PROCEDURE

Gastric tissue biopsy and culture

A gastric tissue biopsy removes small stomach samples during endoscopy for examination and infection testing.

PURPOSE
Examine stomach tissue for infection or abnormal cell changes

PROCEDURE TYPE
Diagnostic endoscopic biopsy during upper gastrointestinal endoscopy

WHERE IT IS DONE
Endoscopy suite, usually as an outpatient

ANAESTHESIA
Moderate or deep sedation, often with local throat anaesthetic

HOW LONG IT TAKES
About 15 to 30 minutes

PREPARATION
Fast beforehand; review medicines, especially blood thinners

RECOVERY
Same day; no driving for 24 hours after sedation

MAIN RISKS
Bleeding, perforation, sedation reactions, infection

RESULTS
Endoscopy immediately; pathology and culture in days to weeks

Overview

A gastric tissue biopsy removes tiny samples from the lining of your stomach. It is usually done during an upper gastrointestinal endoscopy, also called a gastroscopy or EGD.

During endoscopy, a flexible tube with a camera is passed through your mouth and into your stomach. Small instruments passed through the tube collect the samples.

The samples may be examined under a microscope. This is called histology or pathology. They may also be placed in special conditions to grow bacteria, which is called a culture. Gastric culture most often looks for Helicobacter pylori , or H. pylori , a bacterium linked to stomach inflammation and ulcers.

If H. pylori grows, the laboratory may test which antibiotics like amoxicillin or doxycycline are

most likely to work. Culture requires careful sample handling and does not always grow the bacterium, even when infection is present.

Why the procedure is performed

Your healthcare team may recommend gastric biopsy when looking at the stomach alone cannot provide enough information. A biopsy can show inflammation, infection, precancerous changes, or cancer cells.

It may be performed to:

Several samples may be taken from different areas. This improves the chance of finding changes that are patchy rather than spread evenly throughout the stomach.

- Investigate an ulcer, abnormal area, growth, or thickened stomach lining
- Check for H. pylori infection
- Identify the cause of ongoing stomach inflammation
- Assess changes such as thinning or alteration of the stomach lining
- Help diagnose or rule out stomach cancer
- Test antibiotic susceptibility after previous H. pylori treatments have failed

Who should and should not have it

This procedure may be appropriate if you need direct examination of the stomach and tissue testing could change your care. It can be especially useful when an ulcer or unusual area is seen, when cancer needs to be ruled out, or when antibiotic resistance is a concern.

It may not be the right first test when the only question is whether you have H. pylori . A breath or stool test is less invasive and is often sufficient.

The procedure may be delayed or changed if:

These issues are not always absolute reasons to avoid endoscopy. The team may adjust the timing, sedation, or biopsy plan. In an emergency, the benefits of proceeding may outweigh concerns that would delay a routine procedure.

- You have not followed the required fasting instructions
- A serious heart or lung condition is not stable
- You have a blood-clotting problem that has not been addressed

- Medicines affecting clotting require a treatment plan first
- You recently took medicines that could reduce the accuracy of H. pylori testing
- You are pregnant and the procedure is not urgent
- You cannot safely receive the planned sedation

How to prepare

The treating facility's own instructions take priority because fasting and medication plans are tailored to the procedure and type of sedation.

You will usually need to stop eating and drinking for a set period beforehand. An empty stomach gives the team a clear view and reduces the chance of stomach contents entering your lungs during sedation.

Tell the facility about all prescription medicines, over-the-counter products, and supplements you take. It is particularly important to discuss blood thinners like warfarin or apixaban , antiplatelet medicines, diabetes treatments, and medicines that slow stomach emptying.

Do not stop a prescribed medicine unless the healthcare team responsible for your procedure tells you to do so.

Also tell the team if you:

Arrange for a responsible adult to take you home if you will receive sedation. Some facilities also require someone to stay with you for a period after discharge.

- Have allergies or previous problems with anaesthesia or sedation
- Have heart, lung, bleeding, or swallowing problems
- Have sleep apnoea
- May be pregnant
- Have recently taken antibiotics or acid-suppressing medicines
- Have removable dental work

What happens during the procedure

A nurse will review your health information and check your blood pressure, pulse, and oxygen level. An intravenous line may be placed for sedation.

You will usually lie on your side. The team may spray a local anaesthetic into your throat to

reduce gagging. A mouth guard protects your teeth and the endoscope.

The endoscope is guided through your mouth, oesophagus, and stomach. It does not block your breathing. Air or carbon dioxide may be introduced to open the stomach and improve the view, which can cause pressure or fullness.

When the endoscopist identifies areas to sample, tiny forceps are passed through the scope. The forceps remove pieces of tissue only a few millimetres across. Stomach biopsies are not usually felt as sharp pain.

Samples intended for microscopic examination and culture are handled separately. Culture samples must be placed in suitable transport material and delivered promptly to the laboratory.

The endoscope is then withdrawn. The procedure itself commonly takes about 15 to 30 minutes, although your total time at the facility will be longer.

Recovery and what to expect afterward

A mild sore throat, temporary bloating, or cramping can occur. These effects usually improve without treatment. Your team can advise which pain relief is safe for you.

Wait until your swallowing has returned to normal before eating or drinking, especially if throat anaesthetic was used. Start with small amounts unless your discharge instructions say otherwise. Most people can return to their usual diet the same day.

Rest for the remainder of the day after sedation. Avoid important decisions, alcohol, and activities requiring coordination for the period specified by the facility.

Do not drive, cycle on public roads, operate machinery, or travel home alone for at least 24 hours after sedation, unless your treating facility gives a different restriction. Arrange transportation before arriving.

Many people return to desk-based work the next day. You may need longer if your work involves driving, machinery, heavy physical activity, or safety-critical decisions.

Risks and possible complications

Upper endoscopy with biopsy is generally well tolerated, but it is not risk-free.

Minor bleeding can occur where tissue was removed. It usually stops during the procedure. More significant bleeding may require another endoscopy or hospital treatment, particularly if you have a clotting disorder or take medicines that affect clotting.

Perforation means a tear in the oesophagus, stomach, or upper small intestine. It may require hospital care, antibiotics, endoscopic repair, or surgery.

Sedation can affect breathing, blood pressure, or heart rhythm. Your oxygen level and vital signs are monitored so the team can respond promptly.

Other possible problems include aspiration of stomach contents into the lungs, damage to teeth or dental work, and infection. These are uncommon but can require treatment.

A biopsy can also miss an abnormal area. Culture may be negative because bacteria were not present in that sample, did not survive transport, or were suppressed by recent antibiotics or acid-reducing medicines like omeprazole or lansoprazole .

Results and follow up

The endoscopist can usually tell you what the stomach looked like after you recover from sedation. Sedation can affect memory, so written information or having a support person present may help.

Biopsy samples must be processed and reviewed by a pathologist. Results often take several days, although specialised tests can take longer.

Culture takes additional time because the laboratory must try to grow the bacteria. If growth occurs, antibiotic susceptibility testing may extend the wait. Some cultures do not grow successfully.

Your report may describe inflammation, H. pylori , ulcers, cell changes, or whether abnormal tissue is benign or cancerous. It may also state that further sampling or another test is needed.

Arrange routine follow-up to discuss what the findings mean and whether treatment, monitoring, or another procedure is recommended. If H. pylori is treated, a separate follow-up test may be used later to confirm that the infection has cleared.

Alternatives

The best alternative depends on why tissue sampling was proposed.

There is no non-invasive test that fully replaces biopsy when a suspicious stomach lesion requires microscopic examination.

- Urea breath test: Easier and non-invasive for detecting active H. pylori , but it cannot examine stomach tissue or test a visible abnormality

- Stool antigen test: Non-invasive and useful for active H. pylori , but it does not show inflammation, cancer, or other tissue changes
- Blood antibody test: Requires only a blood sample, but it may remain positive after an old infection and cannot reliably confirm current infection
- Imaging, such as CT or contrast X-rays: Can show larger structural problems, but may miss small surface changes and cannot provide tissue
- Treatment without culture: Avoids invasive testing, but the selected antibiotics may not work if the bacteria are resistant
- Molecular resistance testing: May detect resistance-related genetic changes from tissue or stool, but availability and the antibiotics assessed are limited

When to call your healthcare team

Contact your endoscopy team promptly for a fever, worsening throat pain, difficulty swallowing, repeated vomiting, increasing abdominal discomfort, or concerns about your medicines or recovery.

Seek urgent medical assessment for severe or worsening chest or abdominal pain, vomiting blood, black tar-like stools, fainting, marked weakness, or shortness of breath. Call emergency services if symptoms are severe, breathing is difficult, or you feel you may collapse.

For routine matters, contact the team if minor symptoms are not improving or if you have not received results within the timeframe they gave you.

Common questions

Will I be asleep?

With moderate sedation, you are usually very drowsy but may respond to instructions. With deep sedation, you are less aware and may remember little. General anaesthesia is not routinely needed.

Can I drive home?

No. If you receive sedation, arrange for someone to take you home. You should not drive for at least 24 hours or for the period stated by your facility.

How painful is a stomach biopsy?

The endoscope may cause gagging, pressure, or bloating. The biopsy itself is not usually

painful. A mild sore throat afterward is common.

When will I know the results?

The endoscopist may explain the visual findings the same day. Microscopic results usually take several days, while culture and antibiotic susceptibility results can take longer.

Why do I need a culture instead of only a breath test?

Culture may help identify which antibiotics can treat H. pylori , particularly after treatment failure. A breath test can detect infection but cannot directly test antibiotic susceptibility.

Can my stomach look normal but still need biopsies?

Yes. Some infections and microscopic changes are not visible during endoscopy. Biopsy can detect changes that the camera cannot show.

Sources

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