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Urinary Tract Infections

Urinary tract infections (UTIs) are common in kids. By the time they're 5 years old, about 8% of girls and about 1-2% of boys have had at least one.

In older kids, UTIs may cause obvious symptoms such as burning or pain with urination (peeing). In infants and young children, UTIs may be harder to detect because symptoms are less specific. In fact, fever is sometimes the only sign.

About UTIs

Most UTIs are caused when bacteria infect the urinary tract, which is made up of the kidneys, ureters, bladder, and urethra. Each plays a role in removing liquid waste from the body. The kidneys filter the blood and produce urine; the ureters carry the urine from the kidneys to the bladder; and the bladder stores the urine until it is eliminated from the body through the urethra.

An infection can occur anywhere along this tract, but the lower part — the urethra and bladder — is most commonly involved. This is called **cystitis**. If the infection travels up the ureters to the kidneys, it's called **pyelonephritis** and is usually more serious.

Although bacteria aren't normally found in the urine, they can easily enter the urinary tract from the skin around the anus (the intestinal bacteria *E. coli* is the most frequent cause of UTIs). Many other bacteria, and some viruses, can also cause infection. Rarely, bacteria can reach the bladder or kidneys through the blood. Bacterial UTIs are *not* contagious.

UTIs occur much more frequently in girls, particularly those around the age of toilet teaching, because a girl's urethra is shorter and closer to the anus. Uncircumcised boys younger than 1 year also have a slightly higher risk of developing a UTI.

Other risk factors for developing a UTI include:

- an abnormality in the structure or function of the urinary tract (for example, a malformed kidney or a blockage somewhere along the tract of normal urine flow)
- an abnormal backward flow (reflux) of urine from the bladder up the ureters and toward the kidneys. This condition, known as vesicoureteral reflux (VUR), is present at birth, and about 30% to 50% of children with a UTI are found to have it.

- poor toilet and hygiene habits
- the use of bubble baths or soaps that irritate the urethra
- family history of UTIs

UTIs are highly treatable, but it's important to catch them early. Undiagnosed or untreated UTIs can lead to kidney damage, especially in kids younger than 6.

Signs and Symptoms

Signs and symptoms of UTIs vary depending on the child's age and on which part of the urinary tract is infected. In younger kids and infants, the symptoms may be very general. The child may seem irritable, begin to feed poorly, or vomit. Sometimes the only symptom is a fever that seems to appear for no reason and doesn't go away.

In older kids and adults, symptoms can reveal which part of the urinary tract is infected. In a bladder infection, the child may have:

- pain, burning, or a stinging sensation when peeing
- an increased urge to urinate or frequent urination (though only a very small amount of urine may be produced)
- fever (though this is not always present)
- frequent night waking to go to the bathroom
- wetting problems, even though the child is toilet taught
- low back pain or abdominal pain in the area of the bladder (generally below the navel)
- foul-smelling urine that may look cloudy or contain blood

Many of these symptoms are also seen in a kidney infection, but the child often appears more ill and is more likely to have a fever with shaking chills, pain in the side or back, severe fatigue, or vomiting.

Prevention

In infants and toddlers, frequent diaper changes can help prevent the spread of bacteria that cause UTIs. When kids begin self-care, it's important to teach them good hygiene. After every bowel movement, girls should remember to wipe from front to rear — not rear to front — to prevent germs from spreading from the rectum to the urethra.

All kids should be taught not to "hold it" when they have to go because urine that remains in the bladder gives bacteria a good place to grow.

School-age girls should avoid bubble baths and strong soaps that might cause irritation, and they should wear cotton underwear instead of nylon because it's less likely to encourage bacterial growth. Other ways to decrease the risk of UTIs include drinking plenty of fluids and avoiding caffeine, which can irritate the bladder.

Any kids diagnosed with VUR should follow their doctor's treatment plan to prevent recurrent UTIs.

Duration

Most UTIs are cured within a week with proper medical treatment. Recurrences are common

in certain kids with urinary abnormalities, those who have problems emptying their bladders (such as children with spina bifida), or those with very poor toilet and hygiene habits.

Diagnosis

After performing a physical exam and asking about symptoms, your doctor may take a urine sample to check for and identify bacteria causing the infection. How a sample is taken depends on how old your child is. Older kids might simply need to pee into a sterile cup.

For younger children in diapers, a plastic bag with adhesive tape may be placed over their genitals to catch the urine. However, urine that comes in contact with the skin may become contaminated with the same bacteria causing the infection, so a catheter is usually preferred. This is when a thin tube is inserted into the urethra up to the bladder to get a "clean" urine sample.

The sample may be used for a urinalysis (a test that microscopically checks the urine for germs or pus) or a urine culture (which attempts to grow and identify bacteria in a laboratory). Knowing what bacteria are causing the infection can help your doctor choose the best medication to treat it.

Most children with a UTI recover just fine, but some of them — especially those who are very young when they have their first infection or those who have recurrent infections — may need further testing to rule out abnormalities of the urinary tract.

If an abnormality is suspected, the doctor may order special tests, such as an ultrasound of the kidneys and bladder or X-rays that are taken during urination (called a voiding cystourethrogram, or VCUG). These tests, as well as other imaging studies, can check for problems in the structure or function of the urinary tract. Your child may also be referred to a urologist (a doctor who specializes in diseases of the urinary tract).

Treatment

UTIs are treated with antibiotics. The type of antibiotic used and how long it must be taken will depend on the type of bacteria that is causing the infection and how severe it is. After several days of antibiotics, your doctor may repeat the urine tests to confirm that the infection is gone. It's important to make sure the infection is cleared because an incompletely treated UTI can recur or spread.

If a child is having severe pain with urination, the doctor may also prescribe a medication that numbs the lining of the urinary tract. This medication temporarily causes the pee to turn orange, but don't be alarmed — the color is of no significance.

Give prescribed antibiotics on schedule for as many days as your doctor directs. Keep track of your child's trips to the bathroom, and ask your child about symptoms like pain or burning on urination. These symptoms should improve within 2 to 3 days after antibiotics are started.

Take your child's temperature once each morning and each evening, and call the doctor if it rises above 101°F (38.3°C), or above 100.4°F (38°C) rectally in infants. Encourage your child to drink plenty of fluids, but avoid beverages containing caffeine, such as soda and iced tea.

Kids with a simple bladder infection are usually treated at home with oral antibiotics. However, those with a more severe infection may need to be treated in a hospital to receive antibiotics by injection or intravenously (delivered through a vein right into the bloodstream).

Kids tend to be hospitalized for UTI if:

- the child has high fever or looks very ill, or there is a probable kidney infection
- the child is younger than 6 months old
- bacteria from the infected urinary tract may have spread to the blood
- the child is dehydrated (has low levels of body fluids) or is vomiting and cannot take any fluids or medication by mouth

Kids diagnosed with vesicoureteral reflux (or VUR), in which urine goes back up into the ureters instead of flowing out of the urethra, will be watched closely by the doctor. Treatment may include medications or, less commonly, surgery. Most kids outgrow mild forms of VUR, but some can develop kidney damage or kidney failure later in life.

When to Call the Doctor

Call your doctor immediately if your child has an unexplained fever with shaking chills, especially if accompanied by back pain or any type of discomfort during urination.

Also call the doctor if your child has any of the following:

- unusually frequent urination or frequent urination during the night
- bad-smelling, bloody, or discolored urine
- low back pain or abdominal pain (especially below the navel)
- a fever of over 101°F (38.3°C) in children, or 100.4°F (38°C) rectally in infants

Call the doctor if your infant has a fever, feeds poorly, vomits repeatedly, or seems unusually irritable.

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Note: All information is for educational purposes only. For specific medical advice, diagnoses, and treatment, consult your doctor.