Urological symptoms in the older adult

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Outline

- Introduction
- Anatomy and function of lower urinary tract
- Common symptoms related to urination in the older adult

What is urology?

- Function/dysfunction of the urogenital/genitourinary tract
  - Urinary tract function (NOT kidney function)
  - Genital/sexual function (primarily male)
  - Urinary tract malignancies

Urologic conditions/diseases

Bladder/prostate

-- bladder = reservoir

Kidney stones

Male sexual dysfunction

Urological cancers

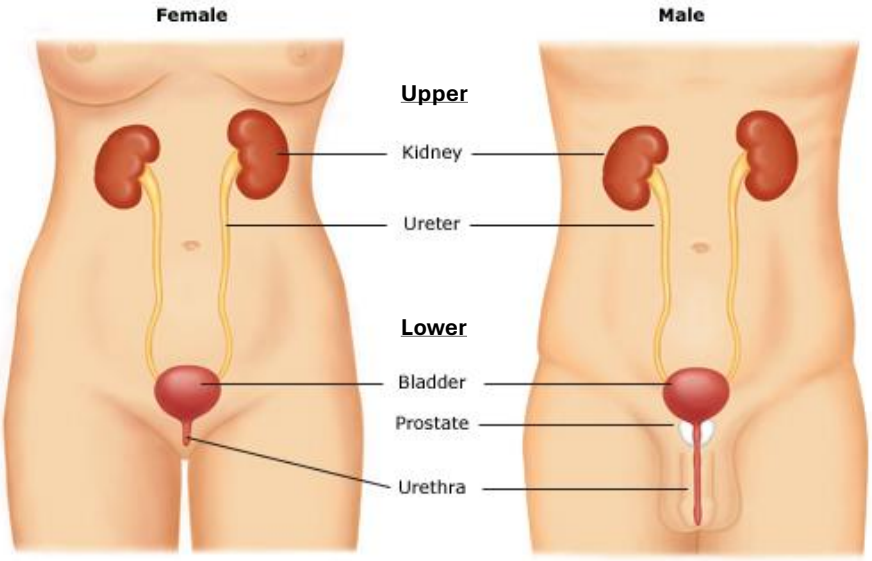
Lower urinary tract (LUT) symptoms and conditions affecting the older adult

- Nocturia
- Daytime frequency
- Incontinence

- Urinary tract infections (UTI)
- “BPH”: straining, hesitancy, slow stream
- Genitourinary syndrome of menopause “GSM”: dryness/irritation, UTIs

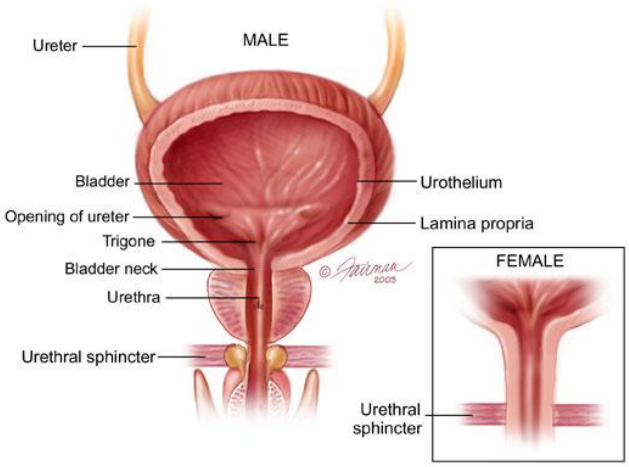
Urinary tract anatomy and function

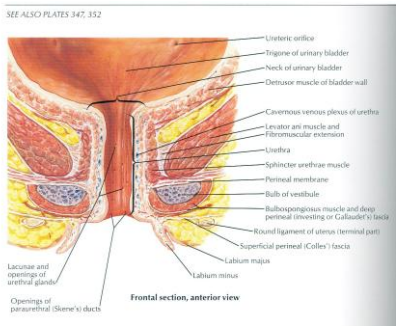
The urogenital tract

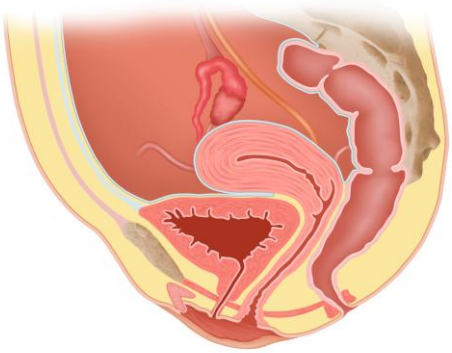


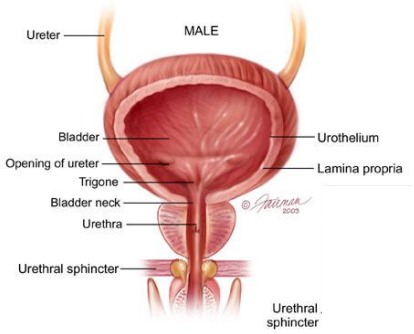
Clitoris, vagina

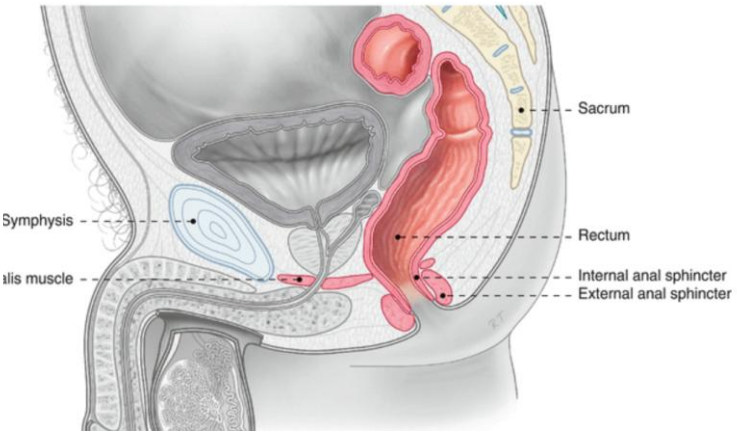
Penis, testicles




SEE ALSO PLATES 347, 352
Ureteric orifice
Trigone of urinary bladder
Neck of urinary bladder
Detrusor muscle of bladder wall
Cavernous venous plexus of urethra
Levator ani muscle and fibromuscular extension
Urethra
Sphincter urethrae muscle
Perineal membrane
Bulb of vestibule
Bulbospongiosus muscle and deep perineal (investing or Gallaudet's) fascia
Round ligament of uterus (terminal part)
Superficial perineal (Colles') fascia
Labium majus
Labium minus
Lacunae and openings of urethral glands
Openings of paraurethral (Skene's) ducts
Frontal section, anterior view

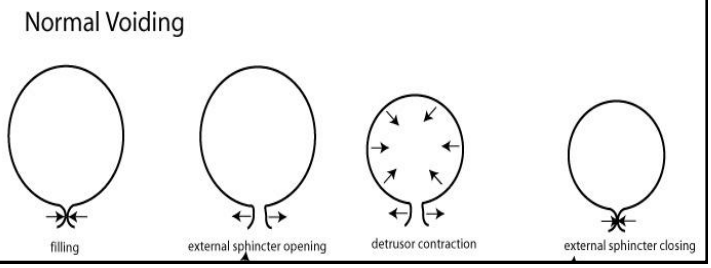



MALE
Ureter
Bladder
Opening of ureter
Trigone
Bladder neck
Urethra
Urethral sphincter
Urothelium
Lamina propria
Urethral sphincter


Sacrum
Symphysis
Rectum
Internal anal sphincter
External anal sphincter

Function of the LUT, mechanics

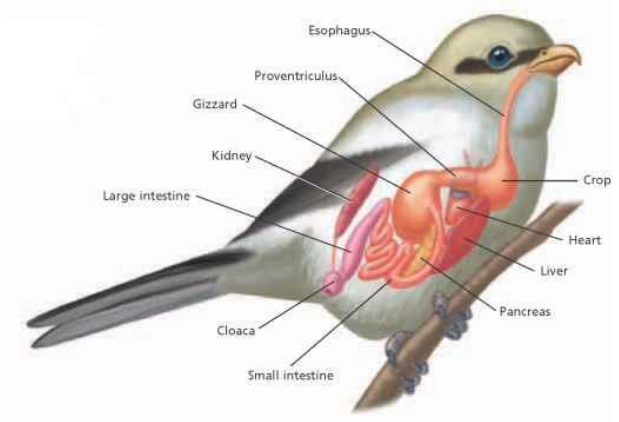
- Store urine until socially appropriate
  - reservoir, filling, ‘diastole’
  - store urine at low pressures = compliance
- Evacuate urine efficiently
  - emptying, ‘systole’
  - low pressure contraction for evacuation



Micturition / urinary cycle physiology: store and evacuate

- Storage phase
  - Urinary sphincters closed
  - Bladder muscle is relaxed, “stretchy”
  - Nerve signals from bladder sent to spine and brain that filling is occurring
  - Brain sends signals to bladder to NOT squeeze
- Voiding phase
  - When bladder is full/sensation to void is strong, brain sends signals to sphincters to open
  - When sphincters are relaxed and open, bladder squeezes urine out

No urinary reservoir (and probably, no urinary symptoms)



Evaluating the older adult with urological symptoms

Urinary tract and aging

- Increasing incidence of dysfunction and symptoms with advancing age
  - Organ/tissue changes are irreversible, symptoms can be manageable
  - Urinary with aging are not preventable
    - Preservation of urinary function related to overall health
  - Not all dysfunction or symptoms are bothersome or need treatment/management
- Symptoms are not pathognomonic of a particular condition
  - Many conditions share similar symptoms

Factors affecting LUT function in older adult

- General health
- Neurologic health
- Mobility
- Medications – most medications with impact on the urinary function will act to make urinary function worse
  - nervous system
  - polypharmacy
  - drug metabolism
- Benign, non-infectious conditions and symptoms are often not cured, just managed

Initial approach to the patient with urinary complaints in primary care

- History
- Physical examination – do not skip this!
- Ancillary evaluation
  - Urinalysis/urine culture
    - considerations in the older adult to getting 'good' specimen
  - Post void residual (PVR) urine volume measurement

Urinary Symptoms

- Urge
- Urgency
- Pain/discomfort
- Hesitancy
- Loss of sensation of urination
- Frequency
- Sensations on body with need to urinate
- Pushing/straining to urinate
- Relaxing to urinate
- Spraying stream
- Weak stream
- Post void dribbling
- Intermittency
- Incomplete emptying
- Incontinence
- Nocturia

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→ COMMON TO MEN AND WOMEN

What is Nocturia?

> **Waking during the night at least once**
  - Clinically significant if ≥ 2

> **Most common reason for interrupted sleep in adult population**

Impact of Nocturia

- **Excessive daytime sleepiness**
- **Cognitive dysfunction**
- **Diminished quality of life**
- **Increased mortality risk with nocturia**
  → Falls

Nocturia Prevalence

- **Majority of older patients up at least once to void**
  - 50-60 yrs ~50% ≥ 1 void/night
  - By early 60's ~25% ≥ 2 void/night

SOME causes of Nocturnal Polyuria

- Caffeine and alcohol before sleep
- Excessive fluid intake prior to/during sleep time
- Loss of circadian rhythm of ADH secretion
- OSA → hypoxia → ANP secretion

Nocturia

Source of morbidity and mortality in older adult
Not all nocturia is due to “BPH” or “OAB”
Rx with behavioral modifications first
Most important dx tool: Voiding diary

Daytime urinary frequency

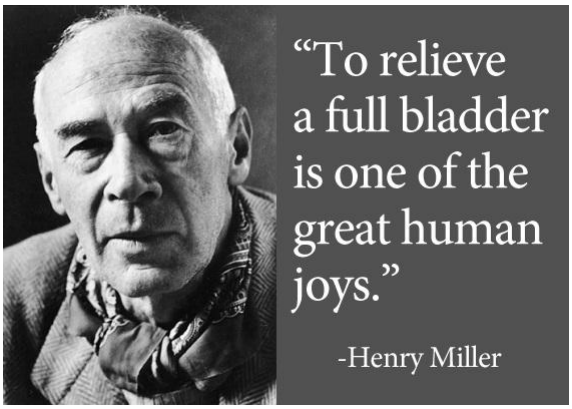
- Voiding more frequently than perceived to be normal
- What is normal? What is healthy?
  - The sensation to void is healthy, act of voiding is healthy
  - But sensation to void is a noxious sensation
  - "Frequency" is an irritation and inconvenience
    - Can be associated with unhealthy conditions: cystitis/UTI, neurological impairment
    - Or can be due to benign causes, including unknown

Causes of daytime urinary frequency

- Very long list! Frequency is associated with many conditions
- Threshold for feeling need to void is at lower volume (neuropathy/neurologic disease, loss of detrusor compliance)
- Impact of bladder irritants is greater
- Emotional: fear of leaking, being away from toilet
- Enlarged prostate sequel in men

Impact of frequency

- Limiting activity
- If mobility is limited, increased risk of incontinence, more care burden



Initial approach in primary care

- Align definitions for "frequency"
  - Typical range voids per waking hours = 3-8
- Assess volume and type of fluid intake
- Query other accompanying symptoms
  - Rule out infectious causes

Incontinence

- Involuntary loss of urine
  - Spectrum of severity
- Urinary continence is deeply seated, emotionally charged
  - Distress not related to volume lost
- Associated with aging: neurologic disease, surgery, sequel of pregnancy trauma
- Huge burden: financial, caregiving, emotional and QOL

Incontinence: myths

- increases UTI risk
- is inherently unhealthy

Types of incontinence

- Stress: loss of urine due to increases in intra-abdominal pressure
  - Low outlet resistance, loss of internal sphincter integrity/function
- Urgency: loss of urine due to sudden onset of sensation to void, with inability to stop urination
  - Low outlet resistance, loss of inhibition of reflex
- Mixed: stress and urgency incontinence occurring together
- Overflow: intravesical pressure overcoming outlet resistance
- Nocturnal eneuresis: incontinence while sleeping
  - In adults otherwise continent, occurs with sedatives, alcohol

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