TEST

Stool guaiac test

A stool guaiac test checks stool samples for small amounts of hidden blood.

WHAT IT MEASURES
Hidden blood through a heme-triggered color change

SAMPLE
Stool

FASTING NEEDED?
No

HOW LONG IT TAKES
A few minutes per sample over several bowel movements

RESULTS IN
Usually several days; timing varies by laboratory

USED FOR
Colorectal cancer screening and investigating possible digestive tract bleeding

MAIN LIMITATION
Diet, medicines, and intermittent bleeding can mislead results

Overview

A stool guaiac test checks for blood that is not visible in a bowel movement. It is a type of fecal occult blood test, often shortened to gFOBT. "Occult" means hidden.

The test uses a plant-based substance called guaiac. If the stool sample contains heme, a part of the blood protein hemoglobin, the test card changes color after a developing solution is added.

Stool guaiac testing is different from a fecal immunochemical test, or FIT. FIT uses antibodies to detect human hemoglobin and is less affected by food. It is important to follow the instructions for the exact test you receive.

The stool guaiac test finds evidence of bleeding. It cannot show where the blood came from or whether cancer, a polyp, an ulcer, hemorrhoids, or another condition caused it.

Why the test is ordered

A high-sensitivity stool guaiac test may be offered as a colorectal cancer screening option.

Screening looks for possible disease before symptoms appear.

Some colorectal cancers and larger polyps bleed in small amounts. Testing stool collected during several bowel movements makes it more likely that intermittent bleeding will be found.

The test may also be used when a healthcare professional is investigating possible digestive tract bleeding or unexplained iron-deficiency anemia. However, a negative result does not rule out bleeding, especially when symptoms or anemia are present.

Visible blood, black stools, persistent bowel changes, or abdominal symptoms need medical assessment rather than screening alone.

Who should have the test

For adults at average risk of colorectal cancer, US guidance includes annual high-sensitivity gFOBT as one screening option from age 45 through 75. Decisions from age 76 through 85 are individualized according to health, previous screening, and personal preferences. Recommendations differ between countries and may change over time.

You may need a different screening plan if you have:

People with these higher-risk situations are often offered colonoscopy-based screening rather than stool testing alone.

A stool guaiac test should not be used to delay assessment of symptoms such as visible bleeding, ongoing abdominal pain, unexplained weight loss, or a lasting change in bowel habits.

- A previous colorectal cancer or certain types of polyps
- Inflammatory bowel disease affecting the colon
- A strong family history of colorectal cancer or advanced polyps
- A known inherited colorectal cancer syndrome

How to prepare

You do not usually need to fast. You can generally eat and drink while collecting the samples, but some guaiac kits require temporary changes to food, supplements, or medicines.

Read the kit instructions before the first sample. Depending on the product, you may be asked to avoid red meat, certain raw fruits and vegetables, or vitamin C for a specified period. These substances can interfere with the chemical reaction.

Tell the healthcare professional who ordered the test about aspirin, anti-inflammatory

medicines such as ibuprofen or naproxen, blood thinners like warfarin or apixaban , and supplements. Some medicines can increase real bleeding from the digestive tract. Do not stop a prescribed medicine unless the clinician responsible for it tells you to do so.

Avoid collecting a sample when it could be contaminated by menstrual blood, urine, or active bleeding from hemorrhoids. Follow the kit's instructions about when to restart collection.

What happens during the test

The samples are usually collected at home. Kits differ, but many guaiac tests require samples from several bowel movements because digestive tract bleeding may come and go.

You will usually:

Do not let the stool touch toilet water or cleaning products. Wash your hands after handling the kit.

A laboratory or clinic applies a developing solution to the card. A color change suggests that heme is present. You should not add developer yourself unless the kit specifically instructs you to do so.

- Catch the bowel movement using the supplied paper or a clean, dry container.
- Use the applicator to take small samples from different areas of the stool.
- Smear the samples onto the marked sections of the test card.
- Label, store, and return the cards as instructed.

Understanding your results

Results are usually reported as negative or positive rather than as a number.

A negative result means the test did not detect blood in the samples. It does not prove that the colon is free of polyps or cancer. A lesion may not have been bleeding when the samples were collected, or the amount of blood may have been too small to detect.

A positive result means the test detected a reaction consistent with blood. It does not mean that you have colorectal cancer. Non-cancer causes include hemorrhoids, ulcers, inflammation, diverticular disease, swallowed blood, and bleeding caused or worsened by medicines.

A positive screening result usually needs a colonoscopy to examine the colon and identify the source. Repeating the stool test cannot reliably rule out a problem after a positive result.

Interpretation varies by laboratory, test brand, age, sex, pregnancy status, medicines, and

clinical context.

What affects the results

Several factors can change the result even when the laboratory performs the test correctly.

Red meat contains animal heme and can cause a positive reaction. Some raw fruits and vegetables contain plant enzymes called peroxidases that can also trigger the color change. Cooking often breaks down these enzymes, but you should follow the restrictions supplied with your kit.

Large amounts of vitamin C can block the chemical reaction and produce a negative result even when blood is present.

Blood from menstruation, hemorrhoids, a nosebleed, bleeding gums, or recent dental work may enter the sample or digestive tract. This can produce a positive result without bleeding from the colon.

Aspirin, nonsteroidal anti-inflammatory medicines, and blood thinners do not simply "fool" the card. They may contribute to actual digestive tract bleeding. Never stop them on your own.

Other important influences include:

Age, pregnancy, kidney function, and recent transfusion do not usually alter the guaiac reaction directly. However, they may affect why the test was ordered and how a result is interpreted.

- Collecting fewer samples than instructed
- Bleeding that occurs only occasionally
- Stool touching urine, toilet water, or cleaning chemicals
- Incorrect storage or delayed return of the cards
- Sampling only one area of the stool

Accuracy and limitations

The stool guaiac test detects blood, not cancer or polyps themselves. Some cancers and many polyps do not bleed continuously, so one round of testing can miss them.

In studies reviewed for the US Preventive Services Task Force, high-sensitivity gFOBT detected about 50% to 75% of colorectal cancers present during one screening round. In other words, it missed about 25 to 50 out of every 100 existing cancers in those studies.

Performance varies by test brand, sample collection, and study population.

Specificity was about 96% to 98%. This means roughly 2 to 4 out of every 100 people without colorectal cancer had a positive screening result. Some of those results may reflect real bleeding from another cause rather than a chemical error.

Repeated screening at the recommended interval helps find bleeding that was missed earlier. It does not make a single negative result conclusive.

FIT is often preferred when a stool-based test is suitable because it is more specific to human blood and usually does not require dietary restrictions. Colonoscopy is the better follow-up test after a positive result and may be the preferred first test for people at increased risk or with concerning symptoms.

Risks and complications

Collecting a stool sample does not injure the bowel and has no meaningful physical risk. Handling stool can spread germs, so use the supplied materials and wash your hands well afterward.

The main practical risk is an incorrect or misleading result. A positive result can lead to colonoscopy, which has separate risks that should be explained before that procedure.

What happens next

After a negative screening result, you will usually continue screening at the interval recommended for that test and your level of risk. High-sensitivity gFOBT screening is commonly repeated every year under US guidance.

A positive result needs timely follow-up, usually with colonoscopy. This is routine follow-up rather than an emergency when you feel well and have no visible bleeding.

Contact a healthcare professional even after a negative result if you have persistent bowel changes, unexplained iron-deficiency anemia, abdominal symptoms, weight loss, or visible blood.

Seek urgent medical care for heavy rectal bleeding, black tar-like stools with weakness or dizziness, severe abdominal pain, fainting, shortness of breath, or a rapid heartbeat. Call emergency services if bleeding is substantial or you feel as though you may pass out.

Common questions

Can I drink coffee before a stool guaiac test?

Usually, yes. Fasting is not normally required, and coffee itself is not a standard source of heme. Follow your kit's instructions about creamers, supplements, and any temporary dietary restrictions.

Does the time of day matter?

Usually not. Collect each sample during a normal bowel movement and return the cards within the time stated in the kit instructions.

Can I exercise beforehand?

Ordinary activity is generally acceptable. Prolonged, strenuous exercise can occasionally cause real digestive tract bleeding. If you have recently completed an endurance event or developed digestive symptoms during exercise, mention this when returning the test.

Can I do the test during my period?

It is usually best to wait until menstrual bleeding has stopped so blood does not contaminate the sample. Follow the timing instructions supplied with your kit.

What if I have hemorrhoids?

Actively bleeding hemorrhoids can cause a positive result. Tell the healthcare professional who ordered the test, but do not assume hemorrhoids explain a positive test without appropriate follow-up.

Why do I need samples from more than one bowel movement?

Bleeding from a polyp, cancer, or another digestive condition may come and go. Multiple samples reduce the chance of testing only when no blood is being released.

Sources

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