

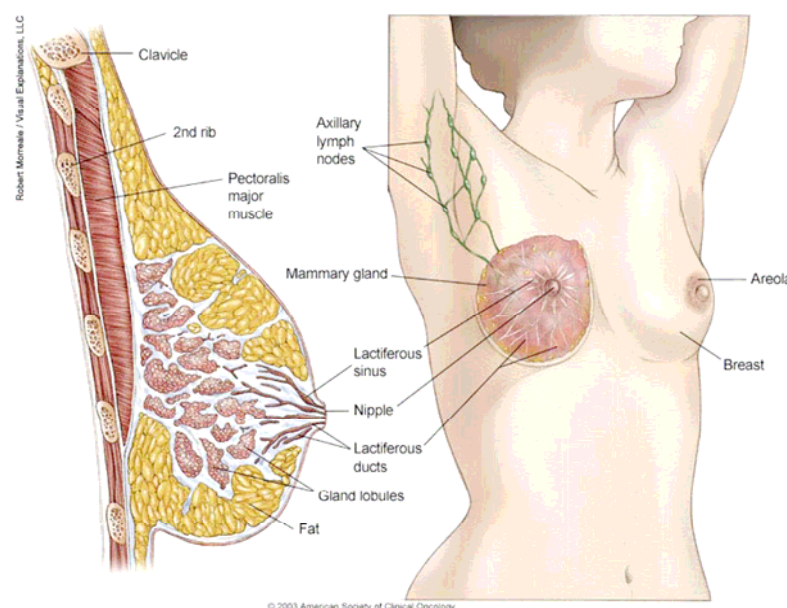
BREAST CANCER

Breast cancer is the second most common cancer in women. Each breast has 15 to 20 lobes and many smaller lobules. Groups of tiny milk-producing glands are in each lobule. Milk flows through thin ducts that connect the lobes and lobules to the nipple in the center of a dark area of skin called the areola. Fat fills the spaces between the lobules and ducts. Lymph vessels carry lymph fluid and lead to small, round organs called lymph nodes. Groups of lymph nodes are found in the axilla (underarm), above the collarbone, in the chest behind the breastbone, and in many other parts of the body. Lymph nodes trap bacteria, cancer cells and other harmful substances that may enter the lymphatic system.

Tumors can be benign or malignant. Benign tumors are not cancer or life threatening. They can be removed and do not spread to surrounding tissues. Malignant tumors can be removed, but may grow back. Cancer cells from malignant tumors may invade and damage surrounding tissues or other parts of the body through the bloodstream and the lymphatic system.

Some breast cancer has been found to be hereditary. About five percent of those with breast cancer have a defective gene that can be detected with a test. There is a greater risk of breast or ovarian cancer for relatives of breast cancer patients who have the defective gene. Relatives of patients with the gene can also be tested for the genetic defect, allowing for preventive or early detection measures.

Breast Self-Exam should be performed at same time of month each month. Changes occur because of menstruation, aging, pregnancy, menopause, and taking birth control pills or other hormones. Breasts normally feel a little lumpy and uneven. The self-exam does not replace regular annual screening mammogram and clinical breast exam.



Women should see a health care provider if any of these symptoms occur: pain, changes in breast size or shape; an inward turned nipple; scaly, red or swollen skin; nipple tenderness or any fluid discharge; lump or thickening in or near the breast or in the underarm area.

The health care provider will perform a Clinical Breast Exam. The exam checks the entire breast, the underarm, and the collarbone area. Both sides are examined. A lump is generally the size of a pea before anyone can feel it. The lymph nodes near the breast may be checked to see if they are swollen. A thorough clinical breast exam may take 10 minutes. The health care provider looks for differences between the breasts, including unusual differences in size or shape. The skin of each breast is checked for a rash, dimpling, or other abnormal signs. The nipples may be squeezed to see if fluid is present.

The National Cancer Institute recommends that women over the age of 40 should have a mammogram every one to two years; women between ages 50 and 69 should have a mammogram every year. Women who are at higher than average risk may have mammograms before age 40. Screening mammograms can often show breast lumps before they can be felt.

A biopsy will be performed if a lump is found in your breast. A small piece of tissue will be removed, either with a needle or through an incision, to examine with a microscope to determine if cancer cells are present. Estrogen and progesterone receptor tests will be performed to assess whether hormones affect the growth if cancer cells are found. Test results will be either positive or negative for estrogen and progesterone and will assist in establishing whether hormone therapy will be an appropriate treatment option to stop the cancer from growing.

Factors affecting treatment options are: the size, location, type, grade, rate of growth, and stage of the tumor; size of the breast; hormone receptor levels in the tumor tissue; age, general health and menopausal status; ability to travel to a radiation treatment center; and feelings about saving the breast.

BREAST CANCER OCCURS AT VARIOUS STAGES:

• Stage 0

Ductal carcinoma in situ (DCIS) is abnormal cells in the linings of the ducts and the most common type. Lobular carcinoma in situ (LCIS) is abnormal cells in the lobes. It is not malignant and can be removed. There is a 25% chance for women with LCIS to develop breast cancer up to 25 years after LCIS is diagnosed. These cancers are also called non-invasive.

• Stage I

The tumor is 2 centimeters or smaller and is non-invasive, or has not spread outside the breast.

• Stage II

This stage defines several tumor sizes and lymph node involvement, or invasive cancer:
A tumor of 2 centimeters or smaller that has spread to lymph nodes under the arm (axillary);
A tumor between 2 and 5 centimeters whether or not it has spread to the axillary lymph nodes;
A tumor bigger than 5 centimeters that has not spread to the axillary lymph nodes.

• Stage III

Stage IIIA is defined as either:
A tumor bigger than 5 centimeters that has spread to the axillary lymph nodes, which have grown into each other or into other tissues; or, the tumor is bigger than 5 centimeters and spread to the axillary lymph nodes.
Stage IIIB describes tumor that has spread to tissues near the breast, which may include the axillary lymph nodes
Stage IIIC describes tumor that has spread to ten or more axillary lymph nodes or lymph nodes beneath the collarbone and near the neck

• Stage IV

The tumor has spread to other organs of the body, most often the bones, lungs, liver, or brain. This is also known as "metastatic" disease.

• Inflammatory Breast Cancer

Inflammatory breast cancer is uncommon and may be Stage IIIB, IIIC, or IV. The breast is warm, red and swollen because cancer cells block the lymph vessels in the skin. The skin may also have a pitted appearance.

• Recurrent

Recurrent disease refers to cancer has come back, in the breast or chest wall, after treatment. If it has come back in other organs, recurrent disease can be Stage IV, or metastatic.

TREATMENT OPTIONS

- **Surgery** type depends on the tumor and the extra area or “margin” of normal tissue around the tumor.
- **Lumpectomy**, or excisional biopsy, removes the lump and a small amount of surrounding tissue.
- **Partial mastectomy** removes part of the breast with cancer and some surrounding tissue. Some axillary lymph nodes may also be removed for biopsy.
- **Total or simple mastectomy** removes the whole breast and axillary lymph nodes for biopsy.
- **Modified radical mastectomy** removes the whole breast, many axillary lymph nodes, the lining over chest muscles and sometimes, part of chest wall muscles.
- **Radical mastectomy** removes the breast, chest wall muscles and all axillary lymph nodes.
- **Sentinel lymph node biopsy** is a procedure that involves injecting a tracer substance near the tumor during surgery, then observing it as it flows to the lymph nodes. The first node (or nodes) that receive the substance is removed and examined for cancer cells by a pathologist who determines if it is necessary to remove any more nodes.
- **Breast Reconstruction** can be done at the time of a mastectomy or afterwards, using the patient’s own nonbreast tissue or implants with saline or silicone. Silicone implants are currently only available in clinical trials.
- **Adjuvant Therapy** is treatment given after surgery to increase chances of cure
- **Neoadjuvant Therapy** is either chemotherapy or radiation therapy given before surgery to shrink a large tumor to make surgical removal easier.
- **Radiation Therapy** kills cancer cells and shrinks tumors with external high-energy x-rays from a machine or internally with a radioactive substance sealed in needles, seeds, wires or catheters that can be placed directly into or near the cancer.
- **Chemotherapy** uses drugs given orally, intravenously, or regionally to stop the growth of cancer cells.
- **Hormone Therapy** with tamoxifen or estrogens is given for early stages of breast cancer or for disease that has metastasized to other parts of the body to block the action of hormones to stop the growth of cancer cells. There may be an increased risk of uterine or endometrial cancer with hormone therapy.
- **Biological Therapy** is usually targeted therapy that tries to exploit a particular weakness of the cancer cell. Herceptin is an example of a monoclonal antibody developed in a laboratory to block a specific protein, HER2. The IHC (ImmunoHistoChemistry) and FISH (Fluorescence In Situ Hybridization) tests determine if tumors will be responsive to Herceptin.

adapted from National Cancer Institute (NCI)
and People Living with Cancer, June, 2006



<http://cancer.med.unc.edu>