

Sentinel Lymph Node Biopsy

What are lymph nodes?

Lymph nodes are small glands that are distributed throughout your body. They are part of the body's immune and filtration system that help drain fluid back to the heart and also contain white blood cells to help the body fight off disease. We have hundreds of lymph nodes throughout our body and about 20-40 lymph nodes in the underarm. For those with cancer, lymph nodes can also drain cancer cells that have broken away from the main tumor.

Sentinel lymph nodes

Are the first few lymph nodes in the beginning of the drainage pathway. Breast cancer can metastasize by first spreading to the sentinel nodes in the underarm (axilla). If the cancer has not spread to the sentinel nodes, then the rest of the lymph nodes in the underarm are probably free of cancer as well and prognosis is very good.

What is a Sentinel Lymph Node Biopsy (SLNB)?

A Sentinel Lymph Node Biopsy (SLNB) is removal of the first few (usually 2-3) lymph nodes that drain the breast to determine if the breast cancer has spread to the lymph nodes. It is more accurate than ultrasounds or CT scans at detecting cancer in lymph nodes.

How is a Sentinel Lymph Node Biopsy (SLNB) performed for Breast Cancer?

To locate the sentinel lymph node(s), a nuclear medicine technologist will inject a radioactive tracer into the breast, either on the day of surgery or the afternoon before. The injection will feel like a Novocain shot. You will be awake for this procedure. Your surgeon may give you a numbing cream to ease the discomfort. The medication will then travel from the breast and concentrate in the first few lymph nodes in the axilla and give off a signal which can be detected using a special probe.

The surgeon then uses this device during the operation to detect lymph nodes that contain the tracer. Once the sentinel lymph node is located, the surgeon makes a small incision in the skin under the arm, and removes the lymph nodes that pick up the tracer. Patients usually have 2-3 sentinel nodes, but may have more or less. This outpatient procedure can prevent patients from needing a more invasive surgery. Additionally, it can shorten postoperative recovery times and lower the risk of side effects, like lymphedema.

The sentinel node is then checked for the presence of cancer cells by a pathologist. If cancer is present, the surgeon may remove additional lymph nodes during the same biopsy or a follow-up surgical procedure.

What are the benefits of SLNB?

SLNB helps us estimate the current and future risk of your breast cancer spreading to other parts of the body. This allows us to make additional treatment decisions regarding chemotherapy and radiation. It accurately identifies the first few lymph nodes that the cancer is most likely to spread to and limits the number of lymph nodes removed. If the sentinel node is negative, the chances are, the rest of your lymph nodes are also negative.

What are the risks of SLNB?

Anytime there is surgery in the underarm, where lymph nodes are removed, there is a small chance of side effects.

- 1) **Lymphedema (swelling of the arm and hand):** Lymph node surgery may disrupt the normal flow of lymph through the affected area, which may lead to a backup of fluid that can cause swelling in the arm or breast. Lymphedema can cause sensation of heaviness or discomfort in the affected area and the swollen tissue may become fibrotic (hard and thickened). The risk is very low (5-8%) when only the sentinel lymph node is removed. In the case of more extensive lymph node removal (>10), called an axillary dissection, the risk and severity of the swelling may increase. Your doctor may monitor your arm for lymphedema and if needed, he/she may prescribe that you wear a compression sleeve and undergo physical therapy to massage the fluid out of the arm. If you only had a SLNB and you don't have lymphedema, there is no need to avoid blood pressure, or blood draws or IV in that arm.
- 2) **Seroma:** An accumulation of fluid in a surgical space is a normal response to surgery, and not a sign of trouble. It results in localized swelling at the surgical site, and typically peaks between 7-10 days after surgery. When the swelling peaks, it may cause pressure, discomfort and/or pain. About 5% of patients need to have the fluid aspirated to relieve the pressure.
- 3) **Bruising or bleeding:** While bruising can be common, serious bleeding occurs <1% of the time.
- 4) **Numbness or tingling under, behind, or on the back of the arm.**

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- 5) Increased risk of infection
- 6) Difficulty moving the arm or shoulder. Your surgeon will give you exercises to help prevent this.
- 7) Allergic reactions to the tracers used in SNLB occur <1% of the time.
- 8) False negative results are reported approximately 5% of the time, but this has not been shown to affect survival. A false negative result means that cancer has not been detected in a sentinel lymph node even though other regional lymph nodes may have cancer in them.

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