

# Geriatric incontinence



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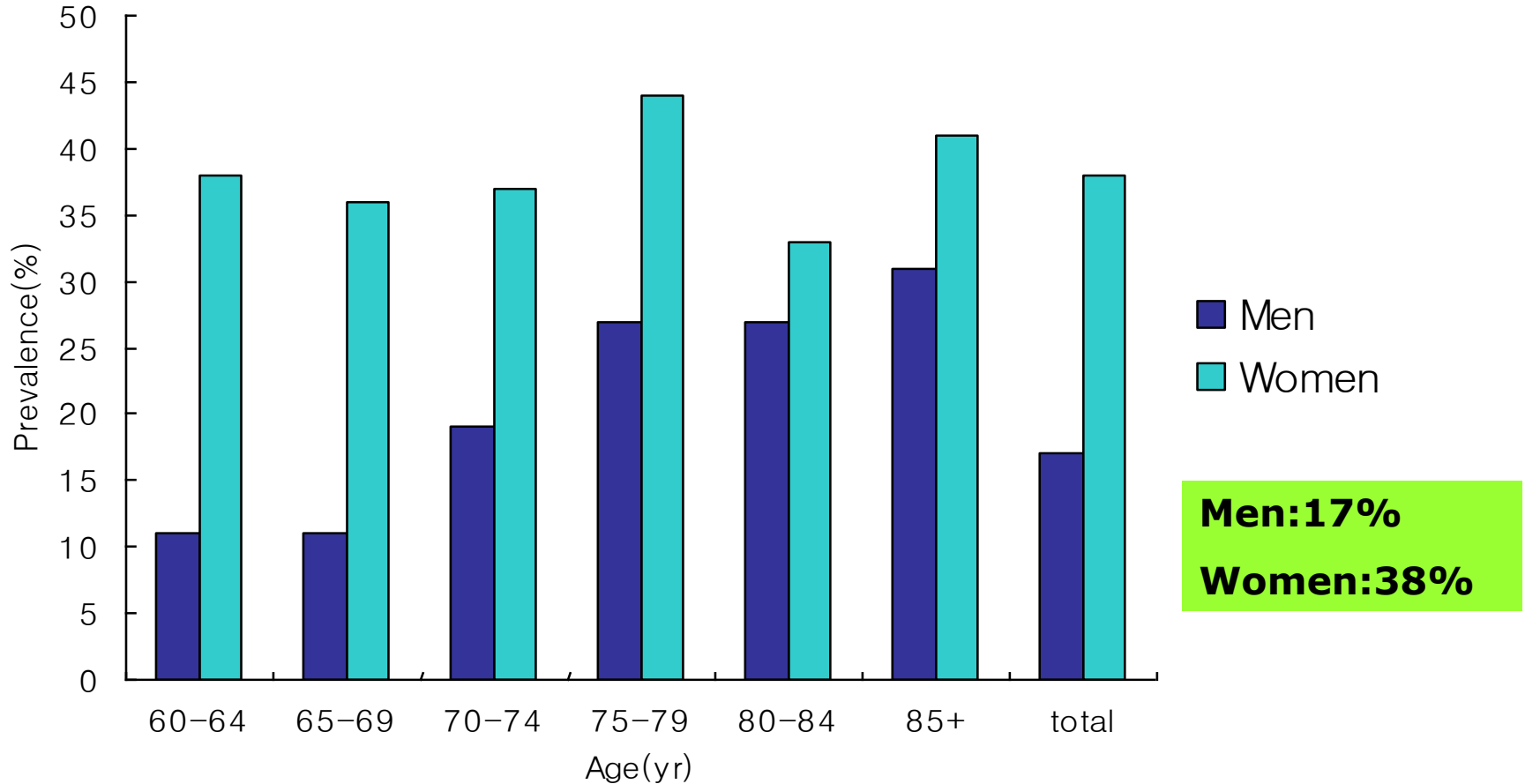
# Geriatrics

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- **Incontinence**
- **Immobility**
- **Impaired intellect**
- **Instability**
  
- **Geriatric syndrome**
  - not fit into discrete disease categories
  - concept, poorly defined
    - delirium
    - falls
    - frailty
    - dizziness
    - syncope
    - urinary incontinence

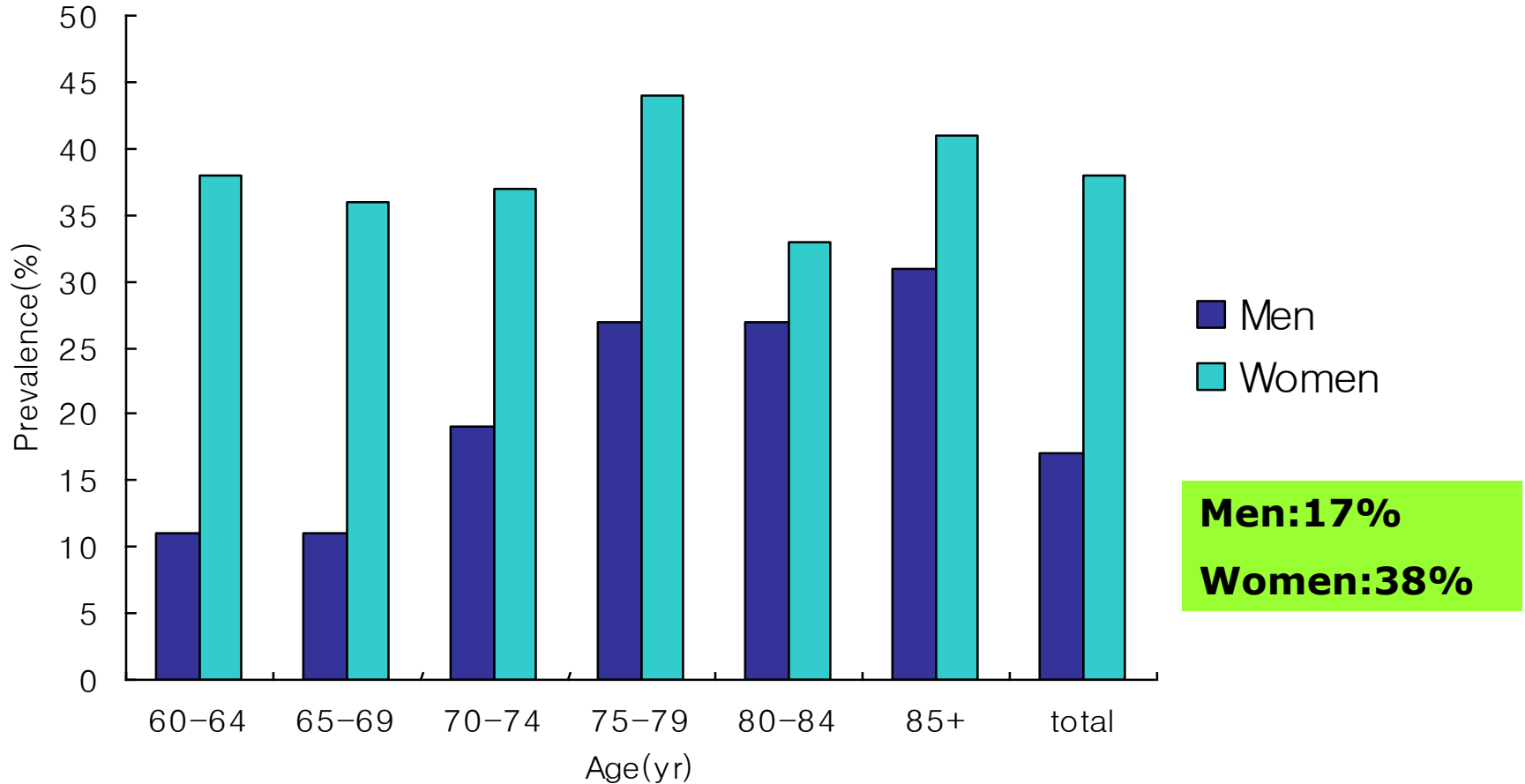
Inouye SK et al. J Am Geriatr Soc 55:780–791, 2007

# Geriatric incontinence Prevalence by gender



1999-2000 NHANES (National Health and Nutrition Examination Survey) in the USA

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1999-2000 NHANES (National Health and Nutrition Examination Survey) in the USA

# Basic types of urinary incontinence

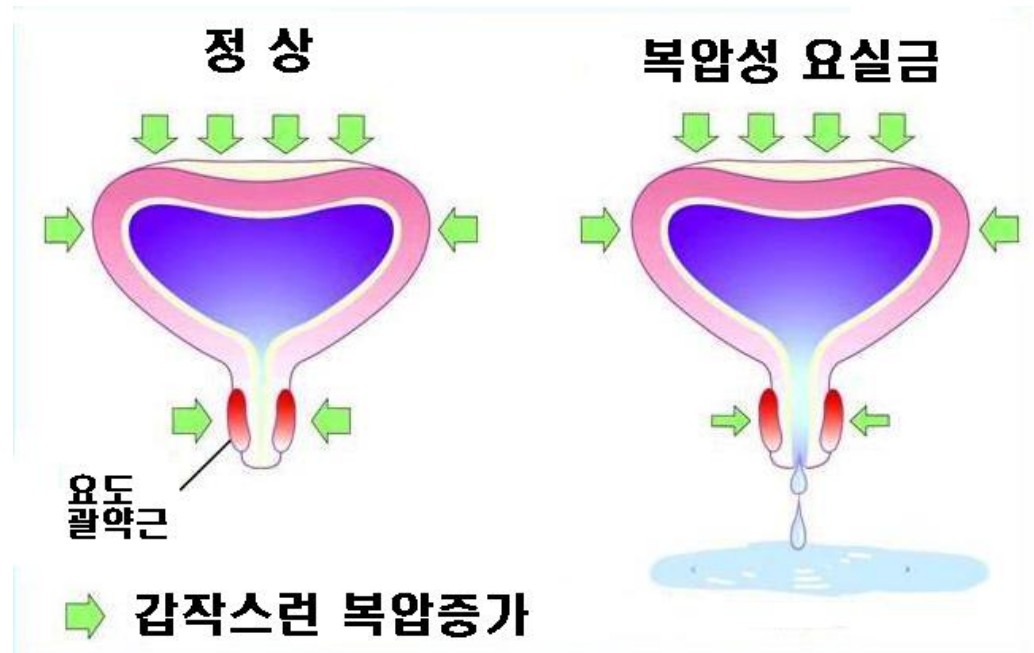
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- **Urge incontinence**
- **Stress incontinence**
- **Mixed incontinence**
- **Overflow incontinence**
- **Functional incontinence**

# 복압성 요실금

## Stress incontinence

- 기침, 웃음, 줄넘기 등 배에 힘이 들어갈 때 요실금
- 골반근육의 약화로 방광과 요도가 처지는 것: 분만, 수술, 비만



**콜록콜록 = 찢김**

**출산, 노화에 의한 골반근육약화**

# 절박성 요실금

## Urge incontinence



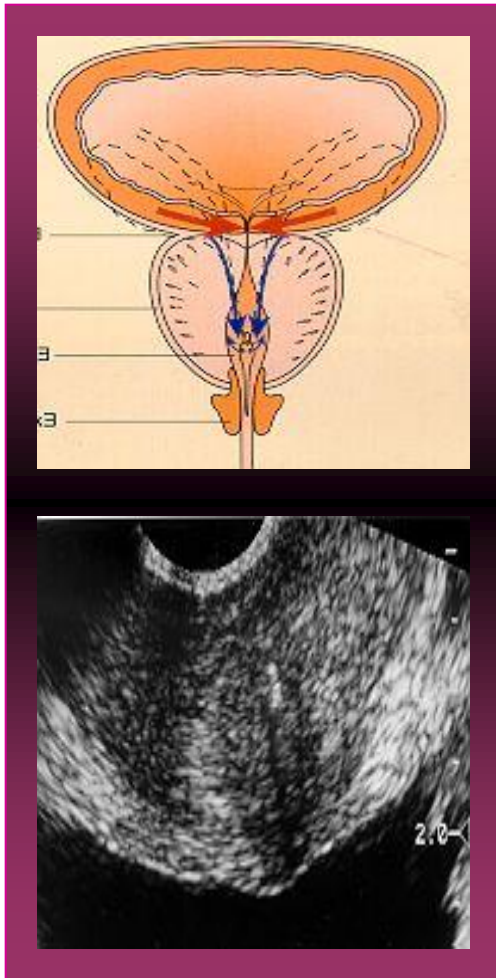
- 갑자기 강한 요의를 느껴 본의아니게 소변이 새는 경우
- 과민성방광의 증상중 하나



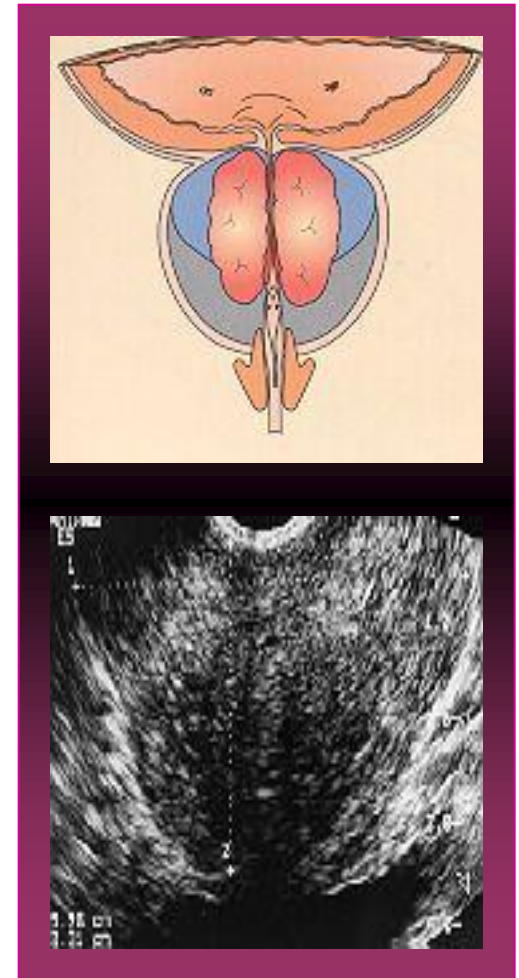
**과민성 방광 (Overactive bladder)**

**; 빈뇨, 절박뇨, 야간빈뇨, 절박 요실금**

# 남성에서의 주 원인

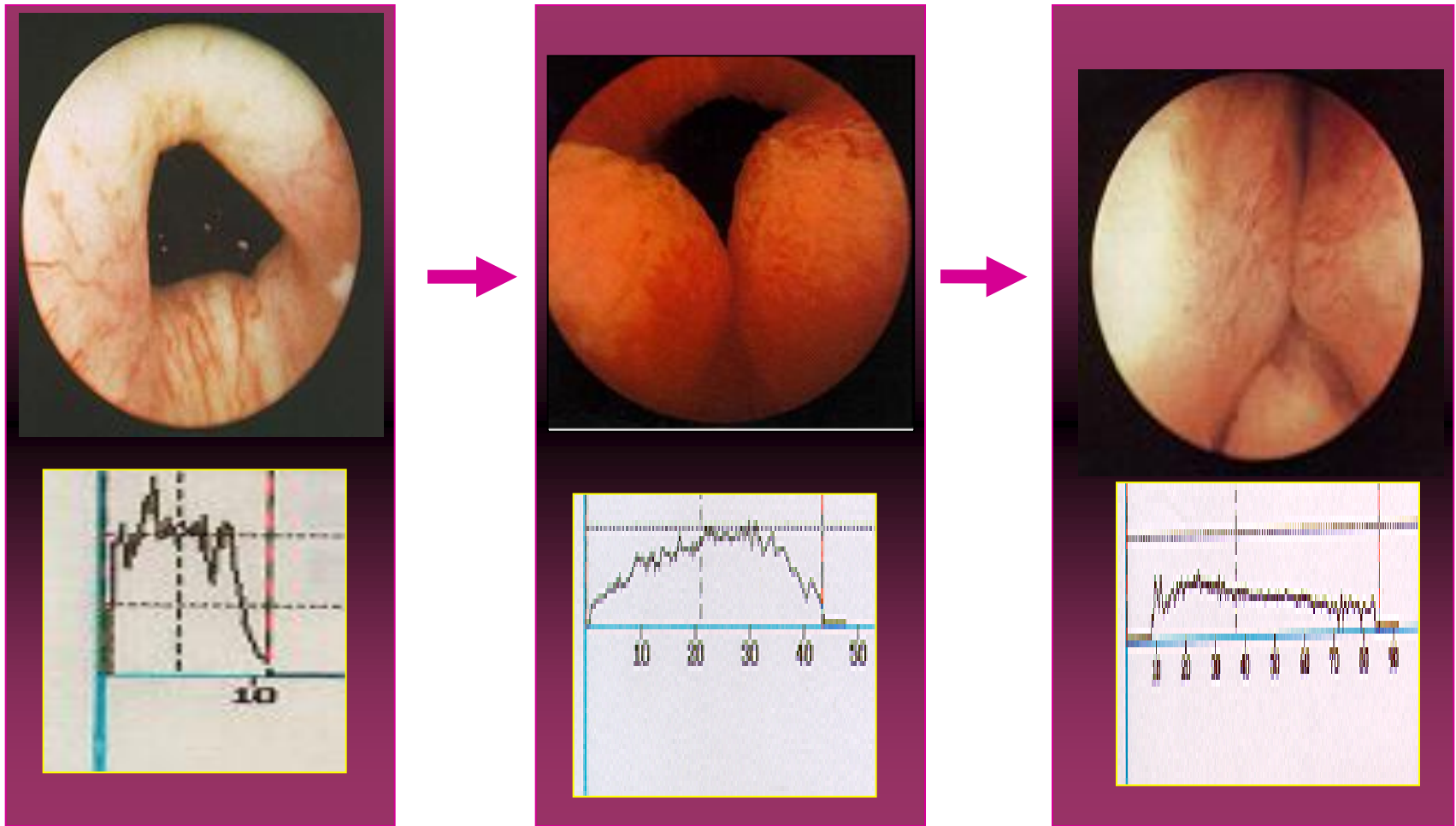


**전립선비대증**  
→  
**[하부요로폐색]**

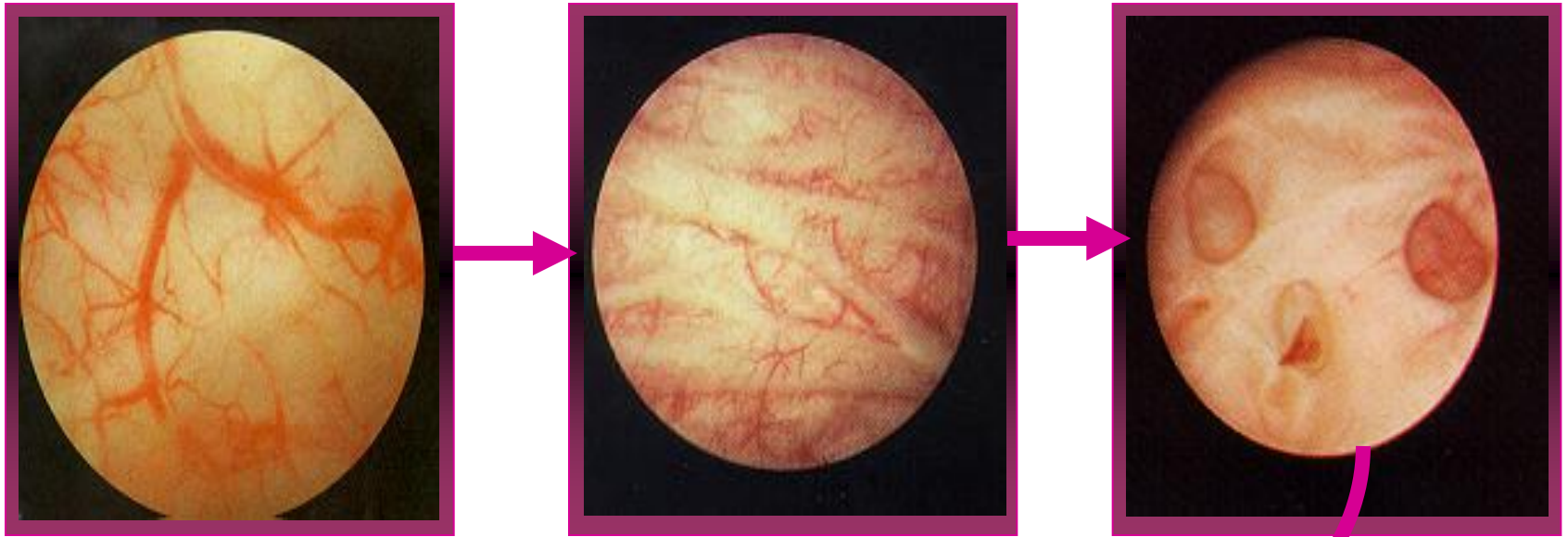




# 요로가 좁아져 소변줄기가 약해지면서



# 방광출구폐색에 이어지는 방광의 변화

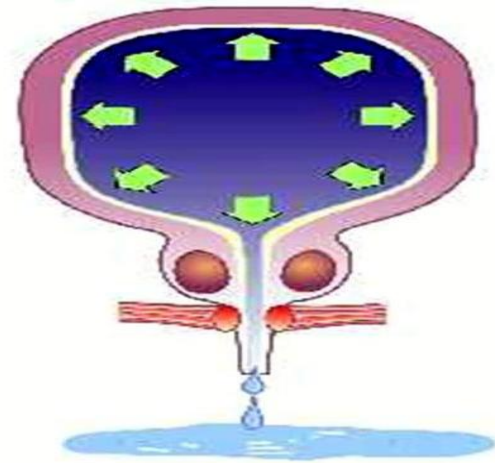


과민성방광

절박성 요실금

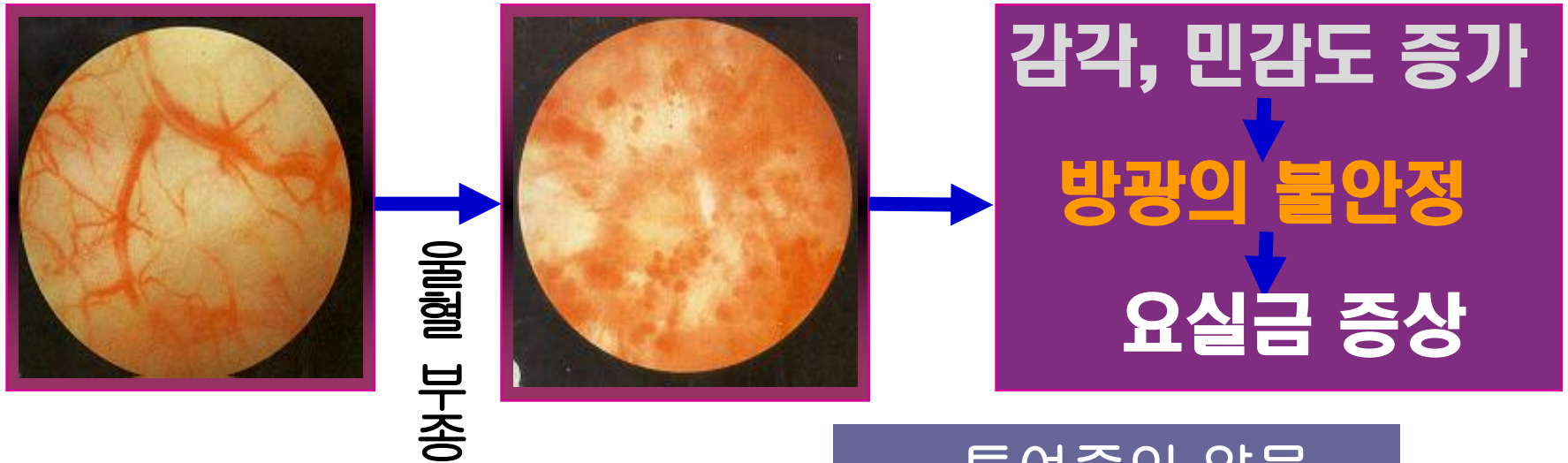
# 일류성(일출성) 요실금

- 요도폐색
  - 전립선 비대증
  - 요도협착
- 방광수축력 저하
  - 당뇨 및 말초신경질환
  - 골반수술
- 여성 요실금의 약 5%



땀이 범람하듯  
방광내의 소변이  
넘쳐 흘러나오는 상태

# 일과성 요실금; 방광염



## 일과성 요실금의 원인

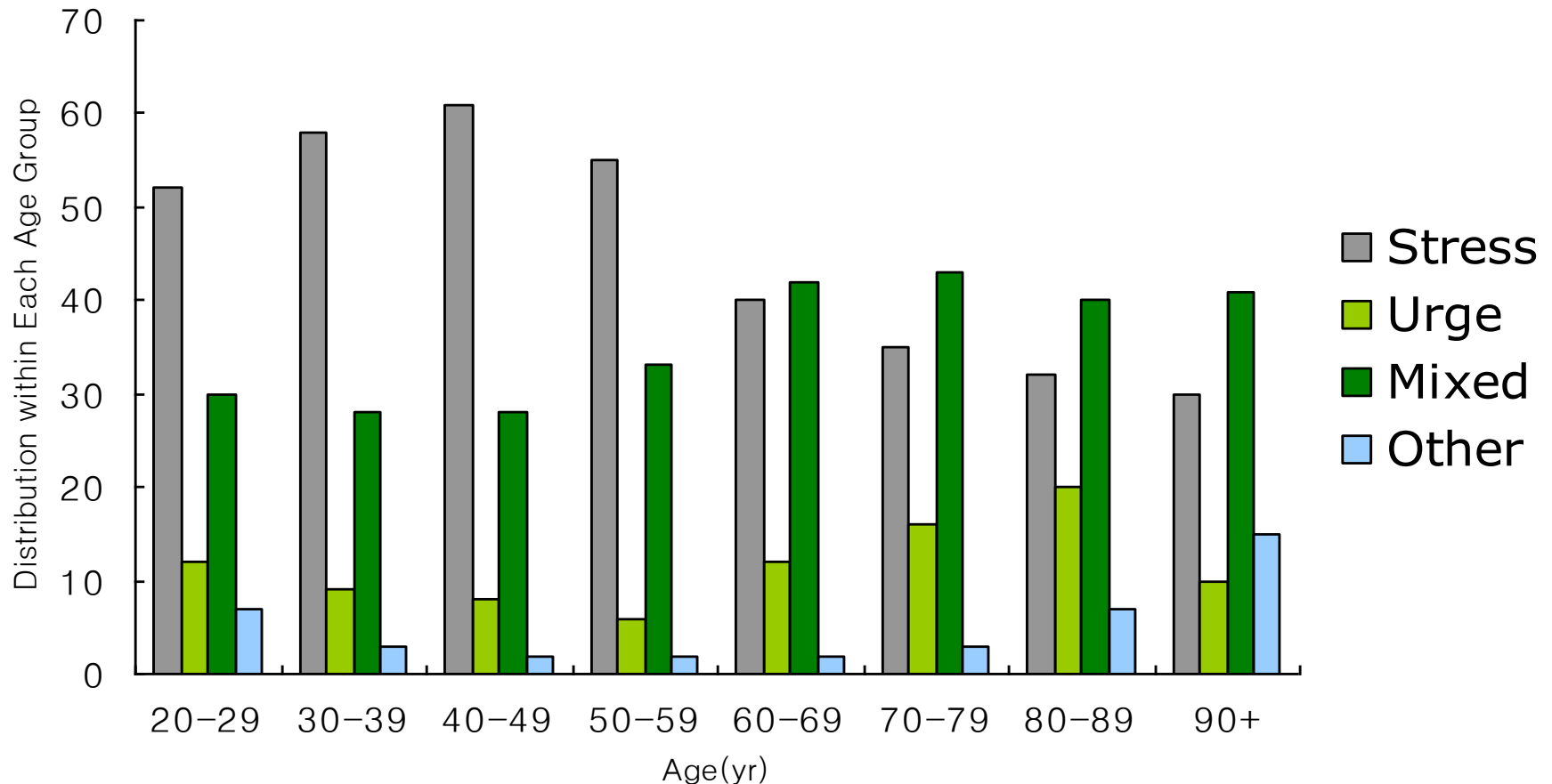
- 투여중인 약물
- 요로계의 감염
  - 정신질환
  - 거동장애
  - 심한 변비

# Proportions of types of incontinence

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- **In elderly men**
  - **Urge incontinence(40-80%)**
  - **Mixed incontinence(10-30%)**
  - **Stress incontinence(less than 10%)**
  
- **In elderly women**
  - **Mixed > Stress > Urge incontinence**

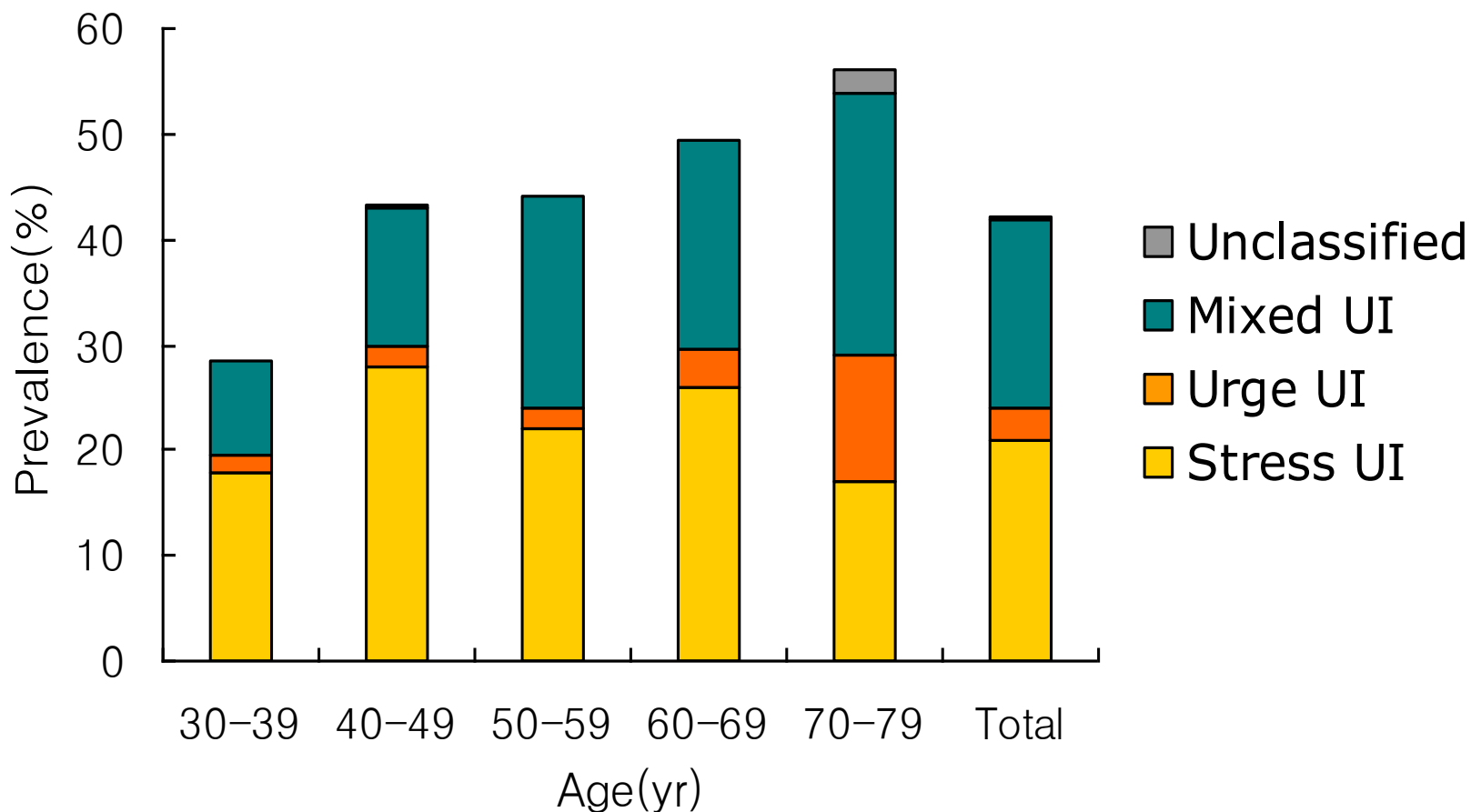
# Proportions of types of UI in women differ with age



The Norwegian EPINCONT study

Hannestad YS et al. J Clin Epidemiol.2000

# Korean epidemiologic study



Oh SJ et al. J Korean Continence Soc. 2003

# UI in the nursing home residents

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- Extremely prevalent in the nursing home setting
  - 50-70% of older NH residents have UI
  - 64.7% (men: 65.1%, women: 64.6%)  
in Korean epidemiologic study
- Association with many conditions outside the urinary tract
  - Functional disabilities
  - Mobility problems
  - Dementia
  - Neurologic disease or other co-morbidity

Tannenbaum C et al. Clin Geriatr Med. 2004

Kim MS, Lee SH. J Korean Acad Nurs. 2008



# Adverse Effects of Urinary Incontinence

<b>Physical health</b>	Skin irritation/breakdown
	Recurrent urinary tract infections
	Falls/fractures
	Sleep disruption
<b>Psychological health</b>	Isolation/social withdrawal
	Depression
	Anxiety
	Dependency
<b>Social consequences</b>	Increased caregiver burden
<b>Predisposition to institutionalization and economic costs</b>	
	Treatment costs
	Pads, Diapers, Drugs, Surgery, Devices
	Complications of treatment
	Lost productivity

# Differences between older men and women with urinary incontinence

Factor	Older Men	Older women
<b>Epidemiology</b> Prevalence	Overall 7~15%	Overall 15~30%
Care strategies	More likely to limit fluids and trips more likely to have seen a physician	More likely to wear pads and perform exercises
Risk factors	Likely greater association between UI and mortality in men than women	<b>Hypoestrogenemia and childbirth</b>
<b>Anatomy</b> Prostate /Pelvic floor	<b>Prostatic growth</b> ;lengthen urethra ;displaces the bladder neck ;urethral sphincter, closed	<b>Childbirth injury, aging</b> ;descent of bladder neck ;denervation urethral sphincter

# Causes of transient incontinence

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Cause	Comments
<b>D</b> elirium/confusion	Results from almost any underlying illness, or medication
<b>I</b> nfection-urinary	More common asymptomatic bacteriuria (only symptomatic)
<b>A</b> trophic urethritis/vaginitis	Vaginal erosion, telangiectasia, petechiae, and friability
<b>P</b> harmaceuticals	Prescribed and nonprescribed agents
<b>E</b> xcess urine output	Large fluid intake, diuretic agents (theophylline, caffeinated beverages, and alcohol) Metabolic disorders (hyperglycemia or hypercalcemia) Mobilization of peripheral edema (CHF, venous insufficiency)
<b>R</b> estricted mobility	Correctable conditions such as arthritis, pain
<b>S</b> tool impaction	Fecal and urinary incontinence

# Commonly used medications that may affect continence

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Type of Medication	Potential effect on continence mechanism
Diuretics	polyuria, frequency, urgency
ACE Inhibitors	cough precipitating stress incontinence
Anticholinergics	urinary retention, overflow incontinence, stool impaction
Psychotropics	anticholinergic actions, sedation, immobility, delirium
Narcotic analgesics	urinary retention, fecal impaction, sedation, delirium
Adrenergic agonists	contraction of smooth muscle of urethra and prostate
Adrenergic blockers	urethral relaxation
Alcohol	polyuria, frequency, urgency, sedation,

# Reversible Conditions;

Increased urine production

Impaired ability or willingness to reach a toilet

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## Increased urine production

### Metabolic

(hyperglycemia, hypercalcemia)

Improved diabetic control; treat hypercalcemia depending upon underlying cause

### Excessive fluid intake

Reduction in intake of diuretic fluid (caffeine)

### Volume overload

(venous insufficiency, CHF)

Support stockings, leg elevation  
sodium restriction, diuretic therapy  
Limit nighttime fluids

## Impaired ability or willingness to reach a toilet

### Delirium

Diagnose and treat underlying cause

### Psychological (depression)

Appropriate pharmacologic or non-pharmacologic treatment

### Chronic illness that interferes with mobility

Regular toileting, use of toilet substitutes, environmental alterations, removal of restraints

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# Evaluation of incontinence in older patients

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- Many older patients who are bothered by urinary incontinence **do not spontaneously complain about it.**
- Simple questions
  - “Do you have trouble with your bladder?”
  - “Do you lose urine when you do not want to?”
  - “Do you wear pads or adult diapers for protection?”
- Thus, **screening questions** should be used to identify this condition.

# Key Aspects of the Office Evaluation of an Older Patient with Urinary Incontinence

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Procedure	Description
<b>Focused history</b>	<p><b>Chronic conditions and medications</b> that can contribute to urinary incontinence</p> <p>Previous treatment and response</p> <p><b>Characteristics of symptoms</b></p> <ul style="list-style-type: none"><li>Overactive bladder</li><li>Stress incontinence</li><li>Voiding difficulty (hesitancy, straining, dribbling, etc.)</li><li>Pain, dysuria, hematuria</li></ul> <p>Frequency/severity of urinary incontinence</p> <p>Fluid intake</p> <p>Bowel habits</p> <p>Most bothersome symptom, and degree of bother</p> <p><b>Treatment goals</b> and preferences</p>

# Key Aspects of the Office Evaluation of an Older Patient with Urinary Incontinence

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Procedure	Description
<b>Targeted physical examination</b>	<p>General</p> <ul style="list-style-type: none"><li>Volume status/signs of heart failure (for patients with <b>prominent nocturia</b>)</li><li>Screening neurological examination (for patients with neurological disease)</li><li>Abdominal-suprapubic palpation</li></ul> <p>Rectal</p> <ul style="list-style-type: none"><li>Resting and active sphincter tone</li><li><b>Impaction, masses</b></li><li><b>Prostate size</b>, contours, tenderness</li></ul> <p>External genitalia and skin condition</p> <p>Pelvic</p> <ul style="list-style-type: none"><li>Atrophy, vaginitis</li><li><b>Prolapse</b></li><li>Mass/tenderness</li></ul>



# Key Aspects of the Office Evaluation of an Older Patient with Urinary Incontinence

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## Simple office test

Procedure	Description
Cough test for stress incontinence	Forceful cough with comfortably full bladder
Measurement of voided volume	Prep for clean catch urine and measure volume
<b>Urinalysis</b>	Dipstick for glucose, <b>blood</b> , leukocyte esterase, nitrite
Urine culture	If urine dipstick is positive for leukocyte esterase or nitrite and patient's symptoms suggest urinary tract infection (ie. Recent worsening of urinary incontinence)
<b>Measurement of PVR</b>	Bladder ultrasound (if available) <b>Catheterization for patients at risk for retention</b>

# Drug Treatment for Urinary Incontinence

Drug	Mechanism of Action	Potential Adverse effects
<b>Antimuscarinic</b> Darifenacin Oxybutynin Solifenacin Tolterodine Trospium	Increase bladder capacity  Diminish involuntary bladder contractions	Dry mouth, constipation, blurry vision,  Cognitive impairment
Topical estrogen Topical cream  Vaginal estradiol ring, tablets	Strengthen periurethral tissues, blood flow increase	Local irritation
Cholinergic agonists	Stimulate bladder contraction	Bradycardia, hypotension, bronchoconstriction, gastric acid secretion, diarrhea
<b><math>\alpha</math>-adrenergic antagonist</b> Doxazosin Tamsulosin	Relax smooth muscle of urethra and prostatic capsule	Postural hypotension

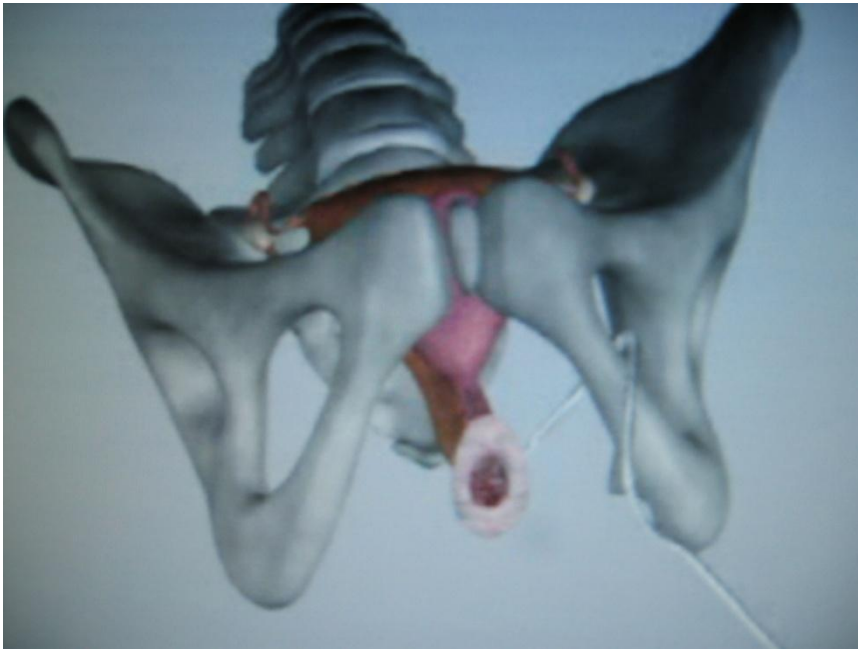
# Pharmacologic Options in Management of Urinary Incontinence

	<b>Predominantly Stress Incontinence</b>	<b>Predominantly Urge Incontinence</b>	<b>Nocturnal Polyuria of Uncertain Cause</b>
	Consider pelvic muscle rehabilitation All drug therapy should be accompanied by a toileting program		
<b>Male</b>	Supportive management	Trial of alpha-blocker should be considered	
<b>Female</b>	Consider referral for <b>surgical management</b>		
<b>Drug therapy</b>		<b>Add antimuscarinic to alpha-blocker, or antimuscarinic alone</b>	Consider trial of <b>DDAVP</b>

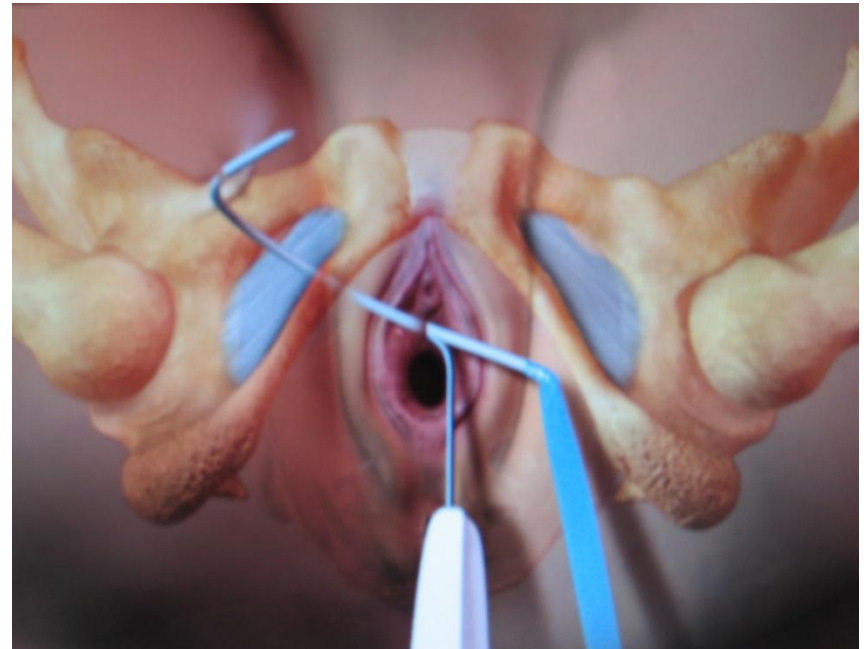
# Trans-obturator Procedure

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## Outside-in



## Inside-out

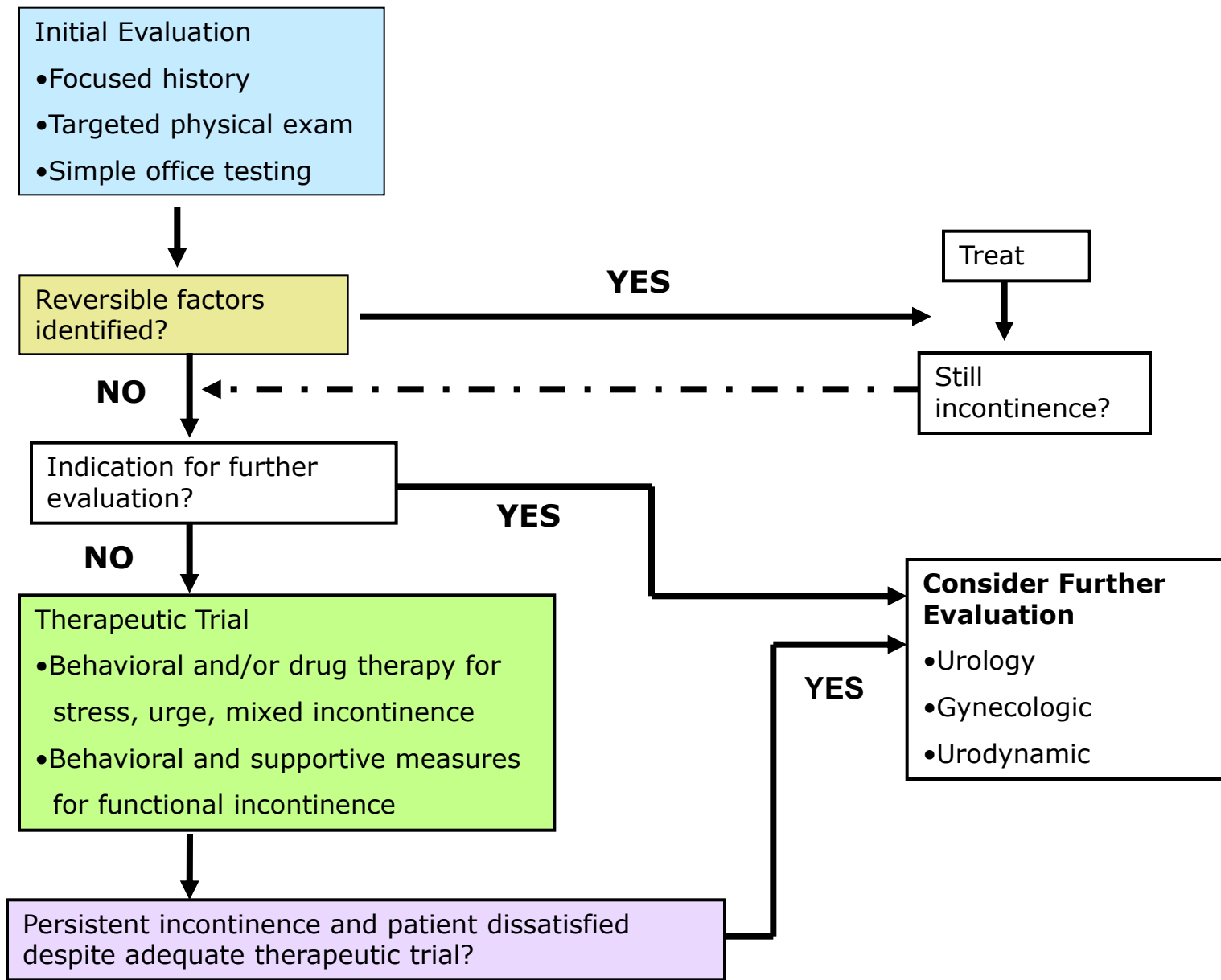


# Criteria to Refer for Further Evaluation

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- ❑ **Surgery/irradiation involving the pelvic area or lower urinary tract within past 6 months**
- ❑ **Two or more symptomatic UTI in a 12-month period**
- ❑ **Marked pelvic prolapse**
- ❑ **PVR >200 mL**
- ❑ **Difficulty passing a 14-Fr straight urinary catheter**
- ❑ **Marked prostatic enlargement**
- ❑ **> 5 RBC/HPF on repeated examinations without infection**
- ❑ **Persistent symptoms after adequate trials of behavioral or drug therapy**

Gibbs et al. Am J Med 2007;120:211-220



Modified from Kane RL, et al. eds. Essential urinary incontinence, 5th ed. 2004

*Thank you very much  
for your attention!*

