

## Sentinel Lymph Node Surgery Female Patient

**Sentinel lymph node surgery** is a procedure that identifies the first (sentinel) node or nodes that receive lymphatic fluid from a cancerous tumor, thus identifying the dominant lymphatic drainage pattern. Tumors may drain to different node chains in the breast, according to the position of the tumor (*Illustration 1*). This procedure identifies the nodes most likely to show whether or not the cancer has metastasized from the original tumor. This information is needed by the oncologist to determine the need for chemotherapy. This procedure provides the surgeon a reliable guide for more accurate node evaluation.

The area surrounding the tumor and/or the areola is injected with a dye and/or radiographic substance several hours before surgery (*Illustration 1*). The dye and/or radiographic substance is carried by the lymphatic fluid to the closest lymph nodes.

Before the incision is made on the breast, a hand-held gamma-detection probe identifies for the surgeon the greatest area of radiographic uptake (*Illustration 2*). This guides the surgeon to the lymphatic chain that drains the tumor, allowing removal of the sentinel node(s) stained by the dye or identified by the hand-held probe. This single node (or nodes) is removed during surgery and is sent to pathology. The pathologist may or may not report to the surgeon during surgery. If cancer cells are present, a standard axillary lymph node dissection may be done at this time requiring a drain and increasing recovery time. If the pathologist does not evaluate the nodes during surgery, additional surgery may be required later if the nodes are positive.

Correctly identifying the sentinel node(s) improves the accuracy of selecting which nodes to remove surgically and evaluate for spread of the cancer. It may also prevent unnecessary removal of nodes, which may not be in the lymphatic drainage field of the tumor. Reducing the number of nodes removed during surgery can reduce the potential for lymphedema, a swelling from lymphatic fluid accumulation in the arm. Reported incidence of lymphedema with sentinel node sampling is very low, ranging from 5 – 8 percent.

Not all patients are candidates for this procedure. Pregnant women, women with known positive nodes, certain size tumors, women with DCIS, or women with more than one tumor in the breast may be ineligible. Your surgeon will inform you if you are a candidate and discuss the procedure with you.

