

Hematuria

<http://www.intelihealth.com/IH/ihtIH/WSIHW000/9339/10922.html>

[What Is It?](#) [Symptoms](#) [Diagnosis](#) [Expected Duration](#) [Prevention](#) [Treatment](#) [When To Call A Professional](#) [Prognosis](#) [Additional Info](#)

What Is It?

Hematuria is the presence of red blood cells in the urine. If there are enough red cells, the appearance of the urine can change, and can be bright red, pink or cola colored. Often, however, it appears completely normal because there is not enough blood to cause a color change. The condition is called "microscopic" hematuria if the urine appears normal but a laboratory examination shows the presence of red blood cells. There are many possible causes of hematuria, including:

- **Urinary-tract infection** — Hematuria can be caused by an infection in any part of the urinary tract, most commonly the bladder ([cystitis](#)) or the kidney ([pyelonephritis](#)).

[Kidney stones](#)

Tumors in the kidney or bladder

Exercise — Exercise hematuria is a harmless condition that produces blood in the urine after strenuous exercise. It is more common in males than females.

Trauma — Traumatic injury to any part of the urinary tract — from the kidneys to the urethral opening (the connection between the bladder and the outside world) — can cause hematuria.

Drugs — Hematuria can be caused by medications, such as blood thinners, including heparin, warfarin (Coumadin) or aspirin-type medications, penicillins, sulfa-containing drugs and cyclophosphamide (Cytoxan).

[Glomerulonephritis](#) — Glomerulonephritis is a family of illnesses that are characterized by inflammation of the glomeruli, the filtering units of the kidneys. Glomerulonephritis is a rare complication of certain viral and bacterial infections (including strep throat), but it also can result from specific immune-system abnormalities, especially those involving immunoglobulin A (IgA), [systemic lupus erythematosus](#) (SLE) (an autoimmune disorder) or [diabetes](#). Sometimes there is no identifiable cause.

Bleeding disorders — These include the family of [hemophilias](#).

Symptoms

By itself, hematuria rarely causes symptoms. One exception is when the bladder has so much blood in it that clots form, block urine flow, and bladder discomfort develops. In general, symptoms come from the cause of the hematuria, and vary depending on the condition:

- **Glomerulonephritis** — If glomerulonephritis is not severe, it may not produce any symptoms. If symptoms appear, they can include swelling, especially in the lower extremities, reduced urination, and headache resulting from severe hypertension.

Urinary-tract infection — Symptoms depend on the site of infection, but can include intense pain on one side of the mid-back, fever, shaking chills, nausea and vomiting (if there is pyelonephritis, a kidney infection), pain above the pubic or bladder region, foul-smelling urine; the need to urinate more often than normal, and dysuria (pain or discomfort during urination with bladder infection (cystitis)).

Prostate infection — There can be pain in the lower back or in the area between the scrotum and anus, pain during ejaculation, blood in the semen, and, sometimes, fever and chills.

Tumor in the kidney or bladder — Most kidney and bladder cancers grow without causing any pain or discomfort. When symptoms develop, the most common are abdominal pain, more frequent urination and/or pain at the end of urination.

Kidney stones — When a kidney stone becomes trapped in one of the ureters (the narrow tubes connecting each kidney to the bladder), it can cause severe pain in the back, side or groin, nausea and vomiting, or painful and frequent urination.

Bleeding disorders — Bleeding disorders tend to cause abnormal bleeding throughout the body, not just into the urine. Depending on the specific bleeding problem, symptoms can include abnormal bruising, prolonged bleeding from cuts, tiny skin hemorrhages, bleeding into the joints or gastrointestinal tract (causing black, tarry stools or bright red blood in the stool), or gum bleeding even with gentle flossing or brushing.

Trauma — There often will be signs of traumatic injury to the body surface, such as bruises (also called ecchymoses), swelling, punctures and open wounds.

Diagnosis

Your health-care provider will want to confirm that hematuria is present. For example, it is common that vaginal bleeding (as during a woman's period) causes a small amount of blood to appear in a urine sample. Repeating the urine test between periods may determine that the urine is, in fact, normal.

Once hematuria has been identified clearly, your doctor will ask about your medical history and your family's medical history, especially any history of kidney disease, bladder problems or bleeding disorders. Your doctor also will ask about any history of recent trauma or strenuous exercise, recent viral or bacterial infections, the medications you take, and any associated symptoms (including more frequent urination, pain with urination and flank pain). In some cases, no further evaluation will be necessary. For example, simple observation and follow-up testing may be all that is needed for a young patient with a normal physical examination and a minimal amount of blood in the urine. Your doctor also will perform a thorough physical examination that will focus on evaluating fever, blood pressure, flank pain, and discomfort over the bladder. A pelvic examination for women and prostate examination for men are important parts of the evaluation. Then, depending on the suspected cause of your hematuria, additional testing may include:

- **Urinalysis** — Urine is analyzed in the laboratory for the presence of protein, white cells and red cells to identify a kidney or bladder infection, or kidney inflammation (glomerulonephritis).

Urine culture — In this test, a sample of urine is monitored to see if bacteria grow.

This test is used to confirm a urinary-tract infection

Intravenous pyelogram (IVP) — In this X-ray test, a dye (also called a contrast medium) is injected into an arm vein. The dye collects in the kidneys and is excreted in the urine, providing an outline of the entire urinary system. The IVP is particularly helpful in identifying kidney stones, though other problems, such as a tumor, can be detected with this test.

Ultrasonography — This test uses sound waves to help establish whether a kidney mass is a benign (noncancerous), fluid-filled cyst or a solid mass, such as a cancerous tumor. Ultrasound also can identify kidney stones.

Computed tomography (CT) scan of the abdomen and pelvis — In a CT scan, a modified X-ray beam produces body images at different angles, offering a three-dimensional look at the inside of the kidneys, abdominal organs and pelvic organs. This test often is performed with an injection of contrast dye, combining the features of an IVP and CT. When done this way, the test also is called a CT urogram.

Cystoscopy — In this test, the doctor inserts a flexible telescope into the urethra and passes it into the bladder to inspect the bladder lining for tumors or other abnormalities. This test usually is done with local anesthesia and sedation.

Blood tests — These can check for signs of urinary-tract infection, kidney failure, anemia (which often accompanies kidney problems), bleeding disorders, or abnormally high levels of blood chemicals that can encourage the formation of kidney stones.

Additional, specialized testing for conditions causing kidney inflammation (such as lupus) may be recommended, depending on the findings of the routine blood and urine tests.

Expected Duration

How long hematuria lasts depends on its underlying cause. For example, hematuria related to strenuous exercise typically resolves on its own within 24 to 48 hours. Hematuria resulting from a urinary-tract infection will end when the infection is cured, while hematuria related to a kidney stone will clear after the stone is passed or removed.

Prevention

To prevent hematuria related to strenuous exercise, switch to a less-intense exercise program. In general, you can help to prevent other forms of hematuria by following a lifestyle that fosters a healthy urinary tract:

- Drink at least eight glasses of water daily (more during hot weather) to flush the urinary tract.
- Avoid cigarette smoking, which is linked to urinary-tract cancers.
- Cut down on cola, tea and coffee. Drinking too much of these beverages eventually can produce highly concentrated urine (urine with a high chemical content) that can lead to kidney-stone formation.

Treatment

The treatment of hematuria depends on its cause. In general, people with exercise-related hematuria do not require any treatment other than to modify their exercise program. People with drug-related hematuria will improve if they stop taking the offending medication, and antibiotics typically will cure infection-related hematuria. For other causes of hematuria, treatment may be more complex:

- **Kidney stones** — Smaller stones sometimes can be flushed from the urinary tract by drinking lots of fluids. Larger stones may require lithotripsy, a procedure that breaks up the stone.

Trauma — Treatment depends on the type and severity of trauma. In severe cases, surgical repair may be necessary.

Tumor in bladder or kidney — Treatment is determined by the type of cancer and its stage (the extent of cancer spread), as well as by the patient's age, general health and personal preferences. The primary types of treatment are surgery, [chemotherapy](#), [radiation therapy](#) and [immunotherapy](#) (a type of treatment that stimulates the immune system to fight cancer).

Glomerulonephritis — Treatment may include antibiotics to treat any infection, medications that help increase urine excretion (called diuretics), medications to control high blood pressure and dietary changes to reduce the work of the kidneys. However, children who develop glomerulonephritis after a streptococcal infection often recover without any specific treatment. If it is caused by an autoimmune disorder, such as lupus, medications to suppress the immune system, including corticosteroids or cyclophosphamide, may be prescribed.

Bleeding disorders — Treatment depends on the specific type of bleeding disorder. Patients with hemophilia can be treated with infusions of clotting factors or with fresh frozen plasma (a type of transfusion that provides missing factors).

When To Call A Professional

Call your doctor immediately if you notice blood in your urine or if your urine turns a cola color. You should also call your health-care provider if you have fever or pain in the lower abdomen or flank.

Prognosis

Most people whose hematuria is related to exercise, medication, kidney stones, urinary-tract infection or prostatitis have an excellent prognosis for complete recovery.

Children with hematuria resulting from glomerulonephritis usually recover completely if their illness is mild or if it develops after a strep infection. Adults with glomerulonephritis are less likely to recover on their own, although the prognosis depends on the specific type of glomerulonephritis. More severe forms of the disease eventually can lead to chronic [renal failure](#).

For people with kidney or bladder cancer, the prognosis depends on the stage and type of tumor. In general, if a kidney or bladder tumor is diagnosed early, the cancer often is curable.

Although people with hemophilia may have recurrent bleeding episodes, recent advances in treatment have achieved a near-normal lifespan for many patients.

Additional Info

National Institute of Diabetes and Digestive and Kidney Disorders
Office of Communications and Public Liaison

Building 31, Room 9A04
Center Drive, MSC 2560
Bethesda, MD 20892-2560
Phone: (301) 496-3583
Fax: (301) 496-7422

<http://www.niddk.nih.gov/>

American Foundation for Urologic Disease

1128 North Charles St.
Baltimore, MD 21201
Phone: (410) 468-1800
Toll-Free: (800) 242-2383
Fax: (410) 468-1808

E-Mail: admin@afud.org

<http://www.afud.org/>

National Kidney Foundation

30 East 33rd St.
New York, NY 10016
Phone: (212) 889-2210
Toll-Free: (800) 622-9010
Fax: (212) 689-9261

E-Mail: info@kidney.org

<http://www.kidney.org/>

Last updated November 15, 2002