



Hematuria or Blood in Urine

Hematuria or blood in the urine may be categorized as gross (visible blood in the urine) or microscopic (only visible under a microscope). It can be caused by a bleeding disorder, certain medications, or by medical conditions such as stones, infection, tumor or injury to the kidneys, urinary tract, prostate gland or genitals. Having hematuria does not always mean you have an underlying abnormality. However, you should contact your doctor immediately, especially if it is accompanied by nausea, vomiting, pain or difficulty urinating.

Your doctor will conduct a physical exam to check for signs of injury and may order an x-ray, MR/CT urography, abdominal ultrasound or intravenous pyelogram (IVP) to help diagnose and evaluate your condition. Your doctor will then focus treatment on the underlying cause for blood in your urine.



What is hematuria?

Hematuria is blood in the urine. It is typically grouped into two categories:

- Macroscopic (or gross) hematuria is the medical term to describe visible blood in the urine. The urine may look red or brown. Sometimes, clots can be found in the blood.
- Microscopic hematuria is only visible under a microscope and is usually detected with a urine test during a doctor's visit.

Hematuria can be caused by a variety of conditions including stones, infection, a tumor, or injury involving the kidneys, urinary tract, prostate gland and/or genitals. It could also be caused by a bleeding disorder or by taking certain medications.

If you find blood in your urine, you should contact your doctor immediately, especially if it is accompanied by other symptoms such as nausea, vomiting, pain or difficulty urinating.

How is hematuria diagnosed and evaluated?

Having hematuria does not necessarily mean you have an underlying medical abnormality. It may be caused by routine activities such as vigorous exercise. However, because it can sometimes indicate a serious condition or disease, your doctor will usually evaluate the cause of hematuria.

Your doctor will begin by discussing your medical history and any symptoms you may have and perform a physical exam. During the physical exam, your doctor will check for any signs of injury such as bruising. If you are male, your doctor may perform a digital rectal exam to determine if your prostate may be causing the hematuria. You should also inform your doctor of any medications you may be taking, including vitamins or supplements.

Hematuria may be evaluated by one or more of the following imaging examinations:

- **X-ray:** An abdominal x-ray may be used to look for some of the causes of hematuria, such as kidney or bladder stones, especially if you have other symptoms such as nausea and vomiting. Most causes of hematuria will not be detected by an x-ray, and additional exams will likely be required.
- **MR/CT Urography:** Your doctor may order a CT or MR urography exam. Both exams will help your doctor see your urinary tract, including the bladder, ureters and kidneys.
- **Abdominal ultrasound:** Ultrasound may be useful for helping your doctor to see the kidneys and the bladder and identify abnormalities, such as blockages in the urinary tract or other potential causes of hematuria.
- **Intravenous pyelogram (IVP):** IVP is an x-ray examination that will help your doctor visualize your kidneys, bladder and ureters. It can help detect abnormalities within the urinary system and show how efficiently the urinary system eliminates waste. This exam requires the patient to receive an injection of contrast material ("x-ray dye") into the vein. After several minutes, a series of x-rays will be taken revealing the kidneys, ureters and bladder.
- **MRI of the prostate:** If the prostate gland is suspected to be the cause of hematuria, your doctor might order an MRI exam to better visualize possible abnormalities of the prostate gland and seminal vesicles.

How is hematuria treated?

The treatment for hematuria varies and is dependent upon the cause. Your doctor will focus treatment on the condition or disease causing the blood in your urine.

If stones are determined to be the cause of hematuria, treatment may require surgery. If your doctor

suspects a tumor in the urinary tract or prostate gland based on the imaging, a biopsy may be recommended and possible treatments may include chemotherapy, surgery or radiation therapy.

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