PROCEDURE

Breast biopsy - stereotactic

A stereotactic breast biopsy uses mammogram images to guide a needle that removes tissue for laboratory testing.

PURPOSE
Sample a mammogram abnormality for laboratory testing

PROCEDURE TYPE
Diagnostic, minimally invasive mammography-guided needle biopsy

WHERE IT IS DONE
Outpatient clinic or breast imaging centre

ANAESTHESIA
Local

HOW LONG IT TAKES
About 30 to 60 minutes

PREPARATION
Medication review; avoid breast products; usually no fasting

RECOVERY
Same day; driving usually allowed unless sedated

MAIN RISKS
Bleeding, bruising, infection, inadequate sampling

RESULTS
Pathology usually available within several days

Overview

A stereotactic breast biopsy removes small samples of breast tissue using a hollow needle. Mammogram images taken from different angles help the radiologist calculate the exact location and depth of the area to sample.

This method is often used for changes that are visible on a mammogram but cannot be felt or clearly seen with ultrasound. These include tiny calcium deposits, called calcifications, or an area where the normal breast tissue pattern looks distorted.

You will usually be awake. The breast is numbed with local anaesthetic, and the procedure is done through a small cut rather than an operation. "Stereotactic" refers to the imaging method used to guide the needle.

Why the procedure is performed

A stereotactic biopsy can help explain an abnormal mammogram finding. Most abnormal findings are not cancer, but imaging alone may not show what caused the change.

Your healthcare team may recommend this biopsy for:

The goal is to obtain enough tissue for a pathologist, a doctor who examines tissue under a microscope, to make a diagnosis.

- Suspicious or changing calcifications
- An area of tissue distortion
- A small mass seen only on mammography or 3D mammography
- A change near the site of previous breast surgery
- A finding that needs tissue testing before treatment decisions are made

Who should and should not have it

This procedure may be suitable when the area can be located reliably with mammography and a needle can reach it safely.

Another biopsy method may be better if the area is clearly visible with ultrasound or only visible with breast MRI. Ultrasound-guided biopsy is often quicker and does not use X-rays.

A stereotactic biopsy may be avoided or delayed when:

Pregnancy does not automatically rule out a needed biopsy, but the team must weigh the small radiation exposure and consider other guidance methods.

- The target cannot be seen clearly or reached safely
- Breast thickness or the target's position makes needle placement difficult
- You cannot remain still or maintain the required position
- There is an infection or open wound near the planned entry site
- A bleeding disorder or blood-thinning medicine has not been safely managed
- You are pregnant or may be pregnant and another approach is suitable

How to prepare

Follow the treating facility's own instructions first, because its equipment and policies may affect your preparation.

Tell the team about all medicines, vitamins and supplements you take, especially medicines that affect bleeding. Do not stop aspirin, anticoagulants or other prescribed medicines unless the clinician responsible for your care tells you to do so.

Also tell the facility if you:

Fasting is usually unnecessary because local anaesthetic is normally used without sedation. Follow different instructions if your facility plans to give you a sedative.

On the day, avoid deodorant, powder, lotion or perfume on your breasts and underarms because these products can appear on mammogram images. Wear a two-piece outfit so you only need to undress from the waist up. A supportive bra may feel more comfortable afterward.

- May be pregnant
- Have a bleeding disorder
- Have allergies to local anaesthetic, adhesives or latex
- Have had previous breast surgery or implants
- Need help lying or sitting in one position

What happens during the procedure

You may sit upright, lie on your side or lie face down on a special table with your breast positioned through an opening. The position depends on the equipment and the location of the abnormal area.

Your breast is compressed between plates, much like during a mammogram. Images are taken from different angles so a computer can calculate where the needle should enter. You need to remain still while the images and samples are taken.

The skin is cleaned, and local anaesthetic is injected. This may sting briefly. Once the area is numb, the radiologist makes a very small cut and guides a biopsy needle into position.

Several tissue samples are removed. Many facilities use a vacuum-assisted needle, which can collect multiple samples through one insertion. You may hear clicks or mechanical sounds and feel pressure or pulling, but you should not feel sharp pain. Tell the team if you do.

If calcifications are being sampled, the tissue may be X-rayed to confirm that the samples contain them. A tiny marker clip is usually placed at the biopsy site. It marks the location for

future imaging and does not mean cancer was found.

The needle is removed, pressure is applied, and the opening is covered with a dressing. Stitches are rarely needed. A final mammogram may check the marker's position.

Recovery and what to expect afterward

Mild soreness, swelling and bruising are common. An ice pack wrapped in cloth and a supportive bra may help. Use only the pain medicine recommended by your healthcare team.

You can usually eat and drink normally right away.

Keep the dressing on for the time stated in your instructions. Avoid strenuous exercise, heavy lifting and activities that bounce or stretch the breast for the period advised by the facility. Showering and bathing instructions differ according to the type of dressing used.

Most people can drive after a biopsy performed with local anaesthetic alone. Do not drive if you received a sedative, feel faint, have restricted arm movement or were told to arrange a ride.

Many people return to desk work the next day. A job involving heavy lifting or vigorous activity may require more time.

Risks and possible complications

A stereotactic breast biopsy is less invasive than surgical biopsy, but it still has possible risks.

Bruising, tenderness and a small collection of blood called a haematoma can occur. Minor bleeding usually stops with pressure. Infection is uncommon but can cause increasing redness, warmth, swelling, discharge or fever.

Other possible problems include:

The procedure uses a small amount of ionising radiation to create mammogram images. The clinical team limits exposure while obtaining the images needed for safe needle placement.

No needle biopsy is perfect. If the pathology result and mammogram appearance do not match, another biopsy or surgical removal may be recommended.

- A sample that does not contain enough tissue for diagnosis
- A result that does not explain the imaging finding
- Movement of the marker clip from its original position

- Injury to nearby structures, which is unusual

Results and follow up

A pathologist examines the samples. Results are usually available within several working days, although additional testing can take longer. Ask when and how the facility will contact you.

The result may be benign, meaning non-cancerous; show abnormal cells that need further assessment; or show cancer. Your healthcare team should also decide whether the laboratory result is "concordant," meaning it adequately explains what was seen on the mammogram.

A benign, concordant result may lead to routine screening or a planned follow-up scan. Abnormal or unclear results may require more tissue sampling, surgical removal or referral to a breast specialist.

The marker clip can remain in the breast unless the area is later removed. Breast biopsy markers are generally designed to be compatible with MRI, but tell imaging staff that you have one.

Alternatives

The realistic alternatives depend on how the abnormal area appears and which imaging method shows it best.

Ask why stereotactic guidance is preferred for your particular imaging finding and what would be lost or gained with another option.

- Ultrasound-guided core biopsy: Often quicker and more comfortable, with no X-ray exposure. It cannot reliably target an area that is not visible on ultrasound.
- MRI-guided biopsy: Useful for changes seen only on MRI. It takes longer, usually requires contrast injection and may be less widely available.
- Surgical biopsy: Removes more tissue and can fully remove a small abnormal area. It involves a larger incision, more recovery and usually greater scarring.
- Short-interval imaging: Avoids an immediate biopsy when a finding is considered probably benign. It delays certainty and requires you to return for imaging to check for change.
- No further testing: Avoids the procedure but leaves the mammogram finding unexplained and may delay diagnosis.

When to call your healthcare team

Some bruising, mild swelling and tenderness are expected. Contact the biopsy team promptly if pain or swelling is worsening rather than improving, or if you develop fever, spreading redness, increasing warmth, pus-like discharge or a rapidly enlarging bruise.

Call the facility urgently if bleeding continues despite firm, uninterrupted pressure for the time stated in your discharge instructions.

Seek emergency help for severe uncontrolled bleeding, fainting, new trouble breathing or severe chest pain. These are not routine recovery symptoms.

For non-urgent questions about your dressing, activity or expected results date, contact the facility during normal hours.

Common questions

Will I be asleep for a stereotactic breast biopsy?

Usually not. Local anaesthetic numbs the breast while you remain awake. Sedation is not routinely needed.

Can I drive home afterward?

Usually, if you had local anaesthetic only and feel well. Arrange a ride if you will receive sedation or if your facility requires someone to accompany you.

How painful is it?

The anaesthetic injection may sting briefly. During sampling, you may feel compression, pressure or pulling. Mild soreness and bruising can continue for several days.

When will I know the result?

Pathology usually takes several working days. Extra laboratory tests can extend this time. The facility should tell you when and how results will be provided.

Why is a marker clip left in my breast?

The clip marks the sampled area for future mammograms or surgery. It is tiny, cannot usually be felt and does not show that the result is cancer.

Can the biopsy spread breast cancer?

Needle biopsy is an established way to diagnose breast abnormalities. It is not considered to cause breast cancer to spread.

Sources

- American College of Radiology. ACR Practice Parameter for the Performance of Stereotactic/Tomosynthesis-Guided Breast Interventional Procedures
- American College of Radiology and Radiological Society of North America. RadiologyInfo.org. Breast Biopsy (X-ray Guided - Stereotactic)
- American Cancer Society. Breast Biopsy
- Mayo Clinic. Stereotactic Breast Biopsy