TEST

Rectal culture

A rectal culture grows microbes from a rectal swab for identification

WHAT IT MEASURES
Microbes growing from a swab taken inside the rectum

SAMPLE
Rectal swab

FASTING NEEDED?
No

HOW LONG IT TAKES
Usually under five minutes

RESULTS IN
Usually one to three days, varying by laboratory

USED FOR
Screening for carriage or helping diagnose infection

MAIN LIMITATION
Antibiotics or poor sampling can cause a missed result

Overview

A rectal culture checks a swab from inside the rectum for bacteria or, less often, other microbes. In the laboratory, the swab is placed on special material that allows selected microbes to grow. Laboratory staff then identify what has grown.

The exact purpose depends on what the laboratory has been asked to find. A rectal culture may help investigate an intestinal infection, although a stool sample is often preferred for diarrhea. It may also screen for bacteria that can live in the bowel without causing symptoms, such as group B streptococcus during pregnancy or certain antibiotic-resistant bacteria in hospitals.

A rectal culture is a test, not a condition. It has no symptoms or outlook of its own. Its meaning comes from why it was ordered, the organism found, and your health circumstances.

Why the test is ordered

A rectal culture may be ordered to:

Susceptibility testing checks which antibiotics are likely to work against bacteria grown in the laboratory. It is not always needed, and not every organism can be tested this way.

For diarrhea, a fresh stool sample may provide more material and may find an intestinal pathogen more reliably. Some laboratories also use molecular tests, which look for genetic material from several microbes at once.

- Look for bacteria that could be causing gastrointestinal symptoms
- Screen for group B streptococcus late in pregnancy
- Check whether someone carries certain antibiotic-resistant bacteria
- Support infection-control decisions during a hospital stay or outbreak
- Obtain bacteria for further testing, including antibiotic like amoxicillin or doxycycline susceptibility testing

Who should have the test

This test is not a routine screening test for all adults. It is used when the result could answer a specific clinical or infection-control question.

During pregnancy, group B streptococcus screening usually uses a combined vaginal and rectal swab. The timing matters because carriage can change during pregnancy. Local maternity protocols determine when and how the sample is collected.

Hospitals may use rectal cultures to screen selected patients for antibiotic-resistant bacteria, such as carbapenem-resistant organisms or vancomycin-resistant enterococci. This is usually based on local policy, recent healthcare exposure, or an identified outbreak.

If you have diarrhea, your healthcare professional may request a stool sample instead, particularly when a larger sample or testing for several pathogens is needed.

How to prepare

You usually do not need to fast. You can normally eat, drink water, and have coffee as usual.

Tell the healthcare professional arranging the test if you:

Antibiotics and bowel-clearing treatments can reduce the number of bacteria collected. Do not stop prescribed medicines or delay treatment just to improve a culture result unless you receive specific instructions.

Follow any collection instructions from the laboratory. Requirements can differ according to

the organism being sought.

- Are taking or recently took antibiotics
- Recently used an enema, laxative, suppository, or rectal medicine
- Recently had bowel preparation for a procedure
- Have rectal pain, bleeding, recent surgery, or a known rectal condition
- Are pregnant, if this is not already known

What happens during the test

You may be asked to undress from the waist down and lie on your side. A healthcare professional gently places a small sterile swab a short distance through the anus and into the rectum. The swab is rotated so that material from the rectal lining is collected.

You may feel pressure, an urge to pass stool, or brief discomfort. The swab is removed immediately and placed in a transport tube.

For group B streptococcus screening, the same swab or separate swabs may be used for the lower vagina and rectum. Some maternity services allow you to collect this sample yourself after receiving clear instructions.

The sample is sent to a laboratory. It is placed in culture media chosen for the specific bacteria being investigated.

Understanding your results

Results are usually reported as positive, negative, or as the name of an organism that grew.

A positive screening culture means the target bacterium was found. It does not necessarily mean that you have an infection. Many bacteria can live in the bowel without causing illness; this is called colonization or carriage.

A negative culture means the target organism did not grow from that sample. It cannot always prove that the organism is absent. The amount may have been too small, shedding may have been intermittent, or antibiotics may have limited growth.

When a culture is being used to investigate symptoms, the report may name a possible disease-causing organism. The result still needs to be considered alongside your symptoms, examination, exposure history, and other tests.

Unlike many blood tests, a rectal culture does not have a universal numerical reference range.

Laboratory methods and reporting differ. Interpretation also varies with age, sex, pregnancy status, medicines, the organism sought, and the clinical context.

What affects the results

Several factors can change what grows without there being anything wrong with the laboratory:

Fasting, coffee, exercise, and a recent blood transfusion do not usually affect a rectal culture. They may matter for other tests, but they do not normally change how bacteria grow from this swab.

- Antibiotics: Current or recent antibiotics can suppress bacteria and produce a negative culture even when they were previously present.
- Bowel preparation or enemas: These may temporarily reduce or redistribute bacteria in the rectum.
- Rectal medicines: Suppositories, creams, or antiseptic products may interfere with collection or bacterial growth.
- Sampling technique: A swab that does not reach the rectum or collect enough material may miss the target organism.
- Transport delays: Some bacteria do not survive well if the swab is stored incorrectly or reaches the laboratory too late.
- Intermittent carriage: The amount of a bacterium can change over time, so one sample may be negative and a later sample positive.
- Laboratory method: Culture media are selected for particular organisms. A routine culture does not look for every possible bacterium, virus, parasite, or fungus.
- Pregnancy timing: Group B streptococcus carriage can change, so a culture taken too early may not reflect carriage near birth.

Accuracy and limitations

A rectal culture can correctly identify bacteria that are alive, present in sufficient numbers, and able to grow under the laboratory conditions used. It may also allow further testing of the organism.

The test can miss an organism. This is more likely after antibiotics, with a shallow or inadequate swab, when bacterial numbers are low, or when the organism is not released continuously.

Collection and transport problems can also lead to a negative result.

A positive result can be misleading if colonization is mistaken for infection. Finding bacteria in the rectum does not prove that they are causing diarrhea, pain, or fever. Occasionally, material from nearby skin or stool can also affect what grows.

A stool sample is generally better when investigating many causes of infectious diarrhea. Molecular tests may find genetic material that culture misses and often return results faster. However, they can sometimes detect material from organisms that are no longer causing illness, and they may not provide a living isolate for antibiotic testing.

No single rectal culture can rule in or rule out every bowel infection or carrier state.

Risks and complications

A rectal swab may cause brief pressure or discomfort. Minor spotting is possible, particularly if the area is already irritated, but significant complications are uncommon.

Tell the person collecting the sample if you have severe rectal pain or recent rectal surgery so the safest approach can be chosen.

What happens next

A negative screening result may require no further action. If there is still a strong reason to suspect the target organism, another sample or a different test may be considered.

A positive screening result does not automatically mean you need treatment. The next step depends on the organism and why testing was done. For example, group B streptococcus carriage during pregnancy is handled differently from an intestinal infection or carriage of an antibiotic-resistant bacterium.

Routine follow-up is appropriate if you are waiting for an explanation of a result, symptoms are stable, or you have questions about infection-control precautions.

Seek prompt medical advice if you develop worsening diarrhea, persistent fever, increasing rectal bleeding, or signs of dehydration such as very little urine or ongoing dizziness. Seek emergency care for severe abdominal pain, fainting, confusion, vomiting blood, or heavy rectal bleeding. Do not wait for a culture result before seeking urgent help.

Common questions

Can I drink coffee before a rectal culture?

Yes. Fasting is not normally needed, so coffee and your usual food and drinks are generally allowed.

Does the time of day matter?

Usually not. Collection timing may matter if the laboratory or maternity service gives specific instructions.

Can I exercise beforehand?

Yes. Exercise does not usually affect which bacteria grow from a rectal swab.

Can I have the test while taking antibiotics?

The sample can be collected, but antibiotics may stop some bacteria from growing and cause a missed result. Do not stop an antibiotic without medical advice.

Can I use the toilet before the test?

Usually, yes. Passing stool does not normally prevent collection, although you should follow any instructions provided with a home collection kit.

Does a positive result mean I have an infection?

Not always. It may mean that you carry the bacterium without symptoms. The reason for testing and your clinical circumstances determine what the result means.

Sources

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