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Blood in Urine

Passing blood in your urine usually results in your urine turning a red or brown colour.

What is blood in the urine?

Although this can be alarming, passing blood in urine is often not due to a serious condition. However, it is important to see your doctor if you notice blood in your urine to determine the underlying cause for this. Blood in your urine (sometimes known in common parlance as 'peeing blood' or 'blood in wee') can be due to a number of reasons, which will be discussed below.

Alternatively, some people have very small traces of blood in their urine which cannot be seen but are found when a dipstick is put in a sample of their urine.

Understanding urine and the bladder

Your kidneys make urine continuously. A trickle of urine is constantly passing to your bladder down the tubes (called ureters) which run from the kidneys to the bladder. You make different amounts of urine, depending on how much you drink, eat and sweat.

Your bladder is made of muscle and stores the urine. It expands like a balloon as it fills with urine. The outlet for urine (your urethra) is normally kept closed. This is helped by the muscles below your bladder that surround and support your urethra (the pelvic floor muscles).

When a certain volume of urine is in your bladder, you become aware that your bladder is becoming full. When you go to the toilet to pass urine, your bladder muscle squeezes (contracts) and your urethra and pelvic floor muscles relax to allow the urine to flow out.

What is haematuria?

Haematuria is the medical term for blood in your urine. This usually occurs when there is a problem with your bladder or kidneys. You may notice other symptoms when you have blood in your urine. You may have blood in the urine with pain or blood in the urine with no pain. You may feel completely well.

Blood in urine causes

There are many different reasons for blood in urine. The blood may be coming from your kidneys or from any area along your urinary tract - for example, from your bladder, ureters or urethra.

Understanding what can cause blood in urine may give you an idea as to what is going on. Blood in urine in females can have different causes to blood in urine in males. It can sometimes be difficult for women to know exactly where the blood is coming from. The blood from a menstrual cycle or from another cause from the vagina can lead to blood in the urine.

Urinary tract infection

A urine infection (UTI) is the most common cause of blood in your urine, especially in women. A urine infection causes inflammation of your bladder (cystitis). The most common symptoms are pain passing urine and passing urine more often than normal. You may also have pain in your lower tummy and a high temperature (fever). UTI blood in urine can occur in your urine as a result of this inflammation occurring in your bladder.

Urinary tract infections are usually very effectively treated with a short course of antibiotics. Further tests may be necessary if you have:

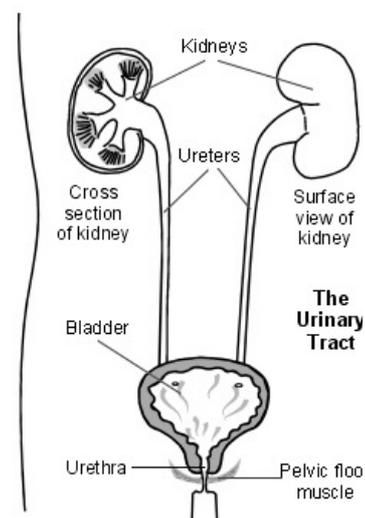
- Frequent episodes of infections. [See the separate leaflet called Recurrent Cystitis in Women.](#)
- Other underlying conditions - for example, kidney problems in the past.

See the separate leaflets called [Cystitis \(Urine Infection\) in Women](#), [Urine Infection in Pregnancy](#), [Urine Infection in Men](#), [Urine Infection in Older People](#), and [Urine Infection in Children](#) for more information.

Kidney infection

Kidney infections (also known as pyelonephritis) usually occur as a complication of a bladder infection. Symptoms of kidney infections are usually more severe than with a urinary tract infection. Often there is a very high temperature (fever) and pain in the side of your tummy (abdomen) or over the side of your back.

Kidney infections are treated with a longer course of antibiotics. If the infection is more severe then the antibiotics may need to be given straight into the vein in hospital. [See the separate leaflet called Kidney Infection \(Pyelonephritis\) for more details.](#)



Urethritis

This is inflammation of the tube (your urethra) draining urine out of your body. Urethritis is often caused by a [sexually transmitted infection](#) which is easily treated with antibiotics.

Kidney stones

Bleeding into your urinary tract can occur when a stone is being passed, as the stone rubs against the inside of your urethra. It is common to have pain from your back and across your tummy towards your groin when this occurs. Some people with kidney stones only have blood in their urine, which is picked up by a dipstick test.

Although many stones do not need any treatment as they will pass by themselves, some people need to have specific treatment to remove any kidney stones. [See the separate leaflet called Kidney Stones for more information.](#)

Tumours in the bladder or kidney

The most common early sign of [bladder cancer](#) or [kidney cancer](#) is blood in the urine, usually without any other symptoms. However, the vast majority of people who have blood in their urine do **not** have cancer.

The outlook for people with bladder and kidney cancer is better the earlier it is diagnosed. It is therefore very important that certain people have tests to look for bladder cancer if they have blood in their urine. For example, a person aged over 45 years with no infection causing blood in their urine would be referred for tests. These may include an [ultrasound scan](#) or a procedure where a small thin telescope is passed into your bladder ([a cystoscopy](#)).

Inflammation in the kidney

There are various conditions which can lead to inflammation in your kidneys. These can then result in blood in your urine, which is usually only found when a dipstick test of your urine is performed. This inflammation of the kidneys is called glomerulonephritis. Other symptoms such as tiredness and swelling around your eyes and legs can also sometimes occur.

The inflammation leads to glomerulonephritis which is usually due to a problem with your body's immune system. This can sometimes be triggered by an infection. Glomerulonephritis is the most common cause of blood in the urine of children and young adults. However, it can occur in people of any age. [See the separate leaflet called Glomerulonephritis for more information.](#)

Bleeding disorders

There are some conditions which can cause problems with the way your blood clots in your body. An example of this is haemophilia. This is an uncommon but important cause of blood in your urine. If you are taking a blood-thinning tablet (for example, [warfarin](#)), it is important that you have your blood checked promptly if you develop blood in your urine. This is because your dose of warfarin may be too high.

There are also other, more uncommon conditions that can lead to blood in your urine. These include [sickle cell disease](#), injuries to your urinary tract and [polycystic kidney disease](#).

Note: some people notice their urine turns red but do not actually have blood in their urine. The urine can turn red in some people after eating beetroot and also after taking some medications - for example, the antibiotic [rifampicin](#).

What investigations may be advised?

The investigations you may need usually depend on many different factors, such as if you have other symptoms, if you have any other illnesses or conditions and your age.

It is likely that you will need to provide a sample of urine which will be sent to the local laboratory to be tested for infection. You may have blood tests and X-rays or scans.

A cystoscopy may be performed to assess your bladder. Having a cystoscopy entails a doctor or nurse looking into your bladder with a special thin telescope called a cystoscope. The cystoscope is passed into your bladder via your outlet for your urine (urethra). A cystoscopy which is done just to look into your bladder is usually carried out under local anaesthetic.

More details about the different tests can be found in the separate individual condition leaflets, mentioned above.

Editor's Note

Dr Sarah Jarvis, February 2021

Updated guidance from the National Institute for Health and Care Excellence (NICE) in September 2020 and January 2021 has updated guidance on signs and symptoms of possible cancer and when people should be referred for investigation.

However, none of the guidance in relation to blood in the urine and bladder/kidney cancer has changed in these updates.

Blood in urine treatment

The treatment will obviously depend on the underlying cause for the blood in your urine. More information can be found in the separate individual leaflets on the various conditions that can cause blood in your urine.

If no cause can be found then you should still report any further bleeding to your GP who may want to you to undergo more tests. You should **not** ignore any blood in your urine even if you have had normal tests in the past.

Further reading & references

- [Suspected cancer: recognition and referral](#); NICE Clinical Guideline (2015 - last updated January 2021)
- [Tan WS, Feber A, Sarpong R, et al; Who Should Be Investigated for Haematuria? Results of a Contemporary Prospective Observational Study of 3556 Patients. Eur Urol. 2018 Jul;74\(1\):10-14. doi: 10.1016/j.eururo.2018.03.008. Epub 2018 Apr 10.](#)
- [Price SJ, Shephard EA, Stapley SA, et al; Non-visible versus visible haematuria and bladder cancer risk: a study of electronic records in primary care. Br J Gen Pract. 2014 Sep;64\(626\):e584-9. doi: 10.3399/bjgp14X681409.](#)
- [European Association of Urology Guidelines 2017 edition](#)

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