

WHAT IS A VACUUM-ASSISTED CORE BIOPSY?

Vacuum-assisted biopsy is a safe and minimally invasive procedure, during which a portion of tissue is removed from the breast for evaluation.

Through a small skin incision, a specialized biopsy needle is inserted into the breast and, using a vacuum mechanism, tissue samples are collected.

The samples are retrieved from the center of the biopsy needle following the procedure and sent to a laboratory to be examined by a pathologist.

The procedure is performed under mammographic guidance. The mammographic images allow the radiologist to confirm that the needle is in the correct position.

Vacuum-assisted core biopsy is an alternative to surgical biopsy. It allows the area of abnormality to be precisely located using imaging guidance so that only samples from the region of interest are removed.

It is performed as an outpatient procedure under local anaesthetic.

HOW DO I PREPARE FOR A VACUUM-ASSISTED CORE BIOPSY?**THE DAY BEFORE THE BIOPSY**

It is important to inform the biopsy department:

- If you are taking any anticoagulant medication, the radiologist performing the biopsy will communicate with your treating physicians to determine whether it is safe to temporarily discontinue this medication.
- If you are or may be pregnant, a small dose of radiation is used during the biopsy, which is performed under mammographic guidance.
- It is important to bring your previous imaging examinations with you before the scheduled day of the biopsy.

ON THE DAY OF THE BIOPSY

- Inform the radiologist performing the biopsy if you have any allergies, especially to local anesthetics and local antiseptic agents.

WHAT HAPPENS DURING A VACUUM-ASSISTED CORE BIOPSY?

Most areas of interest that require stereotactic biopsy (microcalcifications or small masses) are detectable only on mammography. For a stereotactic biopsy to be performed, the use of a specialized mammography unit is necessary for the precise localization of the area of interest.

In a seated or prone position, the breast is placed in the mammography unit, as in a standard mammogram, and a series of mammographic images is obtained to identify the area of interest. The breast remains compressed and immobile throughout the procedure.

After the necessary mammographic images are obtained, local antiseptic is applied to the skin, and the area is anesthetized using a local anesthetic administered into the breast. This may cause a brief stinging sensation lasting a few seconds. After that, you will not feel significant pain.

During the procedure, additional mammographic images are taken to confirm the correct positioning of the biopsy system and the needle. A small incision (3–4 mm) is made in the anesthetized skin and the needle is inserted. During the sampling of tissue, a sound from the device may be heard.

When the radiologist is satisfied with the samples obtained, a radiopaque titanium clip (approximately 2 mm) may be placed through the same needle. This is done to mark the area of interest so that it can be easily located if surgery is required. The clip is safe and, if no further intervention is needed, it does not need to be removed. The procedure usually takes approximately one hour.

After the needle is removed, gentle pressure is applied to the area for a few minutes to reduce the risk of hematoma, bruising, or bleeding. A dressing is then applied. Sutures are usually not required. You will be given instructions on how to remove the dressings before leaving.

WHAT WILL I EXPERIENCE DURING AND AFTER THE PROCEDURE?

You will remain awake throughout the procedure. Some women may experience mild discomfort in the neck or back, as the head is turned to the side when the breast is positioned for the biopsy.

During local anesthesia, you will feel a small needle pinch and a mild burning sensation from the anesthetic. You may feel pressure as the needle is inserted, which is normal. The area becomes anesthetized within a few seconds.

You must remain completely still during the mammographic imaging and the biopsy procedure.

As tissue samples are taken, you may hear clicks or buzzing sounds from the sampling instrument. These are normal. If you experience swelling or bruising after the biopsy, you will be given instructions to take mild analgesics and use ice packs. Temporary bruising is normal.

Contact your treating physician if you develop significant swelling, bleeding, fluid discharge, redness, or heat in the breast. If a marker is left inside the breast to mark the location of the biopsied lesion, it is not painful and does not cause harm. It is compatible with magnetic resonance imaging (you can safely undergo MRI) and is not detected by metal detectors (e.g., at airports).

You should avoid strenuous physical activity for at least 24 hours after the biopsy.

WHO INTERPRETS THE RESULTS?

A pathologist examines the tissue samples obtained and makes the final diagnosis. The radiologist will evaluate the results of the biopsy to make sure that the pathology and image findings explain one another.

WHAT ARE THE BENEFITS VS. RISKS?**BENEFITS**

- The procedure is less invasive compared to surgical biopsy, leaves little to no scar on the skin, and is completed in less than one hour.
- Stereotactic biopsy is an excellent method for evaluating calcifications or masses that are not visible on ultrasound.
- Compared to surgical biopsy, it is approximately two-thirds less expensive.
- It requires minimal recovery time.
- In general, the procedure is not painful.
- It does not leave a mark on the breast, and, unlike surgical biopsy, it does not alter breast tissue structure or create scars that could complicate future mammographic interpretation.
- Patients can return to their daily activities very quickly.
- No radiation remains in the patient's body after the examination.

RISKS

- There is a risk of bleeding or hematoma at the biopsy site, which does not exceed 1% of cases.
- Rarely, significant discomfort may occur in the area, which is easily managed with mild analgesics.
- As with any procedure involving a break in the skin, there is a risk of infection. This may require antibiotic treatment but occurs in fewer than 1 in 1000 cases.
- There is an extremely rare risk that, in biopsies of deeply located lesions, the needle may enter the chest wall, allowing air to enter around the lung and causing lung collapse (pneumothorax).
- There is a small possibility that the procedure may not provide a definitive answer explaining the nature of the abnormality.

WHAT ARE THE LIMITATIONS OF STEREOTACTIC BREAST BIOPSY?

There are cases where stereotactic biopsy may not be feasible, such as:

- The target abnormality is located near the chest wall or directly behind the nipple.
- The breasts are very thin.
- The area of interest consists of scattered calcifications, making targeting difficult.
- In some cases, stereotactic biopsy may not precisely localize the area of interest or may underestimate the extent of the disease.
- If the result is not conclusive after a properly performed biopsy, a surgical biopsy is required.
- Women should inform their treating physician and the radiology technologist in case of pregnancy.