

# Urinary Incontinence in the Elderly

Lily A. Arya, MD, MS

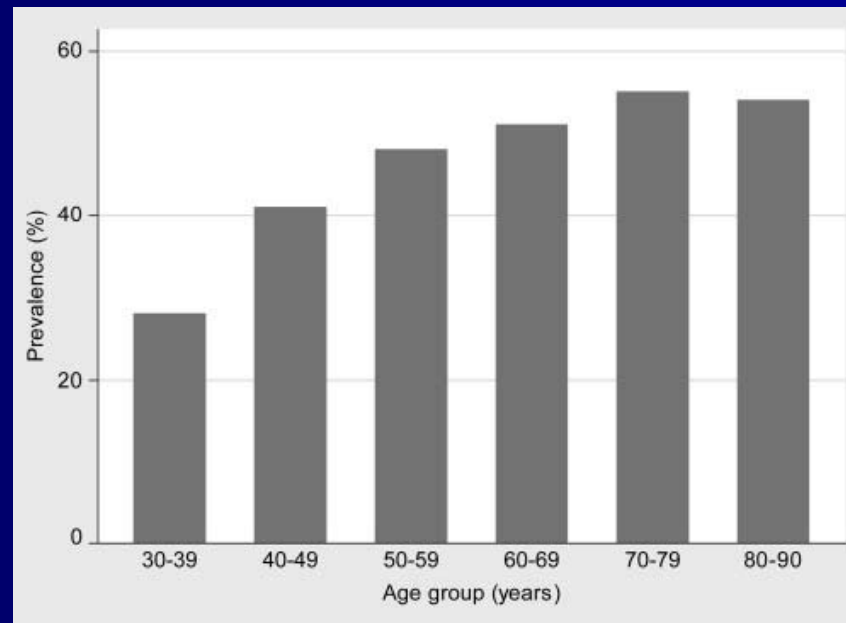
Associate Professor and Chief

Penn Urogynecology

# What is UI

- Unwanted leakage of urine
- UI that is a social or hygienic problem needs treatment <sup>1-2</sup>
- Leads to pad use, shame, sense of self
- Bathroom mapping, social isolation and depression
- UI has a severe impact on QOL

# Prevalence of UI in elderly



Prevalence of urinary incontinence by decade of life.

*Melville JLet al. Urinary incontinence in US women.  
Arch Intern Med 2005;165:537-42.*

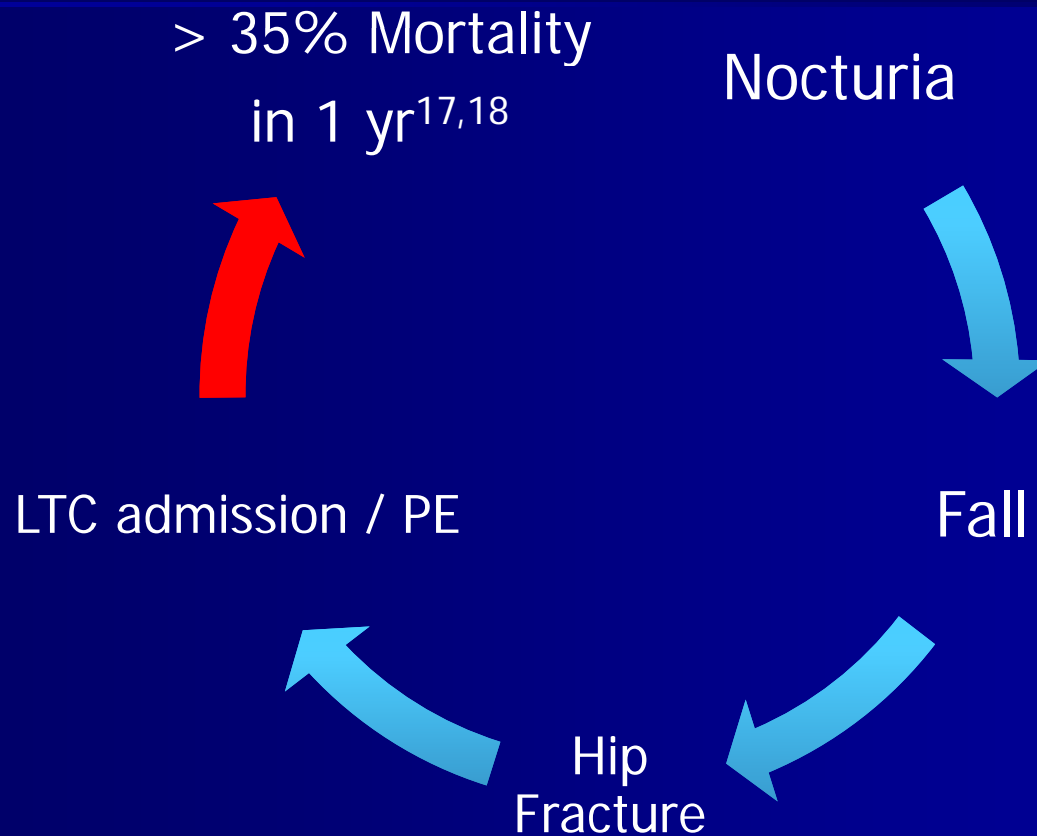
# How common?

- UI is among the 10 most common chronic conditions in the U.S.
- UI is more common than hypertension, depression or diabetes <sup>1-3</sup>

# Why care?

- Clinically significant **anxiety** occurs in 30%-50% of women with UI
- Clinically significant **depression** occurs in 20-30% of women with UI
- UI imposes a severe burden on care-givers
- UI is the leading cause for admission into nursing homes

# Fall Risk / Mobility



# Cost of Urinary Incontinence

- Incontinence aisle
- Advertisements directed at women
- The direct cost of UI (\$12.4 billion annually) is greater than the cost of breast, cervical, uterine and ovarian cancers combined. <sup>5-6</sup>
- NIH is pouring millions of \$\$ into cost-effective Rx



# Barriers to Care

Myth	Fact
If the patient is bothered by UI, she will tell me	More than 50% women with <u>severe</u> UI do not speak to the physician because of embarrassment <sup>7</sup>
UI is 'natural' after childbirth	Women often 'accept' UI but it has a severe impact on their self-image, emotional well being and interpersonal relationships
UI is a 'normal' part of aging	<ul style="list-style-type: none"><li>- UI increases dependence of older adults on care-givers</li><li>- predisposes admission to LTC</li><li>- increases the rate of serious medical conditions</li></ul>
If I get surgery for UI, I will end up with a bag.	Several non-surgical & minimally invasive surgical treatments are available for UI.



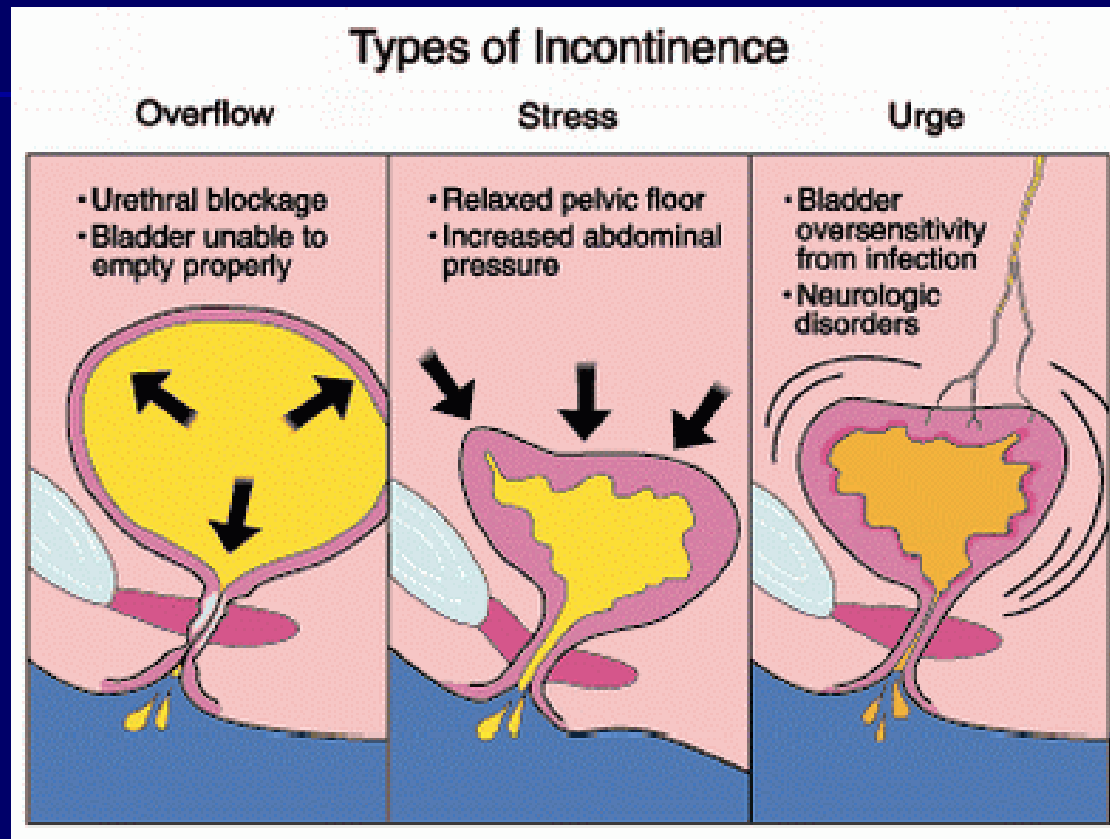
# Stress Urinary Incontinence



# Urge Incontinence



# Underlying Cause



Mixed Incontinence – Stress + Urge

# Case 1



- Ruth: 75 year old G2P2
- High functioning, likes to socialize
- 'Professional' volunteer
- "Every time I play tennis I leak urine".
- " I will stop playing tennis".

# Case 2



- Marge: 83 year old
- Lives at home with help from daughter & aide
- Needs assistance with IADLs > 75% of the time
- Marge is always looking for a bathroom
- Daughter : "She never want to go anywhere"
- "Nothing can be done. I don't want a bag".

# The First Step



- Ask the Question!
- Never use the term 'incontinence'!
- 'Are you having trouble controlling your bladder?'
- Do you leak urine when you cough & sneeze?
- Do you leak on the way to the bathroom?
- A single question by an MD increases reporting of UI by 20%

# Basic Work up of UI in Elderly

- Help dispel Myths
  - 'Nothing can be done'
  - 'If I get surgery, I will end up with a bag'
- Review Medications: that cause UI, Anti-cholinergic burden
- Assess Mobility Issues / Fall risk
- Assess Cognitive Issues
- Assess and treat Constipation, UTI

# Exam and Testing

- Urinalysis
- Exam: cough stress test, atrophic vaginitis, post void residual volume

Leave it to the urogynecologist !

- Urodynamics: not essential for a basic work up



# Medications that cause UI

- Loop Diuretics
- Antipsychotics
- Tricyclic antidepressants
- Alpha adrenergic blockers
- Calcium channel blockers
- ACE inhibitors
- Gabapentin

# Treatment of UI in elderly

- Behavioral Treatment
- Medications
- Anti-incontinence rings
- Minimally Invasive Surgery

# Behavioral Treatment *Bladder Diary*



UNIVERSITY OF  
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HEALTH SYSTEM

Department of Obstetrics and Gynecology

Mrs. Smith 42yrs VOIDING CHART

1	2	3	4	5	6
Time	Amount Voided	Activity	Leak Volume	Urge Present	Amount/Type Fluid Intake
7 am	300cc	wake up	2	Yes	
7:30 am					Coffee 16oz
8 am	150cc			Yes	Water 8oz
8:30 am	150cc			Yes	Orange Juice 8oz
9 am	250cc	Cough	1	Yes	
9:30 am	250cc			Yes	Decaf Coffee 16oz
10 am	175cc			Yes	
12 noon	150cc				Diet Coke 12oz
2 pm	250cc	Dang Dishes	1	Yes	Water 8oz
4 pm	150cc	Grocery Shopping			
5:30 p.m.	250cc	Coming home	2	Yes	
7 pm					Water 8oz
8:30 p.m.	175cc	Watching TV			Decaf Tea 12oz
10 pm	150cc	Going to Bed			
2 a.m.	250cc				10x 8oz = 80oz
	2400 cc				80oz x 30cc = 2400cc
	13 voids				

# Behavioral Rx *continued*

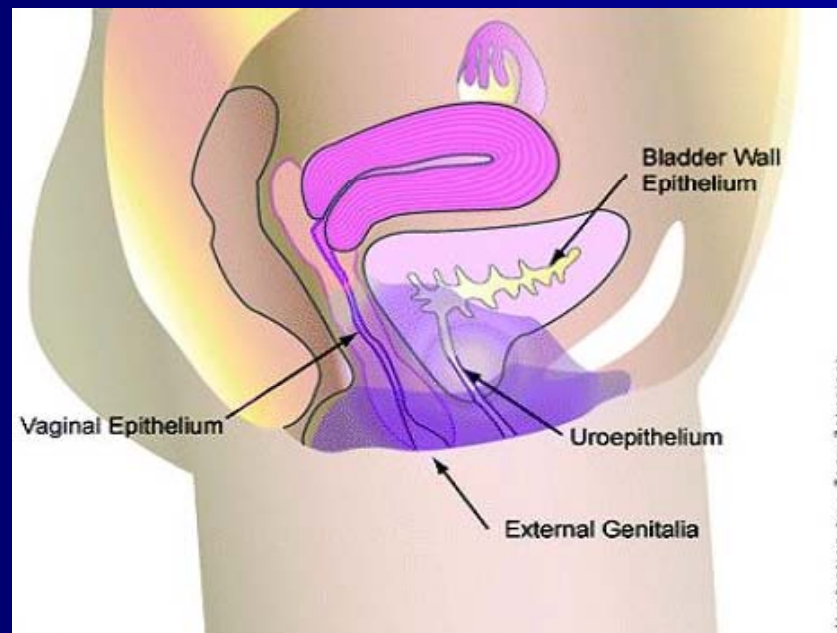
## Constipation

- Acute onset of Constipation/Stool Impaction: can cause temporary UI
  - Distended sigmoid can block parasympathetic sacral nerves, pressure on bladder
- Chronic constipation makes treatment of UI more difficult

# Behavioral Rx *continued*

## Recurrent UTI

- In RCTs, vaginal estrogen cream reduces recurrent UTI



# Behavioral Rx *continued*

## Pelvic floor exercises

- Pelvic Muscle Exercises – Kegel
  - Makes patients proactive in their own care
  - Improves efficacy of other treatments
    - “Don’t let gas come out”
    - 10 squeezes three times a day
- Bladder Training
  - Frequent voluntary voiding



# Institutionalized Patients

- Behavioral treatment is the mainstay in institutionalized patients
- 50% prevalence of UI/OAB<sup>23</sup>
- Timed Voiding, Rx of UTI and constipation
- Don't Fear the Beers<sup>24</sup>
  - Oxybutynin IR, Tolterodine IR on Beers Criteria
  - CMS list of Unnecessary Drugs:  
Anticholinergics<sup>25</sup>

# Anti-cholinergic Medications

- Annoying Side-effects : Dry mouth, constipation
- Elderly ↑ vulnerability to toxicity: Cognitive S.E.
- 600 known anti-cholinergic medications
  - Increased anti-cholinergic load overall
- Low efficacy in clinical practice
- Adherence is shockingly low: 10% at 1 yr
- Use if behavioral treatment fails, monitor carefully



# Rings and Pessaries

- Anti-incontinence rings are for treating SUI
- Pessaries can sometimes worsen SUI



# Rings: Stress or Mixed incontinence



If we find one that fits,  
Efficacy is 50%

Risks: Erosion,  
Cleaning

# Surgery for UI

- For properly selected cases
  - Is UI affecting her quality of life?
  - SUI vs. UUI
  - UI only or UI with Prolapse?
  - Assess frailty: one of the best predictors of post-operative outcome
- Most surgery for UI is office based or outpatient
- Admission is rarely needed

# Four Minimally Invasive Procedures for UI

SUI	UUI
Bulking Agents	Bladder Pacemaker
Sling	Botox Injections

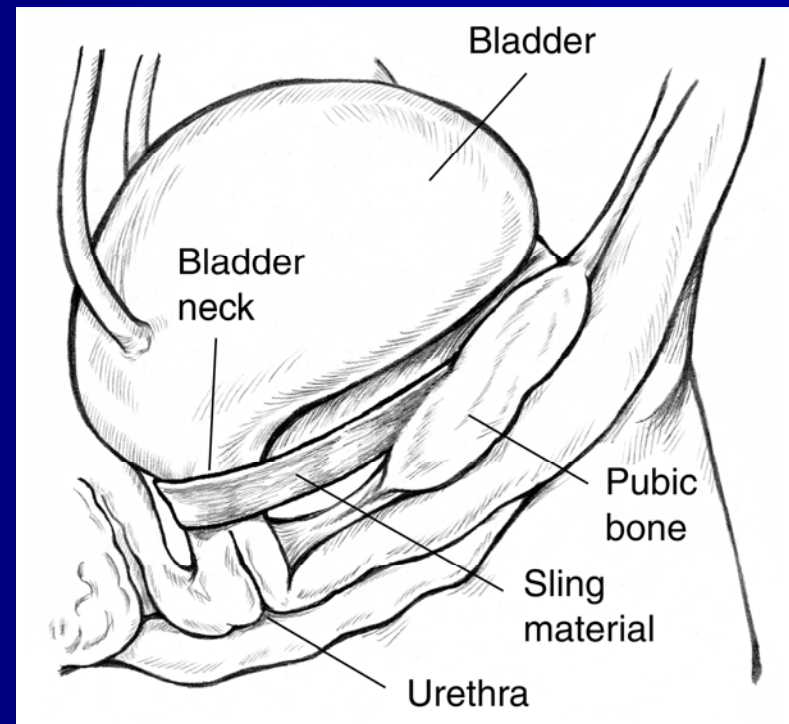
# Periurethral Bulking Agents

- Office procedure
- Local anesthesia
- 10 minutes
- Success Rate:  
50% -75% at 1 year
- Risk: Temporary retention



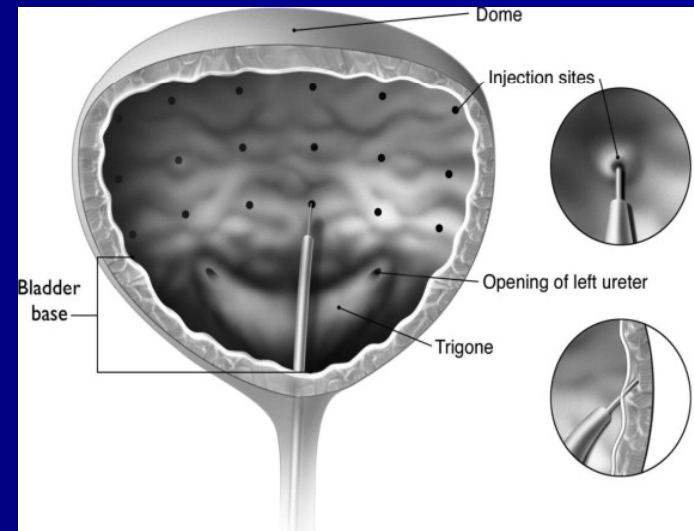
# Sling surgery

- For SUI
- Minimally invasive
- Outpatient
- 30 min
- MAC anesthesia
- Success: 75-80%
- Risk: bleeding, infection, injury

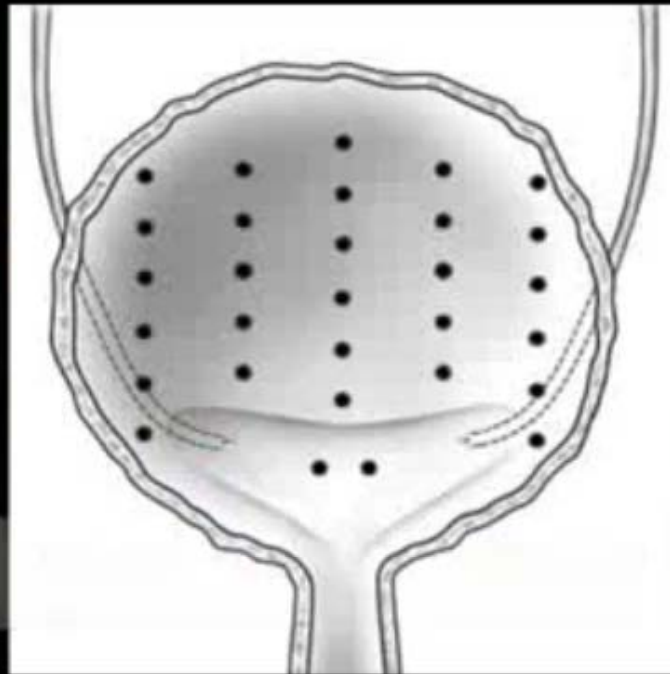


# Botox Injections in the bladder

- Office procedure
- 10 minutes under local anesthesia
- Efficacy: 75% at 8 m to 1 yr
- Risk: urinary retention 2%



# Botox injections

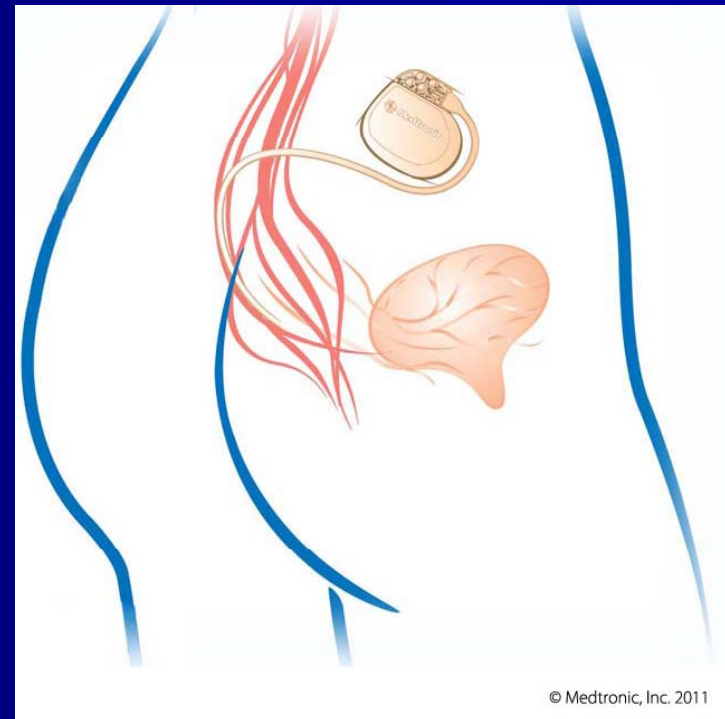




# Bladder Pacemaker:

## Sacral Nerve stimulation

- Since 1997
- Similar to a cardiac pacemaker
- 2-stage procedure
- Each stage takes 30-45 minutes
- Local anesthesia
- Efficacy: 75% for 4 yrs
- Risk: no trunk MRI



# Two stage Bladder Pacemaker



# Bladder Pacemaker



# Botox

# Bladder Pacemaker

Nerve endings in bladder muscle	Afferent nerves of the bladder
Efficacy: 75%	Efficacy: 75%
Office Based	Outpatient
\$3000/- per year	\$15 K for 4 years

# ROSETTA

- Randomized controlled trial of Bladder pacemaker vs. Botox injection
- Cost-effectiveness study
- Penn is a part of the 8-center Network sponsored by the NIH
- Women who have failed conservative treatment and medications

# Case 1



- Ruth: 75 year old P2
- 'Professional' volunteer
- Diagnosis: SUI
- Rx: Biofeedback with PT (some benefit)
- Anti-incontinence ring: she hated it
- Refused bulking agent, had sling
- Walked a 3 K six months after surgery

# Case 2 Continued...



- Marge: 83 year old P2
- Lives at home with help, 'Bathroom mapping'
- Diagnosis: UUI
- Rx: Bladder diary, Kegel, Vaginal E2, Low dose anti-cholinergic over 12 wks
- Bladder Pacemaker
- Can now sit through a baseball game
- Home made scones

# Role of the Geriatrician

- Ask the Question!
- Dispel Myths about treatment!
- Review Medications
- Check for UTI & constipation
- Conservative Rx: Bladder Diary, Pelvic PT, ? low dose anti-cholinergic
- Procedures: Provide basic information



# When to Refer

- Incontinence not responding to conservative treatment
- Significant prolapse
- Elevated PVR
- Hx Pelvic surgery, irradiation
- associated neurologic conditions

# UI Providers

- Lily Arya, Urogyn, HUP and Radnor
- Heidi Harvie, Urogyn, PAH and CHH
- Ariana Smith, Urology, PAH and HUP



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