

Breast Cancer

The National Cancer Institute (<http://www.cancer.gov/>), lists breast cancer as one of 13 common causes of cancer and provides the following information.

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Understanding Cancer

Cancer begins in cells, the building blocks that make up *tissues*. Tissues make up the organs of the body. Normally, cells grow and divide to form new cells as the body needs them. When cells grow old, they die, and new cells take their place.

Sometimes this orderly process goes wrong. New cells form when the body does not need them, and old cells do not die when they should. These extra cells can form a mass of tissue called a growth or *tumor*.

Not all tumors are cancer. Tumors can be *benign* or *malignant*.

Benign tumors are not cancer:

- Benign tumors are rarely life-threatening.
- Usually, benign tumors can be removed, and they seldom grow back.
- Cells from benign tumors do not spread to tissues around them or to other parts of the body.

Malignant tumors are cancer:

- Malignant tumors generally are more serious than benign tumors. They may be life-threatening.
- Malignant tumors often can be removed, but they can grow back.
- Cells from malignant tumors can invade and damage nearby tissues and organs. Also, cancer cells can break away from a malignant tumor and enter the bloodstream or lymphatic system. That is how cancer cells spread from the original cancer (*primary tumor*) to form new tumors in other organs. The spread of cancer is called *metastasis*.

Breast Cancer

Breast *cancer* is the most common type of cancer among women in this country (other than skin cancer). The number of new cases of breast cancer in women was estimated to be about 212,600 in 2003. The National Cancer Institute (NCI) booklet (NIH Publication Number is 03-1556) has important information about breast cancer. It discusses possible causes, screening, symptoms, diagnosis, treatment, and recovery. It also has information to help women with breast cancer cope with the disease. Research continues to teach us about breast cancer. Scientists are learning more about causes and new ways to prevent, find, and treat this disease. Because of research, people with breast cancer can look forward to a better quality of life and less chance of dying from this disease. The NCI provides the most up-to-date information over the telephone and on the Internet.

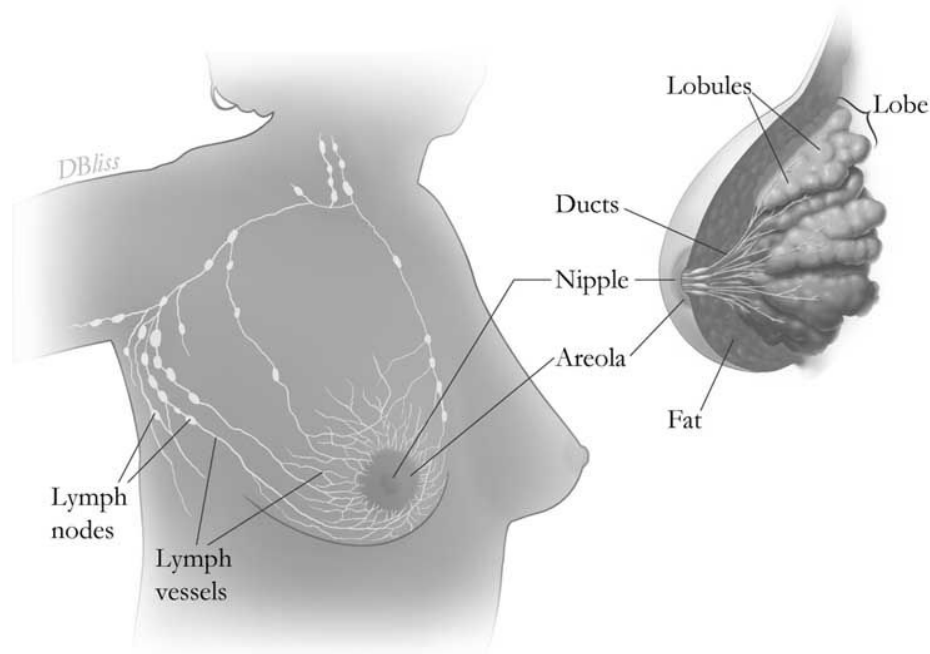
The Breasts

The *breasts* are *glands* that can make milk. Each breast sits on chest muscles that cover the ribs.

Each breast is divided into 15 to 20 sections called *lobes*. Lobes contain many smaller *lobules*. Lobules contain groups of tiny glands that can produce milk. Milk flows from the lobules through thin tubes called

ducts to the nipple. The nipple is in the center of a dark area of skin called the areola. Fat fills the spaces between the lobules and ducts.

The breasts also contain lymph vessels, which carry a clear fluid called lymph. The lymph vessels lead to small, round organs called lymph nodes. Groups of lymph nodes are found near the breast in the axilla (underarm), above the collarbone, in the chest behind the breastbone, and in many other parts of the body. The lymph nodes trap bacteria, cancer cells, or other harmful substances that may be in the lymphatic system.



These pictures show the parts of the breast and the lymph nodes and lymph vessels near the breast.

When breast cancer cells enter the lymphatic system, they may be found in lymph nodes near the breast.

The cancer cells also may travel to other organs through the lymphatic system or bloodstream. When cancer spreads (metastasizes), the new tumor has the same kind of abnormal cells and the same name as the primary tumor. For example, if breast cancer spreads to the bone, the cancer cells in the bone are breast cancer cells. The disease is metastatic breast cancer, not bone cancer. It is treated as breast cancer, not as bone cancer. Doctors sometimes call the new tumor "distant" or metastatic disease.

Breast Cancer: Who's at Risk?

No one knows the exact causes of breast cancer. Doctors can seldom explain why one woman gets breast cancer and another does not.

Doctors do know that bumping, bruising, or touching the breast does not cause breast cancer. And breast cancer is **not** contagious. No one can "catch" this disease from another person.

However, research has shown that women with certain risk factors are more likely than others to develop breast cancer. A risk factor is anything that increases a person's chance of developing a disease. Studies have found the following risk factors for breast cancer:

- **Age:** The chance of getting breast cancer goes up as a woman gets older. A woman over age 60 is at greatest risk. This disease is very uncommon before menopause.
- **Personal history of breast cancer:** A woman who has had breast cancer in one breast has an increased risk of getting this disease in her other breast.
- **Family history:** A woman's risk of breast cancer is higher if her mother, sister, or daughter had breast cancer, especially at a young age (before age 40). Having other relatives with breast cancer on either her mother's or her father's side of the family may also increase a woman's risk.
- **Certain breast changes:** Some women have cells in the breast that look abnormal under a microscope. Having certain types of abnormal cells (atypical hyperplasia or lobular carcinoma in situ [LCIS]) increases the risk of breast cancer.
- **Genetic alterations:** Changes in certain genes (BRCA1, BRCA2, and others) increase the risk of breast cancer. In families in which many women have had the disease, genetic testing can sometimes show the presence of specific genetic changes. Health care providers may suggest ways to try to reduce the risk of breast cancer, or to improve the detection of this disease in women who have these changes in their genes. The Cancer Information Service can provide printed material about genetic testing.
- **Reproductive and menstrual history:**
 - The older a woman is when she has her first child, the greater her chance of breast cancer.
 - Women who began menstruation (had their first menstrual period) at an early age (before age 12), went through menopause late (after age 55), or never had children also are at an increased risk.
 - Women who take menopausal hormone therapy (either estrogen alone or estrogen plus progestin) for 5 or more years after menopause also appear to have an increased chance of developing breast cancer.
 - Much research has been done to learn whether having an abortion or a miscarriage affects a woman's chance of developing breast cancer later on. Large, well-designed studies have consistently shown no link between abortion or miscarriage and the development of breast cancer.
- **Race:** Breast cancer occurs more often in white women than Latina, Asian, or African American women.
- **Radiation therapy to the chest:** Women who had radiation therapy to the chest (including breasts) before age 30 are at an increased risk of breast cancer. This includes women treated with radiation for Hodgkin's lymphoma. Studies show that the younger a woman was when she received radiation treatment, the higher her risk of breast cancer later in life.
- **Breast density:** Older women who have mostly dense (not fatty) tissue on a mammogram (x-ray of the breast) are at increased risk of breast cancer.
- **Taking DES (diethylstilbestrol):** DES is a synthetic form of estrogen that was given to some pregnant women in the United States between about 1940 and 1971. (DES is no longer given to pregnant women.) Women who took DES during pregnancy have a slightly increased risk of breast cancer. This does not yet appear to be the case for their daughters who were exposed to DES before birth. However, as these daughters grow older, more studies of their breast cancer risk are needed.
- **Being obese after menopause:** After menopause, women who are obese have an increased risk of developing breast cancer. Being obese means that the woman has an abnormally high proportion of body fat. Because the body makes some of its estrogen (a hormone) in fatty tissue, obese women are more likely than thin women to have higher levels of estrogen in their bodies. High levels of estrogen may be the reason that obese women have an increased risk of breast cancer. Also, some studies show that gaining weight after menopause increases the risk of breast cancer.
- **Physical inactivity:** Women who are physically inactive throughout life appear to have an increased risk of breast cancer. Being physically active may help to reduce risk by preventing weight gain and obesity.
- **Alcoholic beverages:** Some studies suggest that the more alcoholic beverages a woman drinks, the greater her risk of breast cancer.

Other possible risk factors are under study.

Many risk factors can be avoided. Others, such as family history, cannot be avoided. It is helpful to be aware of risk factors. But it is also important to keep in mind that most women who have these risk factors do not get breast cancer.

Also, most women who develop breast cancer have no history of the disease in their family. In fact, except for growing older, most women with breast cancer have no strong risk factors.

Still, a woman who thinks she may be at risk of breast cancer should discuss this concern with her health care provider. The health care provider may suggest ways to reduce the risk and can plan an appropriate schedule for checkups.

The NCI's Breast Cancer Risk Assessment Tool is at <http://bcra.nci.nih.gov/brc/> on the Internet. This tool allows a health care provider to estimate a woman's risk of developing *invasive cancer* of the breast.

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