Urinary Incontinence

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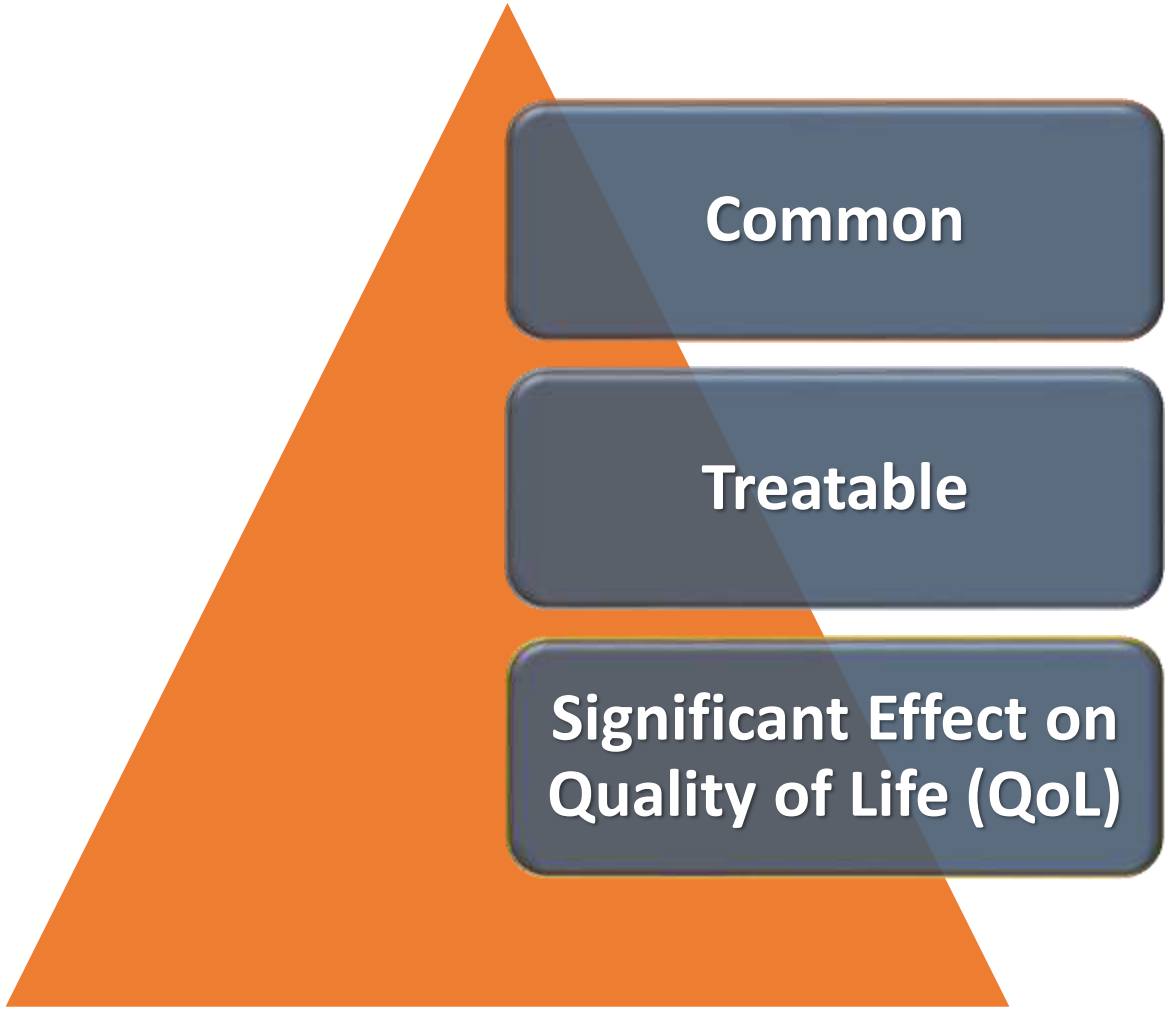
Functional and Neuro-Urology

Definition of Urinary Incontinence

"The involuntary loss of urine which is objectively demonstrable and a social or hygienic problem."

* The International Continence Society

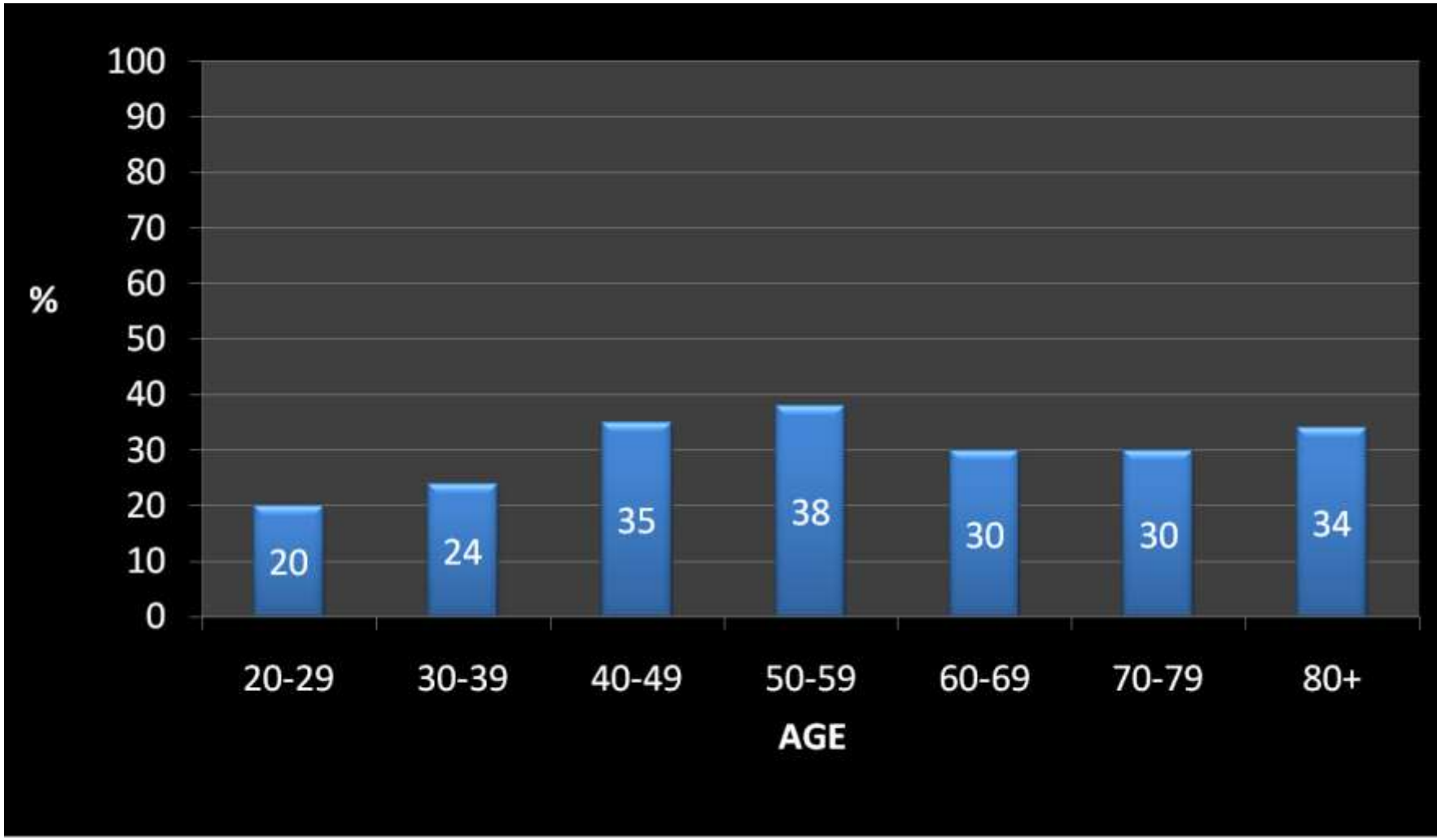
URINARY INCONTINENCE



Prevalence

- Community: 17% older men, up to 30% older women
- Hospital: up to 50% older men and women

Prevalence of Incontinence in Women



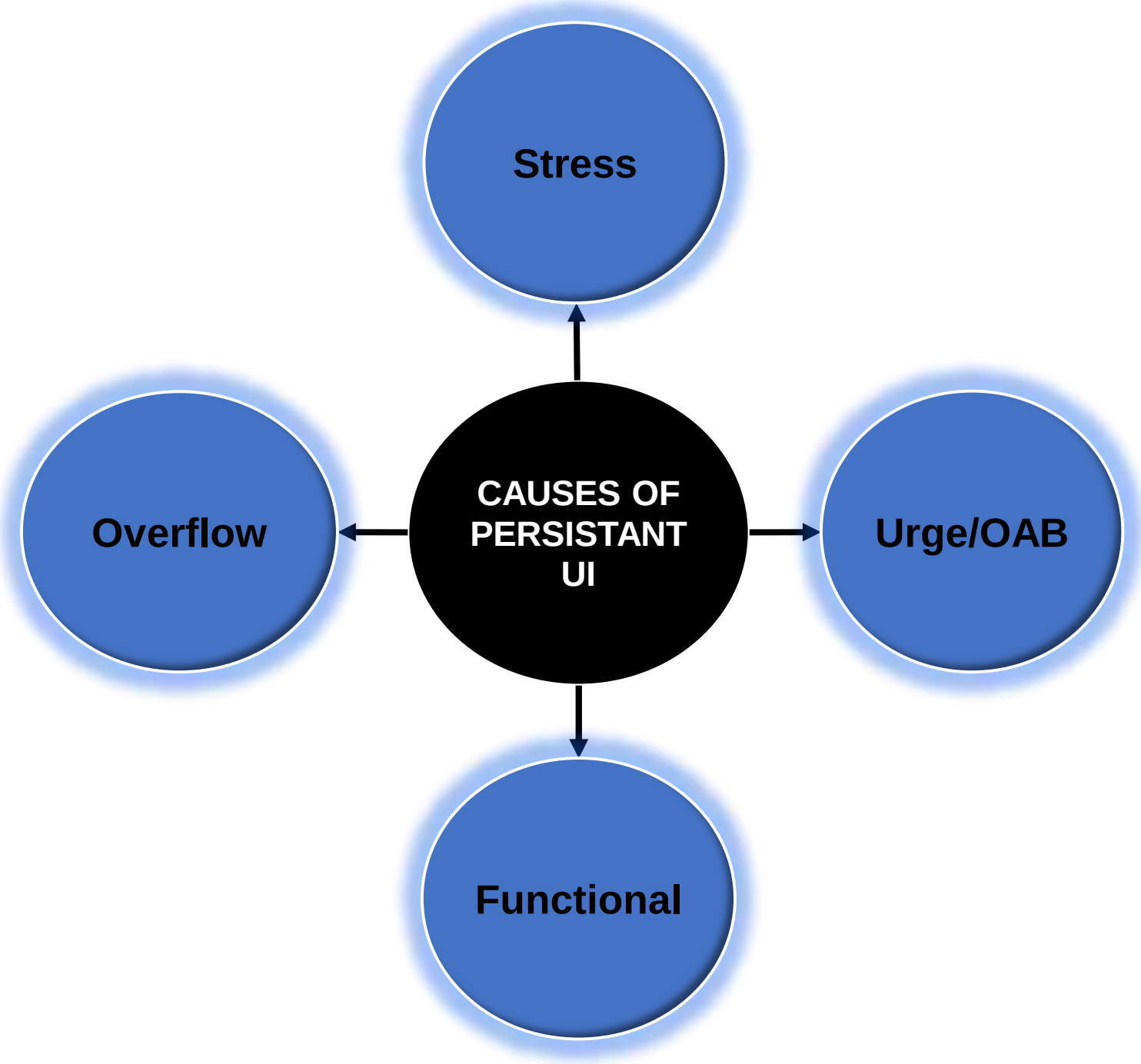
Aging Changes

- Decreased bladder capacity
- Reduced voiding volume
- Reduced flow rates
- Increased urine production at night

* Nordling, J Experimental Gerontology, 2002, 37:991

Reversible causes of UI

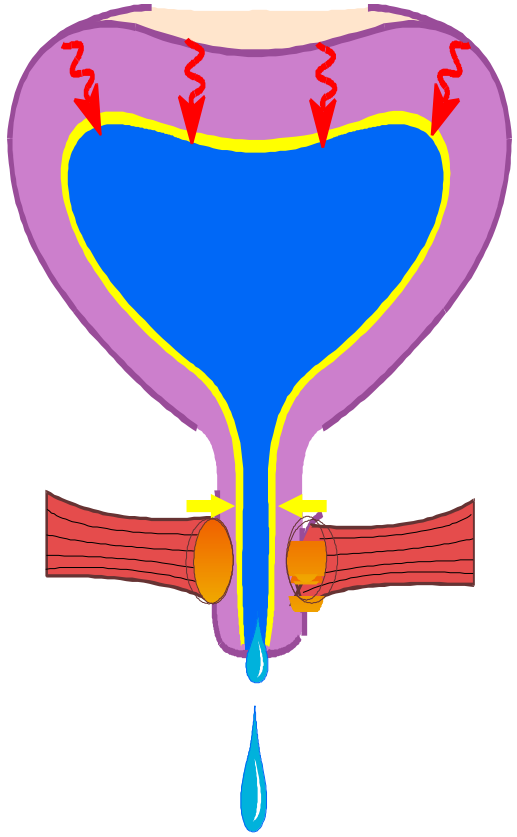
- **Delirium or Drugs**
- **Restricted mobility**
- **Infection, impaction**
- **Polyuria**

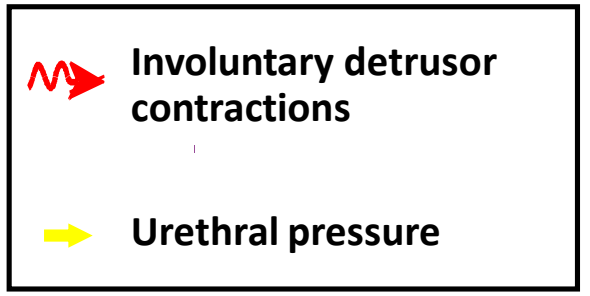

Stress
Overflow
CAUSES OF PERSISTANT UI
Urge/OAB
Functional

Urge UI

Abrams P et al. *Urology*. 2003;61:37-49. Ouslander J. *N Engl J Med*. 2004;350(8):786-799.

The complaint of involuntary leakage accompanied by or immediately preceded by urgency





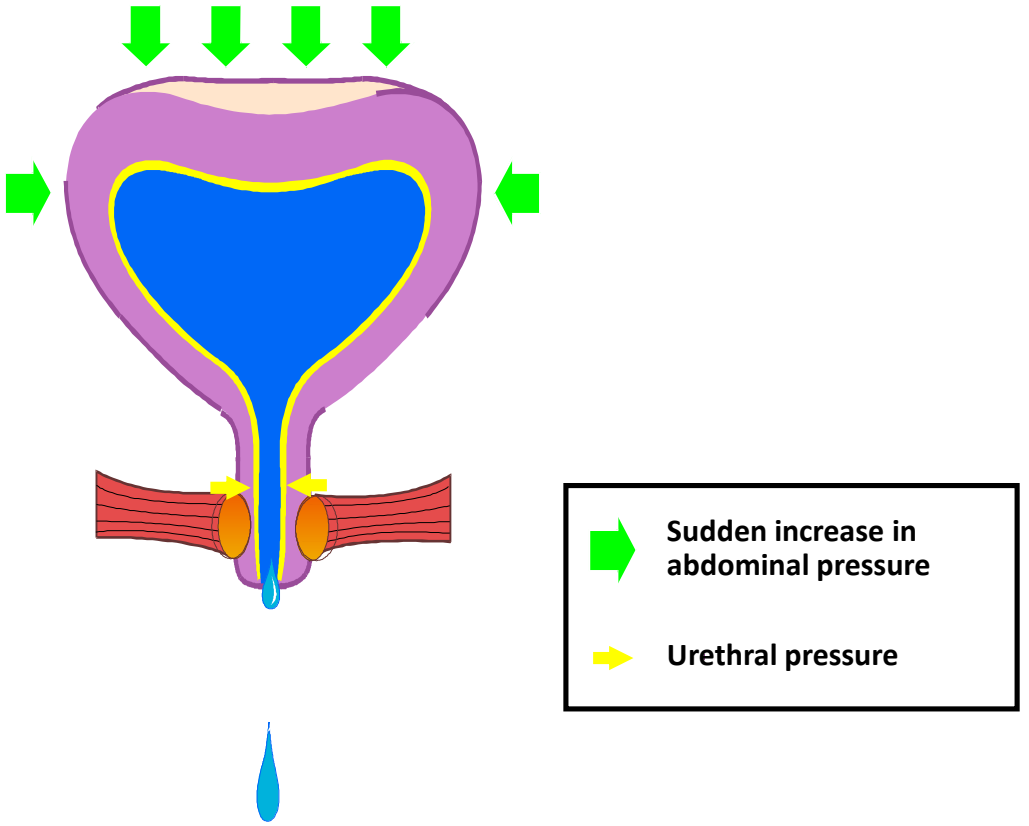
Overactive bladder

- Includes urinary urgency with or without urge incontinence, urinary frequency, and nocturia
- Associated with involuntary contractions of the detrusor muscle

Stress UI

Abrams P et al. *Urology*. 2003;61:37-49

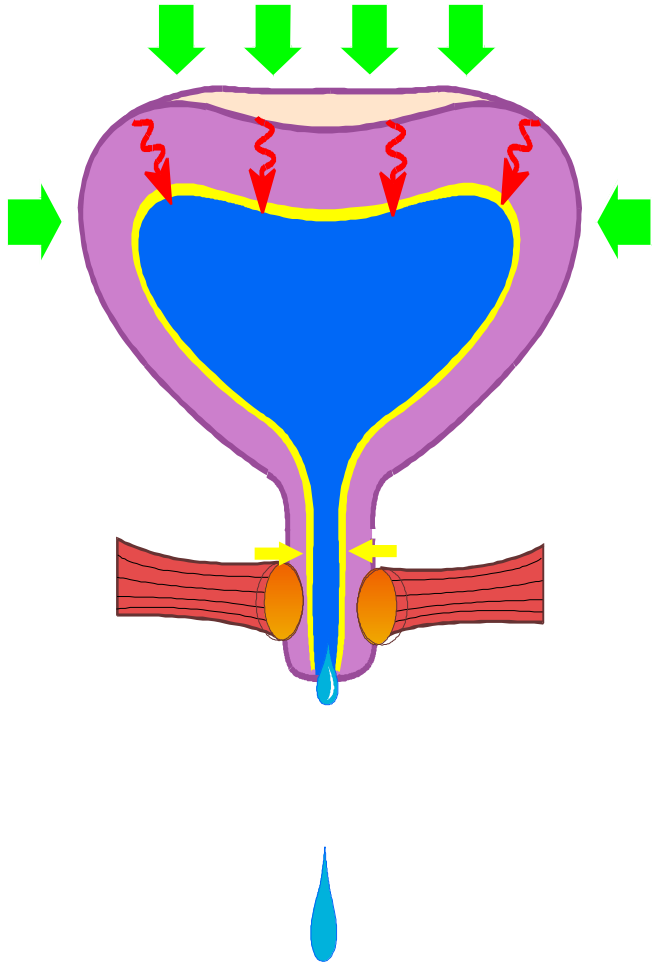
The complaint of involuntary leakage with effort or exertion or on sneezing or coughing



Mixed UI

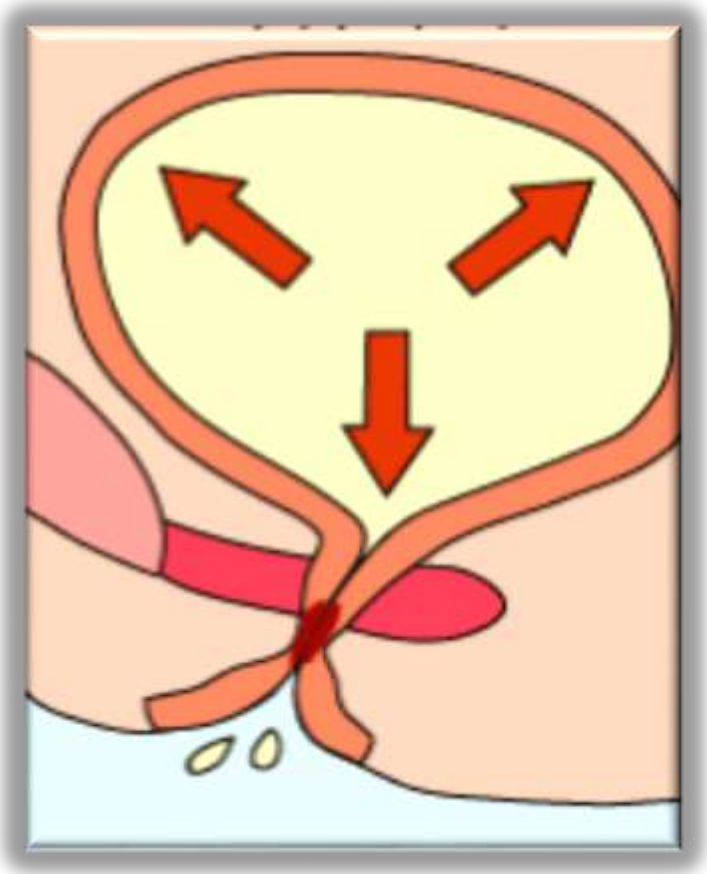
Abrams P et al. *Urology*. 2003;61:37-49. Chaliha C et al. *Urology*. 2004;63:51-57

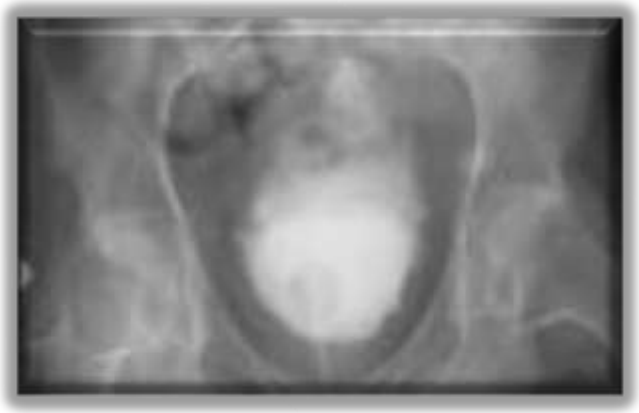
The complaint of involuntary leakage associated with urgency and also with exertion, effort, sneezing, or coughing



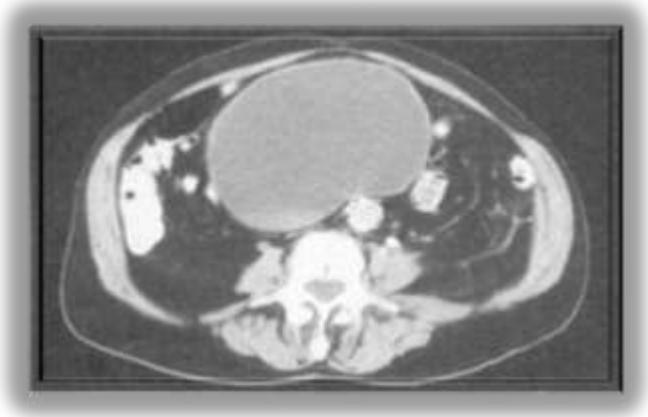
Overflow

- Urethral blockage
- The Bladder is not able to empty properly





Neurogenic/Atonic



Obstruction

Functional Incontinence

- Immobility
- Diminished vision
- Aphasia
- Environment
- Psychological

Basic Evaluation of UI

- History: Type, Frequency, Severity, Bladder diary
- Physical examination, especially Genitourinary and Neurological
- Bladder stress test
- Postvoid residual
- Urinalysis, urine culture if indicated
- BUN, creatinine, fasting glucose

Office Evaluation of UI

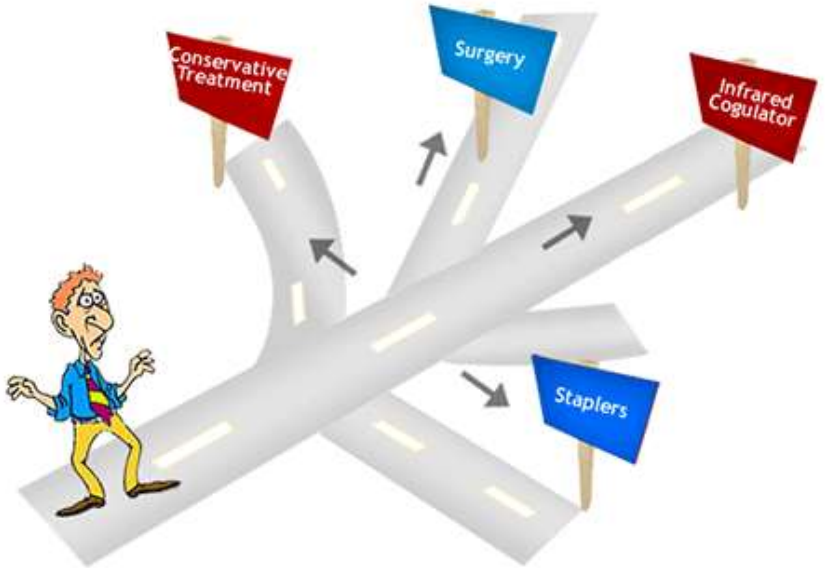
- Identify presence of UI
- Assess for reversible causes and treat
- If UI persistent, determine type and initiate treatment
- Identify patient who needs further evaluation and referral

Referral Criteria

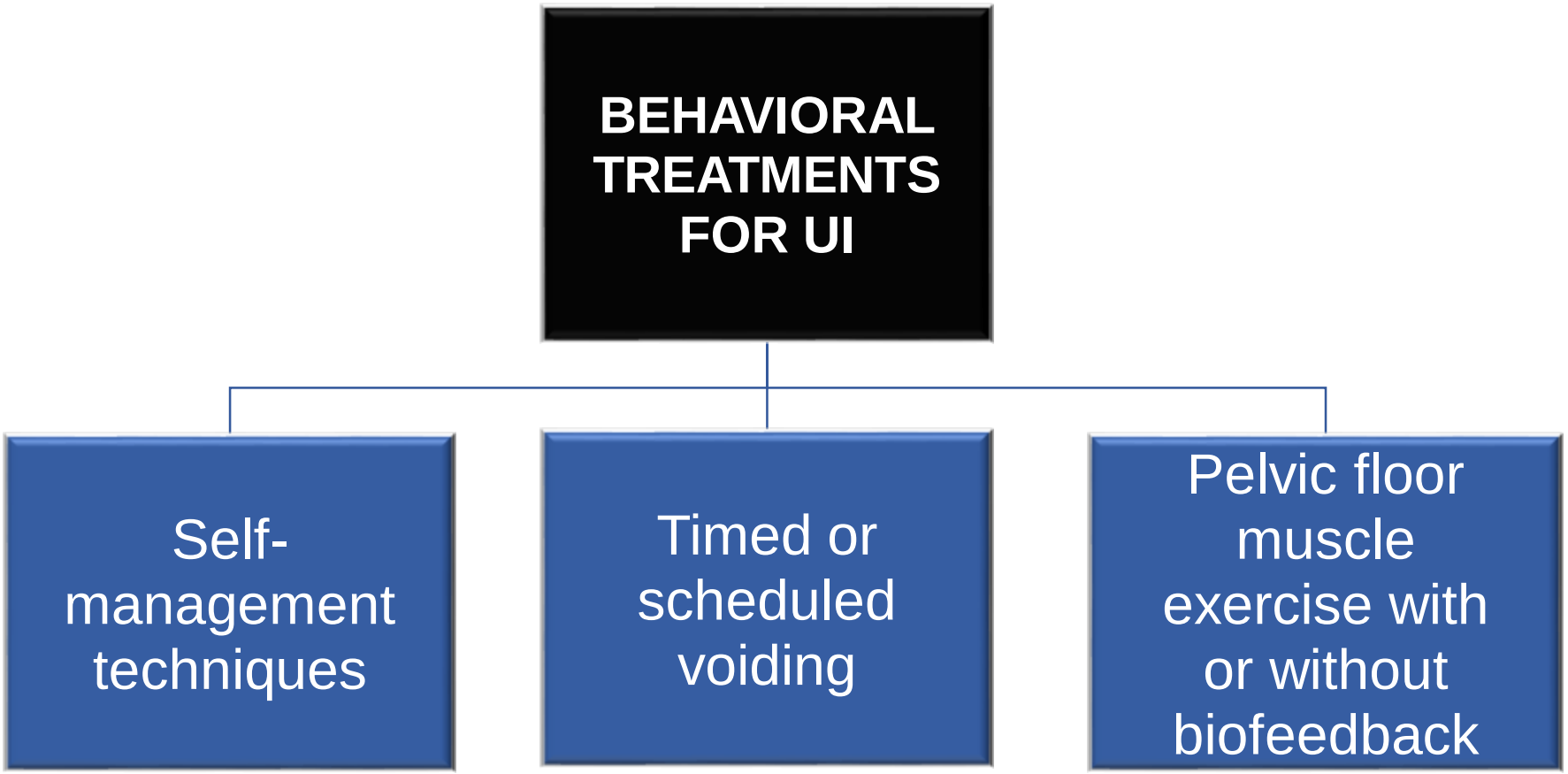
- ✓ Recurrent urinary tract infections
- ✓ Hematuria
- ✓ Elevated postvoid residual or other evidence of possible obstruction
- ✓ Recent gynecological or urological surgery or pelvic radiation
- ✓ Failed treatment of stress or urge UI

Treatment Options

- Behavioral
- Pharmacological
- Functional Electrical Stimulation
- Surgery



Behavioral Treatments for UI



Self Management

- **Fluid Intake**
  - Don’t reduce amount
  - Do not drink fluids 2 hr before bedtime
  - Avoid: caffeine, alcohol, nicotine

Timed/Scheduled Voiding

- Scheduled voiding with systematic delay of voiding
  - Schedule based on time interval pt can manage in daytime
  - Void at scheduled time even if urge not present; suppress urge if not time with “Quick Kegels”
  - Increase voiding interval by 30 min each week until continent for up to 4 hr

Pelvic Muscle Exercises

- Isolation of the pelvic muscles
- Avoidance of abdominal, buttock or thigh muscle contractions
- Moderate repetitions of strongest contraction possible
- Ability to hold contraction 10 seconds, repeat in groups of 10-30 TID

Medical Treatment for UI: What Works

- **Stress UI**
  - Alpha adrenergic agents?
  - Estrogen?
  - Combination therapy?

Alpha Adrenergic Drugs

- Phenylpropanoloamine
  - Once a first line drug
  - 8 randomized controlled trials
  - Study duration: 2-6 weeks
  - % cure: 0-14
  - % side effects: 5-33%
  - WITHDRAWN FROM MARKET due to report of hemorrhagic stroke

Duloxetine (Cymbalta)

- FDA application for stress UI withdrawn
- Warning for liver dysfunction, alcohol

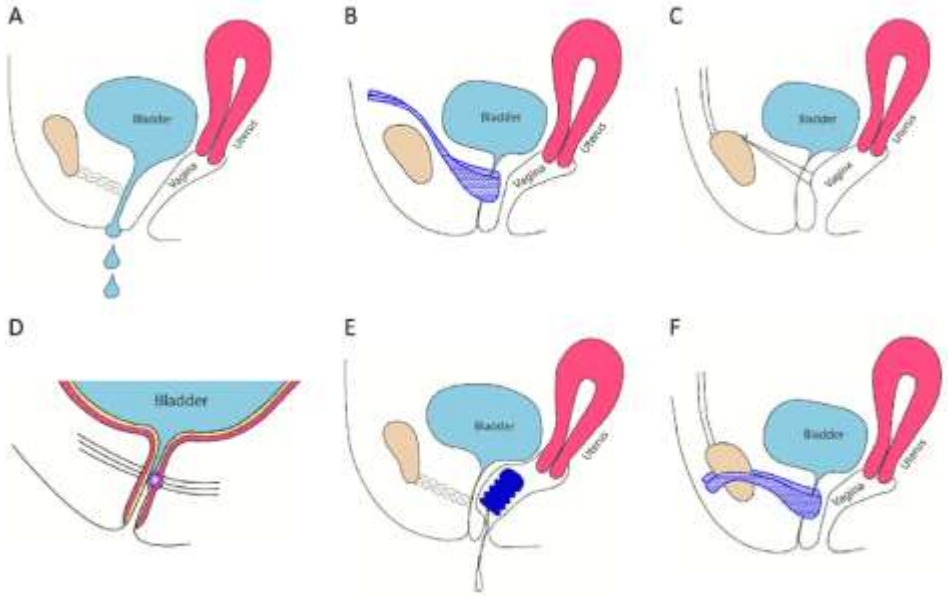
Estrogen

- Combined study with Phenylpropanolamine suggested improvement in combination
- Improves urogenital atrophy
- Heart and Estrogen/Progestin Replacement Study 2001: 4 yr, randomized trial, 2763 postmenopausal women <80 given combined HRT or placebo for ischemic heart disease.
  - 55% had >1 episode UI/week
  - HRT group had worsening stress and urge UI sx

Surgery and procedures for stress incontinence

- Colposuspension. Colposuspension involves making a cut in your lower tummy (abdomen), lifting the neck of your bladder, and stitching it in this lifted position. ...
- Sling surgery. ...
- Vaginal mesh surgery (tape surgery) ...
- Urethral bulking agents. ...
- Artificial urinary sphincter.

Surgery and procedures for stress incontinence



- (A) Stress urinary incontinence: Urine loss while coughing, sneezing or during physical activities (sports).
- (B) TVT surgery: A tape is inserted vaginally around the urethra and retropubically positioned behind the pubic bone.
- (C) Colposuspension: The loose approximation of the lateral edges of the vaginal wall to Cooper's ligament results in a hammock-like suspension of the urethra to the anterior vaginal wall (according to Burch).
- (D) Intraurethral injection of the polyacrylamide hydrogel (PAHG) into the midurethra results in the coaptation of the urethra.
- (E) Vaginal pessary (RECA fem®): Continence by pessary insertion.
- (F) TOT: A tape is inserted vaginally around the urethra and positioned by the transobturator approach along both sides of the pubic bone.

Medical Treatment of Overactive Bladder

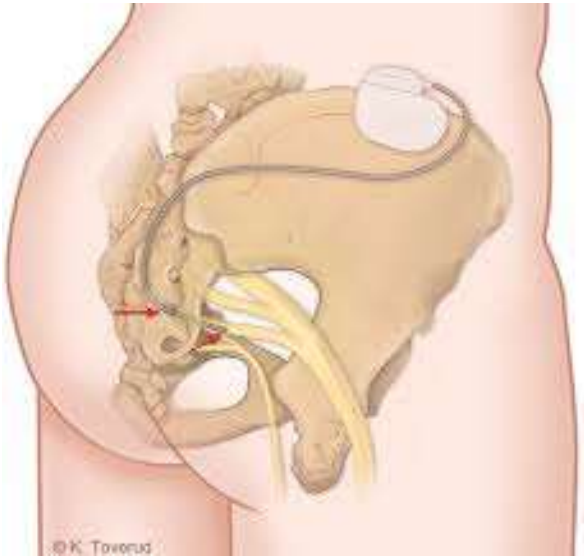
- **Anticholinergic Drugs** are mainstay
  - Oxybutynin IR 2.5-5 mg bid-qid
  - Ditropan XL 5-20 mg daily
  - Oxytrol patch TDS 3.9 mg 2x/wk
  - Tolterodine tartrate IR 1-2 mg bid
  - Detrol LA 2-4 mg daily

New Drugs:

- Trospium chloride (Sanctura) 20 mg bid
- Darifenicin (Enablex) 7.5-15 mg daily
- Solefenicin (Vesicare) 5-10 mg daily
- **Beta-AR agonists**
- **Botulinumtoxin A**

neuromodulation

sacral neuromodulation (SNM)



percutaneous tibial nerve stimulation (PTNS),