TEST

Fecal culture

A fecal culture grows stool bacteria to look for causes of intestinal infection.

WHAT IT MEASURES
Disease-causing bacteria that can grow from stool

SAMPLE
Stool

FASTING NEEDED?
No

HOW LONG IT TAKES
About five to ten minutes for collection

RESULTS IN
Usually two to three days; timing varies by laboratory

USED FOR
Diagnosis and public health investigation

MAIN LIMITATION
Antibiotics or poor handling can prevent bacterial growth

Overview

A fecal culture, also called a stool culture, looks for bacteria that may be causing an intestinal infection. A stool sample is placed on materials that help bacteria grow, allowing laboratory staff to identify disease-causing organisms.

A standard culture commonly looks for Salmonella , Shigella , and Campylobacter . Testing for Shiga toxin-producing Escherichia coli may be included or ordered separately. Bacteria such as Vibrio or Yersinia may require a specific request or special methods.

Fecal culture does not usually detect viruses, parasites, or Clostridioides difficile (C. difficile). These require other tests. Some laboratories instead use gastrointestinal molecular panels, which test for genetic material from several organisms at once.

Why the test is ordered

The test may help identify the cause of diarrhea when a bacterial infection is possible. Finding the organism can guide treatment, although many intestinal infections improve without

antibiotics.

A fecal culture may be ordered when diarrhea:

Testing may also support an outbreak investigation. Some results must be reported to public health authorities to help identify linked cases and prevent further spread.

- Contains blood or mucus
- Comes with fever or severe abdominal cramps
- Persists or gets worse
- Follows travel or possible contaminated food or water
- Affects several people in a shared setting
- Occurs in someone at higher risk of complications

Who should have the test

Not everyone with diarrhea needs a fecal culture. Mild, short-lived watery diarrhea often improves with fluids and time.

Testing is more likely to help if you have bloody diarrhea, significant fever, severe pain, dehydration, or symptoms that are not improving. It may be considered sooner for young children, older adults, pregnant people, and people with weakened immune systems.

Recent travel, food exposures, medicines, work, and local outbreaks help determine which stool tests are appropriate. A routine culture may not include the organism suggested by your history.

How to prepare

You do not need to fast. You can usually eat, drink coffee, and take your regular medicines unless instructed otherwise.

Tell the healthcare professional about recent or current antibiotics like amoxicillin or doxycycline . They can reduce bacterial growth and cause a negative culture even when infection is present. Do not delay necessary treatment or stop prescribed medicine on your own.

You will usually receive a clean container, collection device, and instructions. Check whether the sample must be returned immediately, placed in transport fluid, or refrigerated, as requirements vary.

What happens during the test

Most samples are collected at home. Pass stool into the supplied collection device or another clean, dry container as instructed. Do not collect it from toilet water.

Use the scoop provided to transfer a small amount into the specimen container. If blood or mucus is present, you may be asked to include some of that area. Do not mix the sample with urine, toilet paper, cleaning products, or menstrual blood.

Close and label the container as instructed. Wash your hands thoroughly with soap and water, then return the sample within the stated time.

In the laboratory, the stool is placed on culture plates that support bacterial growth. Suspicious colonies are identified, and the laboratory may test which antibiotics are likely to work.

Understanding your results

Fecal culture results are usually descriptive rather than numerical. Interpretation depends on the laboratory and your clinical circumstances.

A positive result means the laboratory grew a potentially disease-causing bacterium. The report should name it. Results are considered alongside symptoms because some people continue carrying bacteria after recovery.

An antibiotic susceptibility result may accompany a positive culture. It shows how the bacterium responded to particular antibiotics in the laboratory and can guide treatment when antibiotics are appropriate.

A result such as "no enteric pathogens isolated" means the routine culture did not grow the bacteria it was designed to detect. It does not exclude infection from a virus, parasite, C. difficile , or an organism not included in the culture. Symptoms may also have a noninfectious cause.

Normal intestinal flora refers to bacteria that normally live in the bowel and are not considered the cause of illness.

What affects the results

Antibiotics taken before collection may suppress bacterial growth. When practical, collecting the sample before the first dose improves the chance of detection, but necessary treatment should not be postponed solely to obtain a sample.

Delayed delivery, incorrect storage, or failure to use required transport fluid can affect recovery of bacteria. Toilet water, urine, soap, disinfectants, or cleaning chemicals may contaminate the sample or prevent growth. Too little stool can limit testing.

Bacteria may not be shed evenly in every bowel movement, and fewer may be present later in the illness. Sometimes another sample or a different test is needed.

Tell your healthcare professional about travel, seafood, untreated water, animal contact, or possible outbreaks. These details may prompt special testing for organisms not included in routine culture.

Accuracy and limitations

A positive culture for a recognized intestinal pathogen is usually reliable because the organism has been grown and identified. However, detecting a bacterium does not always prove it caused every symptom, since some people carry or shed bacteria without active illness.

Infection may be missed after antibiotics, with delayed transport, when few organisms are present, or when special culture conditions are needed. Routine culture also misses viruses, most parasites, and C. difficile .

Molecular gastrointestinal panels can test for more organisms and may give faster results. However, they can detect genetic material from organisms that are no longer alive or identify several organisms without showing which caused the symptoms.

Culture may still be needed after a positive molecular test to perform antibiotic susceptibility testing or compare the organism with other cases during a public health investigation.

Risks and complications

Collecting a stool sample has no direct medical risk, but poor hand hygiene could spread infection to people or surfaces.

Wash your hands with soap and water after collection. Clean contaminated surfaces according to the kit instructions or local health guidance.

What happens next

If a bacterium is found, treatment depends on the organism, your symptoms, and your overall health. Care may involve fluids, monitoring, antibiotics, or a combination. Antibiotics are not

always needed and may be inappropriate for some intestinal infections.

A negative result may need no further action if you are improving. If symptoms continue, further testing may include a molecular stool panel, parasite testing, a C. difficile test, or evaluation for a noninfectious condition.

Seek prompt medical advice for bloody diarrhea, ongoing fever, worsening pain, symptoms that are not improving, or difficulty returning to normal eating and drinking.

Seek urgent or emergency care if you cannot keep fluids down, pass very little urine, faint, become confused, develop severe abdominal pain, or have signs of severe dehydration. Do not wait for the culture result if you are becoming seriously unwell.

Common questions

Can I drink coffee before a fecal culture?

Yes. Fasting is not required, and coffee does not usually affect the test.

Does the time of day matter?

No. Returning and storing the sample according to laboratory instructions matters more.

Can I exercise beforehand?

Yes, but avoid strenuous exercise if diarrhea has made you weak or dehydrated.

Can I collect the sample from the toilet?

Do not collect it from toilet water. Use the supplied or recommended clean, dry collection device.

Can I take antibiotics before collecting it?

Antibiotics can cause a falsely negative result. Report recent antibiotics, but do not stop or delay prescribed treatment without instructions.

How long am I contagious?

The test cannot determine exactly how long you can spread an infection. Some bacteria remain in stool after symptoms improve. Follow hygiene and any work, school, food-handling, or public health instructions for the organism found.

Sources

- Infectious Diseases Society of America. 2017 Clinical Practice Guidelines for the Diagnosis and Management of Infectious Diarrhea . Clinical Infectious Diseases . 2017;65(12):e45-e80.
- Humphries RM, Linscott AJ. Laboratory Diagnosis of Bacterial Gastroenteritis . Clinical Microbiology Reviews . 2015;28(1):3-31.
- Centers for Disease Control and Prevention. Diagnosis and Management of Foodborne Illnesses . MMWR Recommendations and Reports . 2004;53(RR-4):1-33.
- Centers for Disease Control and Prevention. Post-Travel Diarrhea . CDC Yellow Book .
- Mayo Clinic Laboratories. Enteric Pathogens Culture, Feces . Test catalog and specimen-handling information.