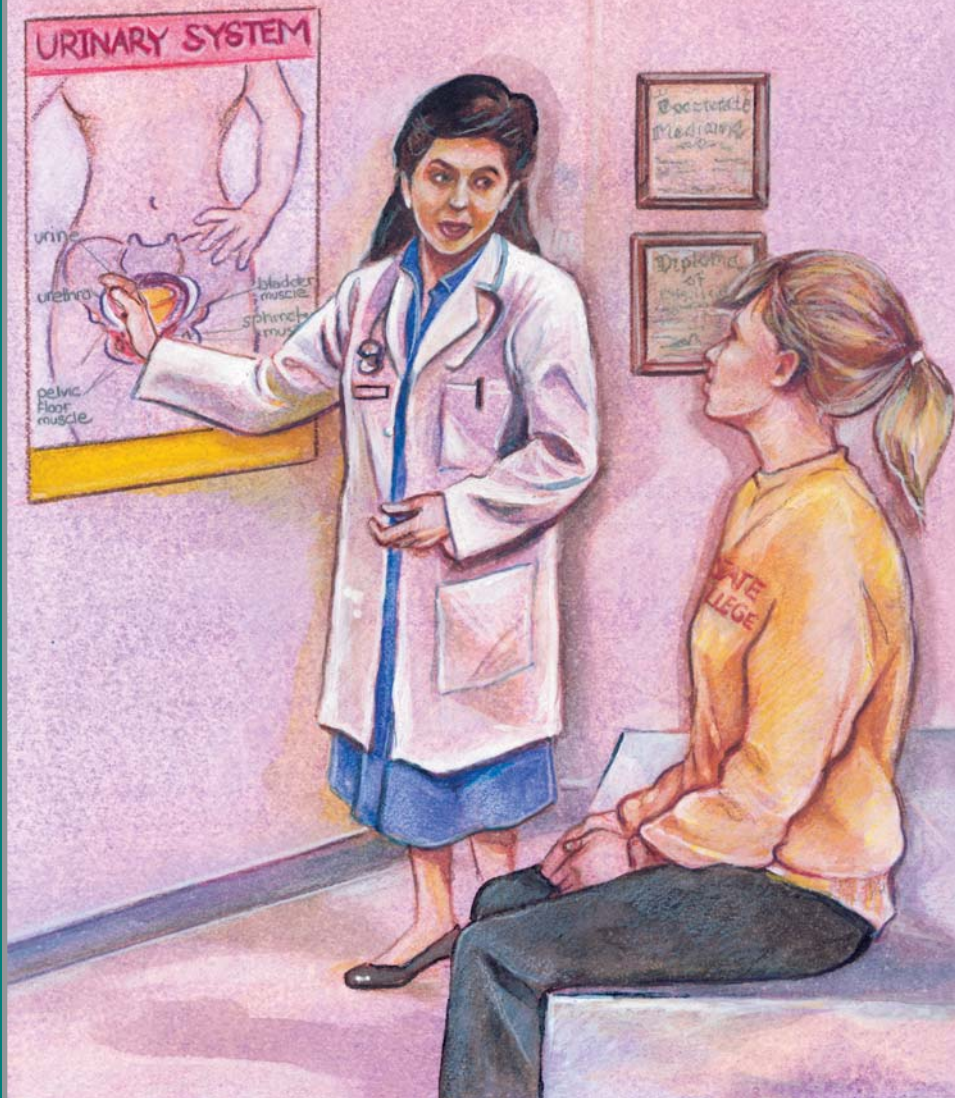


What I need to know about Urinary Tract Infections



NATIONAL INSTITUTES OF HEALTH
National Kidney and Urologic Diseases Information Clearinghouse



U.S. Department
of Health and
Human Services

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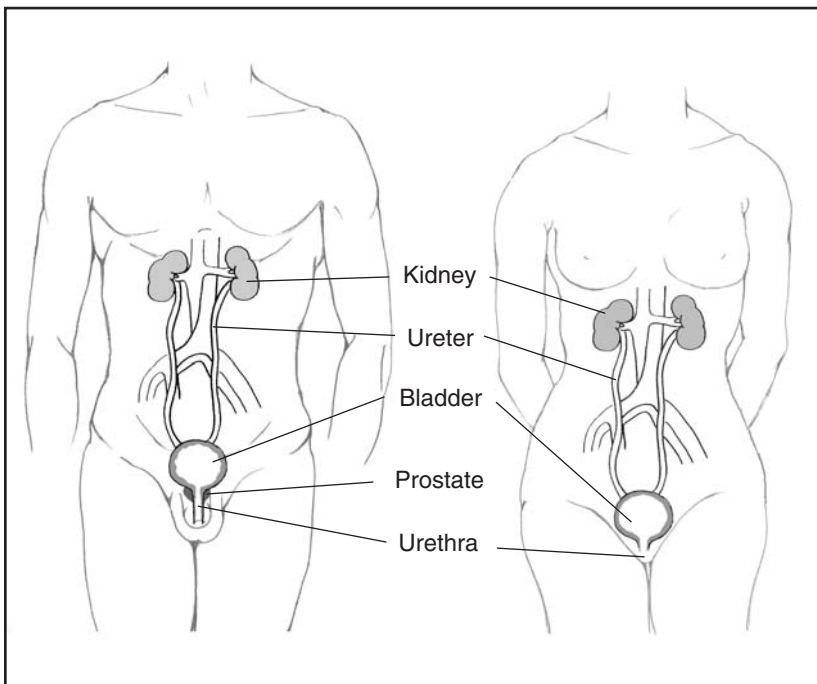
What is a urinary tract infection (UTI)?

A UTI is an infection anywhere in the **urinary tract**.* Your urinary tract includes the organs that collect and store urine and release it from your body. They are the

- kidneys
- ureters
- bladder
- prostate (in men)
- urethra

*Words in **bold** type are defined in the glossary on page 11.

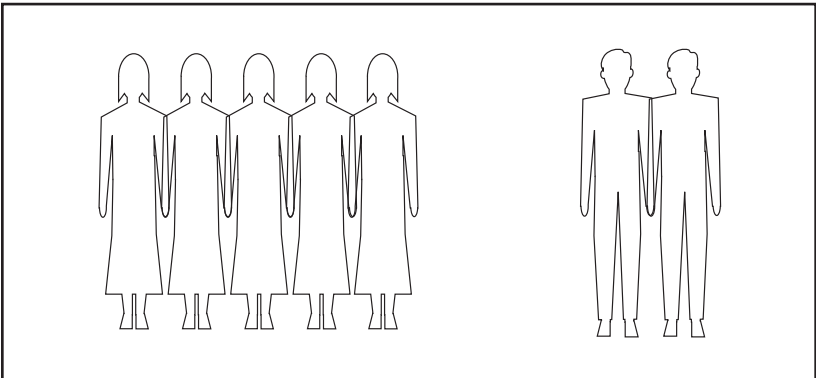
- **Kidneys.** Your kidneys collect wastes and extra water from your blood to make urine.
- **Ureters.** The ureters carry the urine from your kidneys to your bladder.
- **Bladder.** Your bladder stores the urine and squeezes it out when full.
- **Prostate.** The prostate adds fluid to semen.
- **Urethra.** The urethra carries the urine out of your bladder when you urinate.



Images of the male and female urinary tracts that show the kidney, ureter, bladder, prostate, and urethra.

What causes a UTI?

Usually, a UTI is caused by **bacteria** that can also live in the digestive tract, in the vagina, or around the urethra, which is at the entrance to the urinary tract. Most often these bacteria enter the urethra and travel to the bladder and kidneys. Usually, your body removes the bacteria, and you have no symptoms. However, some people—including women and older people of both sexes—seem to be prone to infection.



Women are more likely to get UTIs than men and are more likely to get them at a younger age.

When should I see my doctor?

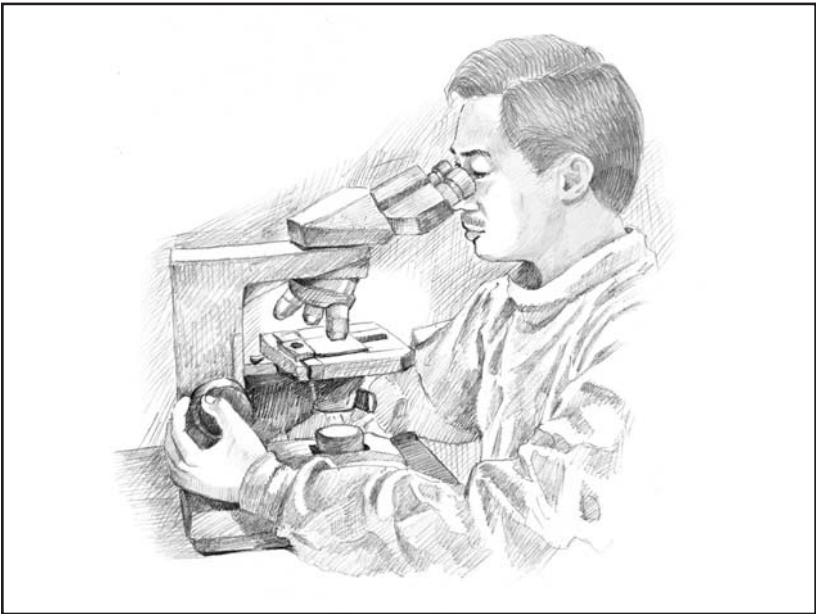
You should see your doctor if you have any of these signs or symptoms:

- burning feeling when you urinate
- frequent or intense urges to urinate, even when you have little urine to pass
- pain in your back or lower abdomen
- cloudy, dark, bloody, or unusual-smelling urine
- fever or chills

Women are more likely to get UTIs than men. When men get UTIs, however, they're often serious and hard to treat. UTIs can be especially dangerous for older people and pregnant women, as well as for those with diabetes and those who have difficulty urinating.

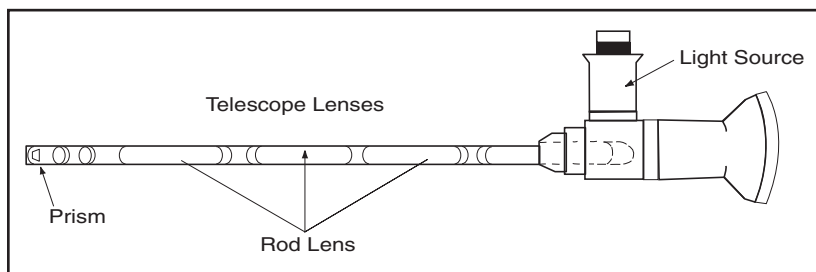
What will happen at the doctor's office?

The health care provider may ask you how much fluid you drink, and if you have pain or a burning feeling when you urinate, or if you have difficulty urinating. Women may be asked about the type of birth control they use. You'll need to urinate into a cup so the urine can be tested. In addition, your doctor may need to take pictures of your kidneys with an x ray or ultrasound and look into your bladder with an instrument called a **cystoscope**.



If you have a UTI, your doctor can look through a microscope and find bacteria in a sample of your urine.

- **Urine tests.** Your urine will be checked with a microscope for bacteria and infection-fighting cells. The doctor may order a urine culture. In this test, bacteria from the urine are allowed to grow in a lab dish so the exact type of bacteria can be seen and the precise type of medicine you need can be chosen.
- **Images.** The doctor may use either x rays, ultrasound, or a computerized tomography (CT) scan to view your bladder or kidneys. These pictures can show stones, blockage, or swelling.
- **Cystoscope.** The urethra and bladder can be seen from the inside with a cystoscope, which is a thin tube with lenses like a microscope. The tube is inserted into the urinary tract through the urethra.



Cystoscope. The prism in the cystoscope reflects light so the doctor can see inside the bladder.

How are UTIs treated?

Once it is determined that your symptoms have been caused by an infection, your doctor will prescribe an **antibiotic**. Antibiotics can kill the bacteria causing the infection. The antibiotic prescribed will depend on the type of bacteria found.

For simple infections, you'll be given 3 days of therapy. For more serious infections, you'll be given a prescription for 7 days or longer. Be sure to follow your instructions carefully and completely. If you have any allergies to drugs, be sure your doctor knows what they are.

Will UTIs come back?

Most healthy women don't have repeat infections. However, about one out of every five women who get a UTI will get another one. Some women get three or more UTIs a year. Men frequently get repeat infections. Anyone who has diabetes or a problem that makes it difficult to urinate may get repeat infections.

If you get repeat infections, talk with your doctor about special treatment plans. Your doctor may refer you to a **urologist**, a doctor who specializes in urinary problems. Your doctor may have you take antibiotics over a longer period to help prevent repeat infections. Some doctors give patients who get frequent UTIs a supply of antibiotics to be taken at the first sign of infection. Make sure you understand and follow the instructions your doctor gives you.

Men may need to take antibiotics for a longer time. Bacteria can hide deep in prostate tissue. Men shouldn't take their spouse's pills and think they will cure the infection. See a doctor for treatment that fits your needs.

How can I prevent more UTIs?

Changing some of your daily habits may help you avoid UTIs.

- Drink lots of fluid to flush the bacteria from your system. Water is best. Try for 6 to 8 glasses a day.
- Drink cranberry juice or take vitamin C. Both increase the acid in your urine so bacteria can't grow easily. Cranberry juice also makes your bladder wall slippery, so bacteria can't stick to it.
- Urinate frequently and go when you first feel the urge. Bacteria can grow when urine stays in the bladder too long.
- Urinate shortly after sex. This can flush away bacteria that might have entered your urethra during sex. Drinking a glass of water will also help.
- After using the toilet, always wipe from front to back, especially after a bowel movement.
- Wear cotton underwear and loose-fitting clothes so that air can keep the area dry. Avoid tight-fitting jeans and nylon underwear, which trap moisture and can help bacteria grow.

- For women, using a diaphragm or spermicide for birth control can lead to UTIs by increasing bacteria growth. If you have trouble with UTIs, consider modifying your birth control method. Unlubricated condoms or spermicidal condoms increase irritation, which may help bacteria grow. Consider switching to lubricated condoms without spermicide or using a nonspermicidal lubricant.

Hope Through Research

Scientists supported by the National Institutes of Health are working on a vaccine to help prevent UTIs. The vaccine may be a **suppository** to place in the vagina or a pill to make the body's infection-fighting cells stronger.

Glossary

antibiotic (AN-tee-by-OT-ik): a medicine that kills bacteria.

bacteria (bak-TIHR-ee-uh): tiny organisms that cause infection or disease.

bladder (BLAD-ur): the balloon-shaped organ inside the pelvis that holds urine.

cystoscope (SISS-toh-skohp): a tube-like instrument used to look inside the urethra and bladder. The procedure is called cystoscopy (siss-TOSS-kuh-pee).

kidney (KID-nee): one of two bean-shaped organs that filter wastes from the blood. The kidneys are located near the middle of the back. They send urine to the bladder through tubes called ureters.

prostate (PROSS-tayt): in men, a walnut-shaped gland that surrounds the urethra at the neck of the bladder. The prostate supplies fluid that goes into semen.

suppository (suh-POZ-ih-TOH-ree): solid medicine formed in the shape of a small cone or cylinder to be placed in a body cavity like the vagina or rectum.

ureters (YOOR-uh-turz): tubes that carry urine from the kidneys to the bladder.

urethra (yoo-REE-thruh): the tube that carries urine from the bladder to the outside of the body.

urinary tract (YOOR-ih-NAIR-ee) (trakt): the system that takes wastes from the blood and carries them out of the body in the form of urine. The urinary tract includes the kidneys, renal pelvises, ureters, bladder, and urethra.

urologist (yoo-RAH-luh-jist): a doctor who specializes in urinary problems.

For More Information

The National Kidney and Urologic Diseases Information Clearinghouse has a fact sheet, *Urinary Tract Infections in Adults*, that gives more information about UTIs. The Clearinghouse has information about prostate problems and kidney stones as well.

The following organizations also have fact sheets on UTIs.

American Urological Association Foundation

1000 Corporate Boulevard

Linthicum, MD 21090

Phone: 1-866-RING-AUA (746-4282)

or 410-689-3700

Email: patienteducation@auafoundation.org

Internet: www.auafoundation.org

www.UrologyHealth.org

National Kidney Foundation, Inc.

30 East 33rd Street

New York, NY 10016

Phone: 1-800-622-9010 or 212-889-2210

Internet: www.kidney.org

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The National Kidney and Urologic Diseases Information Clearinghouse (NKUDIC) is a service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The NIDDK is part of the National Institutes of Health of the U.S. Department of Health and Human Services. Established in 1987, the Clearinghouse provides information about diseases of the kidneys and urologic system to people with kidney and urologic disorders and to their families, health care professionals, and the public. The NKUDIC answers inquiries, develops and distributes publications, and works closely with professional and patient organizations and Government agencies to coordinate resources about kidney and urologic diseases.

Publications produced by the Clearinghouse are carefully reviewed by both NIDDK scientists and outside experts.

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This booklet is also available at www.kidney.niddk.nih.gov.

This publication may contain information about medications used to treat a health condition. When this publication was prepared, the NIDDK included the most current information available. Occasionally, new information about medication is released. For updates or for questions about any medications, please contact the U.S. Food and Drug Administration at 1-888-INFO-FDA (463-6332), a toll-free call, or visit their website at www.fda.gov. Consult your doctor for more information.



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