CONDITION

Bladder infections in teens and adults

Learn about bladder infection symptoms, causes, testing, treatment, warning signs, and follow-up for teenagers and adults.

WHAT IT IS
Infection of the bladder

BODY SYSTEM
Urinary system

MAIN SYMPTOMS
Painful urination, frequent urination, urgent urination, lower abdominal pain

WHAT CAUSES IT
Bacterial infection

HOW IT IS DIAGNOSED
Urinalysis and urine culture

MAIN TREATMENT
Antibiotics

CAN IT BE CURED?
Yes, antibiotics usually clear infection

IS IT AN EMERGENCY?
Sometimes, confusion or severe weakness

LONG-TERM OUTLOOK
Most improve with suitable treatment

Overview

A bladder infection is an infection of the bladder, usually caused by bacteria. The medical term is cystitis . It is one type of urinary tract infection, or UTI.

The urinary tract includes the kidneys, tubes called ureters, the bladder, and the urethra-the tube that carries urine out of the body. A bladder infection is considered a lower UTI because it affects the bladder rather than the kidneys.

Most bladder infections develop when bacteria from the bowel or nearby skin enter the urethra and travel into the bladder. Escherichia coli , often called E. coli , is the most common cause.

Bladder infections are usually treatable. However, symptoms can overlap with kidney

infections, sexually transmitted infections, vaginal conditions, prostate problems, and other causes of urinary pain. An accurate assessment helps determine whether antibiotics like amoxicillin or doxycycline are needed and which treatment is appropriate.

Certain situations need special attention. These include urinary symptoms during pregnancy, infections in people with male urinary anatomy, repeated infections, and infections associated with kidney disease, urinary blockage, catheters, or immune system problems.

Symptoms

Symptoms may begin suddenly. Common symptoms include:

Urine odor or cloudiness alone does not confirm an infection. These changes may also occur because of dehydration, foods, medicines, vaginal discharge, or other factors.

A simple bladder infection does not usually cause a high fever or pain in the back or side. Fever, chills, pain below the ribs in the back or side, nausea, or vomiting may suggest that the infection has reached a kidney. This is called pyelonephritis and needs prompt medical assessment.

In teenagers and sexually active adults, painful urination can also result from urethritis, which is inflammation of the urethra, or from a sexually transmitted infection. Genital sores, unusual vaginal or penile discharge, pelvic pain, pain during sex, or recent sexual exposure may lead a clinician to recommend additional testing.

Some people have bacteria in their urine without urinary symptoms. This is called asymptomatic bacteriuria . It usually does not require antibiotics, although treatment may be needed during pregnancy or before certain procedures involving the urinary tract.

- Burning, stinging, or pain while urinating
- A frequent need to urinate, even when little urine comes out
- A strong or difficult-to-control urge to urinate
- Pressure, discomfort, or pain low in the abdomen
- Cloudy, pink, red, or blood-tinged urine
- Urine with a stronger or different odor

Causes and risk factors

Bladder infections usually occur when bacteria enter through the urethra. People with female

urinary anatomy have a shorter urethra, which gives bacteria a shorter distance to travel to the bladder.

Sexual activity can move bacteria toward the urethra. A new sexual partner and the use of spermicides may increase the chance of infection for some people. A bladder infection is not itself a sexually transmitted infection, and it is not passed between partners in the same way as an STI.

Other factors that can increase risk include:

Holding urine for long periods may cause discomfort, but it is not usually the sole cause of an infection. Poor hygiene is also not a simple explanation for most UTIs.

For transgender and nonbinary people, risk depends on current anatomy, hormone use, and any genital or urinary surgery. Sharing this information with a clinician can help guide testing while respecting privacy and identity.

Repeated bladder infections may have more than one contributing factor. A clinician may define infections as recurrent when they happen multiple times over several months. Recurrent symptoms do not always mean recurrent bacterial infections, so urine testing can be important.

- A previous bladder infection
- Pregnancy
- Menopause and lower estrogen levels
- Difficulty emptying the bladder completely
- Kidney stones or another blockage in urinary flow
- An enlarged prostate
- A urinary catheter
- Structural differences in the urinary tract
- Diabetes, especially when blood glucose is not well controlled
- Conditions or medicines that weaken immune defenses
- Recent urinary surgery or procedures

Diagnosis

A clinician will ask about the symptoms, when they began, previous infections, recent antibiotics, pregnancy possibility, medical conditions, and urinary tract procedures. Questions

about sexual activity or discharge help distinguish a bladder infection from an STI or genital condition.

A urine sample may be tested in several ways. A urinalysis looks for findings such as white blood cells, blood, or substances produced by certain bacteria. A urine dipstick is a quick type of urinalysis.

A urine culture checks whether bacteria grow from the sample and may show which antibiotics are likely to work. A culture is particularly useful when symptoms are unusual or severe, infections keep returning, initial treatment has not worked, or the person is pregnant or has male urinary anatomy. Local practices may differ.

To reduce contamination, the healthcare team may ask for a midstream "clean-catch" sample. This generally means beginning to urinate into the toilet and then collecting urine in the container without touching its inside.

Depending on the symptoms, testing may also include:

Imaging and bladder examination with a camera are not routinely needed for every uncomplicated infection. They may be considered for repeated infections, persistent blood in the urine, unusual organisms, suspected blockage, or other concerning findings.

- A pregnancy test
- Tests for chlamydia, gonorrhea, or other infections
- An examination for vaginal, pelvic, penile, or prostate conditions
- Blood tests if a kidney infection or more serious illness is suspected
- Imaging when there may be a stone, blockage, abscess, or structural problem

Treatment and management

Bacterial bladder infections are generally treated with antibiotics. The choice depends on the person's age, pregnancy status, allergies, kidney function, other medicines, past culture results, local antibiotic resistance, and whether the infection may involve the kidneys or prostate.

Common antibiotic options for uncomplicated bladder infection include nitrofurantoin, trimethoprim-sulfamethoxazole, and fosfomycin. These medicines are not suitable for every person or every type of UTI. A clinician should select the medicine and treatment length.

It is important to take an antibiotic as directed and complete the prescribed course unless the prescriber advises otherwise. Leftover antibiotics or another person's medicine may be

ineffective, cause side effects, and make future bacterial infections harder to treat.

Pregnancy changes how urinary infections are managed because an untreated infection can create risks for both the pregnant person and the pregnancy. A urine culture is commonly used, and the antibiotic must be appropriate for the stage of pregnancy.

In people with male urinary anatomy, clinicians may consider whether the prostate is involved. Prostate infection can cause pelvic or genital pain, fever, difficulty urinating, or pain with ejaculation and may require a different treatment approach.

Self-care may help with discomfort but does not replace appropriate evaluation or antibiotics when they are needed. Helpful measures include:

Forcing very large amounts of water has not been shown to cure an active infection and can be harmful in some medical conditions. Cranberry products also should not be used as treatment for an active bladder infection.

Some urinary pain-relief products can change urine to orange or red. They relieve symptoms only and do not kill bacteria. A pharmacist or clinician can advise whether such a product is safe.

- Drinking enough fluid to avoid dehydration
- Urinating when needed rather than repeatedly delaying it
- Using a warm heating pad on the lower abdomen, with care to prevent burns
- Asking a clinician or pharmacist which nonprescription pain medicine is safe

Complications

Most bladder infections improve with suitable treatment. A possible complication is spread from the bladder to one or both kidneys. Kidney infection may cause fever, chills, back or side pain, nausea, and vomiting.

In some cases, infection can spread into the bloodstream and lead to sepsis, a dangerous whole-body response to infection. This is more likely when there is urinary blockage, a catheter, serious chronic illness, reduced immune function, or a delay in treating a kidney infection.

Other possible problems include repeated infections and infection involving the prostate. During pregnancy, UTIs are associated with increased risks, including kidney infection and pregnancy complications, which is why prompt medical care is important.

Visible blood can occur with cystitis, but blood that remains after the infection has cleared needs follow-up. Persistent blood may have another cause, such as a stone or another urinary

tract condition.

Follow up

Symptoms often begin to improve after treatment starts, but the timing varies. Follow the prescriber's instructions about when to make contact if symptoms remain unchanged or become worse. Another urine test or a change in treatment may be needed.

Routine follow-up is especially useful if infections keep returning, there is ongoing difficulty emptying the bladder, or urinary symptoms continue despite negative cultures. Keep a record of symptom dates, test results, antibiotics, and possible triggers. This can help a clinician look for patterns.

Seek prompt, same-day medical advice for:

Seek emergency care for confusion, fainting, severe weakness, difficulty breathing, blue or mottled skin, or other signs of severe illness. These symptoms can occur with sepsis and should not wait for routine follow-up.

For recurrent infections, prevention depends on the person's situation. Options may include avoiding spermicides, addressing incomplete bladder emptying, or using vaginal estrogen after menopause when appropriate. Some people may be offered clinician-directed preventive antibiotics. These choices require a discussion of benefits, side effects, and antibiotic resistance.

- Fever or chills with urinary symptoms
- New pain in the back or side below the ribs
- Nausea or vomiting that makes drinking difficult
- Symptoms during pregnancy
- Inability to urinate or increasing difficulty urinating
- Worsening symptoms or no improvement within the timeframe given by the clinician
- Urinary symptoms in someone with a catheter, major kidney disease, or a weakened immune system

Sources

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