

TerranearPMC Safety Share

Week of October 23, 2017 – Breast Cancer Awareness (Part 2)

Last weeks' topic focused on the history of breast cancer. This weeks' topic discusses the various risk factors of this disease as well as preventative measures.

To begin, breast cancer is a malignant tumor (a collection of cancer cells that have multiplied without control and have the ability to invade other tissue) initiating within cells of the breast. According to the American Cancer society:

- Over 250,000 new cases of invasive breast cancer will be diagnosed in women in 2017 and over 2,400 in men;
- Approximately 40,000 women and 440 men died of breast cancer in 2015;
- There are over 3.1 million breast cancer survivors in the United States;
- Although breast cancer **awareness** and survival has increased significantly in the United States for all races, several studies have cited a significantly worse survival rate for African-American women compared to white women; and,
- Guidelines for mammography differ depending on the organization making recommendations. Currently, the American Cancer Society recommends yearly mammograms for women aged 45-54 for those at average risk for breast cancer and mammograms every two years for women aged 55 and older, who should also have the option to continue yearly screening.

Even today, with all the studies and information accumulated, the causes of breast cancer are not yet fully known. Yet research has discovered many risk factors including information of being able to recognize predisposing factors on a sub-molecular level (discussed in last week's "Part 1" of Breast Cancer Awareness *SafetyShare*).

We know that normal breast cells become cancerous because of mutations in the DNA, and although some of these are inherited, most DNA changes related to breast cells are acquired during one's life. If these cells mutate, they can increase growth of cells without control. Such mutations are referred to as oncogenes and such uncontrolled cell growth can lead to cancer.

Some of the breast cancer risk factors can be modified (such as alcohol use) while others cannot be altered (such as age). It is important to discuss these risks with a health-care provider anytime new therapies are started (for example, postmenopausal hormone therapy).

The following are risk factors for breast cancer:

- Age: The chances of breast cancer increase as one gets older.
- Family history: The risk of breast cancer is higher among women who have relatives with the disease. Having a close relative with the disease (sister, mother, daughter) doubles a woman's risk.
- Personal history: Having been diagnosed with breast cancer in one breast increases the risk of cancer in the other breast or the chance of an additional cancer in the original breast.



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- Women diagnosed with certain benign breast conditions have an increased risk of breast cancer. These include atypical hyperplasia, a condition in which there is abnormal proliferation of breast cells but no cancer has developed.
- Menstruation: Women who started their menstrual cycle at a younger age (before 12) or went through menopause later (after 55) have a slightly increased risk.
- Breast tissue: Women with dense breast tissue (as documented by mammogram) have a higher risk of breast cancer.
- Race: While Caucasian women have a higher risk of developing breast cancer, African-American women tend to have more aggressive tumors when they do develop breast cancer.
- Exposure to previous chest radiation or use of diethylstilbestrol (synthetic form of estrogen) increases the risk of breast cancer.
- Having no children or the first child after age 30 increases the risk of breast cancer.
- Breastfeeding for one and a half to two years might slightly lower the risk of breast cancer.
- Being overweight or obese increases the risk of breast cancer both in pre- and postmenopausal women but at different rates.
- Use of oral contraceptives in the last 10 years increases the risk of breast cancer slightly.
- Using combined hormone therapy after menopause increases the risk of breast cancer.
- Alcohol use increases the risk of breast cancer, and seems to be proportional to the amount of alcohol used. A recent study reviewing the research on alcohol use and breast cancer concluded that all levels of alcohol use are associated with an increased risk for breast cancer. This includes even light drinking.
- Exercise seems to lower the risk of breast cancer.
- Genetic risk factors: The most common causes are mutations in the BRCA1 and BRCA2 genes (breast cancer and ovarian cancer genes). Inheriting a mutated gene from a parent means that one has a significantly higher risk of developing breast cancer.

Early symptoms and signs of breast cancer are typically *NOT* recognizable; this is why screening mammography is valuable to detect cancers at a very early stage. Even advanced stages do not always produce visible symptoms and signs. When symptoms do occur, the most common symptom is a lump or mass in the breast or underarm area, while other possible symptoms include 1) nipple discharge or redness, 2) changes in the breast skin texture such as puckering or dimpling (like an orange skin), and 3) swelling of part of the breast.

The American Cancer Society believes that women should have the opportunity to begin annual screening between 40-44 years of age. Women age 45 and older should have a screening mammogram every year until age 54. Women 55 years of age and older should have biennial screening or have the opportunity to continue screening annually. Women should continue screening mammography as long as their overall health is good and they have a life expectancy of 10 years or longer.

Women at high risk (greater than 20% lifetime risk) should get an MRI and a mammogram every year. Women at moderate risk (15%-20%) should talk to their doctor about the benefits and limitations of adding MRI screening to their yearly mammogram.

The only person that can save you is you. That was going to be the thing that informed the rest of my life – Sheryl Crow (on being diagnosed with breast cancer)