



Hematuria

Blood in the urine (hematuria) is a common problem that your doctor needs to explore.

What is hematuria?

- When there is blood in your urine, it is called hematuria.
- Blood that can be seen only with a microscope is called microscopic hematuria.
 - Microscopic hematuria can be an early sign of a defect in the urinary tract and often needs to be investigated (See diagram: “The male and female urinary tracts”).
- Usually, blood that you can actually see in your urine is called gross hematuria.
 - Gross hematuria is more likely to show a disorder that needs more testing.
- In many cases, no cause can be found for very small amounts of blood in the urine.

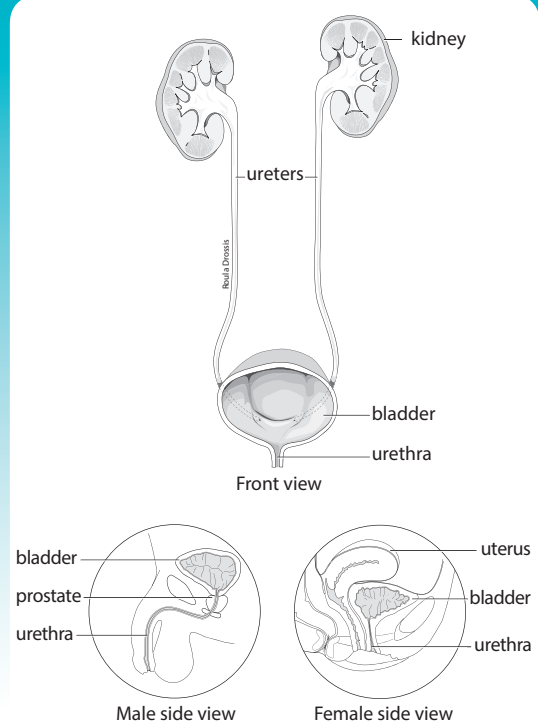
Where does blood in the urine come from?

- Blood may get into the urine anywhere within the urinary tract. (See diagram: “The male and female urinary tracts”)
- Your kidneys filter the blood to get rid of waste matter and extra water which are flushed out with your urine.
- The urine is then carried through a ureter (long narrow tube) from each kidney to the bladder.
- The bladder empties urine through the urethra (in a woman) or through the prostate and urethra (in a man) (See diagram: “The male and female urinary tracts”).

What causes hematuria?

- Hematuria may be an early sign of damage or injury to the kidney(s).
- In some people, heavy exercise can cause blood to leak into the urine.
- Blood in the urine is often found in people with a urinary infection or a stone.

The male and female urinary tracts



- Blood in the urine is sometimes found in men who have an enlarged prostate (called benign prostatic hyperplasia [BPH]).

What could hematuria mean for me?

Hematuria may be a sign of a tumour in the urinary system.

- Often bladder tumours are first discovered when blood is seen in the urine.
- Kidney tumours generally show up in people between the ages of 50 and 70 years.
 - Kidney tumours may grow slowly.
 - There may not be any symptoms before blood shows up in the urine.
- Although prostate cancer is common in older men, it very seldom causes bleeding in the urinary tract.

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What will tests show about hematuria?

- To learn more about your hematuria, your doctor may order tests for some of the following reasons:
 - Your age
 - Your past medical history
 - A history of smoking
 - Your current voiding pattern
 - Characteristics of your urinary bleeding.
- Stopping smoking will greatly reduce your chances of bladder cancer.

What kinds of tests are done for hematuria?

- The first step will often be a simple urine dipstick test (a thin, plastic stick with strips of chemicals on it), done in your doctor's office.
- A microscope is used to look for blood in the urine and, if blood is there, measure how much.
- Urine will probably be tested at several different times to see if microscopic hematuria shows regularly.
- Protein in the urine may mean that the cause of the hematuria is a problem with your kidneys.

What does a urine test tell us?

- A lab test can check for bacteria or other germs in a urine sample (called a urine culture if a urinary infection is suspected).
- Cells which are normally shed in the urine can be examined under a microscope (called urine cytology).
 - Sometimes, if certain cells are seen, it is possible that a tumour is growing somewhere in the urinary tract (See diagram: "The male and female urinary tracts").
 - It is important to find out where these cells are coming from.
- Other blood and urine tests may be done if more help is needed to figure out the cause of the hematuria.

What imaging studies are used to look at the kidneys?

Imaging studies (such as X-rays, ultrasound, or MRI) are very accurate ways to find major problems in the kidneys, such as tumours or stones.

- Imaging studies are important because they help your doctor "see" the insides of the kidney.
- Ultrasound is a painless way to look at the kidneys using sound waves.
- A CT (computerized tomography) scan or MRI (magnetic resonance imaging) can give a more clear-cut picture of your kidneys.
- Your doctor will decide which imaging study would be most helpful in your case.

What imaging studies are used to look at the bladder?

- Unfortunately, imaging studies are not as useful for looking at the bladder and its opening as it is for the kidneys.
- As a result, cystoscopy (using a "scope") is another test that can be used.
- A "scope" (looks like a small camera at the end of a thin tube) is put through the urethra to the bladder.
- Cystoscopy can take a closer look at the lower part of the urinary tract (See diagram: "The male and female urinary tracts").
- Usually, the process takes only a few minutes and causes very little pain.
- Sometimes, an x-ray may be done at the same time.
- Cystoscopy is a good way to find a tumour in your bladder.
- Most children and healthy young adults do not have a cystoscopy for hematuria because their risk of a bladder tumour is very low.

What happens if tests don't help diagnose the problem?

- In many cases, your doctor will not be able to find a specific reason for blood in the urine, especially if you have microscopic hematuria.
- It is also possible that urine tests, imaging studies, and cystoscopy may come back "normal."
- When results are "normal", the risk of having a serious illness is very low.
- Your doctor will keep a close eye on you to make sure there are no more changes.
- If your tests come back with blood in your urine, you may need to:
 - Repeat some of the tests
 - Have more imaging tests (like a CT scan)
 - Have another cystoscopy

What is the bottom line?

- Microscopic hematuria does not automatically mean there is a major problem even if extra testing is needed.
- Sometimes a few blood cells can leak through the filter of your kidney into the urine, but they do not always mean there is something wrong.
- On the other hand, gross hematuria is more likely to point to a problem.

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