

Breast Cancer and Treatment

Breast cancer affects nearly 200,000 women each year in the United States. The risk of developing breast cancer over a lifetime is 1 in 8, or 12% of all women. Breast cancer also occurs in men. Each year, about 2,000 men in this country learn they have breast cancer.

Breast cancer can be found on a mammogram, through self-exam, or felt by your doctor. It is important to follow these guidelines for the early detection of breast cancer:

- Breast self-exam each month
- Doctor or nurse practitioner exam each year
- Mammogram each year after age 40

Breast Cancer

Breast Tissue

Your breast is made up of different types of tissues that can change based on your hormones. Before menopause, your breasts are mostly made of dense, fibrous tissue and fat. As you pass through menopause, this fibrous tissue often turns to fat. This may cause your breasts to feel much softer and less lumpy. If you take estrogen after menopause, your breasts may remain fibrous. Fibrous tissue can sometimes hide a small cancer and make it more difficult to feel or find on a mammogram. It is important to have a mammogram each year and do breast self-exams each month. As you become older and have less hormonal effects on your breast tissue, it is easier to see a lump on a mammogram.



This handout is for informational purposes only. Talk with your doctor or health care team if you have any questions about your care.

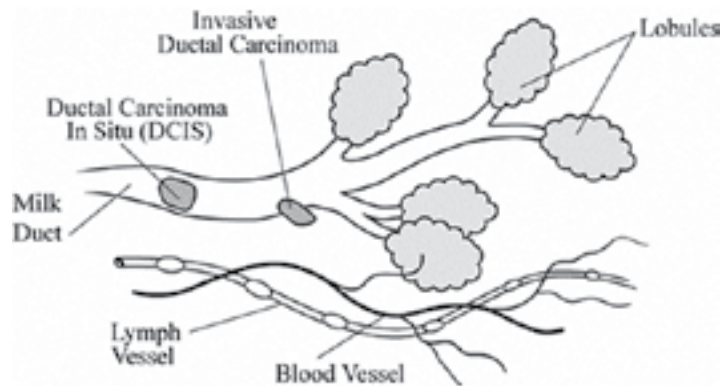
Types of Breast Cancer

Here is information on the different types of breast cancer.

- **Infiltrating/Invasive Ductal Carcinoma** (most common type) is a breast cancer that starts in your milk duct and spreads through the ductal wall into your surrounding tissue. Once it has spread, the cancer cells can enter your lymph vessels and blood vessels. These vessels can carry cancer cells to other parts of your body.

- **Ductal Carcinoma in Situ (DCIS)**

is a non-invasive type of breast cancer. The cancer cells are found only within the milk ducts. They have not spread through or outside the wall of the duct. It is important to surgically remove all traces of the DCIS to improve local control of the cancer.



- **Infiltrating/Invasive Lobular Carcinoma** is a cancer that starts in the lobule of your breast. It has microscopic projections that can break through the lobule wall and move into your surrounding tissue. This can make it a more difficult to diagnose this cancer at an early stage.
- **Inflammatory Breast Cancer** symptoms include redness and swelling of your breast with skin changes. These symptoms can be mistaken for a rash. This breast cancer can grow very fast. It has a higher chance of spreading to another part of your body and must be treated quickly using chemotherapy first, and then by surgery and radiation therapy.

Breast Cancer Surgery and Local Treatment

Breast cancer may be treated two ways: local (where your cancer was found) or systemic (your whole body). Local treatment may include surgery and possibly radiation therapy. If systemic treatment is needed, it may include anti-hormonal therapy (also known as “hormone therapy”)

and/or chemotherapy. Using the information from your imaging and biopsy results, your health care team will talk with you about what treatment is best for your type of breast cancer.

You may have more than one option for local treatment. The size, type and location of your tumor will determine your treatment options. The entire breast must be treated. Either a portion of your breast tissue is removed (lumpectomy) or your entire breast is removed (mastectomy). In both types of surgery, your lymph nodes may also need to be checked.

Here is information about your possible surgery treatments.

Lumpectomy

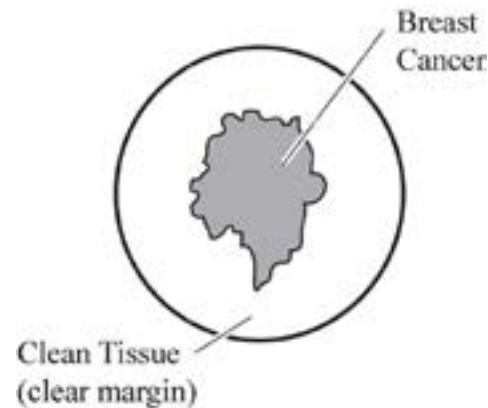
A lumpectomy may be a treatment option after your cancer has been found. Your surgeon makes an incision on the surface of your breast near the area of the tumor. This incision may be curved to help keep the natural curve of your breast. If you had a biopsy, your surgeon will make this incision in the area of your biopsy.

Your nurse will put a (✓) by the procedure you will have:

- ☐ **Needle-Localization** - This procedure is done the morning of your breast surgery if your surgeon is unable to feel the abnormal area of tissue. While you are awake, a thin wire is placed in your breast to “localize” or find the tumor. This helps to reduce the amount of breast tissue that is removed. Using ultrasound or mammogram as a guide, the specialized doctor (radiologist) will place a very slender wire or needle into your breast. The tip of the wire is put near your tumor. Part of the wire will extend outside your breast and will be taped in place. This wire will guide your surgeon to your tumor to be removed. The wire is then removed at the end of your surgery.
- ☐ **Radioactive Seed Localization (RSL)** - This procedure can help your surgeon locate and remove your breast tumor. This method helps prevent damage to healthy tissue in the area. During the procedure, a special doctor (radiologist) will use mammography or ultrasound to guide placement of a very low- energy radioactive seed, the size of a grain of rice, into your tumor or abnormal tissue. This procedure is done on a different day, before your breast surgery. When you have your surgery, the surgeon will use a handheld probe to find the radioactive seed to pinpoint the area that needs to be removed. The only way to remove the seed is by having surgery. For more information, including what to do if the seed comes out, ask for the patient education handout, [RadioactiveSeed Localization](#).

It is very important to remove all cancer cells from the area. The goal of a lumpectomy is to remove your cancerous tissue. Noncancerous, “clean” tissue is also removed from around the edges of your tumor. This is called a clear margin of tissue. The clear margin will also be checked for cancer cells. If cancer cells are found in the clear margin, additional surgery is needed.

A lumpectomy, followed by radiation therapy can be just as effective as a mastectomy for local treatment of your breast cancer. A lumpectomy provides the best cosmetic result and you should look normal in a bra afterwards. Your breast may not be as full in the area where your tumor was removed, but it should still be rounded.



Oncoplastic surgery is a reconstruction option after a lumpectomy. This surgery uses plastic surgery techniques at the time of your lumpectomy to reshape your breast after the tumor is removed. It is important to talk with your surgeon about this procedure before your lumpectomy.

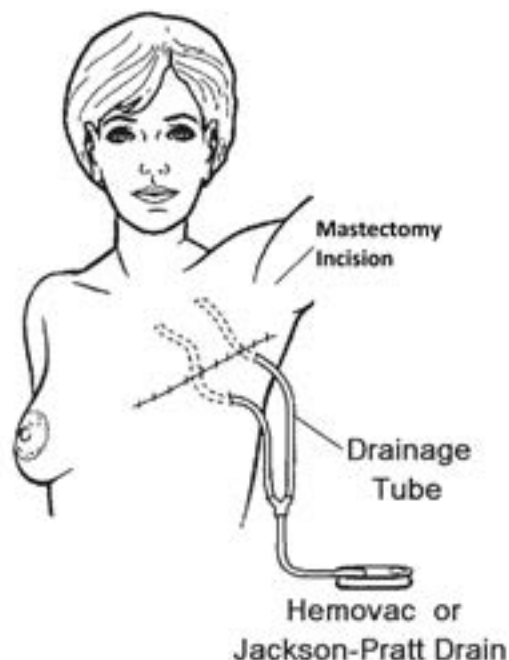
Mastectomy

A mastectomy is another surgical option used for the treatment of breast cancer. The size and location of your tumor or the number of tumors in your breast may make a mastectomy the best option for you. Typically, radiation therapy is not needed after a mastectomy. However, if your tumor is large or if several of your lymph nodes have cancer in them, radiation therapy to the area may be recommended.

After a mastectomy, a soft, temporary prosthesis can be worn with a bra or camisole to provide a mound under your clothes. A permanent prosthesis and special bras can be fitted after the area has healed, about 3 months after your surgery. There are many different type of prostheses and bras available.

Types of Mastectomy

- **Total Mastectomy** removes all the breast tissue, the skin and the nipple. An incision is made on your chest wall angled towards your armpit. The edges of the incision are pulled together, creating a thin incision across your chest wall. During your surgery 1 to 2 drainage tubes will be placed under your arm. These tubes are called hemovac's and are used to prevent fluid build up. Once healed, your chest area will be flat where your breast tissue was removed. The skin across your chest wall may have decreased sensation, especially to hot and cold. This may improve, as you continue to heal.
- **Modified Radical Mastectomy (MRM)** removes all your breast tissue, skin and nipple as well as your axillary lymph nodes.
- **Radical Mastectomy** removes all your breast tissue, skin, nipple and lymph nodes, and all or part of your chest wall muscle. This procedure is rarely done.



Reconstruction

Surgery to create the appearance of a breast can be done after a mastectomy. The goal of reconstruction is to have a normal appearing breast in a bra or under clothing, but not when naked. If a large amount of your breast tissue is removed, often a more acceptable appearance can be achieved with a mastectomy and reconstruction.

This surgery can be started either at the time of the mastectomy (immediate reconstruction) or at a later time (delayed reconstruction). Most reconstructive procedures involve many steps and surgical procedures. There are several options for reconstruction and it is important to talk with a plastic surgeon before your mastectomy.

Axillary Lymph Node Evaluation

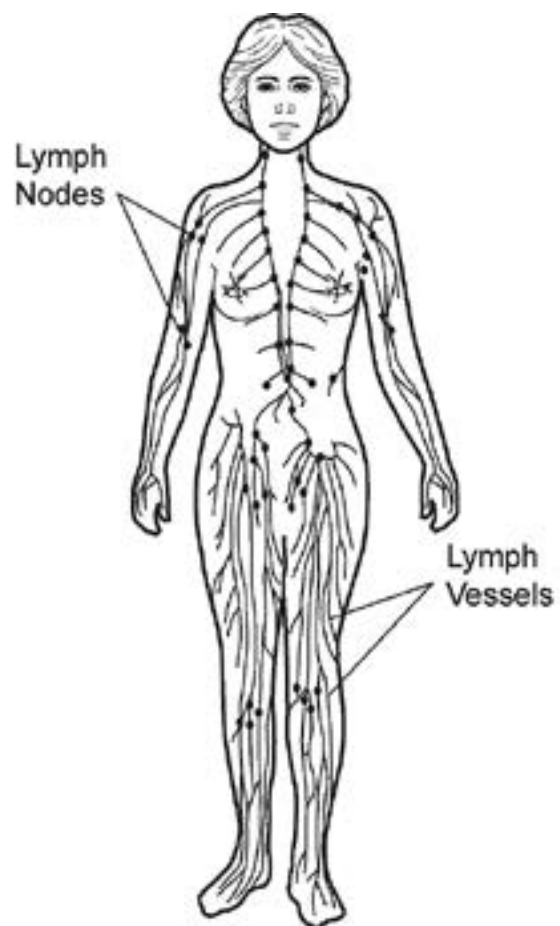
You have lymph nodes in several places in your body. Lymph nodes are in your neck, under your arms and in your groin. Lymph nodes help your body fight infection and drain fluid. If an invasive cancer has been diagnosed or is suspected, your axillary lymph nodes need to be checked. Your axillary lymph nodes are located under your arm and help drain fluid from your breast. This is the first place breast cancer is likely to spread. Your doctor will check the condition of your lymph nodes and the size of your tumor to decide the best treatment plan for you.

The best way to check your lymph nodes is with a biopsy. A biopsy is a procedure to remove a small sample of tissue. Your doctor may recommend a **sentinel lymph node biopsy** to check the first lymph node(s) that drain your tumor. This biopsy is done if your tumor is small and no axillary lymph nodes can be felt. If you have a lumpectomy, your sentinel node(s) may be removed during your surgery.

- **Sentinel Lymph Node Biopsy**

The sentinel lymph node(s) is the first lymph node(s) that drains the breast tumor. The goal is to find this first node and check it for cancer cells. If the node(s) has cancer cells, then other nodes may also be affected.

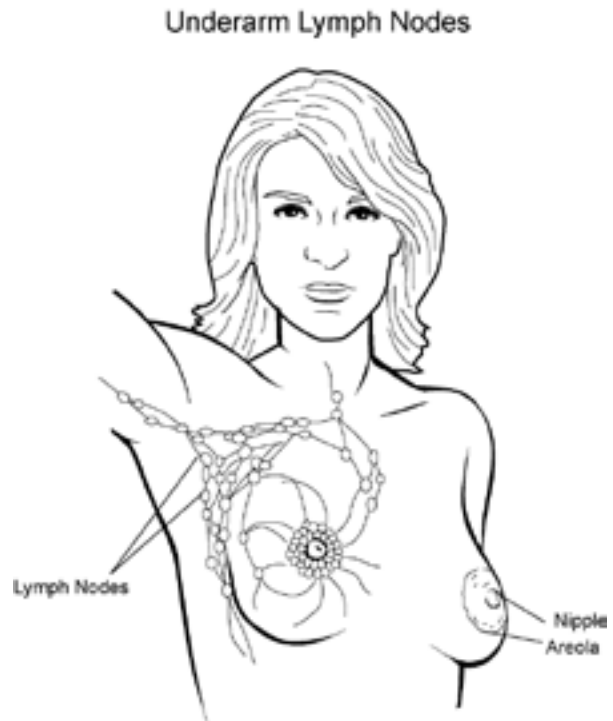
There are several steps done to find a sentinel node(s). A few hours before surgery, a tiny amount of radioactive material (radionuclide) called a tracer will be injected around your areola. The tracer will track through your breast lymph vessels and drain into your axillary lymph nodes. This process can take 1 to 2 hours. A special wand called a gamma probe will be used to track the tracer and find your sentinel node(s).



In the operating room, a blue dye may also be injected into your tumor. This dye will help to show the lymph pathway and find your sentinel node(s).

Once your sentinel lymph node(s) is found, your surgeon will make a small incision under your arm and remove it. A special doctor (pathologist) will look at the node(s) immediately to see if cancer cells are present. The pathologist will do more testing after your biopsy to check the sentinel lymph node(s) in more detail. Your doctor will talk with you about your results at your post-operative visit. If cancer cells are found, an **axillary lymph node dissection** may be done.

An axillary node dissection is done to remove all of your axillary lymph nodes under your arm. This may be done if cancer cells are present in your sentinel lymph node(s). Your nurse will give you more information if this procedure will be done.



Care After Biopsy or Dissection

When your lymph nodes are removed, a space is created in your armpit. This space can fill up with fluid. At the end of your surgery, 1 to 2 drainage tubes are put in to drain this fluid and to promote healing. These tubes are called a Hemovac or Jackson-Pratt drains. The drainage tube(s) exit your body on the side of the surgery, a few inches below your armpit. Stitches hold your tube(s) in place. The tube(s) are left in place for at least 2 to 3 weeks after surgery. A container is attached to the end of the tube to collect the fluid. It is important to empty your container 2 times each day or when it is halfway full. Your nurse will give you a [Wound Drainage Record Sheet](#) to record your drainage. Write down the date, time, amount and color of the fluid from each drain every time you empty a drain. **It is important to bring this record sheet with you to all of your appointments.** Your tube(s) will be removed in the doctor's office when your drainage decreases.

Side Effects of Biopsy or Dissection

The side effects of removing your nodes include a chance of permanent swelling in your arm, also called **lymphedema**. Another side effect after axillary node dissection is an increased risk of infection. You must protect your arm from swelling and infection. More information will be given to you after surgery.

Precautions for care of your arm:

- **Do not** have your blood pressure taken in that arm.
- **Do not** have blood drawn or get an injection in that arm.
- **Do not** sleep on the side you had surgery or with your arm tucked up.
- Wear gloves while you do activities that may cause skin injury like gardening, working with tools or using chemicals or detergents.
- Use sunscreen and insect repellent to protect your arm from sunburn and insect bites.
- Be careful when you lift anything over 15 pounds. **Do not** lift things repeatedly. **Always follow the lifting precautions given to you by your doctor.**
- Eat a healthy, low fat, low sodium (salt) diet.
- Use oven mitts to keep from burning your arm or hand when you cook or bake.
- Use an electric razor if you shave your armpit, if needed.
- Trim your fingernails to prevent hangnails and cuticle tears.
- If you get a scratch, bite, burn or break in your skin, wash the area at once with soap and water. Put antibiotic ointment on the area and cover it with a bandage to keep it clean and to protect it from infection. Check at least 1 time each day for signs of infection or swelling to make sure your arm is healing well.

Call your doctor right away if you have signs of infection in the affected arm, or if swelling continues. Signs of infection include:

- Pain
- Arm is warm to the touch
- Redness
- New or sudden swelling
- Fever of 100.4 degrees Fahrenheit (38 degrees Celsius) or higher
- Chills or general achiness

Radiation Therapy

Radiation therapy will start once your drain(s) have been removed and you are healed from surgery. This happens about 4 to 6 weeks after surgery. If you need chemotherapy, your **radiation treatments will follow your chemotherapy**. Your entire breast will receive radiation therapy. You may talk with a radiation oncologist before your surgery to learn more about radiation therapy. If you choose not to have radiation therapy, a mastectomy must be done.

Radiation therapy is done in an outpatient clinic, Monday through Friday. Your doctor will talk with you to plan your treatment schedule. Your therapy must be done at the same facility each time. You can receive your radiation therapy at The Stephanie Spielman Comprehensive Breast Center or at another location closer to your home.

Side effects of radiation treatment may include:

- A temporary reddening (like a sunburn) of your breast and thickening of your skin.
- A change in how your breast feels. Radiation may make your breast feel firmer.
- Swelling and tenderness of your breast.
- Physical, mental and emotional fatigue.

Breast Cancer - Systemic Treatment

Systemic treatment is treatment that goes throughout your whole body. Systemic treatments for breast cancer include anti-hormonal therapies, chemotherapy and targeted therapies. Invasive breast cancer is both a local problem and a systemic disease. You may benefit from systemic treatment even if you do not show signs of cancer.

Systemic treatments kill cancer cells and stop them from growing somewhere else in your body. It is easier to treat cancer before it has spread to another part of your body. When cancer spreads to other areas in your body (metastasis), it is hard to cure.

Systemic treatments can be done before or after you have healed from surgery. Certain therapies (**neoadjuvant**) are done before your surgery to help shrink the tumor if it is in an advanced stage or to save your breast tissue before a lumpectomy. Other therapies (**adjuvant**) are given after you have healed from surgery. Your doctor will talk with you about your therapy options.

Systemic treatment for breast cancer consists of two options:

- **Anti-hormonal Therapy:** (Tamoxifen / Nolvadex; Anastrozole / Arimidex; Letrozole / Femara; Exemestane / Aromasin) Medicines that work against estrogen hormones in your body. This pill-form medicine is taken 1 or 2 times each day for 5 to 10 years. The most common side effect is menopausal symptoms, such as hot flashes or night sweats. The side effects depend on your age, menopausal status, and whether you have your ovaries and uterus. Anti-hormonal therapy is tolerated well, especially in older women or women who are post-menopausal.
- **Chemotherapy:** Medicines that kill cancer cells before they can spread to other areas of your body. This medicine is usually given through an intravenous (IV) catheter. An IV is a long, thin, flexible tube that is put into a vein in your arm. The side effects from chemotherapy depend on what medicines are used and for how long they are given. The most common side effects of chemotherapy for breast cancer include:
 - ▶ Fatigue
 - ▶ Low white blood cell count
 - ▶ Hair loss or thinning of your hair
 - ▶ Nausea

These side effects are temporary and you may feel better shortly after your treatments are done.

Your doctor will review your biopsy results and will talk with you about the type and combination of treatments needed. Your doctor will look at 4 factors to decide the best systemic treatment for you.

Four important factors in systemic treatment decisions:

- **Final tumor size**
- **Number of lymph nodes with cancer** - lymph nodes are then divided into groups:
 - ▶ No cancerous lymph nodes
 - ▶ 1 to 3 cancerous lymph nodes
 - ▶ 4 to 9 cancerous lymph nodes
 - ▶ 10 or more cancerous lymph nodes

The lymph node status also determines the stage of your cancer. For example, if a tumor is Stage I by size, but even one node is positive, it becomes a Stage II.

- **Estrogen / progesterone receptor status (ER/PR) Status** - Done to find out the hormone receptor status of your cancer. Receptors are areas that let hormones, such as estrogen and progesterone, attach to a tumor cell. These hormones help the tumor cell to grow. Medicine can be used to keep these hormones from attaching to these receptors. Breast cancers that have estrogen receptors are called ER-positive cancers. Breast cancers with progesterone receptors are called PR-positive cancers. ER-positive and PR-positive breast cancers may include more than one treatment. Tumors that are hormone receptor negative (ER-negative and PR-negative) will not respond to anti-hormonal therapy and are treated with chemotherapy alone.
- **HER-2-neu Test Status** - (pronounced: 'her 2 new') HER-2-neu, also called an oncogene, is the name of a gene found in breast cancer cells. Breast cancer cells that have a high number of this gene, may be more likely to spread to other areas in your body. Levels of the HER-2-neu are measured to help your doctor figure out how quickly your tumor is growing and the best treatment for your breast cancer.

Breast Cancer Sequence of Treatments

There are a number of ways that local treatment (surgery and radiation) and systemic treatment (anti-hormonal and chemotherapy) can be given. The following are the most common treatment plans:

- Surgery - chemotherapy - radiation therapy - anti-hormonal therapy
- Surgery - chemotherapy - radiation therapy
- Surgery - chemotherapy - anti-hormonal therapy
- Surgery - chemotherapy
- Surgery - radiation therapy - anti-hormonal therapy
- Surgery - radiation therapy
- Surgery - anti-hormonal therapy
- Chemotherapy - surgery

We hope this information is helpful to you as you make decisions with your doctor about treatment for breast cancer.

For more information:

- The James Patient Education office at 614-293-5853
- The James Patient Support resources available at www.cancer.osu.edu/patient-support
- The **Patient and Family Resource Center** located on the ground floor of The James near the grand staircase. Staff at the center can prepare a packet of information with answers to your health-related questions. To make a request for health information, you may:
 - ▶ Visit the center during business hours
 - ▶ Call 614-366-0602
 - ▶ Send an email to cancerinfo@osumc.edu.If you are unable to visit the center, the information will be delivered to your hospital room or mailed to your home address at no charge.
- The JamesLine at 1-800-293-5066
- The National Cancer Institute (also in Espanol) at 1-800-4-Cancer (1-800-422-6237)

James Patient Education Materials include:

- [Breast Cancer Surgery](#)
- [Breast Biopsy Methods](#)
- [Care of Your Arm After Lymph Node Removal \(Female\)](#)
- [Cancer Internet Resources](#)
- [Making the Most of Visits with Your Doctor](#)
- [Cancer Genetics Consultation](#)