TEST

Bernstein test

The Bernstein test checks whether controlled acid exposure in the esophagus reproduces your usual symptoms.

WHAT IT MEASURES
Whether esophageal acid exposure reproduces your usual symptoms

SAMPLE
None

FASTING NEEDED?
Yes, usually for several hours before the appointment

HOW LONG IT TAKES
About 30 to 60 minutes

RESULTS IN
Usually immediate; written turnaround varies by testing center

USED FOR
Historically, diagnosing acid-related esophageal pain

MAIN LIMITATION
Symptom reproduction does not prove everyday acid reflux

Overview

The Bernstein test is an older test for acid-related pain in the esophagus, the tube that carries food from your mouth to your stomach.

During the test, a thin tube delivers saline, or salt water, and diluted acid into the lower esophagus. You report whether either liquid causes your usual heartburn or chest discomfort. Saline provides a comparison because it should not normally trigger acid-related symptoms.

The test checks your response to acid under controlled conditions. It does not measure how often reflux occurs in daily life.

The Bernstein test is now rarely used. Ambulatory reflux monitoring usually provides more useful information by recording reflux for a day or longer. Upper endoscopy can look for tissue damage, while esophageal manometry assesses swallowing and muscle movement.

Why the test is ordered

Historically, the test helped determine whether unexplained chest pain or heartburn could come from an acid-sensitive esophagus. It might now be considered only in unusual circumstances, such as when reproducing symptoms would be useful and modern reflux monitoring is unavailable or unsuitable.

Chest discomfort has many possible causes. A Bernstein test cannot rule out a heart or lung problem. New or unexplained chest pain needs appropriate assessment before being treated as an esophageal symptom.

Who should have the test

This is not a screening test, and most people with heartburn do not need it. It may occasionally be considered when symptoms thought to be acid-related remain unexplained after other assessment.

Tell the testing team if you have:

These factors do not necessarily prevent testing, but they may change the procedure or make another test more appropriate.

- Difficulty or pain when swallowing
- Previous surgery involving your nose, throat, stomach or esophagus
- Frequent nosebleeds or a bleeding disorder
- A known narrowing, ulcer or other esophageal condition
- Pregnancy or possible pregnancy
- Medicines that reduce stomach acid or affect bleeding

How to prepare

You will usually be asked not to eat or drink for several hours beforehand. This keeps the stomach relatively empty and reduces nausea or regurgitation during tube placement. Follow your testing center's instructions because fasting times vary.

Ask specifically about antacids, proton pump inhibitors and H2 blockers. A center may ask you to pause them to assess untreated symptoms or continue them for a particular clinical question. Do not stop prescribed medicine unless the clinician arranging the test tells you to.

Tell the team about all medicines and supplements you take. Describe your usual symptoms, including their location and quality, because recognizing your typical symptom is central to

interpretation.

Sedation is not usually needed, so most people can resume ordinary activities afterward. Check local instructions before arranging transport.

What happens during the test

You usually sit upright while a healthcare professional passes a thin, flexible tube through one nostril, down the throat and into the esophagus. Swallowing water may help. Placement can be uncomfortable and may briefly cause gagging.

Saline and diluted hydrochloric acid are delivered through the tube at a controlled rate. You may not be told when the liquid changes, reducing the influence of expectation.

You report any burning, pressure or pain and whether it matches your usual symptom. If your typical symptom occurs, the acid is stopped and saline may be used to wash it away. The tube is then removed.

Understanding your results

A traditionally positive result means acid reproduced your usual symptom while saline did not, and the symptom improved when acid was stopped or flushed away. This suggests acid can trigger pain in your esophagus.

It does not prove abnormal reflux occurs in daily life. The esophagus may be unusually sensitive even when acid exposure is within the expected range.

A negative result means controlled acid exposure did not reproduce your typical symptom. It does not completely rule out gastroesophageal reflux disease, or GERD. Reflux may be intermittent, the test may not match your usual trigger, or symptoms may involve weakly acidic or non-acid reflux.

There is no universal numerical reference range. Interpretation depends mainly on symptom reproduction, comparison with saline, the testing protocol, medicines and the wider clinical context.

What affects the results

Because the test depends on what you feel and report, several factors can influence it:

Food, coffee and recent exercise may provoke baseline symptoms or make tube placement

less comfortable. Follow the center's fasting and activity instructions.

Pregnancy can affect reflux symptoms and the choice of testing. Kidney function, blood transfusions and normal blood-cell changes do not directly affect this test because no sample is analyzed.

- Acid-reducing medicines and recently used antacids may change esophageal sensitivity.
- Symptoms already present can make a new response difficult to identify.
- Anxiety, expectation and knowing when acid is given can influence reporting.
- The tube may cause pressure, gagging or discomfort resembling familiar symptoms.
- Tube position, acid strength, delivery rate and exposure time may vary.
- Recent inflammation or injury may make the esophagus more sensitive.
- Non-acid reflux, muscle spasm or another condition may not respond to acid.

Accuracy and limitations

The test can show that acid provokes a person's usual symptoms, but its accuracy varies across studies and protocols.

It may be positive even when everyday acid exposure is normal because of esophageal sensitivity, expectation or tube discomfort. It may be negative when reflux is still responsible because the test is brief and does not assess non-acid reflux or symptom patterns around meals, sleep and activity.

Ambulatory pH or pH-impedance monitoring is generally better for measuring reflux over time. Endoscopy is better for detecting inflammation, narrowing or other visible changes. Manometry evaluates esophageal muscle contractions.

Risks and complications

Tube placement can cause temporary nasal or throat discomfort, gagging, watery eyes, mild nausea or a small nosebleed.

Temporary heartburn or chest discomfort may occur because the test is designed to provoke symptoms. It usually settles after the acid is stopped and saline is given.

Serious complications are uncommon. Tell the testing team immediately if you have trouble breathing, feel faint, or develop severe or unexpected pain that differs from your usual symptom.

What happens next

The initial result can often be discussed immediately, although a written report may follow later.

A positive result may prompt discussion of acid-sensitive reflux or modern reflux monitoring. A negative result may lead to assessment for non-acid reflux, an esophageal movement disorder or another cause. Attend your planned follow-up to review the result and next steps.

Seek urgent medical assessment for new, severe or unexplained chest pain, especially with shortness of breath, sweating, fainting, nausea, or pain spreading to the arm, jaw or back. Do not use a previous Bernstein test result to decide that new chest pain is harmless.

Common questions

Can I drink coffee before a Bernstein test?

Usually not during the fasting period. Coffee may stimulate reflux or cause symptoms before testing. Follow instructions about both black coffee and coffee with milk.

Can I drink water beforehand?

Small amounts may be allowed until a stated time, but instructions vary. Confirm this with the testing center.

Does the time of day matter?

There is no time-of-day reference range. Scheduling mainly affects fasting and medicine timing.

Can I exercise beforehand?

Avoid exercise if it commonly triggers your reflux or chest symptoms. Strenuous activity could make procedure-related symptoms harder to identify.

Will the test hurt?

Tube placement is usually uncomfortable rather than painful. Acid may reproduce your familiar burning or chest discomfort, but it is stopped when the expected symptom occurs.

Is this the same as esophageal pH monitoring?

No. The Bernstein test briefly introduces acid to see whether symptoms occur. pH monitoring records acid exposure during ordinary activities for much longer.

Sources

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