What Is Breast Cancer?

Female Patient

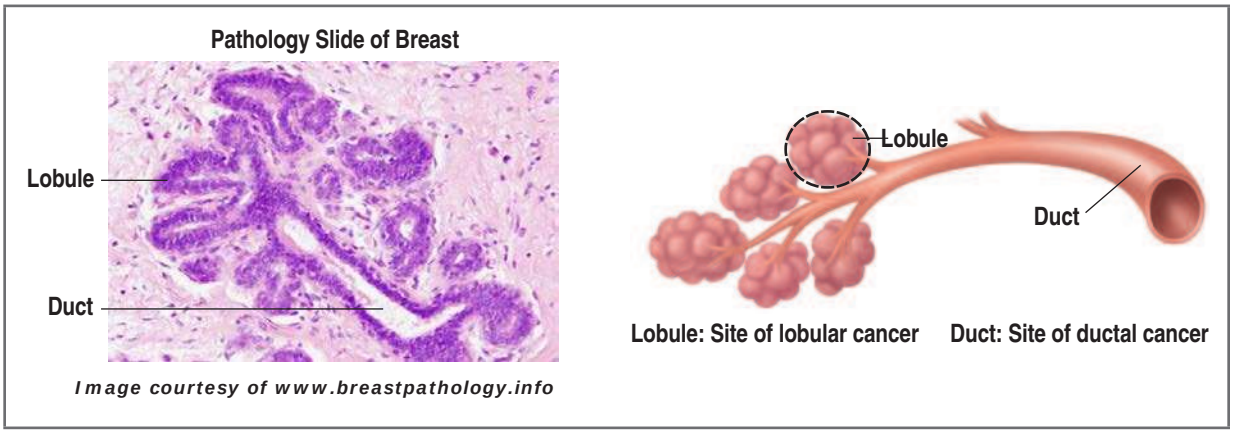
The female breast is a complex, glandular organ and is the site of the most commonly occurring cancer in women—breast cancer. No one knows exactly what causes breast cancer for the majority of women. Contributing factors have been identified such as having a family history of breast cancer, environmental carcinogens, viruses, radiation therapy and life-style factors. A known increased risk occurs in women who have a blood relative who has been clinically diagnosed with a positive BRCA (BR= breast; CA= cancer) mutation. Less than ten percent of diagnosed breast cancers occur from BRCA mutations, leaving ninety percent of breast cancers with an unknown cause.

The term carcinoma is used to describe a malignant or cancerous growth. Cancer begins when the cells of the breast undergo changes. A normal cell converts into a cancer cell that has an uncontrolled growth pattern. These cancer cells continue to divide and grow and may spread to other parts of the breast and then to other parts of the body if not removed. The process of cancer cells spreading throughout the body is called metastasis.

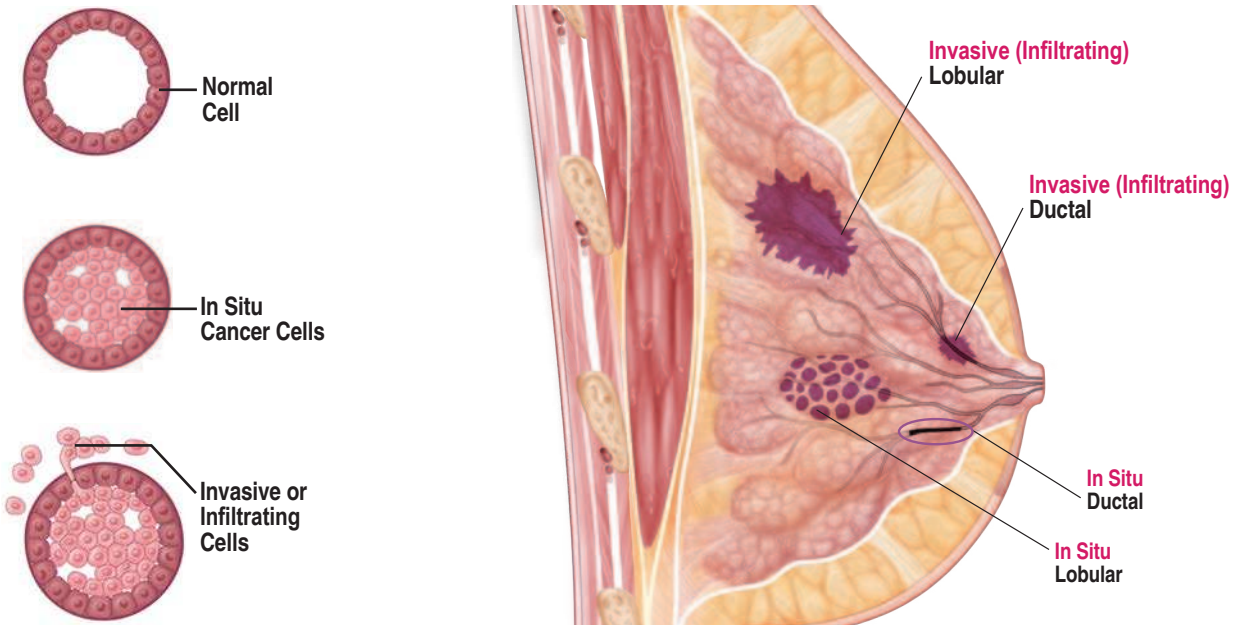
Types of Breast Cancer

Approximately 15 different types of breast cancer have been identified. Tumors that develop from different types of breast tissue, in different parts of the breast, may have varying characteristics. Breast cancers are named according to the part of the breast in which they develop.

Cancers beginning in the ducts are called ductal carcinomas and comprise the largest number of cancers occurring in women. Cancers beginning in the lobules are called lobular carcinomas and account for a small percentage of cases. Your physician will tell you which type of cancer you have—ductal or lobular.

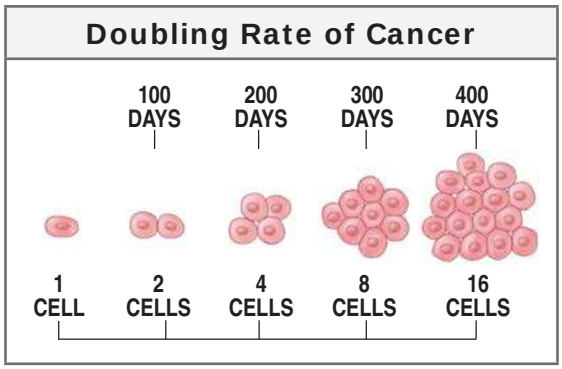


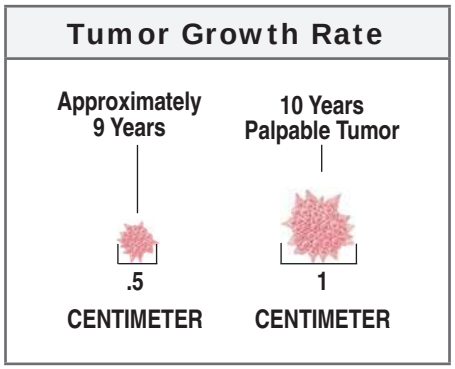
Ducts and lobules are lined with one or two layers of orderly, normal cells. When the cells become cancerous they grow and fill the duct or lobule. In situ carcinomas are cancers that are still contained within the walls of the breast area in which they developed. They have not invaded surrounding tissue. If the cancer grows through the duct or lobular walls, it is called an infiltrating or invasive carcinoma. Your pathology report will explain if your cancer is in situ or invasive (infiltrating).



How Fast Do Breast Cancers Grow?

Some breast cancers grow rapidly, while others grow slowly. Breast cancers have been shown to double in size every 23 to 209 days. A tumor that doubles every 100 days (the estimated average doubling time) would have been in your body approximately eight to ten years when it reaches one centimeter in size (⅜ inch)—the size of the tip of your smallest finger. The cancer begins with one damaged cell and doubles until it is detected and treated. The cancer must be surgically removed from the body, destroyed with chemotherapy and/or radiation therapy, or controlled with hormonal therapy. Some people believe that cancer grows in spurts and the doubling time varies at different times. However, by the time a one-centimeter tumor is found, the tumor has already grown from one cell to approximately 100 billion cells. The pathology report will tell how fast a tumor is estimated to grow.





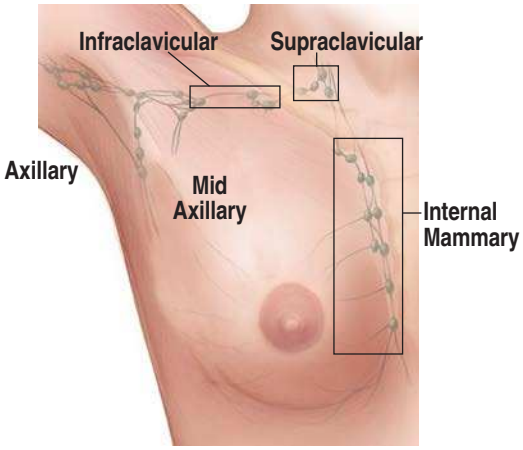
Some tumors spread more rapidly to other parts of the body, while others do not spread as readily. Breast cancer spreads to other parts of the body through the lymphatic system or the blood system. The spread of the cancer can be local (in the area of the breast), regional (in the nodes or area near the breast) or distant (to other organs of the body).

The Role of the Lymphatic System

Lymph nodes play an important role in the discussion of your treatment decisions. The lymphatic system serves as the sewage system for cellular waste in the body. The lymph vessels follow closely beside the blood vessels and receive the cell's waste products. This waste is carried by the vessels and filtered through rounded areas of the lymph system, called lymph nodes. Nodes appear as small round capsules and vary from pinhead to olive-size. Lymphocytes and monocytes (components of fluid that fight infection) are produced in the nodes. Nodes act as filters to stop bacteria, cellular waste and cancer cells from entering the blood stream. Lymph nodes may also serve as metastatic sites—places where cancer has spread from the original site to the nodes, referred to as secondary sites.

A small percent of the lymphatic fluid leaving the breast is drained in the lymph nodes located near the breastbone, called internal mammary nodes. The majority of the fluid is drained through the nodes of the armpit, referred to as the axillary nodes. There are three levels of nodes draining breast lymphatic fluid. Your surgeon may remove nodes from one or several levels, a procedure called axillary sampling. Axillary dissection is the term used when all the nodes under the arm are removed. The number of nodes in each level varies from person to person. A procedure called sentinel node biopsy identifies the first draining nodes from a tumor determining the need for axillary dissection.

Breast Lymph Nodes



Axillary
(Below the edge of the pectoralis muscle; nodes near armpit)

Mid Axillary
(Under Pectoralis Minor Muscle)

Infraclavicular
(Below Collarbone)

Supraclavicular
(Above Collarbone)

Internal Mammary
(Next to the Breastbone)

Nodes are removed to determine whether your cancer has moved from the breast into the node area. The term negative nodes means that your lymph nodes did not have any evidence of cancer. Positive nodes indicate that the cancer was found in the lymph nodes. Your surgeon will tell you how many nodes were removed during your surgery and whether any were found to have cancer cells present. Treatment decisions are often based on the number of nodes in which cancer cells are found. Two important factors that determine your oncologist's treatment plan are the number of positive nodes and the size of your tumor.

Surgery and treatment with chemotherapy, radiation therapy or hormonal therapy can vary because of differences in types of cancer, sizes of tumors, lymph node involvement, documented metastasis, aggressiveness of tumors and hormonal sensitivity. Therefore, it is necessary for you to communicate with your physicians, who know your particular tumor characteristics, when seeking any specific information or advice on your breast cancer treatment.

Breast cancer is not a sudden occurrence, but a process that has been developing for a period of time. Therefore, when a biopsy confirms a cancerous breast tumor, you are not facing a medical emergency. You have time to get answers to your questions and learn about your particular disease and treatment options. Most physicians recommend surgery within several weeks of biopsy.

There are exceptions; for example, inflammatory carcinoma requires immediate treatment with chemotherapy for maximum control. Tests performed on your tumor will reveal cell type and grade it for aggressiveness. Ask your physician about the characteristics of your tumor and treatment recommendations.

Additional Information:

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