Few days → few weeks → several months
- Potential complications
  - Vaginal odor/discharge:
    - Acidic vaginal gel such as Trimo-San
    - Douche with vinegar or hydrogen peroxide
  - Vaginal ulceration:
    - Likely due to reduced estrogen
    - If thin vaginal walls notes, treat with vaginal estrogen before or concurrently with pessary

# Electrical stimulation

- Noninvasive, implantable, percutaneous
- Poorly studied (small, non-randomized, non-blinded, case series)
- External magnetic stimulation: similarly poorly studied

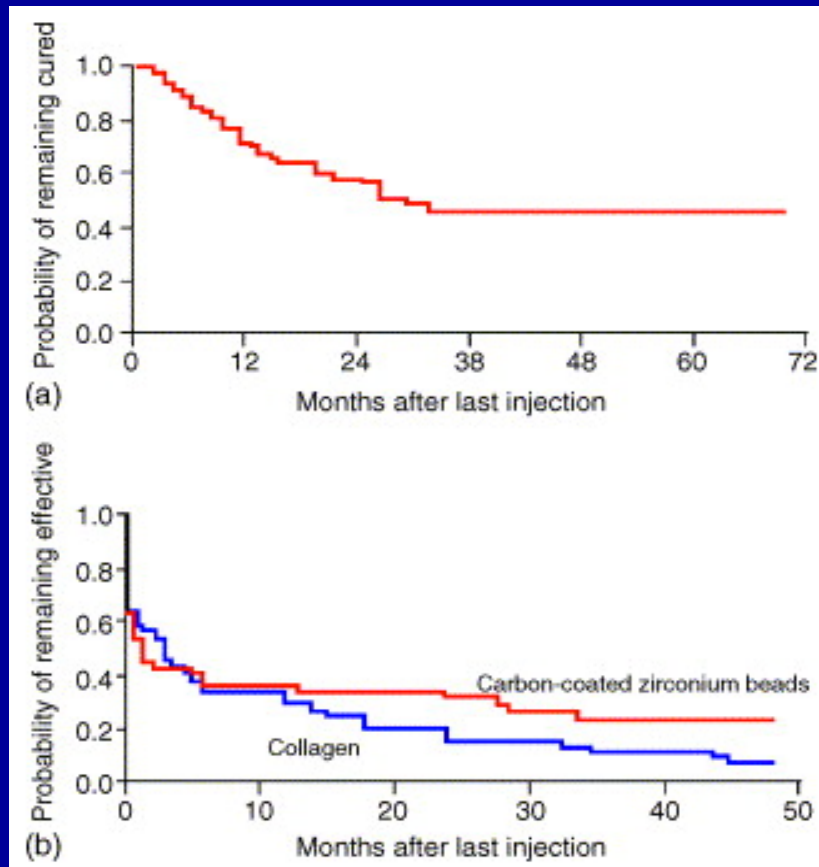
# Minimally invasive

- Periurethral injection
  - Focal expansion of periurethral tissues → increased pressure transmission to urethra
  - Original use: sphincter deficiency
  - Outpatient, local anesthesia
  - Cystoscopic, transurethral vs. transvaginal, periurethral
  - Most appropriate patients: high surgical morbidity, several previous operations, failed conservative tx, not a candidate for medications

# Injections, continued

- Contigen®: glutaraldehyde cross-linked bovine collagen
  - Biodegradable → transient effect
  - Potential allergic reaction
  - 93% initially cured or significant improvement
    - 24% proceeded with sling due to persistent symptoms
- Durasphere®: carbon-coated zirconium beads
  - May migrate or form granulomas
- Macroplastique®: silicone
  - Theoretical risk of autoimmune d/o
- NASHA/Dx: dextranomer microspheres in a carrier gel of non-animal stabilized hyaluronic acid
  - Biodegradable

# Duration of injection effect



Durability of cure after last collagen injection. Cure was defined as no incontinence symptoms or pad use (questionnaire).

Durability of efficacy after injection with collagen or carbon-coated zirconium beads. Efficacy was based on an incontinence questionnaire.

# Injections, continued

- Efficacy: around 75% of women have short term improvement or cure
- Duration of effect:
  - Unknown
  - At least months
- Procedure cheaper than invasive surgery
  - Transient effect → repeat procedures → unclear long-term cost
- Low complication rate
- Virtually no evidence for choosing one agent over another

# Operations

- Mid-urethral sling: synthetic
  - Vaginal insertion, tension free
  - Shorter operative duration, hospital stay, recovery
  - Fewer new urgency symptoms
  - Most common complication: bladder perforation
  - Cure: 60-95%
    - Related to urge symptoms pre- and perioperatively
- Bladder neck/pubovaginal sling: autologous or synthetic mesh
  - Cure: 82-100%

# Surgical considerations

- Appropriate patients
  - Fail conservative therapy, finished childbearing
- Pelvic organ prolapse: more often have combined laparoscopic/open procedure
- Mixed incontinence:
  - If urge predominant, try meds first
  - Similar SUI symptom relief
- Obesity
  - Known risk factor for incontinence
  - Does not independently confer surgical risk



# Very invasive operations

- Artificial sphincter
  - Complications common
  - About 50% of women had device removed due to complications
  - Only 37% continue to use it after 7 years
- Urinary diversion
  - High complication rate
  - Ostomies, suprapubic catheter

# Wrap up and Questions