TEST

Fecal smear

A fecal smear examines a thin stool sample under a microscope for parasites and other visible material.

WHAT IT MEASURES
Parasites, eggs, larvae, and selected cells visible in stool

SAMPLE
Stool

FASTING NEEDED?
No

HOW LONG IT TAKES
About five to ten minutes for home collection

RESULTS IN
Usually one to three days; varies by laboratory

USED FOR
Diagnosing possible intestinal infection

MAIN LIMITATION
A single smear can miss parasites shed intermittently

Overview

A fecal smear, also called a direct stool smear or stool wet mount, is a microscopic examination of stool. A small amount is spread onto a glass slide, usually with saline or another preparation fluid, and examined by a laboratory professional.

The main purpose is to look for intestinal parasites, including organisms, eggs, cysts, or larvae. Cysts are protective forms that help some parasites survive outside the body. Depending on what was ordered, the laboratory may also report red or white blood cells, yeast, fat, or other material.

The term "fecal smear" is not standardized, so reports differ between laboratories. It is not the same as a stool culture, fecal occult blood test, or stool DNA test, although it may be part of a broader ova and parasite examination. "Ova" means parasite eggs.

Why the test is ordered

A fecal smear may be ordered when an intestinal parasite or bowel inflammation is suspected. Reasons include persistent diarrhea, abdominal discomfort, mucus in the stool, unexplained weight loss, or symptoms beginning during or after travel.

Testing may also follow exposure to untreated water, contaminated food, or someone with a parasitic infection. People with weakened immune systems may be tested more readily because some infections can be more serious.

Many laboratories combine microscopy with concentration methods, parasite antigen tests, or molecular tests such as polymerase chain reaction, usually called PCR.

Who should have the test

You may be asked to provide a sample if your symptoms, travel, exposures, or immune health suggest stool microscopy could help. It is not usually a general screening test for people without symptoms or a relevant exposure.

A fecal smear is not the best test for every parasite, bacterium, or virus. Your testing plan may instead include, or be combined with, stool culture, parasite antigen testing, PCR, or repeat stool samples.

How to prepare

Fasting is not needed. You can usually eat, drink coffee, take part in normal activities, and use the toilet as usual.

Use the container and instructions supplied by the laboratory or clinic. Some containers include preservative; do not pour it out or add water.

Tell the clinician or laboratory about medicines and recent procedures. Antibiotics like amoxicillin or doxycycline , antiparasitic medicines, bismuth, mineral oil, some antidiarrheal medicines, and recent barium contrast studies can affect the findings.

Do not stop prescribed medicine solely for this test unless specifically instructed.

What happens during the test

Most samples are collected at home. Pass stool into a clean, dry collection device rather than directly into the specimen container.

Do not mix the stool with urine, toilet water, toilet paper, soap, or cleaning products. Transfer

the requested amount, close the container securely, and label it as directed. Record the collection time if requested. If the stool has watery, bloody, or mucus-filled areas, follow the kit instructions about which part to sample.

Fresh stool may need to reach the laboratory quickly because moving parasite forms, called trophozoites, can lose their movement and recognizable shape. If the container includes preservative, follow its storage and transport instructions. Do not refrigerate or freeze the sample unless instructed.

In the laboratory, a small portion is placed on a slide and may be mixed with saline, iodine, or a stain before examination.

Understanding your results

Results are usually descriptive rather than a single number. The report may identify a parasite, egg, cyst, larva, cell, or other material.

A positive result means the reported organism or structure was seen. Its importance depends on the exact finding, your symptoms, and whether it is known to cause illness. Some intestinal organisms can be present without causing symptoms.

A negative result means no target organism was found in the examined portion. It does not always rule out infection because parasites may be present in small numbers or may not be released in every bowel movement.

There is no universal reference range. Reporting and interpretation vary by laboratory, the requested examination, medicines, immune health, travel history, and the wider clinical context.

What affects the results

Parasites can be unevenly distributed in stool or shed only intermittently. A small smear from one sample may miss them even when they are present.

Other factors include:

Food, coffee, exercise, and time of day usually have little direct effect. Sample quality, timing, and handling matter more.

A recent blood transfusion does not usually affect microscopy. Pregnancy and kidney function generally do not create false parasite findings, although they may affect follow-up testing or treatment.

- Delay before examination, especially when fresh stool is required
- Contamination with urine, toilet water, soil, or cleaning products
- Too little stool or sampling an unrepresentative area
- Incorrect storage, refrigeration, freezing, or preservative use
- Recent antibiotics or antiparasitic treatment
- Bismuth, mineral oil, or barium obscuring microscopic detail
- Mistaking food, pollen, yeast, or debris for parasites

Accuracy and limitations

A direct fecal smear can identify a parasite when enough recognizable material is present and the sample is examined correctly. It is less sensitive when few organisms are present or shedding is intermittent, so a single negative smear can miss an infection.

Laboratories may request samples collected on separate days or use concentration methods to improve detection. False-positive findings can occur because plant cells, pollen, yeast, air bubbles, and debris may resemble parasite structures.

For some infections, antigen or PCR testing is more likely to detect the organism. Stool culture is more appropriate for many bacterial infections. A fecal smear cannot explain every cause of diarrhea, bleeding, or abdominal pain.

Risks and complications

Collection does not involve needles or instruments entering the body. The main risk is spreading germs from stool to your hands or nearby surfaces.

Close the container securely, clean contaminated surfaces, and wash your hands thoroughly with soap and water after collection.

What happens next

If a parasite is identified, next steps depend on the organism, symptoms, and your general health. Further testing may confirm the finding or check for another infection.

If the result is negative but symptoms continue, follow-up may include repeat stool samples, concentration examination, stool culture, antigen testing, PCR, blood tests, or assessment for

noninfectious bowel conditions.

Contact a healthcare service promptly for ongoing diarrhea with dehydration, fever, visible blood, or worsening pain. Seek urgent or emergency care for fainting, confusion, severe abdominal pain, black tar-like stool, heavy bleeding, or inability to keep fluids down.

Common questions

Can I drink coffee before a fecal smear?

Yes. Fasting is not normally required, and coffee does not usually affect stool microscopy.

Does the time of day matter?

Usually not. Collection and delivery timing matter more, especially when a fresh sample is required.

Can I exercise beforehand?

Yes. Normal exercise does not usually affect the result. Do not delay delivery of a time-sensitive sample.

Can I collect the sample from toilet water?

No. Toilet water can dilute or contaminate it. Use the collection device or clean, dry container recommended by the laboratory.

Why have I been asked for more than one sample?

Some parasites are not released in every bowel movement. Samples collected on separate days improve the chance of finding them.

Can I take antibiotics or diarrhea medicine before collecting it?

Some medicines can reduce organisms or obscure microscopic details. Tell the clinician or laboratory what you have taken, but do not stop prescribed medicine without instructions.

Sources

- Centers for Disease Control and Prevention. DPDx: Stool Specimens-Specimen Processing
- Centers for Disease Control and Prevention. Clinical Testing and Diagnosis for Giardia Infection
- MedlinePlus. Ova and Parasite Test

- Infectious Diseases Society of America. 2017 Clinical Practice Guidelines for the Diagnosis and Management of Infectious Diarrhea
- Garcia LS, Arrowood M, Kokoskin E, et al. Practical Guidance for Clinical Microbiology Laboratories: Laboratory Diagnosis of Parasites from the Gastrointestinal Tract. Clinical Microbiology Reviews . 2018;31(1):e00025-17
- World Health Organization. Bench Aids for the Diagnosis of Intestinal Parasites. Second edition. 2019