Learn about PSA and Screening for Prostate Cancer
Identify who is at risk for Urinary Tract Infections and how to prevent them
Learn the symptoms and treatment for enlarged prostate
Find out the two kinds of incontinence and treatments for each
PROSTATE CANCER
PSA stands for “Prostate Specific Antigen”

- It is a protein that is normally made in the prostate and is measured in the blood.
- There are normal ranges of PSA based on your age
- Reasons for PSA elevation:
  - Infection
  - Enlargement
  - Prostate Cancer
  - Recent exam
MALE URINARY TRACT

- Ureter
- Bladder
- Prostate
- Urethra
- Penis
- Testicle
- Rectum
Because prostate cancer does not cause any symptoms until it has spread outside of the prostate, men should be screened for it while it is still treatable.
WHO SHOULD BE SCREENED?

- Men beginning at age 40 should have a baseline PSA drawn.
- Beginning at age 50, men should have yearly screening for prostate cancer.
- If there are abnormalities in either test, men should be sent to a urologist.
Two tests must be done

- A physical exam of the prostate done by a primary care doctor or a urologist
- A PSA test should be drawn
There has been recent controversy in the media after a publication from the USPTF.
The American Urologic Society and other groups that regularly treat prostate cancer still advise screening for prostate cancer between the ages of 50 and 80 if the patient has at least a 10-year life expectancy.
URINARY TRACT INFECTIONS
BLADDER VS KIDNEY INFECTION
A clinical syndrome of dysuria, frequency, urgency, and occasionally suprapubic pain

- Can be from bacteria in the bladder, urethra or the vagina.
- Can also be from non-infectious conditions such as interstitial cystitis, bladder cancer, or stone.
A clinical syndrome of chills, fever, and flank pain from a bacterial infection of the kidney.
Completely VS. Uncomplicated

**Uncomplicated infection:** an infection in a healthy patient with a structurally and functionally normal urinary tract.

**Complicated infection:** an infection associated with factors that increase the chance of acquiring bacteria and decreases the efficacy of therapy.

- The urinary tract is functionally or structurally abnormal, the patient is compromised, and/or the bacteria have increased virulence or antibiotic resistance. The majority of these patients are men.
More than 3 urinary tract infections per year defines *recurrent UTIs*. These patients need to be evaluated by a urologist.
UTIs are considered to be the most common bacterial infection.

- They account for >7 million visits to physician’s offices and 1 million ER visits necessitating 100,000 hospitalizations annually.

- Nearly 30% of women will have a symptomatic UTI requiring antibiotics by age 24, and almost half of all women will experience a UTI in their lifetime.

- The incidence of bacteriuria increases with institutionalization or hospitalization and concurrent disease.
An infection happens when there is an imbalance between factors for infection (mainly bacterial factors) and against infection (mainly patient factors)
Most infections are caused by bacteria originating in the bowel flora (bacteria that live in the colon)
FEMALE URINARY TRACT

- Rectus abdominis muscle
- Uterus
- Space of Retzius
- Peritoneum
- Pubic bone
- Bladder
- Urethra
- Vagina
- Anus
- Rectum
- Spine

Copyright 2000 YourSurgery.Com
Obstruction to urine flow (voluntary or involuntary) is a key factor in increasing a patient’s susceptibility to UTIs.
PATHOGENESIS: HOW DO I GET A UTI?

- Hormone changes (i.e. lower estrogen levels) after menopause in women seem to increase the ability of bacteria to adhere to cells in the bladder and kidney.

- Lower levels of “normal” bacteria in the vagina (lactobacilli and S. epidermidis) lead to more adherence of pathogenic bacteria.

- Higher levels of colonic bacteria in constipated patients seem to increase the incidence of UTIs.
PATHOGENESIS: HOW DO I GET A UTI?

- Trauma from intercourse,
- the use of spermicides and vaginal douches, and
- incomplete bladder emptying

all increase the chance of a UTI.
HOW DO I GET A UTI?

Glucose in the urine may facilitate infections.
This is consistent with the increased frequency and severity of infection in diabetics.
ALTERATIONS IN PATIENT DEFENSE MECHANISMS

- Obstruction of urine flow in the urinary tract
- Vesicoureteral Reflux
- Underlying disease
- Diabetes Mellitus
- HIV
- Pregnancy
- Spinal Cord Injury with high-pressure bladder
PREVENTION

Treat constipation
- You should be having a soft bowel movement every day
- Untreated constipation leads to
  - bladder dysfunction— inability to empty completely
  - Higher bacterial counts in the colon

Keep urine dilute and **empty your bladder at least every 3-4 hours**
- Do not get dehydrated! Your urine should be clear after your first morning void.
PREVENTION

- Void before and after intercourse
- Avoid douches and spermicides
- Treat low levels of estrogen after menopause
  - Estrogen comes in a pill form or a vaginal cream
- Control your other medical problems
- Regularly wash your hands
WHO SHOULDN’T BE TREATED?

In populations other than those for whom treatment has been documented to be beneficial (e.g. pregnant women and those undergoing urologic interventions), screening for or treatment of asymptomatic bacteriuria is not appropriate and should be discouraged.
WHO SHOULDN’T BE TREATED?

In adult populations, asymptomatic bacteriuria has not been shown to be harmful, and treatment has not been shown to decrease frequency of symptomatic infections or improve other outcomes.
Prescription antibiotics will almost always cure a UTI.

You should increase fluid intake and empty your bladder frequently to help flush out the bacteria.

Kidney infections can often be treated with oral antibiotics, too. But severe kidney infections may require hospital care, including a course of intravenous antibiotics.
UTIs are among the most common infections in the elderly.

But the symptoms may not follow the classic pattern.

- Agitation, delirium, or other behavioral changes may be the only sign of a UTI in elderly men and women. This age group is also more likely to develop serious complications as a result of UTIs.
ENLARGED PROSTATE
SYMPTOMS

- Weak stream
- Hesitancy
- Urgency
- Going to the bathroom more than twice nightly
- Going to the bathroom frequently during the day (more than 4-6 times during waking hours)
- Feeling of incomplete bladder emptying
Prostates enlarge over time because of:

- the male hormone Testosterone and
- Genetics (if your father had a large prostate, chances are you will too)
HOW IS IT DIAGNOSED?

- Physical exam
- Cystoscopy
- Uroflow
- Your symptoms
**TREATMENT**

**Medications**
- 2 types:
  - One type helps to relax the prostate and neck of the bladder
  - Another helps to shrink the prostate slowly over a several month period

**Surgery**
- Now a day surgery
- Use electricity to vaporize prostate tissue
BUTTON TURP
INCONTINENCE
COMMON CLASSIFICATIONS OF INCONTINENCE:

- Stress Incontinence
- Urgency Incontinence or Overactive Bladder
- Combination of Stress and Urgency (Mixed) Incontinence
- Overflow Incontinence
- Neurologic dysfunction/Spinal Cord Injury
URGENCY INCONTINENCE

• Characteristics:
  • Can’t get to the bathroom in time
  • Strong urge to go with inability to stop urine
  • More frequent urination than normal
  • Up at night several times
  • Often complain that running water or rising from a chair causes urgency and leakage
  • Problem worsened in elderly who are limited in mobility
URGENCY INCONTINENCE

- Increased risk in post menopausal women
- Atrophic vaginitis leads to vaginal dryness, burning, urgency, frequency, urinary tract infections, and increased risk of stress or mixed incontinence.
- Value of estrogen replacement primarily improves risks for UTI
- Most studies don’t show definitive evidence that estrogen replacement improves urgency/frequency syndrome.
Treatment:

- Nonsurgical therapy to relax detrusor muscle
- Early drugs like Ditropan (oxybutinin) were several times a day dosing and side effects including constipation and dry mouth
- Newer generation drugs more specific for smooth muscle of bladder, initially Detrol (tolteradine), and more recently Sanctura (trospium), Enablex (darifenacin), and Vesicare (solifenacin).
- New drugs as effective with fewer side effects and single daily dosing, but more expensive.
BEHAVIORAL THERAPY FOR OAB

Bladder training

Pelvic floor exercises
Biofeedback

Education reinforcement

Timed voiding

Diaries

Fluid / dietary management

Other non-pharmacologic treatment:
  • Botulinum Toxin Injection into bladder wall
  • Posterior tibial cutaneous nerve stimulation
  • Interstim therapy
INTERSTIM IMPLANTATION
STRESS INCONTINENCE

Typical Patient:
- Middle aged woman
- Prior History of Hysterectomy
- Mild to severe obesity
- History of multiparity

Typical Complaints:
- Leak with a cough, sneeze or laugh
- Need to wear one or more pads to protect from embarrassment
- No significant urgency or frequency to symptoms
- No difficulty emptying bladder
• Exercise and athletics increase risk of incontinence: As many as 30% of women leak during physical activity
• 38% reported in runners, even 28% in nulliparous young women, 80% in elite trampolinists
• Obesity is a risk factor for stress incontinence
• Higher intra-abdominal pressures overwhelm the valve mechanism
• Weight loss (even as little as 10% of your body weight) has been shown to improve severity of stress incontinence
• Hysterectomy is theorized to increase stress incontinence but evidence is conflicting in studies.
STRESS INCONTINENCE
RISK FACTORS

• There is an association between childbirth and incontinence
• Increased risk following vaginal delivery compared to Cesarean section
• Stress incontinence shows the strongest association with parity
• Vaginal birth may lead to loss of pelvic muscle strength transiently after childbirth which may return but sometimes remains weakened
Primarily treatment for Stress Incontinence is surgical. A multitude of different techniques for curing Stress Incontinence exist, and often the best selection of technique is based on the training and experience of the surgeon. Older techniques such as the Burch or MMK procedure have fallen out of favor as they are more invasive, but they remain one of the more effective long term cures for stress incontinence. New techniques for surgical cure primarily are variation of a basic sub-urethral sling technique, with many differing opinions on the best sling material.
PATIENT SELECTION: WHO NEEDS WHAT SURGERY...

・Typical mid-urethral sling is best for otherwise healthy woman with SUI, hypermobility of urethra on exam, small to moderate cystocele, residual urine volume after voiding less than 100 cc, with or without the need for concomitant vaginal prolapse surgery

・Urethral bulking agents: can significantly improve stress incontinence for the very elderly or poor operative candidates, although chance of success is in 60% range, and may need multiple treatments.
PATIENT SELECTION: WHO NEEDS WHAT SURGERY...

- Autologous slings are still used for those with high risk of vaginal erosion of sling, such as prior radiotherapy, immobile urethra, or history of urethral diverticulum or prior urethral surgery.
- Burch or retropubic suspension for those with simultaneous abdominal prolapse repair, or if prior sling failed, or in event of significantly increased obstructive voiding symptoms where a sling may be felt to increase risk of retention.
- Urinary diversion: for those with neurogenic bladder or severely incompetent urethra.
URETHRAL INJECTION OPTIONS...

- **Contigen:** product of bovine collagen and skin test required, often requires multiple injections for success
- **Autologous fat:** lower success rate
- **Silicone microimplants (microplastique):** generally good results, possible concern regarding autoimmune silicone reactions or particle migration
- **Coaptite:** made from calcium hydroxylapatite, a component of bone, non toxic and non immunogenic.
COLLAGEN INJECTION APPEARANCE
BEFORE/AFTER

Copyright 2007 by Saunders, an imprint of Elsevier Inc.
SLING SURGERY FOR STRESS INCONTINENCE

With current techniques patients should expect:

1. 85-90% chance of cure of stress incontinence
2. 60-70% chance of going home from surgery the same day catheter free. Those with a need for catheter typically need it only 2-3 days.
3. Small narcotic requirement and fairly rapid recovery. Most patients doing non-exertional jobs can go back to work in about 2 weeks.
4. Low risk for urinary retention in the long term and long term or permanent cure is likely.
POTENTIAL COMPLICATIONS OF SLING SURGERY

Risks are low but include:

1) Bleeding/Infection. Transfusion risk around 3%.
2) Retention of urine or long term outlet obstruction
3) Damage to bladder from trocar needles, very low risk for ureteral obstruction
4) Failure to cure incontinence in about 10%
"Mr. Osborne, may I be excused? My brain is full."
QUESTIONS?