

View this article online at: [patient.info/mens-health/urine-infection-in-men/midstream-specimen-of-urine-msu](https://patient.info/mens-health/urine-infection-in-men/midstream-specimen-of-urine-msu)

## Midstream specimen of urine (Urine test)

A midstream specimen of urine (MSU) is usually tested to look for infection, although in some cases, illness other than infection might be diagnosed based partly on what is seen in an MSU.

### What is the purpose of a midstream specimen of urine test?

- **To confirm the diagnosis of a urine infection.** The usual symptoms of a urine infection are pain when you pass urine and passing urine frequently. However, symptoms are not always typical, particularly in children and the elderly, so a urine test may be needed.
- **To decide the best antibiotic to use.** Some germs (bacteria) are resistant to some antibiotics. If the test shows that bacteria are in the urine then the bacteria are tested against various antibiotics. This finds which antibiotics will kill the bacteria in the urine.
- **To look for other abnormalities in the urine** such as red or white blood cells, which should not be there - in the absence of infection, blood in the urine can sometimes indicate disease such as bladder cancer or kidney (renal) disease, and white cells in the urine with no infection that grows easily might indicate tuberculosis.

### How do I do a midstream specimen of urine?

The aim is to obtain a sample (specimen) of urine from the middle of your bladder. Urine does not normally have any germs (bacteria) in it (urine should be sterile). If bacteria are found in the sample, it means that the urine is infected. A midstream specimen of urine (MSU) is best, as the first bit of urine that you pass may be contaminated with bacteria from the skin.

Before doing an MSU, wash your hands and ideally your genitals as well.

## **Women**

Hold open the entrance to the vagina (your labia). Pass some urine into the toilet. Then, without stopping the flow of urine, catch some urine in a clean (sterile) bottle. (The bottle is usually provided by a doctor or nurse.) Once you have enough urine in the bottle, finish off passing the rest of your urine into the toilet.

## **Men**

Pull back your foreskin then pass some urine into the toilet. Then, without stopping the flow of urine, catch some urine in a clean (sterile) bottle provided by a doctor or nurse. Finish off by emptying the rest of your urine into the toilet.

Do not open the sterile bottle until you are ready to take the sample. Avoid touching any part of your genitals with the bottle, as this will increase the risk of contamination. Put the cap back on the container. You do not need to fill the bottle to the top; a small amount will do.

Some specimen bottles contain a powder which helps the sample last longer for testing (a preservative). If this is the case, a mark on the bottle will indicate the ideal amount of urine. However, if that is difficult, any amount is better than none.

It is important to make sure that you understand what type of specimen your healthcare professional has asked for. An MSU is the most commonly requested sample, but for some tests (eg, chlamydia and gonorrhoea) you will be specifically asked to give the first part of the urine, rather than the middle of the stream.

## **How soon does a midstream specimen of urine need to be taken?**

The sooner the sample is given in to the doctor's surgery, or to the laboratory, the better. Within two hours is best. If that is not possible, put the sample in the fridge until you take it to the doctor or laboratory. It is not ideal for the sample to stay in the doctor's surgery overnight, and in many cases samples are collected and taken to the lab at lunchtime or in the early afternoon. Check with the surgery as to what is the latest time that you can leave the sample, for it to go to the lab on the same day.

If it is difficult to aim your urine stream into the bottle, you may use another container such as a jam jar or a disposable plastic cup. You can then pour the urine into the sterile bottle. If you do this, make sure the container you pass water into is as clean as possible. Wash it well and rinse it with boiling water. You should still pass the first part of your urine stream into the toilet. In this way, you are collecting the urine from the bladder.

The full result of an MSU takes 2-7 days - usually the microscopy (looking for white and red blood cells under a microscope) will be back first, followed by the culture and sensitivity (trying to grow any bacteria and see which antibiotics will work) a few days later.

## **Urine specimens and children**

It is not easy to obtain a pure midstream specimen of urine (MSU) in young children and babies. The following methods may be used:

### **The clean catch method**

The usual way is to catch some urine in the specimen bottle whilst the child is passing urine. This is called the clean catch method. For a child who is toilet trained this is fairly straightforward - just be ready with the open bottle as the child passes urine. (Be careful not to touch the open rim of the bottle with your fingers, as this may contaminate the specimen with germs (bacteria) from your fingers.)

For babies or toddlers who are not toilet trained, having some nappy-free time in the hour after a feed can be a good way to catch a urine sample. Gently rubbing the suprapubic area (the very lowest bit of the abdomen, in the middle) with gauze or cotton wool soaked in cold fluid has also been shown to increase the likelihood of successfully getting a sample. -

### **Urine pads**

One method is to place a special absorbent pad in a nappy. Your doctor or nurse will provide the special pad and tell you how to use it. Basically, when you place the pad in the nappy, check the pad every 10 minutes to see if it is wet with urine. Do not leave in for longer than 30 minutes as this may increase the risk of contamination.

Therefore, replace the pad with a fresh one every 30 minutes until urine has been passed. Then, use the syringe provided to suck the urine from the pad. Then, transfer the urine in the syringe into a sterile container. Do not use any other type of pads, cotton wool balls or gauze as they could alter the results.

### **Urine collection bags**

These are bags which are placed inside the nappy to collect urine. They are stuck to the skin around the genitals. When the infant passes urine, it collects in the bag. You then take off the bag, cut the corner of the bag and pour the urine into the sterile bottle.

Always wash your child's genital area and dry it carefully before sticking the bag on. This is so germs from the skin are not mixed in with the urine.

## **What do the test results mean?**

The MSU test is primarily performed to check for infection (see above). However, there are occasions when the urine is clear of infection, but other abnormalities are detected, such as blood in the urine.

These abnormalities may also be detected by other tests such as the urine dipstick test. For more information, see our separate leaflets called [Urine Dipstick Test](#) and [Blood in Urine](#).

---

## **Further reading**

- [Gilbert R](#); Taking a midstream specimen of urine. *Nurs Times*. 2006 May 2-8;102(18):22-3.
- [Urinary tract infection in under 16s: diagnosis and management](#); NICE guideline (July 2022)
- [Kaufman J, Fitzpatrick P, Tosif S, et al](#); Faster clean catch urine collection (Quick-Wee method) from infants: randomised controlled trial. *BMJ*. 2017 Apr 7;357:j1341. doi: 10.1136/bmj.j1341.
- [Kaufman J](#); How to... collect urine samples from young children. *Arch Dis Child Educ Pract Ed*. 2020 Jun;105(3):164-171. doi: 10.1136/archdischild-2019-317237. Epub 2019 Aug 23.

**Disclaimer:** This article is for information only and should not be used for the diagnosis or treatment of medical conditions. Egton Medical Information Systems Limited has used all reasonable care in compiling the information but makes no warranty as to its accuracy. Consult a doctor or other healthcare professional for diagnosis and treatment of medical conditions. For details see our [conditions](#).

Authored by:	Peer Reviewed by: Dr Colin Tidy, MRCGP	
Originally Published: 19/11/2023	Next review date: 14/06/2023	Document ID: doc_4297

---

View this article online at: [patient.info/mens-health/urine-infection-in-men/midstream-specimen-of-urine-msu](https://patient.info/mens-health/urine-infection-in-men/midstream-specimen-of-urine-msu)

Discuss Midstream specimen of urine (Urine test) and find more trusted resources at [Patient](#).



To find out more visit [www.patientaccess.com](https://www.patientaccess.com)  
or download the app



Follow us

