 Cancer is the name for diseases in which the body's cells become abnormal and divide without control. Cancer cells may invade nearby tissues. And they may spread through the bloodstream and lymphatic system to other parts of the body.

Breast cancer is an uncontrolled growth of breast cells. To better understand breast cancer, it helps to understand how any cancer can develop.

Cancer occurs as a result of mutations, or abnormal changes, in the genes responsible for regulating the growth of cells and keeping them healthy. The genes are in each cell’s nucleus, which acts as the “control room” of each cell. Normally, the cells in our bodies replace themselves through an orderly process of cell growth: healthy new cells take over as old ones die out. But over time, mutations can “turn on” certain genes and “turn off” others in a cell. That changed cell gains the ability to keep dividing without control or order, producing more cells just like it and forming a tumor.

A tumor can be benign (not dangerous to health) or malignant (has the potential to be dangerous). Benign tumors are not considered cancerous: their cells are close to normal in appearance, they grow slowly, and they do not invade nearby tissues or spread to other parts of the body. Malignant tumors are cancerous. Left unchecked, malignant cells eventually can spread beyond the original tumor to other parts of the body.

Symptoms of Breast Cancer

Initially, breast cancer may not cause any symptoms. A lump may be too small for you to feel or to cause any unusual changes you can notice on your own. Often, an abnormal area turns up on a screening mammogram (x-ray of the breast), which leads to further testing.

In some cases, however, the first sign of breast cancer is a new lump or mass in the breast that you or your doctor can feel. A lump that is painless, hard, and has uneven edges is more likely to be cancer. But sometimes cancers can be tender, soft, and rounded. So it's important to have anything unusual checked by your doctor.

According to the American Cancer Society, any of the following unusual changes in the breast can be a symptom of breast cancer:

- Swelling of all or part of the breast
- Skin irritation or dimpling
- Breast pain
- Nipple pain or the nipple turning inward
- Redness, scaliness, or thickening of the nipple or breast skin
- Nipple discharge other than breast milk
- A lump in the under arm area

These changes also can be signs of less serious conditions that are not cancerous, such as an infection or a cyst. It’s important to get any breast changes checked out promptly by a doctor.

Breast Cancer Risk Factors

A “risk factor” is anything that increases your risk of developing breast cancer. Many of the most important risk factors for breast cancer are beyond your control, such as age, family history, and medical history. However, there are some risk factors you can control, such as weight, physical activity, and alcohol consumption.

Be sure to talk with your doctor about all of your possible risk factors for breast cancer. There may be steps you can take to lower your risk of breast cancer, and your doctor can help you come up with a plan. Your doctor also needs to be aware of any other risk factors beyond your control, so that he or she has an accurate understanding of your level of breast cancer risk. This can influence recommendations about breast cancer screening — what tests to have and when to start having them.

Risk factors you can control

Weight: Being overweight is associated with increased risk of breast cancer, especially for women after menopause. Fat tissue is the body's main source of estrogen after menopause, when the ovaries stop producing the hormone. Having more fat tissue means having higher estrogen levels, which can increase breast cancer risk.

Diet: Diet is a suspected risk factor for many types of cancer, including breast cancer, but studies have yet to show for sure which types of foods increase risk. It's a good idea to restrict sources of red meat and other animal fats (including dairy fat in cheese, milk, and ice cream), because they may contain hormones, other growth factors, antibiotics, and pesticides. Some researchers believe that eating too much cholesterol and other fats are risk factors for cancer, and studies show that eating a lot of red and/or processed meats is associated with a higher risk of breast cancer. A low-fat diet rich in fruits and vegetables is generally recommended

Exercise: Evidence is growing that exercise can reduce breast cancer risk. The American Cancer Society recommends engaging in 45-60 minutes of physical exercise 5 or more days a week.

Alcohol consumption: Studies have shown that breast cancer risk increases with the amount of alcohol a woman drinks. Alcohol can limit your liver's ability to control blood levels of the hormone estrogen, which in turn can increase risk.

Smoking: Smoking is associated with a small increase in breast cancer risk.

Exposure to estrogen: Because the female hormone estrogen stimulates breast cell growth, exposure to estrogen over long periods of time, without any breaks, can increase the risk of breast cancer. Some of these risk factors are under your control, such as:

- taking combined hormone replacement therapy (estrogen and progesterone; HRT) for several years or more, or taking estrogen alone for more than 10 years
- being overweight
- regularly drinking alcohol

1. *Recent oral contraceptive use*: Using oral contraceptives (birth control pills) appears to slightly increase a woman's risk for breast cancer, but only for a limited period of time. Women who stopped using oral contraceptives more than 10 years ago do not appear to have any increased breast cancer risk.

Stress and anxiety: There is no clear proof that stress and anxiety can increase breast cancer risk. However, anything you can do to reduce your stress and to enhance your comfort, joy, and satisfaction can have a major effect on your quality of life. So-called "mindful measures" (such as meditation, yoga, visualization exercises, and prayer) may be valuable additions to your daily or weekly routine. Some research suggests that these practices can strengthen the immune system.

Risk factors you can't control

Gender: Being a woman is the most significant risk factor for developing breast cancer. Although men can get breast cancer, too, women's breast cells are constantly changing and growing, mainly due to the activity of the female hormones estrogen and progesterone. This activity puts them at much greater risk for breast cancer.

Age: Simply growing older is the second biggest risk factor for breast cancer. From age 30 to 39, the risk is 1 in 233, or .43%. That jumps to 1 in 27, or almost 4%, by the time you are in your 60s.

Family history of breast cancer: If you have a first-degree relative (mother, daughter, sister) who has had breast cancer, or you have multiple relatives affected by breast or ovarian cancer (especially before they turned age 50), you could be at higher risk of getting breast cancer.

Personal history of breast cancer: If you have already been diagnosed with breast cancer, your risk of developing it again, either in the same breast or the other breast, is higher than if you never had the disease.

Race: White women are slightly more likely to develop breast cancer than are African American women. Asian, Hispanic, and Native American women have a lower risk of developing and dying from breast cancer.

Radiation therapy to the chest: Having radiation therapy to the chest area as a child or young adult as treatment for another cancer significantly increases breast cancer risk. The increase in risk seems to be highest if the radiation was given while the breasts were still developing (during the teen years).

Breast cellular changes: Unusual changes in breast cells found during a breast biopsy (removal of suspicious tissue for examination under a microscope) can be a risk factor for developing breast cancer. These changes include overgrowth of cells (called hyperplasia) or abnormal (atypical) appearance.

Exposure to estrogen: Because the female hormone estrogen stimulates breast cell growth, exposure to estrogen over long periods of time, without any breaks, can increase the risk of breast cancer. Some of these risk factors are not under your control, such as:

- starting menstruation (monthly periods) at a young age (before age 12)
- going through menopause (end of monthly cycles) at a late age (after 55)
- exposure to estrogens in the environment (such as hormones in meat or pesticides such as DDT, which produce estrogen-like substances when broken down by the body)

Pregnancy and breastfeeding: Pregnancy and breastfeeding reduce the overall number of menstrual cycles in a woman’s lifetime, and this appears to reduce future breast cancer risk. Women who have never had a full-term pregnancy, or had their first full-term pregnancy after age 30, have an increased risk of breast cancer. For women who do have children, breastfeeding may slightly lower their breast cancer risk, especially if they continue breastfeeding for 1 1/2 to 2 years. For many women, however, breastfeeding for this long is neither possible nor practical.

DES exposure: Women who took a medication called diethylstilbestrol (DES), used to prevent miscarriage from the 1940s through the 1960s, have a slightly increased risk of breast cancer.

Women whose mothers took DES during pregnancy may have a higher risk of breast cancer as well.

Treatment Options:

- Surgery
- Chemotherapy
- Radiation Therapy
- Hormonal Therapy
- Targeted Therapies