Cancer

Breast Cancer

What is Breast Cancer?

Cancer develops in the breast tissue when cells grow out of control. Cancerous cells can form a malignant tumor that may be visible on X-rays (mammograms) or felt as a lump. As it progresses, breast cancer can invade surrounding tissues and nearby lymph nodes or spread to other parts of the body, a process known as metastasis.

Breast cancer is easier to treat than many other cancers, and early detection and treatment improves outcomes. The overall five-year survival rate for people with breast cancer is 90 percent, while the 10-year survival rate exceeds 80 percent. But if the cancer is diagnosed after it has spread to a distant part of the body, a process known as metastasis, the five-year survival rate falls to just 26 percent.

Usually breast cancer begins in ducts in the breast and in the lobules, the glands that produce breast milk. Other types of breast cancer called sarcomas start in the cells of the muscle, fat or connective tissue. Less common types include inflammatory breast cancer, Paget disease and angiosarcoma.

The most common types of breast cancer are ductal carcinoma in situ (DCIS), invasive ductal carcinoma and invasive lobular carcinoma. In situ means that the cancer has not spread. Cancer is classified as invasive if cancerous cells have spread into surrounding tissue. Metastatic breast cancer has spread elsewhere in the body.

Who gets breast cancer?

Breast cancer occurs primarily in women, and it is the second most prevalent cancer (after skin cancer) among women in the United States. About 266,100 women are newly diagnosed with invasive breast cancer and around 40,900 die from it annually, according to the American Cancer Society. Men can also develop breast cancer. About 2,500 men are diagnosed with invasive breast cancer and 490 die from the disease annually.

Around a quarter of women with early breast cancer will go on to develop metastatic disease. Breast cancer is the most common cause of cancer death among Hispanic women and the second most common cause among white, Black and Asian/Pacific Islander women, according to the Centers for Disease Control and Prevention (CDC).

What are the risk factors for breast cancer?

According to the CDC, besides being a woman and getting older, other factors that influence the risk of developing breast cancer include:

- Genetic mutations (including BRCA1 and BRCA2)
- Family history of breast cancer
- Early menstrual period
- Late or no full-term pregnancies
- Starting menopause after age 55
- Not being physically active
- Being overweight or obese after menopause
- Having dense breasts
- Race and ethnicity
- Combination hormone therapy
- Oral contraceptives
- Previous radiation therapy
- History of taking diethylstilbestrol (DES) or having a mother who took DES while pregnant
- Drinking alcohol

What are the symptoms of breast cancer?

The most common sign of breast cancer is a lump or mass. Most likely, a hard and painless mass with irregular edges is cancer. But cancerous masses can sometimes be tender, soft or painful. Other symptoms may include swelling (even if no distinct lump is felt), skin irritation or dimpling, breast or nipple pain, nipple retraction (turning inward), redness, scaliness or thickening of the nipples or breast skin and a discharge other than breast milk from the nipple.

How is breast cancer diagnosed?

Regular screening for breast cancer can detect the disease early, when it is easier to treat. Professional guidelines vary in how often they recommend screening, with most advising that women get mammograms every year or every other year starting at age 45 or 50. Younger women who have a higher than average risk can opt for earlier screening on an individual basis. All women who notice a new mass, lump or other changes in their breasts should report this to their health care provider immediately.

If a mammogram detects changes in a breast, an ultrasound is used for further examination. This test can determine whether a lump is a solid mass or a cyst filled with fluid—if it’s the latter, it’s

most likely not cancer. Once diagnosed with breast cancer, a breast MRI scan is done to measure the size of the cancer, look for other tumors in the affected breast and check for tumors in the opposite breast.

Genetic testing provides more information about the type of cancer and how best to treat it. Breast cancer is classified according to what kind of receptors it expresses. A majority of breast tumors carry estrogen or progesterone hormone receptors (known as HR-positive). Others express another receptor called HER2 (human epidermal growth factor receptor 2), while triple-negative breast cancer doesn't express any of these receptors.

How is breast cancer treated?

Treatment for breast cancer depends on how advanced the cancer is when it is detected, including how many tumors there are, how large they are and whether they have spread to nearby lymph nodes and other parts of the body. Treatment can be broken down into local and systemic therapies. Local therapies, such as surgery and radiation, treat cancer in the beast without affecting the rest of the body. Systemic treatments can reach cancer cells anywhere in the body and can cause more side effects.

Surgery: Types of breast cancer surgery include mastectomy (removal of the breast) and lumpectomy (removal of a tumor and a margin of surrounding healthy tissue). Sometimes nearby lymph nodes are also removed. Some women choose to have breast reconstruction surgery during or after a mastectomy.

Radiation: Radiation may be used to kill any cancer cells that remain after surgery or to shrink tumors that cannot be surgically removed. It is often used in conjunction with other forms of treatment.

Chemotherapy: Traditional chemotherapy works by killing fast-growing cells, including cancer cells. It can also destroy rapidly dividing healthy cells such as those in the gut and hair follicles, leading to side effects like nausea and hair loss.

Targeted therapy: Targeted drugs work against cancers with specific characteristics. For example, they may interfere with signaling pathways that regulate cell growth. Some breast cancers are treated with drugs that target HER2. Targeted treatment is often better tolerated than chemotherapy, but cancer may develop resistance.

Hormone or endocrine therapy: This type of targeted therapy works against cancers that grow faster in the presence of sex hormones like estrogen. Hormone-blocking drugs deprive tumors of hormones that stimulate their growth, but they can cause side effects such as premature menopause.

Immunotherapy: The newest type of treatment helps the immune system fight cancer. For example, some tumors can turn off immune responses against them, and drugs known as checkpoint inhibitors can restore T cells' ability to recognize and destroy cancer cells. Current immunotherapy drugs work for only a subset of patients, and it is hard to predict who will benefit.

Click here for a list of approved medications used to treat breast cancer.

For more information about breast cancer, please visit our sister site Cancer Health.

Last Reviewed: August 3, 2018

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