Urinary Tract Infections

What is a Urinary Tract Infection?

Urinary tract infections (UTI's) are a common problem affecting millions of people each year. The urinary tract is the second most common site of infection after the respiratory tract. Each year, UTI's account for about 8 million doctor visits.

The urinary system consists of the kidneys, ureters, bladder, and urethra. The kidneys remove liquid waste from the blood in the form of urine, keep a stable balance of salts and other substances in the blood, and produce a hormone that aids the formation of red blood cells. Narrow tubes called ureters carry urine from the kidneys to the bladder in the lower abdomen. Urine is stored in the bladder and emptied through the urethra. The average adult passes about a quart and a half of urine each day. The amount of urine varies, depending on the fluids and foods a person consumes. The volume formed at night is about half that formed in the daytime.

Cystitis - is a urinary infection that is confined to the bladder and is commonly called a "bladder infection". Women are especially prone to this type of UTI and at least 50% of women will have one in their lifetime. Pyelonephritis or kidney infections are also UTI's that are more serious and can cause worse symptoms, but occur less.

Causes of a UTI

Urine in the bladder normally has no bacteria growing in it. However, the normal vaginal and rectal areas and their surrounding skin have lots of normally occurring bacteria. These normal germs play a useful role in the body and are called "normal flora." An infection occurs when bacteria enter the opening of the urethra and begin to multiply. Most infections arise from one type of bacteria, Escherichia coli (E. coli), which normally live in the colon or bowel.

Some women are more prone to getting a UTI than others. One factor may be that a woman's urethra is short, allowing bacteria easy access to the bladder. Also, a woman's urethral opening is near the anus and vagina which are sources of
bacteria. For many women, sexual intercourse seems to trigger an infection. Any abnormality of the urinary tract that obstructs the flow of urine (a kidney stone, for example) sets the stage for an infection. In women the rate of UTI's gradually increases with age.

Recently, researchers found that women who use condoms containing a spermicidal lubricant tend to have increased UTI's, possibly due to an increased growth of E. coli bacteria in the vagina.

**Symptoms**
Not everyone with a UTI has symptoms, but most people get at least some. These may include a frequent urge to urinate and a painful, burning feeling in the area of the bladder or urethra during or at the end of urination. Often, women feel an uncomfortable pressure above the pubic bone. It is common that, despite the urge to urinate, only a small amount of urine is passed. The urine itself may look cloudy, or even reddish if blood is present. A fever may mean that the infection has reached the kidneys. Other symptoms of a **kidney infection** include pain in the back or side below the ribs, nausea, or vomiting.

**Diagnosis**
To find out whether you have a UTI, your health care provider will test a sample of urine for bacteria and signs of infection. You will be asked to give a "clean catch" urine sample by wiping off the genital area and collecting a "midstream" sample of urine in a sterile container.

**Treatment**
A simple bladder infection can usually be cured in 1 or 3 days with antibiotic treatment. The choice of drug and length of treatment depends on the patient's history and the urine tests. You should follow your treatment instructions exactly to prevent recurrence of the infection. The drugs most often used to treat routine, uncomplicated UTI's are trimethoprim /sulfamethoxazole (Bactrim, Septra, Cotrim), amoxicillin (Amoxil, Trimox, Wymox), and nitrofurantoin (Macrodantin, Furadantin).

**If you have had a UTI**
It is important to take the full course of treatment because symptoms may disappear before the infection is fully cleared. A follow-up urinalysis is sometimes recommended to confirm that the urinary tract is infection-free.
Kidney infections generally require at least two weeks of antibiotic treatment. Sometimes patients with kidney infections need to be hospitalized for intravenous fluid and medicine until they are able to take them by mouth.

**Recurrent Infections in Women**
Many women suffer from frequent UTI's. Nearly 20 percent of women who have a UTI will have another. Usually, the latest infection stems from a strain or type of bacteria that is different from the infection before it, indicating a separate infection. Research funded by the National Institutes of Health (NIH) suggests that one factor behind recurrent UTI's may be the ability of bacteria to attach to cells lining the urinary tract.

Women who have frequent recurrences (three or more UTI's per year) may benefit from preventive therapy and should ask their health care provider about one of the following medical treatment options.

**Prevention**

- Take low doses of an antibiotic such as TMP/SMZ or nitrofurantoin daily for 6 months or longer. (If taken at bedtime, the drug remains in the bladder longer and may be more effective.) NIH-supported has shown this therapy to be effective without causing serious side effects.
- Take a single dose of an antibiotic after sexual intercourse.
- Take a short course (1 or 3 days) of antibiotics when symptoms appear.

Here are some additional steps that a woman can take to help prevent an infection:

- Drink plenty of water (6-8 glasses) every day.
- Several studies show that drinking cranberry juice acidifies the urine and may inhibit bacterial attachment to the urethra and bladder. Cranberry capsules are also available.
- Urinate when you feel the need; don't resist the urge to urinate.
- Wipe from front to back after urinating or a bowel movement to prevent bacteria around the rectal area from entering the vagina or urethra.
- Take showers instead of tub baths.
- Avoid using feminine hygiene sprays, bubble baths and scented mini-pads and douches, which may irritate the urethra.
- Urinate after sexual intercourse.
- Use adequate lubrication during intercourse to decreases urethral irritation.