

Palm Beach Obstetrics & Gynecology, PA

4671 S. Congress Avenue, Lake Worth, FL 33461

561.434.0111

4631 N. Congress Avenue, Suite 102, West Palm Beach, FL 33407

Urinary Tract Infection

About one of every five women will have a urinary tract infection (UTI) during her life. Some women will have more than one or get them often. Most UTIs are not serious. They are easy to treat with antibiotics. Symptoms are relieved quickly.

This pamphlet will explain:

- Causes of UTIs
- Symptoms and treatment
- How UTIs can be prevented

With prompt, proper treatment, UTIs can be treated with success.

A Woman's Urinary Tract

The urinary tract includes:

- The **kidneys**, which make urine
- Tubes called ureters that carry urine to the **bladder** where it is stored
- The urethra, a short, narrow tube that urine passes through on its way out of the body

The urinary tract in women has a lower part and an upper part. The lower urinary tract is made up of the urethra and the bladder. Most infections occur in the lower urinary tract where it is easy for bacteria to enter. Infections of the bladder or urethra rarely cause problems.

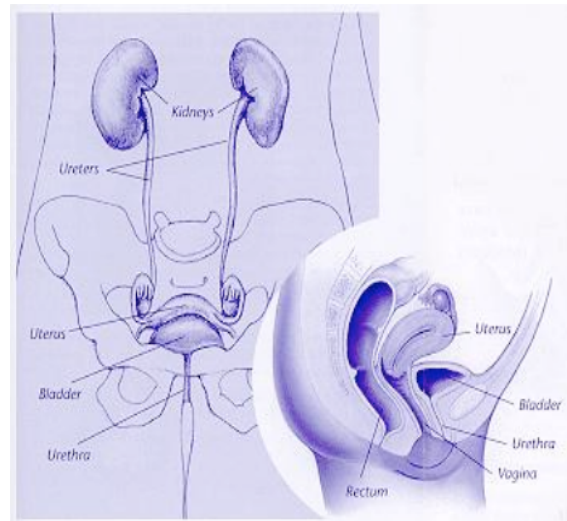
The upper urinary tract consists of the kidneys and ureters. An infection in the upper tract may cause a more severe illness.

How Urine Is Made

The kidneys are organs located in the lower back. They produce urine. Each has many **nephrons**--units that filter the blood in a two-step process.

In the first step, the nephrons remove wastes, water, and salts from the blood as it enters the kidneys. Then, the nephrons screen the liquid removed from the blood. This allows most of the water and salts in this liquid to be reabsorbed by the blood. Whatever is left after this process is **urine**.

Storage and Release



The ureters transport urine from the kidneys to the bladder (where urine is stored). To prevent urine from leaking out of the bladder, there is a muscle along the urethra that can tighten. As it fills with urine, the bladder expands.

When the bladder is stretched to a certain limit, the urge to urinate is felt. Urine will not be released until the urethra muscle relaxes and the bladder muscle contracts. The urine then passes out of the body through the urethra.

Types of Urinary Tract Infections

Most UTIs start in the lower urinary tract. Bacteria can enter through the urethra and spread upward to the bladder. This causes cystitis, a bladder infection. In most cases, **urethritis** occurs at the same time.

Bacteria that have infected the bladder may travel up the ureters to the kidneys. This may cause pyelonephritis, a kidney infection.

Causes

Urinary tract infections often are caused by bacteria from the bowel that live on the skin near the rectum or in the vagina. These bacteria can spread and enter the urinary tract through the urethra. They then travel up the urethra. They may cause infections in the bladder and, sometimes, in other parts of the urinary tract.

Sex is one of the causes of UTIs. Because of their anatomy, women are prone to UTIs after having sex. In front of the vagina is the opening of the urethra. During sex, bacteria in the vaginal area could be massaged into the urethra by the back and forth motion of the penis.

Urinary tract infections also tend to occur in women who change sexual partners or begin having sex more often. Some women get an infection each time they have sex. This is rare, though.

Waiting too long to urinate also can result in UTIs. The bladder is a muscle that stretches to hold urine and contracts to expel it. If you go for hours without urinating, the bladder muscle is stretched too much. This weakens the muscle so that it can't contract with enough force to expel all of the urine it holds. Some urine remains in the bladder after urination. Any time this happens, the risk of a UTI increases.

Certain other factors increase your chances of having a UTI. You are more likely to have an infection if you:

- Are pregnant
- Had UTIs as a child
- Are past menopause
- Have diabetes

Symptoms

Symptoms of UTIs can come on quickly. The first sign of a UTI is a strong urge to urinate (urgency) that cannot be delayed. As urine is released, a sharp pain or burning (dysuria) will be felt in the urethra. Very little urine is released. The urine may be tinged with blood. The need to urinate returns minutes later (frequency). Soreness may occur in the lower abdomen, in the back, or in the sides.

This cycle may repeat itself many times during the day or at night (nocturia). It is normal to urinate about six times a day. If you are urinating more often, you may have a UTI.

If the bacteria enter the ureters and spread to the kidneys, symptoms also may include:

- Back pain
- Chills
- Fever
- Nausea
- Vomiting

Symptoms linked with a UTI, such as painful urination, can be caused by other problems (such as an infection of the vagina or vulva). Only your doctor can make the correct diagnosis. It is up to you to let your doctor know when you are aware of any of these changes.

To help diagnose a UTI, your doctor may check your pelvic organs during a pelvic exam for signs of a problem.

Diagnosis

Urinary tract infections are diagnosed on the basis of the number of bacteria and white blood cells found in a urine sample. To detect the presence of bacteria and white blood cells, a sample of your urine will be studied under a microscope. It also will be cultured in a substance that promotes the growth of bacteria. A pelvic exam may be needed as well.



Treatment

Antibiotics are used to treat UTIs. Most patients with UTIs have to take antibiotics for up to 10 days. But with some infections, only a single dose of an antibiotic is needed.

Be sure you take all of the medication you are given even though your symptoms may go away before you finish your prescription. If you stop treatment early, the infection may still be present or it could come back after a short time. About a week after you finish treatment, another urine test may be done to see whether the infection is cured.

Repeated Infections

Urinary tract infections may recur a few weeks after treatment. These are **recurrent infections**. They can be frustrating, stressful, time-consuming, and hard to treat.

Repeated UTIs may cause severe health problems. A kidney infection may occur if bacteria go up the ureters to the kidneys. It only rarely results in severe damage to the kidneys leading to kidney failure, the point at which the kidneys stop making urine.

If you have only two or three repeated infections, your doctor likely will treat these simply as if they were normal infections. When infections occur more often, a week or two apart, the doctor may prescribe a low dose of an antibiotic to be taken each day or after sex. It is hoped that this newer approach to treating this type of UTI will prevent it completely.

Often the cause of repeated UTIs is never found. Doctors may look for some blockage in the urinary tract that would trap urine and aid bacteria in starting an infection. One of these problems may cause repeated infections:

- Kidney stones lodged in some part of the urinary tract
- One of the tubes narrows in the urinary tract
- Diverticula--small pockets that bulge out of the bladder wall or out of the urethra and hold urine
- Cystocele--a condition in which the supports that hold the bladder in place become weakened, allowing the bladder to protrude into the vagina

Testing

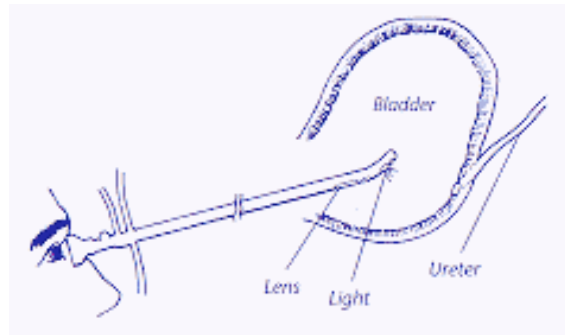
After you have had a few UTIs, or maybe a single kidney infection, your doctor may refer you to a urologist. A urologist is a doctor who specializes in problems of the urinary tract. The urologist will do some tests to find out whether there are any defects in the urinary tract that could be causing your infections.

Intravenous pyelography, or IVP, is a test that helps find defects or abnormal structures in the urinary tract. The test is performed by injecting a chemical into the body that shows up on an X-ray. As this chemical enters the kidneys, ureters, and bladder, X-rays are taken. If there is a blockage or abnormal structure in the urinary tract, it will show on the X-ray.

In a similar test, cystourethrography, a chemical is inserted into a woman's bladder. X-rays are taken as she urinates. This detects any urine that might be backing up in the urinary tract instead of flowing downward. This problem, called reflux, often results in UTIs.

With cystoscopy, a slender metal tube with a lens and light source is used to view the inside of the bladder.

Another test, cystoscopy, often is done to examine the urethra and the inside of the bladder. A cystoscope is a slender metal tube like a telescope with a light. During the exam, it is inserted through the urethra into the bladder. Samples of urine and small bits of tissue can be removed through the cystoscope for further testing.



Most cases of recurrent infection cannot be cured with surgery. If these tests do not reveal a problem that can be treated with surgery, some other treatment must be found.

How You Can Prevent Urinary Tract Infections

There are a number of ways to try to prevent UTIs. Some of them work some of the time or in only some women. It is likely you will find one that works for you:

- Practice good hygiene. This is the best and easiest thing you can do to avoid infections. After a bowel movement or after urinating, wipe from front to back. Each day, wash the skin around the rectum, the vagina, and the area in between. Before and after you have sex, wash these areas again.
- Drink plenty of fluids to flush bacteria out of your urinary system.
- Empty your bladder as soon as you feel the urge or about every 2-3 hours. You may want to empty your bladder before and after sex. This may flush out bacteria that entered the urethra during sex.
- Drink cranberry juice or eat blueberries to help prevent the growth of bacteria.
- Wear underwear with a cotton crotch. Cotton breathes. Other fabrics can trap moisture.

- During sex, you may want to try different positions that cause less friction to your urethra from your partner's penis. Your doctor may suggest taking an antibiotic pill right after sex if you tend to have repeated UTIs.

Finally...

Urinary tract infections are common and painful. In most cases, they last only a few days. If you have symptoms of a UTI, see your doctor right away. With prompt, proper treatment, these infections can be treated with success.