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Patient information: Bladder infections in adolescents and adults

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BLADDER INFECTION OVERVIEW

Bladder infections are one of the most common infections, causing symptoms of burning with urination and needing to urinate frequently. A bladder infection is a type of urinary tract infection (UTI). Bladder infections are more common in women than men. Most women have an uncomplicated bladder infection that is easily treated with a short course of antibiotics. In men, bladder infections may also affect the prostate gland, and a longer course of treatment may be needed.

This discussion will focus on bladder infections in a healthy adult. Kidney infections and bladder infections in children are discussed in a separate article. (See "[Patient information: Kidney infection \(pyelonephritis\)](#)" and "[Patient information: Urinary tract infections in children](#)".)

BLADDER INFECTION CAUSES

The urinary tract includes the kidneys (which filter urine), ureters (the tube that carries urine from the kidneys to the bladder), the bladder (which stores urine), and urethra (the tube that carries urine out of the bladder) ([figure 1](#)). Bacteria do not normally live in these areas. However, bacteria normally live close to the urethra in women and men who are not circumcised. Bladder infections occur when bacteria travel up the urethra into the bladder.

Factors that increase the risk of developing a bladder infection include:

- Vaginal sex
- Use of spermicides
- History of past bladder infections
- Diabetes

In men, not being circumcised or having anal sex increase the risk of bladder infections.

BLADDER INFECTION SYMPTOMS

The typical symptoms of a bladder infection include:

- Pain or burning when urinating
- Frequent need to urinate
- Urgent need to urinate
- Blood in the urine

Fever, back pain, nausea, or vomiting are not common symptoms of a bladder infection, but can occur in people with a kidney infection (pyelonephritis). If you have these symptoms, you should call your doctor or nurse immediately.

Is it a bladder infection or something else? — Burning with urination can also occur in people with vaginitis (eg, yeast infection) or urethritis (inflammation of the urethra). For this reason, it is important to call your healthcare provider before assuming you have a bladder infection.

BLADDER INFECTION DIAGNOSIS

Simple bladder infections are usually diagnosed based upon your symptoms alone. However, most patients, especially those who have bladder infection symptoms for the first time, should see a healthcare provider for urine testing.

Urine culture — A urine culture is a test that uses a sample of urine to try and grow bacteria in a laboratory. It usually requires about 48 hours to get results.

However, a urine culture is not always required to diagnose a bladder infection. Urine culture is often recommended if:

- You have never had a bladder infection before
- You have symptoms that are not typical for bladder infection
- You have had "resistant" bladder infections before
- You have frequent bladder infections
- You do not begin to feel better within 24 to 48 hours after starting antibiotics
- You are pregnant

BLADDER INFECTION TREATMENT

Bladder infection — In young, healthy adolescents and adults with a bladder infection, the usual treatment includes a three to seven day course of antibiotics. The typical drugs chosen are: trimethoprim-sulfamethoxazole (Bactrim®), nitrofurantoin (Macrobid®), ciprofloxacin (Cipro®) or levofloxacin (Levaquin®).

In men, the infection may involve your prostate gland and treatment is usually given for at least 7 days.

Your symptoms should begin to resolve within one day after starting treatment. It is important to take the full course of antibiotics to completely eliminate the infection. If your symptoms persist for more than two or three days after starting treatment, call your healthcare provider.

If needed, you can take a prescription medication that numbs the bladder and urethra (phenazopyridine [Pyridium®]) to reduce the burning pain of some UTIs. A similar

medication is available without a prescription (eg, Uristat). Both medications change the color of the urine (usually blue or orange) and can interfere with laboratory testing. You should not take these medications for more than 48 hours due to the risk of side effects. These medications do not treat the infection and must be taken along with an antibiotic.

Some providers recommend drinking more fluids while treating bladder infections to help flush bacteria from the bladder. Others believe that drinking more fluids may dilute the antibiotic in the bladder and make the medication less effective. No studies have been performed to address this issue.

There are also no good studies on the effectiveness of cranberry juice for treating a bladder infection; we do not recommend using cranberry juice to treat bladder infections.

Follow-up care — Follow-up testing is not needed in healthy, young men or women with a bladder infection if symptoms resolve. Pregnant women are usually asked to have a repeat urine culture one to two weeks after treatment has ended to make sure the bacteria are no longer in the urine.

RECURRENT BLADDER INFECTIONS

Bladder infections versus other causes — Some adults, especially women, develop bladder infections frequently. In this case, it is important to confirm that your symptoms (eg, pain or burning, frequency, and urgency) are caused by a bladder infection. Symptoms are usually similar from one infection to another. The best way to confirm an infection is to have a urine culture (see '[Urine culture](#)' above).

If your urine culture is negative for infection, other causes of pain, burning, and frequency should be investigated. There is no reason to take antibiotics if your urine culture is negative. (See "[Patient information: Painful bladder syndrome and interstitial cystitis](#)".)

Need for further testing — If you continue to develop bladder infections, you may require further testing. This is especially true if there is a chance you could have an abnormality in the kidneys, ureter, bladder, or urethra ([figure 1](#)), or if you could have a kidney stone. (See "[Patient information: Kidney stones in adults](#)".)

Tests for these conditions may include a computed tomography (CT) scan, ultrasound, or cystoscopy (looking inside the bladder with a thin, lighted telescope-like instrument).

If you continue to notice blood in your urine after your bladder infection has cleared, you should have further testing. (See "[Patient information: Blood in the urine \(hematuria\) in adults](#)".)

Preventing recurrent UTIs — Women with recurrent urinary tract infections may be advised to take steps to prevent bladder infections, including one or more of the following:

Changes in birth control — Women who develop frequent bladder infections and use spermicides, particularly those who also use a diaphragm, may be encouraged to use an alternate method of birth control. (See "[Patient information: Birth control; which method is right for me?](#)".)

Cranberry products — Taking cranberry juice or cranberry tablets has been promoted as one way to help prevent frequent bladder infections. However, this has not been proven.

Drinking more fluid and urinating after intercourse — Although studies have not proven that drinking more fluids or urinating soon after intercourse can prevent infection, some healthcare providers recommend these measures since they are not harmful. Drinking more fluid may help to wash out bacteria that enter the bladder.

Postmenopausal women — Postmenopausal women who develop recurrent bladder infections may benefit from using vaginal estrogen. Vaginal estrogen is available in a flexible ring that is worn in the vagina for three months (eg, Estring®), a small tablet (Vagifem®), or a cream (eg, Premarin® or Estrace®). Vaginal estrogen is discussed in more detail in a separate topic review. (See "[Patient information: Vaginal dryness](#)".)

Antibiotics — A preventive antibiotic treatment may be recommended if you repeatedly develop bladder infections and have not responded to other preventive measures. Antibiotics are highly effective in preventing recurrent bladder infections and can be taken in several different ways.

- Preventive antibiotic — You can take a low dose of an antibiotic once per day or three times per week for six months to several years.
- Antibiotics following intercourse — In women who develop urinary tract infections after sex, taking a single low dose antibiotic after intercourse can help to prevent bladder infections.
- Self-treatment — A plan to begin antibiotics at the first sign of a bladder infection may be recommended in some situations. Before starting this regimen, it is important that you have had testing (urine cultures) to confirm that your symptoms are caused by a bladder infection; some people have symptoms of a bladder infection but do not actually have an infection. (See "[Patient information: Painful bladder syndrome and interstitial cystitis](#)".)

WHERE TO GET MORE INFORMATION

Your healthcare provider is the best source of information for questions and concerns related to your medical problem.

This article will be updated as needed every four months on our web site (www.uptodate.com/patients).

The following organizations also provide reliable health information.

- National Library of Medicine
(www.nlm.nih.gov/medlineplus/healthtopics.html)
- Centers for Disease Control and Prevention (CDC)

Toll-free: (800) 311-3435
(www.cdc.gov)

- Infectious Diseases Society of America

(www.idsociety.org)

- National Kidney and Urologic Disease Information Clearinghouse

(<http://kidney.niddk.nih.gov/kudiseases/pubs/utiadult/>)

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Last literature review version 18.1: January 2010

This topic last updated: September 22, 2009

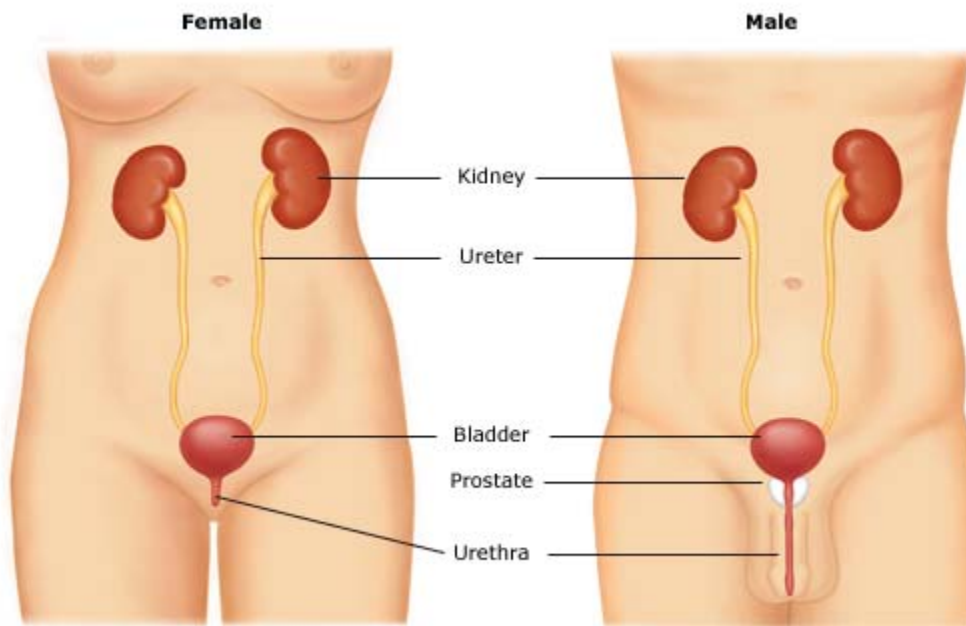
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GRAPHICS

Urinary tract anatomy



Urine is produced by the kidneys and passes into the urinary bladder. The urethra carries urine from the bladder to the outside of the body.