TEST

Urine culture

A urine culture checks whether bacteria or yeast grow from urine and which antibiotics may work.

WHAT IT MEASURES
Bacteria or yeast that grow from a urine sample

SAMPLE
Urine

FASTING NEEDED?
No

HOW LONG IT TAKES
About 5 to 10 minutes

RESULTS IN
Usually 1-3 days; varies by laboratory

USED FOR
Diagnosing urinary infection and guiding antibiotic choice

MAIN LIMITATION
Contamination from skin or genital bacteria

Overview

A urine culture is a laboratory test that looks for bacteria or yeast in urine. These microorganisms may cause an infection in the bladder, kidneys, or another part of the urinary tract.

The laboratory places some of the urine in conditions that allow microorganisms to grow. If growth occurs, the laboratory may identify the organism and test which antibiotics like amoxicillin or doxycycline are likely to work against it. This second step is called antibiotic susceptibility testing .

A culture is different from a urinalysis or urine dipstick. Those tests look for signs such as white blood cells, blood, or chemicals produced by some bacteria. They give faster results, but they do not usually identify the organism or show which antibiotic may work.

Why the test is ordered

A urine culture can help confirm whether urinary symptoms are caused by an infection. It may also guide antibiotic treatment, particularly when the likely cause or best antibiotic is uncertain.

The test may be ordered when:

Testing urine when you have no urinary symptoms is often not useful. Bacteria can live in the urine without causing illness, especially in some older adults and people with catheters. Important exceptions include certain stages of pregnancy and preparation for some procedures involving the urinary tract.

- You have burning when urinating, frequent urination, urgency, or lower abdominal discomfort
- A kidney infection is suspected because of fever, pain in the side or back, or vomiting
- Symptoms continue, return, or do not improve after treatment
- You have repeated urinary infections
- A urine dipstick or urinalysis has an unexpected result
- You are pregnant and screening or investigation is appropriate
- An infection related to a urinary catheter or urinary procedure is suspected

Who should have the test

A healthcare professional may recommend a urine culture if your symptoms, medical history, or urinalysis suggest that identifying an organism would affect your care.

Cultures are more likely to be useful when infection could be complicated by pregnancy, kidney problems, urinary tract abnormalities, a catheter, reduced immune function, or recent antibiotic use. Local recommendations differ, so not everyone with mild urinary symptoms needs a culture.

Seek prompt medical advice if urinary symptoms occur with fever, pain in your side or back, repeated vomiting, pregnancy, or a rapidly worsening condition. These may require assessment before a culture result is available.

Call emergency services for severe difficulty breathing, fainting, marked confusion, blue or grey skin, or if someone is difficult to wake. Do not wait for a urine culture result in an emergency.

How to prepare

You do not need to fast. You can usually eat, drink coffee, and take your regular medicines unless you have separate instructions for another test.

If possible, collect the sample before starting antibiotics. Antibiotics can reduce bacterial growth and produce a negative result even when an infection is present. Do not delay prescribed or urgent treatment simply to provide a sample.

Tell the healthcare professional or laboratory about:

You will usually receive a sterile container. Do not open it until you are ready to collect the urine, and avoid touching the inside of the container or lid.

- Antibiotics taken recently or currently
- Pregnancy or possible pregnancy
- A urinary catheter
- Recent urinary surgery or procedures
- Difficulty collecting a clean sample

What happens during the test

Most samples are collected using the clean-catch, midstream method. Cleaning and collecting urine from the middle of the flow reduces the chance that skin or genital bacteria enter the container.

You will usually be asked to:

Only a small amount of urine is needed. Follow the collection instructions you receive, as details can differ.

If you have a catheter, a trained professional should usually collect urine from the catheter's sampling port. Urine from the drainage bag is more likely to be contaminated or misleading.

Babies and people unable to provide a clean-catch sample may need another collection method. A catheter sample is sometimes used because urine collection bags can easily pick up bacteria from the skin.

The sample should reach the laboratory promptly. If transport is delayed, the collection service may instruct you to refrigerate it or use a container with preservative.

- Wash your hands and clean around the urinary opening as instructed.
- Begin urinating into the toilet.
- Without stopping the flow, collect some urine in the sterile container.

- Finish urinating into the toilet.
- Close the container without touching its inside.

Understanding your results

A result may report no growth , growth of one organism, or mixed growth involving several organisms.

No growth means the laboratory did not detect meaningful bacterial or yeast growth under the culture conditions used. It makes a typical bacterial urinary infection less likely, but does not completely rule one out.

Growth of one organism may support infection when it fits your symptoms and other urine findings. The report usually names the organism and may state how much grew.

Mixed growth often suggests that bacteria from the skin or genital area entered the sample. A repeat clean-catch sample may be needed. Mixed growth can occasionally have another explanation, especially with catheters or complex urinary conditions.

If susceptibility testing was performed, antibiotics may be labelled as likely to work or unlikely to work. These findings must be considered alongside allergies, pregnancy, kidney function, previous treatment, and the location and severity of a possible infection.

There is no single result threshold that applies in every situation. Reporting and interpretation vary by laboratory, age, sex, pregnancy status, medicines, sample method, symptoms, and clinical context.

What affects the results

Several factors can make a culture misleading even when the laboratory performs it correctly.

Contamination is the main problem. Skin, vaginal, or genital bacteria can enter the container if cleaning is incomplete, the urine stream touches the skin, or the inside of the container is touched.

Recent or current antibiotics may stop organisms from growing. This can cause a false-negative result.

Drinking a very large amount shortly before collection can dilute the urine. Frequent urination may also leave less time for bacteria to build up in the bladder.

Long delays before the sample reaches the laboratory can allow contaminating bacteria to multiply. Incorrect storage may therefore make growth look more important than it is.

Collecting urine from a catheter drainage bag can give a misleading result. Long-term catheters also commonly develop bacterial growth that does not always mean there is an infection requiring treatment.

Menstrual blood, vaginal discharge, or difficulty obtaining a clean sample can increase contamination. Recent urinary procedures may also affect how the result is interpreted.

Some organisms grow slowly, need special culture conditions, or do not grow on a standard urine culture.

Accuracy and limitations

A properly collected culture is good at finding many common bacterial causes of urinary infection. It can also provide information that a dipstick cannot, including the organism's identity and likely antibiotic response.

The test can miss an infection if antibiotics were started first, the urine was very dilute, the organism count was low, or the organism does not grow well under routine conditions. A negative result therefore does not always explain continuing symptoms.

The test can also appear positive when there is no urinary infection. This happens with contamination or when bacteria are present without causing symptoms. Treating a culture result without considering symptoms can lead to unnecessary antibiotics.

Standard urine culture is not the best test for every cause of urinary symptoms. Separate molecular tests are generally used for infections such as chlamydia or gonorrhoea. Imaging, blood tests, or examination may be needed if stones, obstruction, kidney infection, or another cause is suspected.

No culture can guarantee that an antibiotic will work in the body. Laboratory results do not fully account for drug absorption, the infection's location, or individual medical factors.

Risks and complications

Collecting urine naturally has no significant physical risk. Some people may find cleaning or collecting midstream urine awkward or uncomfortable.

Catheter collection can cause brief discomfort and, rarely, minor bleeding or infection. It is used only when there is a reason to obtain urine this way.

What happens next

If no significant growth is found and your symptoms are improving, no further testing may be needed. Continuing or recurring symptoms may lead to a repeat culture or tests for another cause.

If an organism grows, the result may confirm that a prescribed antibiotic is suitable. Treatment may instead be changed after the susceptibility results are available. Do not stop or change an antibiotic unless the prescribing professional advises you to do so.

A contaminated or mixed result often leads to routine repeat collection rather than immediate treatment. Careful clean-catch technique can make the repeat result easier to interpret.

Seek prompt medical advice if symptoms worsen while you are waiting, particularly if you develop fever, side or back pain, vomiting, reduced urine output, or feel seriously unwell. Emergency symptoms such as fainting, severe breathing difficulty, or being difficult to wake require emergency care.

Common questions

Can I drink coffee before a urine culture?

Yes. Fasting is not required. Avoid deliberately drinking much more fluid than usual, because very dilute urine may reduce the amount of bacteria in the sample.

Does the time of day matter?

A sample can usually be collected at any time. Some services prefer the first urine of the morning or urine held in the bladder for a few hours, but follow your specific instructions.

Can I exercise beforehand?

Normal exercise does not usually affect a urine culture. Heavy exercise can cause blood or protein to appear on a urinalysis, but it does not usually create bacterial growth on culture.

Can I give a sample during my period?

Often, yes, but menstrual blood may make collection harder and increase contamination. Tell the collection service and use careful clean-catch technique. If the test is not urgent, you may be advised to collect it later.

Can I have the test after starting antibiotics?

Yes, but antibiotics can cause a false-negative result. Provide the sample before the first dose when practical, without delaying urgent or prescribed treatment.

Why does the result take several days?

Microorganisms need time to grow. The laboratory may then need additional time to identify them and test their response to antibiotics.

Sources

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- Urinary Tract Infections in Pregnant Individuals , American College of Obstetricians and Gynecologists