# Prostate Disease in the Geriatric Population

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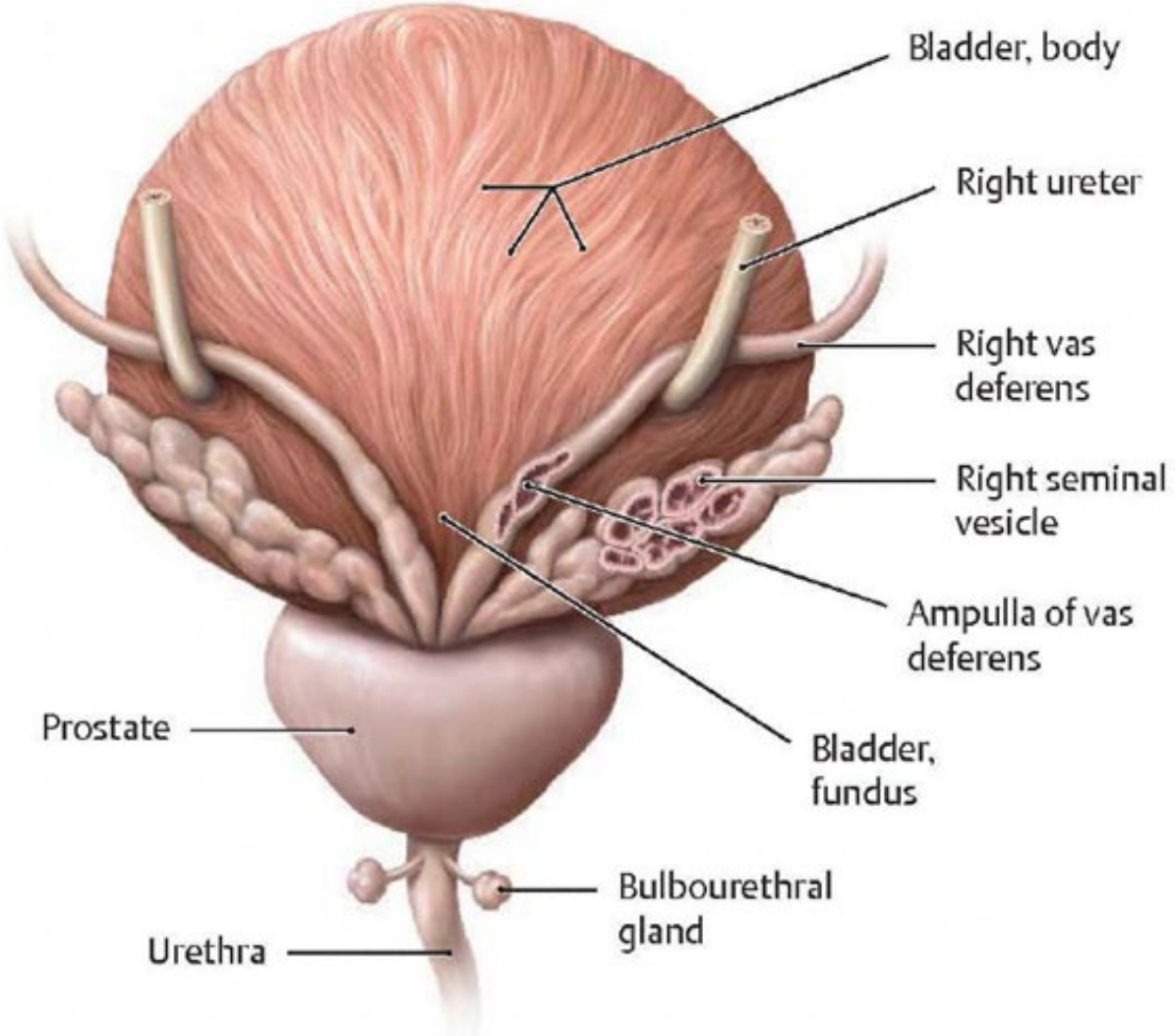
# Prostate Anatomy

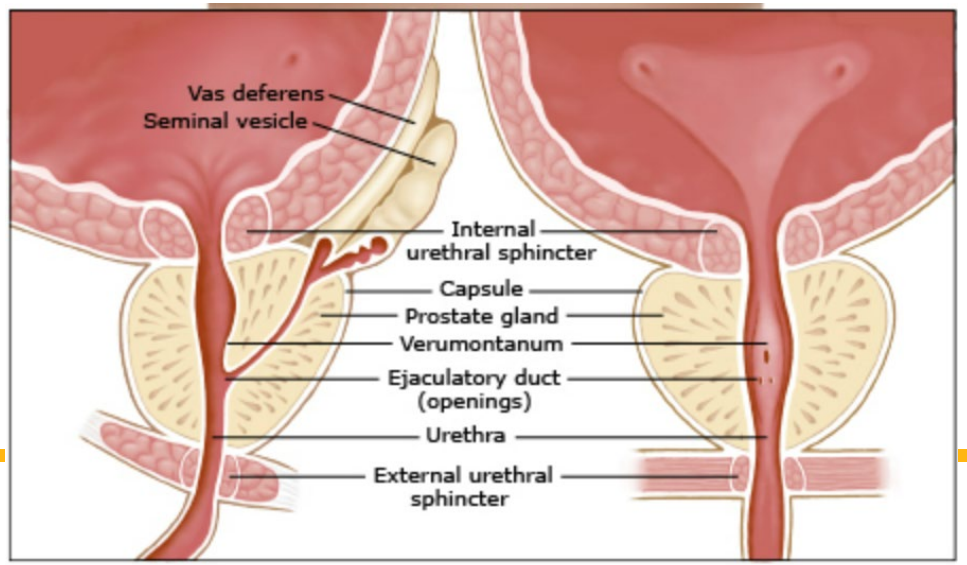
- "A walnut shaped gland just below the bladder"



# Prostate Function

- Produces a component of seminal fluid
  - 30% prostate
  - 65% seminal vesicles
  - 5% testes

- Acts as a mechanical switch between urination and ejaculation



# Terminology

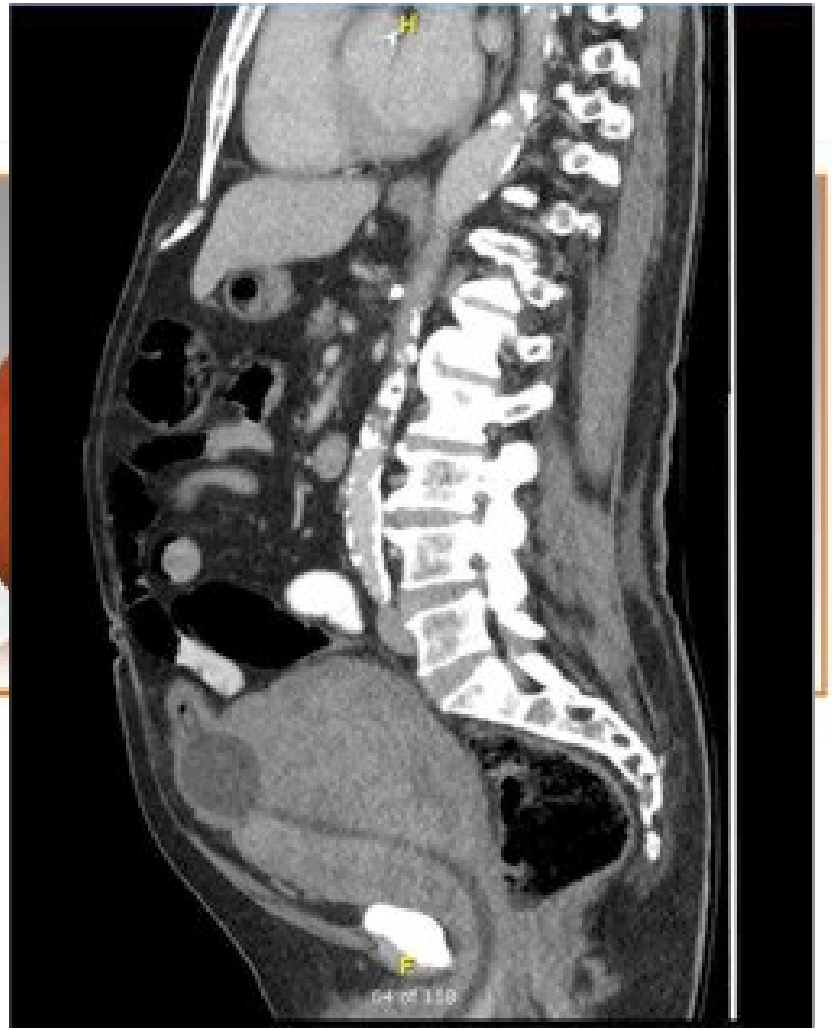
- Prostate diagnoses
  - BPH (a type of BOO)
  - Prostate cancer
  - Prostatitis
- Signs / symptoms
  - Lower urinary tract symptoms
    - Frequency
    - Urgency
    - Incontinence
    - Weak stream / need to strain
  - "Pelvic" pain
    - Suprapubic
    - Inguinal
    - Penile/urethral
    - Perineal
    - Rectal

# BPH: What is it?

- "Dictionary" definition
  - Histology: "epithelial and stromal hyperplasia of the prostate"
- "Clinical" definition
  - "An enlarged prostate"
  - Prostate grows throughout life due to hormones
- What is it not?
  - A urinary symptom

# BPH: What is it?

- How enlarged is enlarged?

# BPH: Clinical Relevance

- What do I care about?
  - Obstruction of urine causing organ damage
    - Bladder distension
      → (short term) pain, rupture
      → (long term) hypotonic/atonic bladder
    - Inadequate drainage from kidneys → hydronephrosis → renal failure
  - Obstruction of urine causing bothersome symptoms

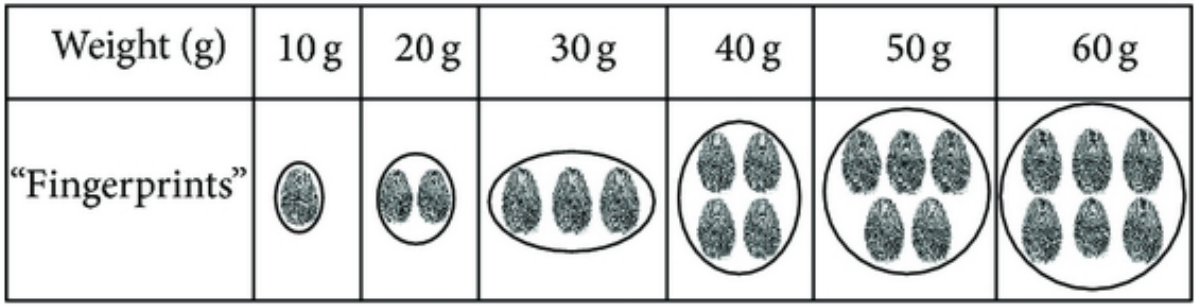
- What do I not care about?
  - An enlarged prostate on exam or imaging

# BPH: Evaluation

- Urinary symptoms
  - Weak stream, hesitancy, need to strain
  - Frequency, urgency, nocturia, incontinence

    Multiple causes! High PVR (retention) vs low bladder capacity (OAB)
- Assess bladder emptying
  - PVR
    - What's too high? Depends… 200=high-ish. 400=high. 600= very high
    - Acute? Chronic?
  - Catheterization
- Assess prostate size
  - Imaging
  - DRE

Proportion: weight (g) × DRE surface (area)

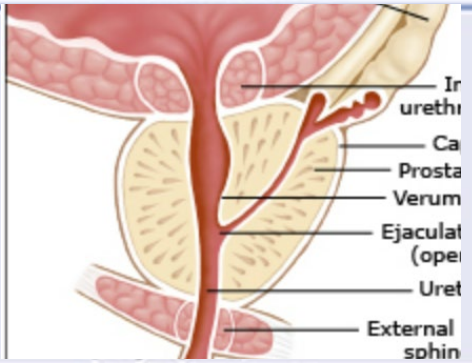



DRE = digitalrectalexamination

# BPH: Medical Treatment

- a-blockers
  - Relax the bladder neck (a1 receptors)
  - Work quickly: 1 day
  - Do not change the prostate
- 5a-reductase inhibitors (5-ARIs)
  - Decrease T→ DHT
  - Work slowly: 6-9 months
  - Shrink the prostate (which continues to grow)
- PDE5 inhibitors
  - Decrease smooth muscle tone of the bladder
  - Improves symptoms only (not retention)

# BPH: Medical Treatment

| Class | MOA | Drug (Brand) | Daily Dose (Oral) | Adverse Effects[a] |
|---|---|---|---|---|
| Alpha-blockers | Relax tension in the prostate smooth muscle by targeting alpha-receptors | Alfuzosin (Uroxatral)<br>Doxazosin (Cardura)<br>Tamsulosin (Flomax)<br>Terazosin (Hytrin)<br>Silodosin (Rapaflo) | 10 mg<br>1-8 mg<br>0.4-0.8 mg<br>1-10 mg<br>8 mg |  |
| 5ARIs | Block the growth of prostate cells by targeting the 5-alpha-reductase enzyme and decreasing concentrations of DHT | Dutasteride (Avodart)<br>Finasteride (Proscar) | 0.5 mg<br>5 mg | Libido impairment, abnormal ejaculation, erectile dysfunction, mastalgia, gynecomastia |
| PDE5 inhibitors | Decrease detrusor, prostate, and urethra smooth muscle tone via increase of intracellular cGMP | Tadalafil (Cialis) | 5 mg | Back pain, dyspepsia, flushing, headache, infection, myalgia, nausea, pharyngitis |

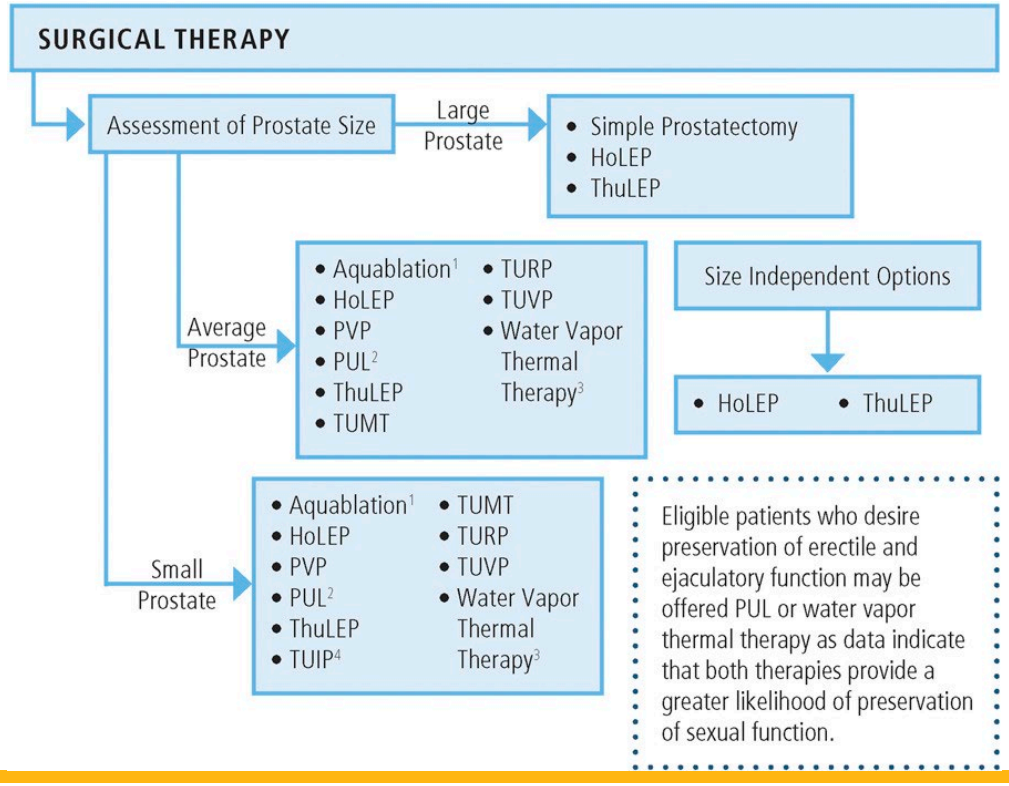
# BPH: Medical Treatment

- Try these medications either independently or concurrently
  - Common combination: tamsulosin 0.4 QHS + finasteride 5

- Continue these medications indefinitely
  - If a-blockers are stopped, the effect wears off
  - If 5-ARIs are stopped, the prostate regrows

# BPH: Surgical Treatment

- When?
  - Symptomatic on maximal medical therapy
  - Inability to tolerate medications
  - Urinary retention
  - Recurrent UTIs
  - Renal dysfunction
  - Bladder stones
- What?
  - Procedure to open the prostatic urethra
  - TURP = “roto-rooter”



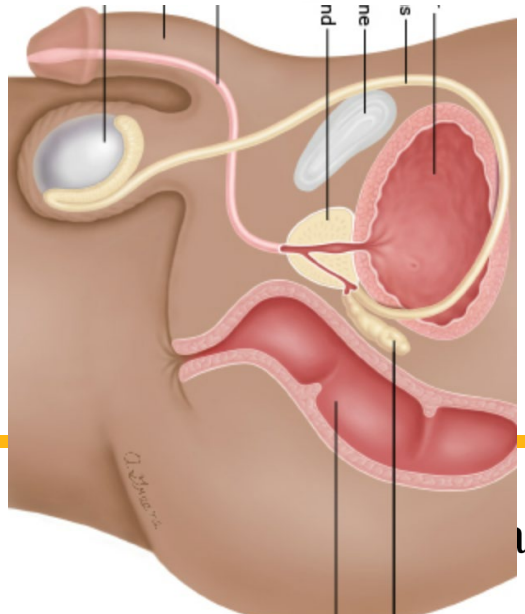
# Management of Retention

- Goal: drain the bladder. How?
- Indwelling urethral catheter
  - Pros: easy to place
  - Cons: uncomfortable, UTI risk
- Suprapubic tube
  - Pros: more comfortable, lower UTI risk (maybe)
  - Cons: procedure to place
- Clean intermittent catheterization
  - Pros: lowest UTI risk, no indwelling catheter
  - Cons: discomfort, relies on patient/caregivers
  - Must be done q4-6hr

# Management of Retention

- Nursing page: “I can’t get the catheter in, what do I do?”

- Ask the nurse to try with a different catheter (or try yourself!)
  - BPH? → use a bigger catheter, 18-20F
  - Stricture? Use a smaller catheter, 12-14F
  - Tip: pull the penis up towards the ceiling with some force

- No luck? Consult urology

# Management of Retention

- Management for patients with a chronic catheter or SPT…
  - Make sure it is changed monthly!
  - Mild hematuria is ok
  - Only test the urine if the patient is having symptoms
    - Catheter is often colonized
    - + urinalysis ≠ UTI
    - + urine culture ≠ UTI

# Prostate Cancer

- What is it?
  - Adenocarcinoma of the prostate gland

- What do I care about?
  - Cancer that leads to morbidity or mortality
    - "Most men die with prostate cancer rather than from it"
  - Difficult to predict!

# Prostate Cancer: Screening

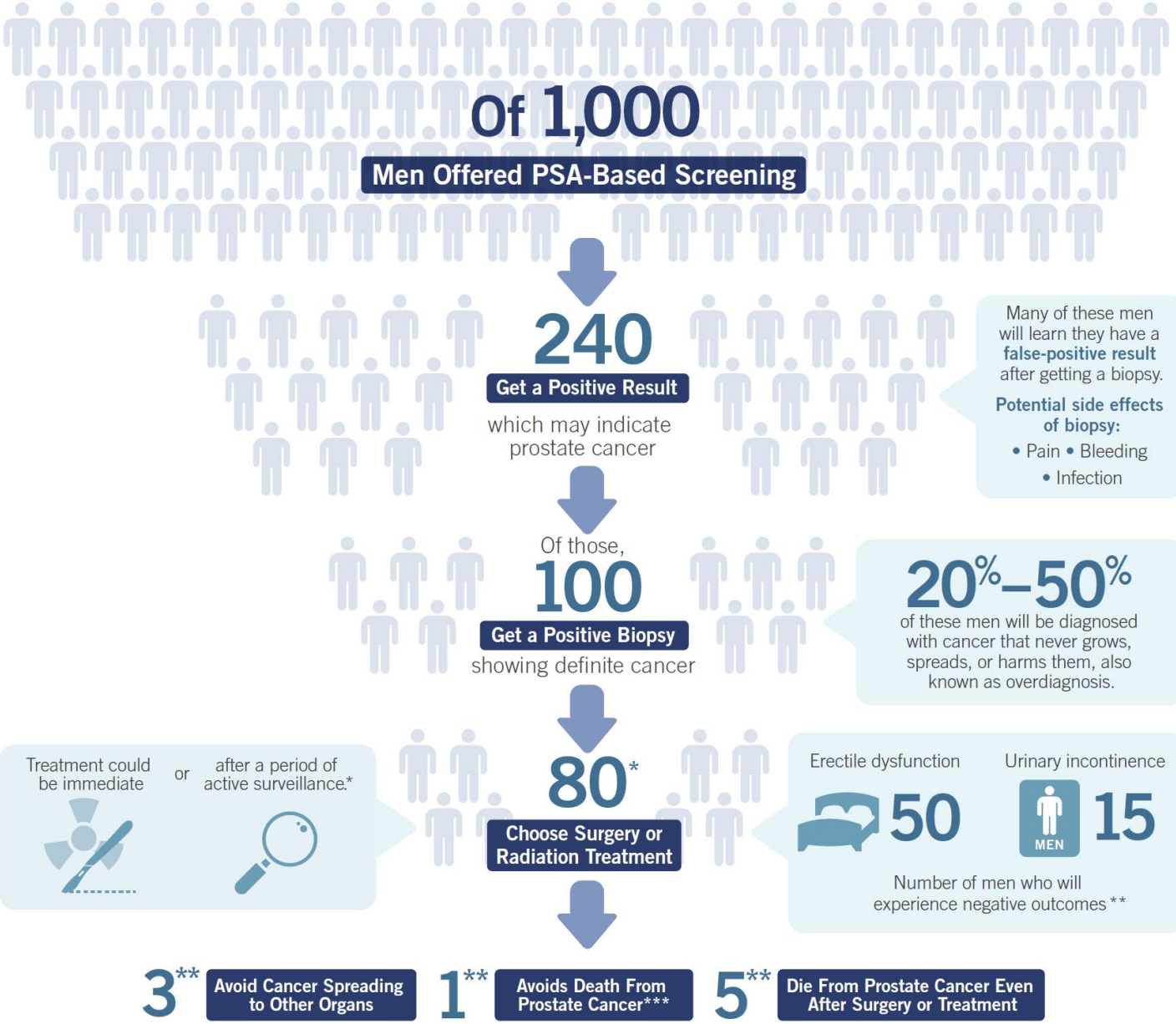
- PSA screening
  - What is PSA?
    - "Prostate specific antigen"
    - Protein made by the prostate to help liquify semen, detected in blood
  - Characteristics
    - Great NPV, terrible PPV
  - Causes of elevated PSA
    - Cancer
    - BPH
    - UTI, prostatitis
    - Ejaculation
    - Prostate pressure: rectal exam, prostate massage, catheter

# Prostate Cancer: Screening

- PSA screening
  - Who should get PSA screening?
    - 55-69 year old men
    - 40-55 year old men with risk factors
    - At least 10 year life expectancy
    - Only men who want screening– shared decision making
    - Only men who would consider undergoing treatment
  - How often should we screen?
    - Every 2 years
  - Elevated PSA? → Retest!

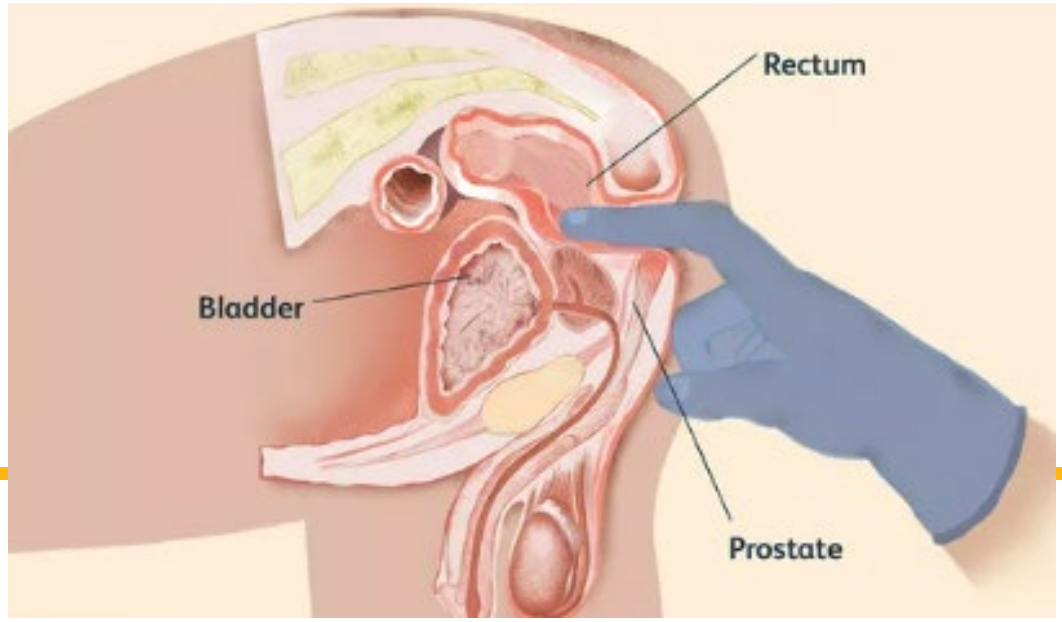
# Is Prostate Cancer Screening Right for You?

## Understanding the Potential Benefits vs. Risks for Men 55–69



# Prostate Cancer: Screening

- Digital rectal exam
  - What is it?
    - Palpation of the prostate through the anterior rectum
    - Done with patient in left lateral decubitus, or standing with waist bent
  - Why do it?
    - 70% of prostate cancer is in the peripheral zone
  - Who should get a DRE?
    - PSA <2: no
    - PSA >3: yes



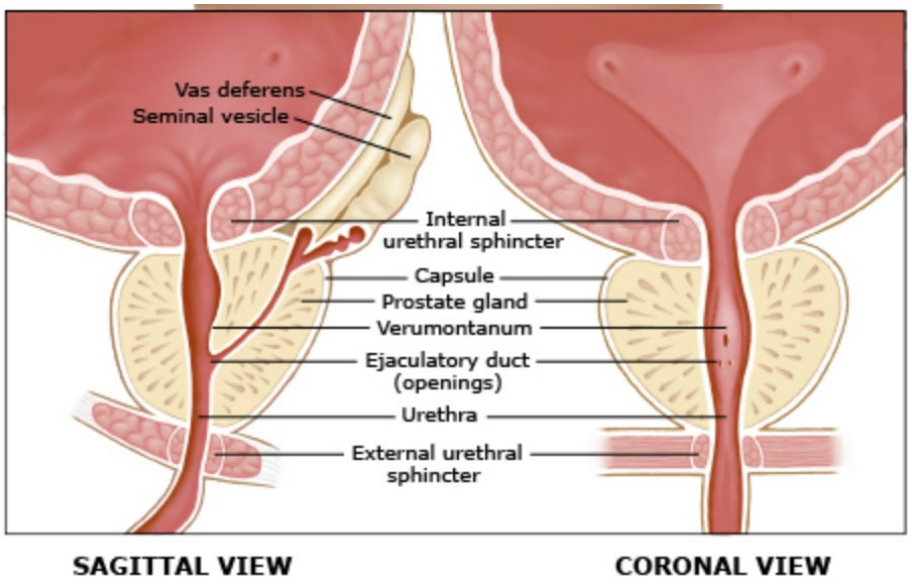
# Prostate Cancer: After Referral

- What happens at the urology appointment?
- Next step in workup
  - Repeat PSA
  - Prostate MRI
  - Prostate biopsy

- Possible treatments?
  - "Depends on where it is…"
  - Localized disease: surgery, radiation
  - For metastatic disease: androgen deprivation therapy or chemo

# Prostatitis

- What is it?
  - Inflammatory condition of the prostate gland (or prostate pain)
- Infectious vs noninfectious
  - Difficult to differentiate
- Acute vs chronic
- Symptomatic vs asymptomatic



# Prostatitis: 4 Types

- Type I: acute bacterial prostatitis
  - "Classic" prostatitis
  - Cause: bacterial infection of the prostate
  - Sxs: dysuria, freq/urge, weak stream, perineal/rectal pain, fever
  - Exam: tender, boggy prostate. Be gentle!

- Type II: chronic bacterial infection
  - Persistently positive urine culture (however can be negative!)
  - Cause: persistence of bacteria after type I, or mild under-treated infection
  - Sxs: +/- dysuria, freq/urge, weak stream, perineal/rectal pain
  - Exam: normal vs tender, boggy prostate

# Prostatitis: 4 Types

- Type III: chronic prostatitis/ chronic pelvic pain syndrome
  - Cause: not well understood. No infection. Multiple factors?
  - Subtypes
    - Type IIIA: inflammatory (leukocytes in prostate fluid)
    - Type IIIB: non-inflammatory
  - Sxs: pelvic pain is hallmark; +/- urinary sxs

- Type IV: asymptomatic inflammatory prostatitis
  - Incidentally discovered leukocytes in prostate fluid
  - Sxs: none
  - Does not require treatment!

# Prostatitis: Treatment

- Acute and chronic bacterial prostatitis
  - Antibiotic for 4-6 weeks
  - Choose abx with higher prostate penetrance
  - If no improvement after 2-3wk, switch

| *Drug* | *Dosage* |
|---|---|
| **First-line antibiotics** | |
| Fluoroquinolones | |
| Ciprofloxacin (Cipro) | 500 mg twice daily |
| Levofloxacin (Levaquin) | 500 mg once daily |
| Norfloxacin (Noroxin) | 400 mg twice daily |
| Trimethoprim/ sulfamethoxazole (Bactrim DS, Septra DS) | 160 mg/800 mg twice daily |
| **Second-line antibiotics** | |
| Doxycycline | 100 mg twice daily |
| Azithromycin (Zithromax) | 500 mg once daily |
| Clarithromycin (Biaxin) | 500 mg twice daily |

# Prostatitis: Treatment

- Chronic prostatitis/ chronic pelvic pain syndrome
  - Treatments to manage flares (rather than cure the disease)
  - Lifestyle modifications +/- medications
  - Avoid triggers
    - Decrease stress– yoga, meditation, exercise
    - Prostatitis diet– avoid caffeine, alcohol, citrus, spicy food
  - Symptom-directed treatment:

# Prostatitis: Treatment

- Chronic prostatitis/ chronic pelvic pain syndrome (cont)
  - Pain
    - Perineal ttp→ prostatitis pillow, standing desk, new bike seat, sitz bath
    - Perineal/pelvic floor spasm→ pelvic floor PT, muscle relaxants
    - General “pelvic” pain→ NSAIDs, neuropathic pain meds (gabapentin, amitriptyline)
  - Urinary symptoms
    - Weak stream→ a-blockers
    - Urgency→ anticholinergics, B3-agonists, PDE5i
  - Anxiety/depression
    - Referral to psych

# Prostatitis: Treatment

- Chronic prostatitis/ chronic pelvic pain syndrome (cont)
  - My (unvalidated) initial multiprong approach:
    - Meloxicam x4 weeks
    - Stress relief
    - Strict prostatitis diet
    - Decreased perineal pressure
    - Additional treatment based on patient-specific symptoms
    - +/- bactrim x6 weeks. Switch to cipro if no change in 2 weeks

# Take Home Messages

- BPH = enlarged prostate causing urinary problems
  - Try to confirm diagnosis (PVR, prostate size)
  - Ok to try medicine first– tamsulosin, finasteride
  - Refer to urology to discuss surgery if medicine doesn't help

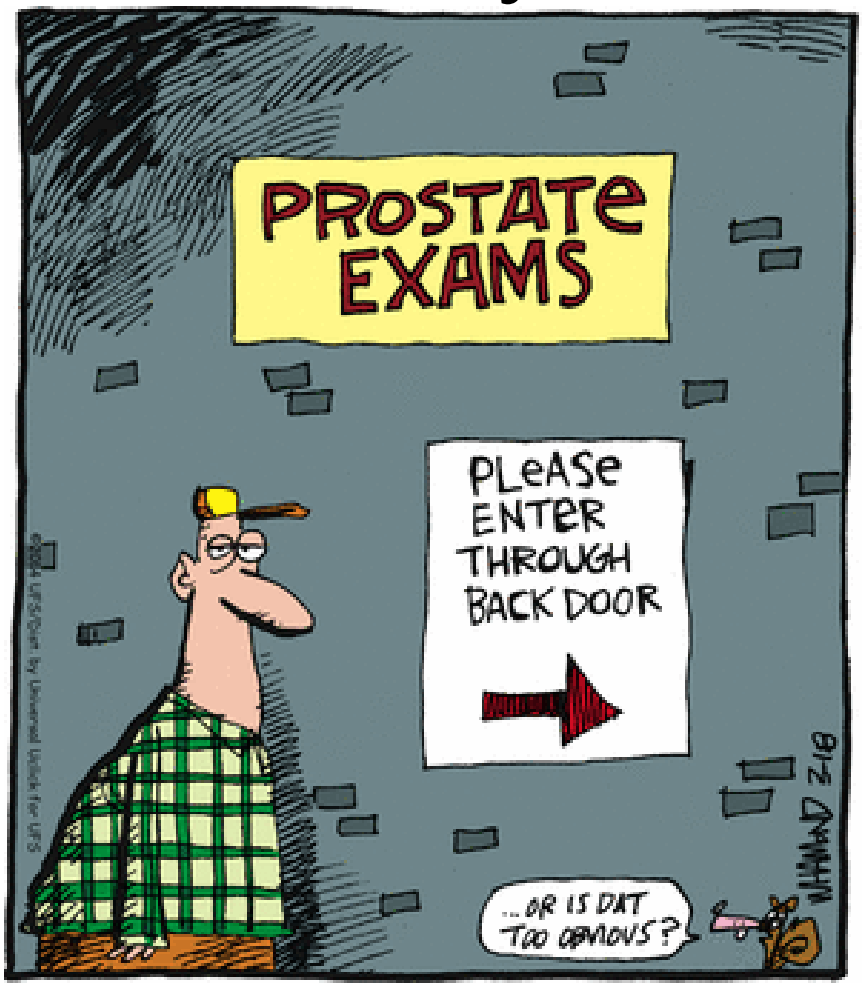
- Urinary retention
  - Acute retention— put a catheter in, then discuss SPT or CIC
  - Chronic catheters— exchange monthly, don't check urine cultures, some hematuria is ok

# Take Home Messages

- Prostate cancer
  - PSA screen 55-69YO men, who will live >10 yrs;  q2 yrs
  - If high, retest after removing other causes of high PSA
  - Do a DRE if PSA is >3

- Prostatitis
  - Conglomerate of multiple disease entities
  - Bacterial infection (+/- unsure)– abx for 4-6wks
  - Nonbacterial— treat specific symptoms; teach behavior modification for future flares

# Thank you!


PROSTATE EXAMS
PLEASE ENTER THROUGH BACK DOOR
...OR IS DAT TOO OBVIOUS?