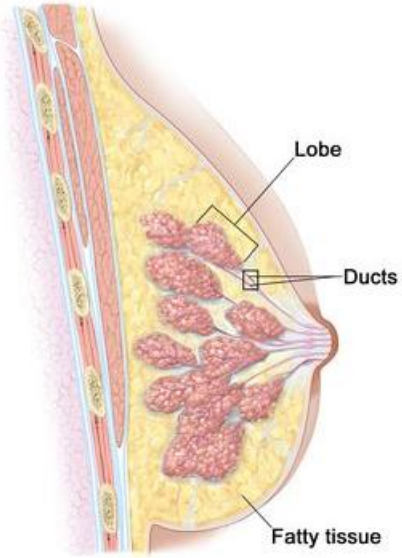
Breast Cancer Surgery

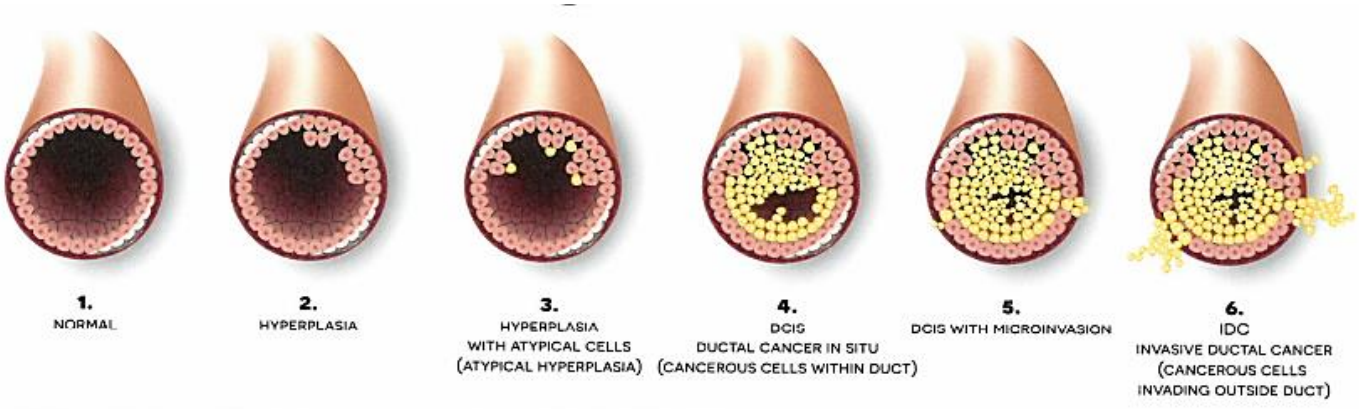
The Basics of Breast Cancer

PREMIER Surgical
Breast Services

Dr. Ana Wilson
Premier Surgial at Fort Sanders Regional
(865) 524-3695
1819 Clinch Ave., Suite 200
Knoxville, TN 37916

The breast is made up primarily of fatty tissue, lobules that make breast milk and ducts that carry the breast milk to the nipple. The majority of breast cancer forms from cells making up the ducts (80%) or the lobules (10-15%) of the breast. As we age, the cells are constantly replicating to replace dying cells. Each time the cells replicate themselves, there is a chance that there will be a small change in the DNA that will cause the cell to behave abnormally. If enough of small changes accumulate, a cancer can form.



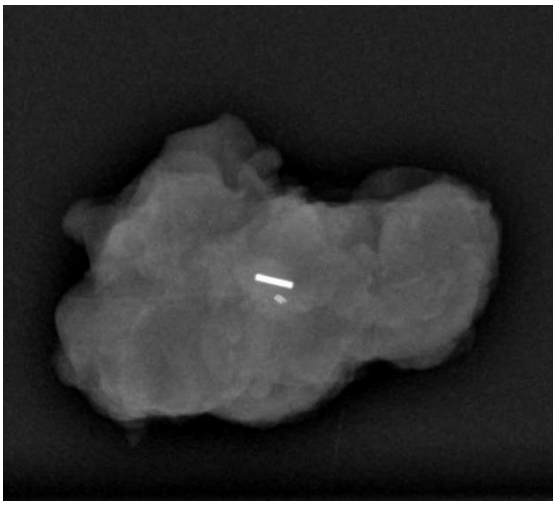


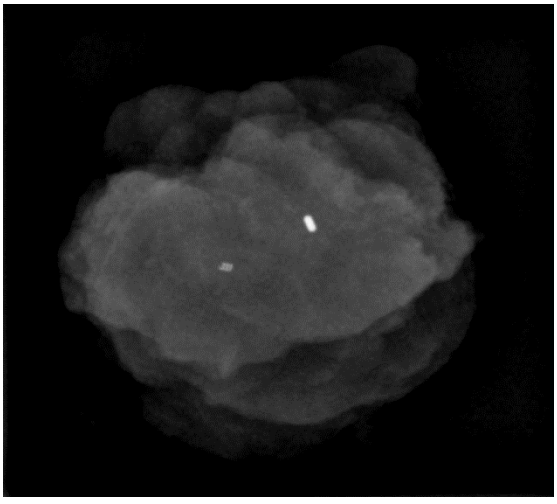
Breast Cancer Surgery

Breast Conservation

Breast-conserving therapy involves removal of a tumor/lesion along with a small rim of normal breast tissue. You may hear this referred to as a "lumpectomy," "quadrantectomy," or "partial mastectomy." When paired with radiation, lumpectomy has been shown to be equivalent to mastectomy[1]. More recently, studies have shown that patients who have breast-conserving therapy and radiation have better overall survival than those who undergo mastectomy[2]. Benefits of breast-conserving therapy are faster recovery and preservation of the appearance of the breast. For these reasons, surgeons will usually recommend breast-conserving therapy unless you have a genetic mutation predisposing you to a second breast cancer in the remaining breast.

Breast-conserving surgery requires localization of the area of concern within the breast. If the tumor is palpable or is easily visible by ultrasound, the surgeon will use the ultrasound in the operating room to find the tumor and remove it. If the tumor cannot be located this way, a magnetic seed will be placed near your previously placed biopsy clip, prior to surgery. This can then be found using a metal detecting wand in the OR. After the tumor/area of concern is removed, it is placed on an X-ray machine in the OR to confirm that the specimen removed from the breast contains the clip/seed and the associated tumor. If the tumor or calcifications appear to be close to an edge on the X-ray, the surgeon may remove additional tissue at that time to try to make sure there are "clear" margins. Margins are never 100% certain until the final pathology results come in 3 to 5 days after surgery. Approximately 10% of patients will need to return to the OR to excise an additional margin.



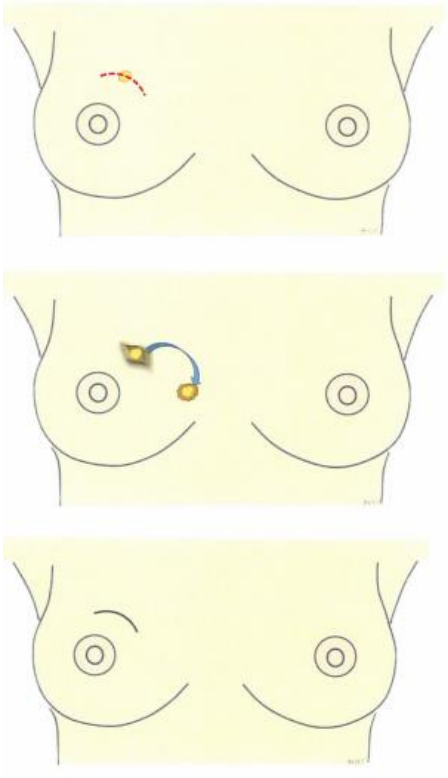


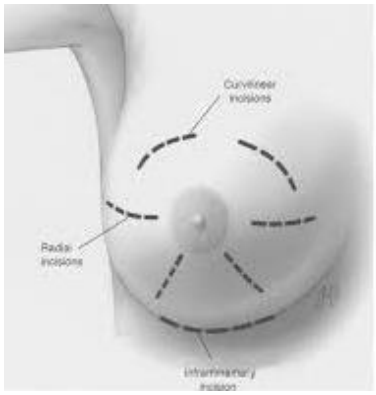
[1] Fisher B, Anderson S, Bryant J, et al. Twenty-year follow-up of a randomized trial comparing total mastectomy, lumpectomy, and lumpectomy plus irradiation for the treatment of invasive breast cancer. N Engl J Med. 2002;347:1233–41.

[2] de Boniface J, Szulkin R, Johansson ALV. Survival After Breast Conservation vs Mastectomy Adjusted for Comorbidity and Socioeconomic Status: A Swedish National 6-Year Follow-up of 48 986 Women. JAMA Surg. 2021;156(7):628–637.

Traditional Breast-Conserving Surgery Techniques

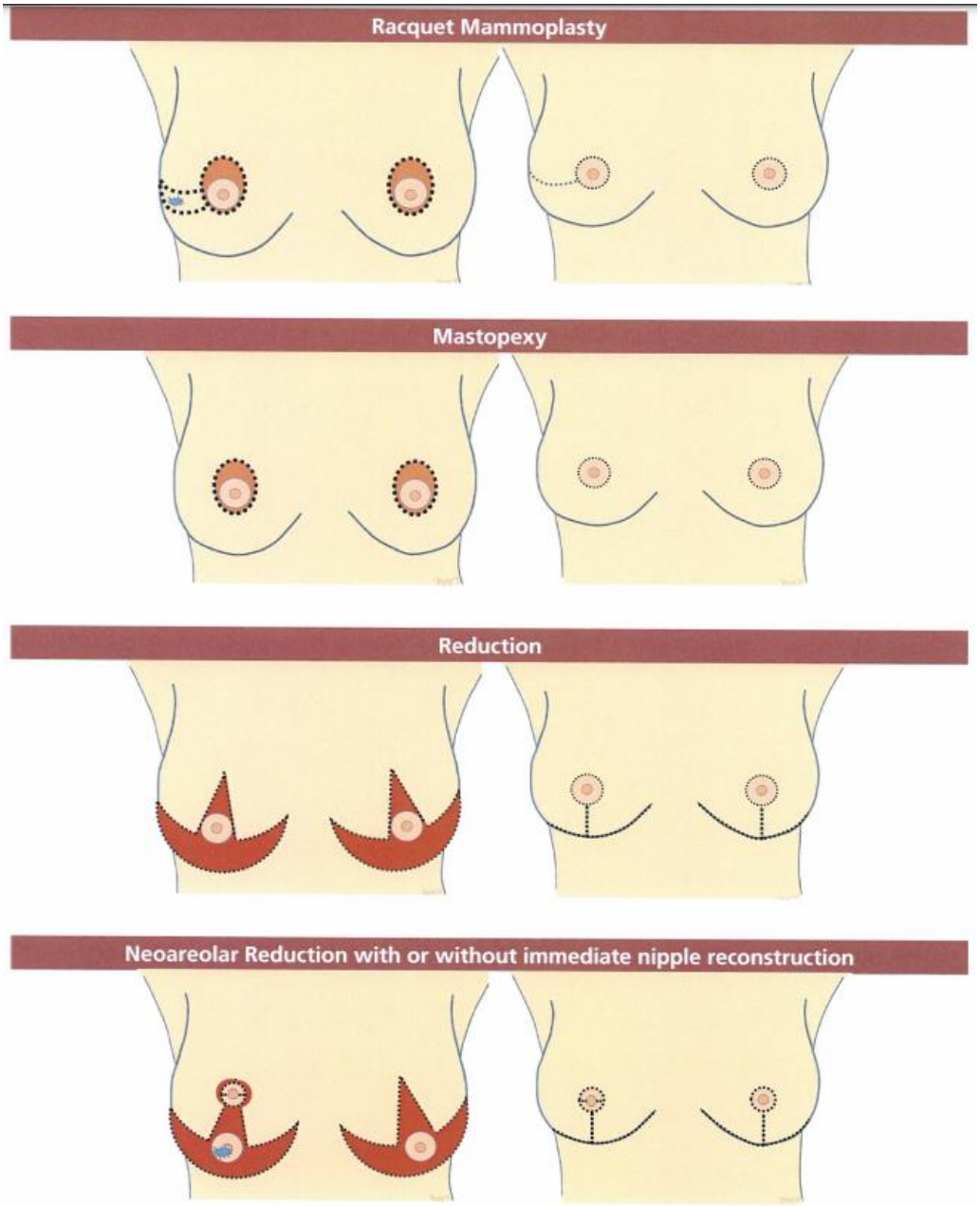
Traditionally, an incision is made directly over the lump or area of concern and the tumor is removed along with a small amount of surrounding tissue. The incision is then closed in a straight line. This sometimes results in an indentation, especially after radiation therapy and scarring. However, it is a quick, efficient manner to remove the tumor and is an excellent option for patients with significant health problems for which prolonged anesthesia is of greater risk.





Oncoplastic Surgery Techniques

Oncoplastic surgery utilizes plastic surgery incisions to perform a cancer operation. Some studies have shown lower re-excision rates when these oncoplastic techniques are used. This means that there is a lower chance of returning to the OR for additional surgery to remove more tissue. Additionally, because these techniques allow us to rearrange the tissue as a plastic surgeon does, there is less chance of an indentation/depression when the scars heal. These are typically still outpatient procedures and do not require a hospital stay or additional pain medication.

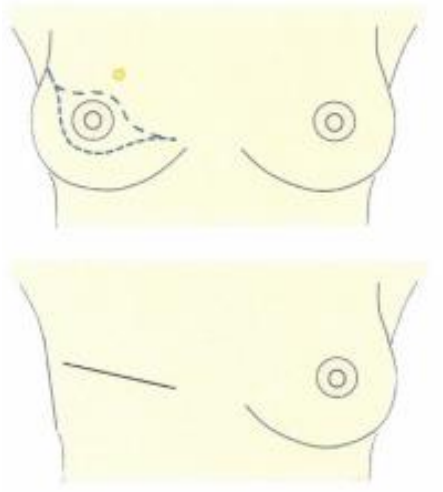


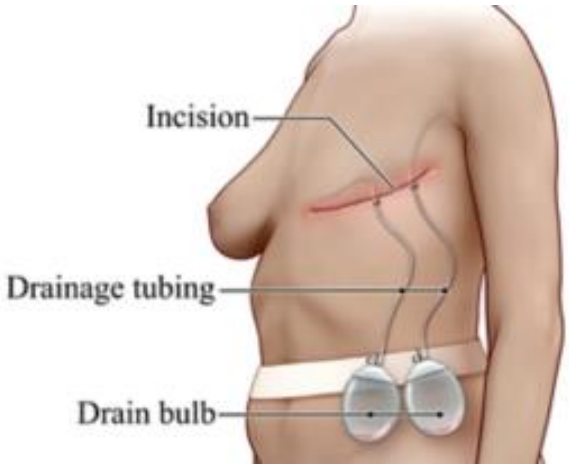
Mastectomy

A mastectomy means removing all of the breast tissue. Because this is a more extensive surgery, there is a somewhat higher chance of wound healing complications and bleeding complications, and the surgery can sometimes be more painful. There are three main types of mastectomies listed below. All of these typically require drains to be left in for one to two weeks following surgery to collect excess fluid that accumulates in the surgical site. Some patients will stay overnight in the hospital after surgery. It is important to remember that it is still possible to have a cancer recurrence after mastectomy. Studies show recurrence rates of 5-10% in the first 5 years after surgery. Self-exams and clinical exams by your surgeon should be performed regularly so that if there is a recurrence, it is detected early, when it can be treated.

Simple Mastectomy

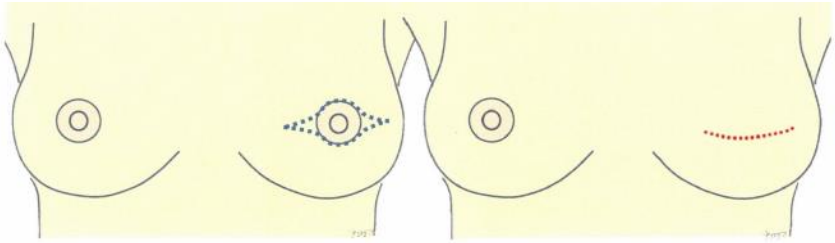
In a simple mastectomy, the entire breast, the nipple, and the overlying skin are removed. A simple mastectomy is typically performed when patients are not interested in reconstruction, and prefer to "go flat." The result is a flat scar which angles up towards the armpit.





Skin-Sparing Mastectomy

In a skin-sparing mastectomy, the nipple is removed but the overlying skin is preserved to make room for immediate reconstruction by a plastic surgeon. This can be performed as long as the tumor is not involving the skin that needs to be preserved.



Nipple-Sparing Mastectomy

Nipple-sparing mastectomy involves removing all of the breast tissue underneath the nipple, but leaving the skin of the nipple and a small layer of fat underneath intact. Because the milk ducts pass through the nipple, there is a small chance (5-10%) of a positive margin here, requiring additional surgery to remove the nipple. There is also risk of skin or nipple necrosis, meaning the nipple dies after surgery. The rates of this happening range from 2% to 8%, depending partially on the size of the breast and other patient related factors that contribute to wound healing (age, smoking, diabetes, etc.)

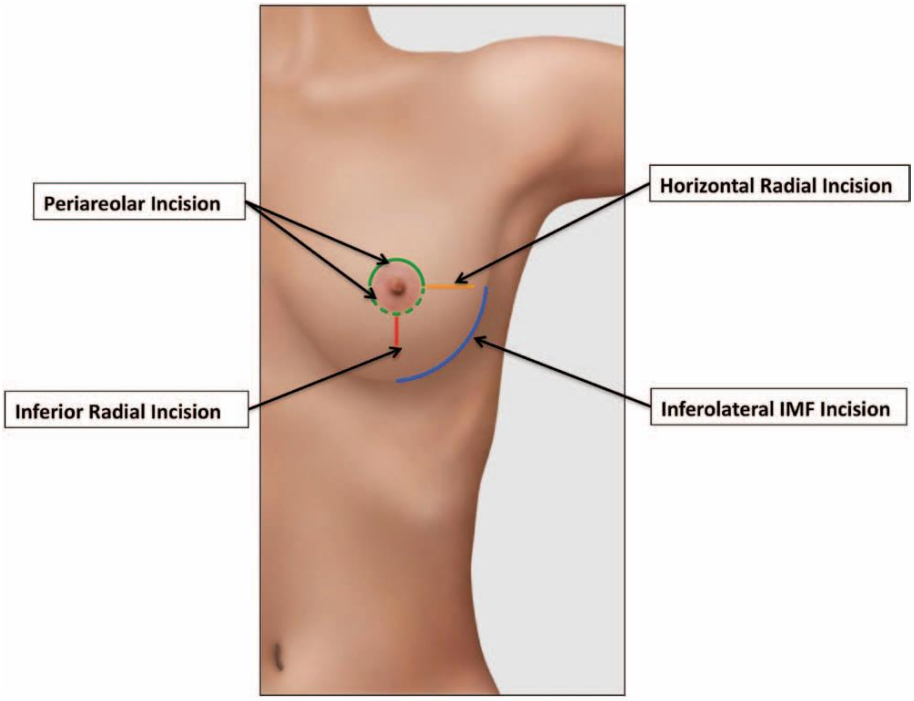


Fig. 1. Diagrammatic display of nipple-sparing mastectomy incisions.

Reconstruction after Mastectomy

The goal of reconstruction is to attempt to recreate the natural shape of the breast. There are multiple ways to achieve this goal, and you should discuss these in detail with your plastic surgeon and ask to see pictures of before/after surgery to set realistic expectations. It is important to note that no matter the type of reconstruction that is performed, many patients require additional surgery or other procedures such as fat grafting and scar revision after they complete treatment, to optimize their cosmetic results.

Implant Reconstruction

Implant reconstruction can be performed either immediately during the initial breast cancer surgery or later on after you have completed your radiation, if needed. If you are having delayed reconstruction, the plastic surgeon will place tissue expanders at the time of your initial breast cancer surgery. The tissue expander has a tiny valve through which saline can be injected to slowly stretch the skin over time. This can then be replaced with a saline or gel implant at a later date.

Autologous Tissue Reconstruction

This technique involves replacing the breast with tissue from another part of your body. This can be done with microsurgery, called a "free flap" procedure. This requires an expert surgical team and typically an ICU stay to monitor the blood flow to the flap. Another type of flap is a rotational flap, called a latissimus dorsi flap. In this procedure, the skin, fat and muscle from your back is rotated around to the chest, usually to cover an implant or a tissue expander.

Insurance coverage for breast reconstruction

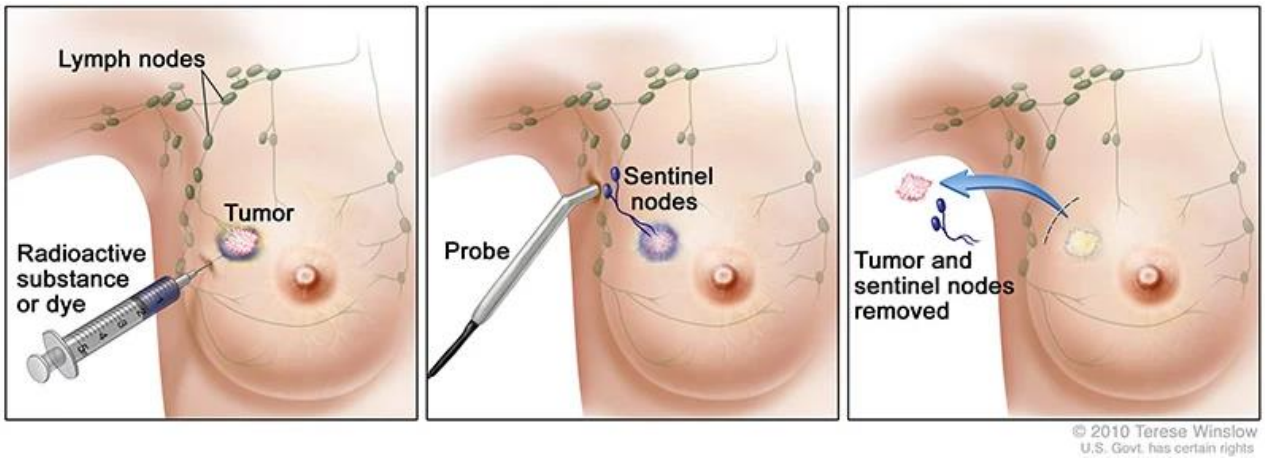
Federal law mandates insurance coverage of the expenses of breast reconstruction and any operations to make the opposite breast more balanced in size and shape. However, not all plastic surgeons will take insurance. Please clarify this with their office when making an appointment for consultation.

Insurance coverage for revisions to completed breast reconstruction remains complicated. Some companies cover the initial procedure but not the operations that are needed to refine the results. Be sure to check with your insurance provider before making your final decision.

Lymph Node Surgery

Sentinel Lymph Node Biopsy

This is a technique where 1 to 4 lymph nodes are removed to check and see if the cancer has spread beyond the breast. This procedure is performed at the same time as a lumpectomy or mastectomy. Radioactive tracer is injected into the breast on the morning of surgery. This tracer migrates to the first lymph nodes that drain the breast, called the "sentinel" nodes. These nodes are then localized during surgery using a gamma probe, removed and sent to the pathologist. The pathology results will be reported along with the breast results about 3 to 5 days after surgery.



Axillary lymph node dissection

This procedure is performed when there is biopsy-proven cancer in the lymph nodes that has not been treated with pre-operative chemotherapy, or *sometimes* when a sentinel lymph node biopsy is positive. All of the fatty tissue under the arm containing lymph nodes is removed, on average 10 to 20 nodes. The most significant complication from this procedure is lymphedema which can occur in around 20% of patients and can be permanent. There are also nerves controlling movements of the shoulder that can be damaged during the operation.

Surgical Drains

Patients who have had a mastectomy or an axillary lymph node dissection will have drain(s) placed at the time of surgery. These provide constant suctions to evacuate the expected fluid that collects from the surgical site. They usually stay in place for at least a week.

You will be shown how to care for your drain(s) prior to leaving the hospital. In short, you should empty the drain twice a day at the same time each day. Record the amount of fluid that comes out so that the surgeon will know if it is ready to be removed when they see you. You may also need to "strip" the drain to push any clots through the tubing and keep it from getting clogged.

Generally, the fluid starts out fairly red in color and then transitions to pink and then a pale straw color. You can either attach the drains to your clothing with a safety pin, or keep them in a waste belt/fanny pack. When showering, you may find it helpful to thread a ribbon through the loops on the drains and tie the ribbon around your neck.

Recovery

After breast surgery you will be pretty tired and sore for the first few days. We recommend that patients take Ibuprofen (Advil, Motrin, etc.) and Acetaminophen (Tylenol) around the clock for these first few days to decrease the inflammation caused by surgery and the resulting pain. Each of these medications can be taken every 6 hours, or they can be alternated every three hours. The vast majority of our patients do not require any additional pain medications, but if your pain is not well-controlled you should contact the office.

You will be placed in a post-op bra during surgery. You should wear either this bra, or another relatively snug fitting soft bra, day and night for the first two weeks after surgery. This will help reduce swelling, reduce pain and ensure that your incisions heal nicely.

It is okay to shower the day after surgery. You will have small steri-strips on your incisions. You can let warm soapy water run over the incisions in the shower and pat the incisions gently to dry. Do not soak in the tub or go swimming for at least two weeks after surgery.

You can move your arms any way that is comfortable after surgery, but we recommend avoiding any strenuous pushing, pulling or lifting with the arms for the first two weeks. After two weeks, your incisions should be well-healed and you can begin doing gentle range of motion exercises.

Range of Motion Exercises after Mastectomy or Axillary Lymph Node Dissection

You may begin these exercises one to two weeks after surgery, after you have see the surgeon for your postoperative visit and he/she clears you.

1. Shoulder abduction: Lie on your back with your arm at your side. Slowly slide your arm away from your body and up towards your head, keeping your arm resting on the floor. Repeat 5-10 times.
2. Shoulder extension: Stand facing a wall. Place your hand on the wall at shoulder height and slowly walk your fingers up towards the ceiling until you feel a stretch under the arm. Slide the hand back down and repeat.
3. Shoulder extension with external rotation: Stand in a doorway. Place your hand at should height on the door frame. Slowly walk your hand up the door frame towards the ceiling until you feel a stretch. Slide the hand back down and repeat.
4. Shoulder retraction: Hook your hands together behind your head. Bring your elbows in towards your face. Then pull your elbows back as far as possible. Hold the position for 5 seconds, then relax.

Dr. Ana Wilson
Premier Surgial at Fort Sanders Regional
(865) 524-3695
1819 Clinch Ave., Suite 200
Knoxville, TN 37916

PREMIER Surgical
Breast Services