



Urinary Tract Infections

- **How do urinary tract infections develop?**
- **What causes urinary tract infections?**
- **What other factors increase the risk of getting a urinary tract infection?**
- **What are the signs of a urinary tract infection?**
- **How are urinary tract infections diagnosed?**
- **How are urinary tract infections treated?**
- **What is a recurrent infection?**
- **How can urinary tract infections be prevented?**
- **Glossary**

How do urinary tract infections develop?

Most urinary tract infections (UTIs) start in the lower urinary tract, which is made up of the **urethra** and **bladder**. Bacteria can enter through the urethra and spread upward to the bladder. This causes cystitis, a bladder infection.

Bacteria that have infected the bladder may travel to the upper urinary tract, the **ureters** and the **kidneys**. An infection of the kidneys is called pyelonephritis. An upper urinary tract infection may cause a more severe illness than a lower urinary tract infection.

Women are more likely than men to get UTIs because the urethra is shorter in a woman than in a man. In women, the bacteria can reach the bladder more easily.

What causes urinary tract infections?

Women's anatomy makes them prone to getting UTIs after having sex. The opening of the urethra is in front of the **vagina**. During sex, bacteria near the vagina can get into the urethra from contact with the penis, fingers, or devices.

Urinary tract infections also tend to occur in women when they begin having sex or have it more often. Using **spermicides** or a diaphragm also can cause more frequent UTIs.

Infections also can occur when the bladder does not empty completely. This condition may be caused by

- blockage (a stone) in the ureters, kidneys, or bladder that prevents the flow of urine through the urinary tract
- a narrowed tube (or a kink) in the urinary tract
- problems with the pelvic muscles or nerves

What other factors increase the risk of getting a urinary tract infection?

You are more likely to get an infection if you

- have had a UTI before
- have had several children
- have **diabetes mellitus**
- are obese

UTIs can occur during **menopause** and pregnancy. If you are pregnant and think you may have a UTI, be sure to tell your **obstetrician–gynecologist (ob-gyn)** or other health care professional promptly. If untreated, it may cause problems for you and your **fetus**.

What are the signs of a urinary tract infection?

One sign is a strong urge to urinate that cannot be delayed (urgency). As urine flows, a sharp pain or burning, called **dysuria**, is felt in the urethra. The urge to urinate then returns minutes later (frequency). Soreness may be felt in the lower abdomen, in the back, or in the sides.

Other signs may show up in the urine. It may

- have a strong odor
- look cloudy
- sometimes be tinged with blood

Blood in the urine may be caused by a UTI, but it also may be caused by other problems. Tell your ob-gyn or other health care professional promptly if you see blood in your urine.

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

- back pain
- chills
- fever
- nausea
- vomiting

If you have any of these symptoms, tell your ob-gyn or other health care professional right away. Kidney infections are serious. They need to be treated promptly.

Symptoms linked with a UTI, such as painful urination, can be caused by other problems (such as an infection of the vagina or **vulva**). Tests may be needed to confirm the diagnosis. Be sure to let your ob-gyn or other health care professional know if you have any of these symptoms.

How are urinary tract infections diagnosed?

The diagnosis of a UTI often is made based on symptoms, including pain with urination or frequent urination. Your ob-gyn or other health care professional may first do a simple test, called urinalysis, to find out whether you have a UTI. For this test, you will be asked to provide a urine sample. This sample will be studied in a lab for the presence of white and red blood cells and bacteria. The urine sample also may be grown in a culture (a substance that promotes the growth of bacteria) to see which bacteria are present.

How are urinary tract infections treated?

Antibiotics are used to treat UTIs. Treatment is meant to relieve symptoms. A simple UTI rarely leads to infection of the upper urinary tract. The type, dose, and length of the antibiotic treatment depend on the type of bacteria causing the infection and on your medical history.

Treatment lasts a few days and is very effective. Most symptoms go away in 1–2 days. Be sure to take all the medication 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.

For more severe infections, such as a kidney infection, you may need to stay in the hospital. These infections take longer to treat and you may be given medication intravenously (through a tube in a vein).

What is a recurrent infection?

If you have three or more UTIs in a year, you have a **recurrent infection**. The first step in treatment is finding the cause. Factors that increase the risk of recurrent infection are

- frequent sex
- young age at first UTI
- spermicide use
- diaphragm use
- a new sexual partner

Recurrent infections are treated with antibiotics. A week or two after you finish treatment, a urine test may be done to see if the infection is cured. Changing your birth control method also may be recommended. If you often get UTIs through sexual activity, you may be given an antibiotic to take in single doses after you have sex.

How can urinary tract infections be prevented?

There are a number of ways to prevent UTIs:

- Wash the skin around the **anus** and the genital area.
- Drink plenty of fluids (including water) to flush bacteria out of your urinary system.
- Empty your bladder as soon as you feel the urge or about every 2–3 hours.

Unsweetened cranberry juice and cranberry pills may decrease the risk of getting a UTI. The exact amount of juice or pills needed and how long you need to take them to prevent infection are being studied. Treatment with an **estrogen** cream or pills is being studied as a way to prevent UTIs in menopausal women.

Glossary

Antibiotics: Drugs that treat certain types of infections.

Anus: The opening of the digestive tract through which bowel movements leave the body.

Bladder: A hollow, muscular organ in which urine is stored.

Diabetes Mellitus: A condition in which the levels of sugar in the blood are too high.

Dysuria: Pain during urination.

Estrogen: A female hormone produced in the ovaries.

Fetus: The stage of human development beyond 8 completed weeks after fertilization.

Kidneys: Organs that filter the blood to remove waste that becomes urine.

Menopause: The time when a woman's menstrual periods stop permanently. Menopause is confirmed after 1 year of no periods.

Obstetrician–Gynecologist (Ob-Gyn): A doctor with special training and education in women's health.

Recurrent Infection: An infection that occurs more than once.

Spermicides: Chemicals (creams, gels, foams) that inactivate sperm.

Ureters: A pair of tubes, each leading from one of the kidneys to the bladder.

Urethra: A tube-like structure. Urine flows through this tube when it leaves the body.

Vagina: A tube-like structure surrounded by muscles. The vagina leads from the uterus to the outside of the body.

Vulva: The external female genital area.

If you have further questions, contact your obstetrician–gynecologist.

FAQ050: This information was designed as an educational aid to patients and sets forth current information and opinions related to women's health. It is not intended as a statement of the standard of care, nor does it comprise all proper treatments or methods of care. It is not a substitute for a treating clinician's independent professional judgment. Please check for updates at www.acog.org to ensure accuracy.

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