



Breast Cancer

A Discussion for the JWA

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WHAT IS CANCER PREVENTION?

- Cancer prevention is action taken to lower the chance of getting cancer; the number of new cases of cancer in a group or population is lowered.
- To prevent new cancers from starting scientists look at ***risk factors*** and ***protective factors***. Anything that increases your risk of developing cancer is called a risk factor and anything that decreases your chance of developing cancer is called a protective factor.

BREAST CANCER RISKS

- Many things can increase the chance that you'll get breast cancer. They're called risk factors. Some things you can change. Others you can't.
- Having one or more of these risks doesn't mean you'll get breast cancer. Also, some women have breast cancer even when they don't have any of these risks.
- Talk to your doctor about what you can do to lower your risk, and the right screening for you.

BREAST CANCER RISKS

That You Can't Change

- **Gender**
 - Being a woman is the main risk factor for developing breast cancer.
 - Men can develop breast cancer. Breast cancer is 100 times more common among women than men.
- **Getting Older**
 - Your risk of developing breast cancer increases as you get older
 - 1 out of 8 breast cancers are found in women <45
 - 2 out of 3 are found in women >55.
- **Personal history of breast cancer**
 - A woman who has had breast cancer, has a 3 - 4 times increased risk of developing a new cancer in the same or other breast.
- **Genetic Risk Factors**
 - 5% - 10% of breast cancer cases are classified as hereditary; meaning that they directly result from a genetic defect (mutation).

BREAST CANCER RISKS

That You Cant Change (con't)

- Family history of breast cancer
 - Having one first degree relative (mother, sister, daughter) with breast cancer doubles a women's risk.
 - Having two first degree relatives increases the risk 3 fold.
 - Having a brother or father with breast cancer elevates ones risk.
- Menstruation
 - Starting your period before 12/Starting menopause after age 55.
 - The increased risk is due to a longer lifetime exposure to the hormones estrogen and progesterone.
- Previous Chest Radiation
 - Women who, as children or young adults, had radiation to the chest area (such as lymphoma) have a significantly higher risk for developing breast cancer. The risk varies with the age when the patient received the radiation.

BREAST CANCER RISKS

Lifestyle Risks

- Motherhood
 - Women who have their first child after age 35 or never have children have a slightly higher risk of developing breast cancer.
 - Breastfeeding for 1 ½ - 2 years may slightly decrease your risk.
- Hormones
 - Studies have found that women taking oral contraception have a slightly higher risk of developing breast cancer.
 - Some types of HRT significantly increase your risk for breast cancer.
 - Combined HRT (progesterone and estrogen), for women who have not had a hysterectomy, have the greatest risk for developing breast cancer
 - HRT also increases the likelihood that the cancer will be found at a more advanced stage
 - “Bioidentical” or “natural HRT” provides NO DOCUMENTED decrease in risk
 - If a women does decide with her doctor to use HRT, it is recommended to use the lowest dose possible for the shortest about of time.

BREAST CANCER RISKS

Risks Associated With Lifestyle

- Exercise
 - 3 - 4 hours of exercise each week.
 - Exercise that causes you to break a sweat and elevates your heart rate.
 - Research has shown that women who exercise regularly produce lower levels of an estrogen byproduct called 16a-hydroxyestrone and higher levels of the byproduct 2-hydroxyestrone. A higher ratio of these byproducts significantly lowers a women risk for breast cancer.
 - Keep a healthy weight, especially after menopause.
 - A consistent exercise routine is thought to lower your breast cancer risk between 10-20%, with the greatest impact on post menopausal women.
 - Belly fat (visceral fat) - Women with an “apple” body shape are at a higher risk for breast cancer as belly fat emits estrogen like hormones which breast cancer cells respond to.



BREAST CANCER RISKS

Risks Associated With Lifestyle

- Diet
 - What you put into your body is just as important as what you don't.
 - Eating fatty fish/oily fish which contain high levels of omega-3 polyunsaturated fatty acids (PUFAs) can reduce your risk of developing breast cancer later in life as much as 14%. They are found in fish such as mackerel, lake trout, tuna and salmon.
 - Omega-3 PUFAs are found in flaxseeds, walnuts and leafy greens.
 - Berries – especially strawberries and raspberries are high in ellagic acid, a phytochemical that prevents breast and other cancers.
 - Beans – fiber rich foods have been shown to reduce the risk of breast cancer. Other high fiber foods include; avocado, raspberries, chia seeds, barley, broccoli, pears, lentils, artichokes and peas.
 - Broccoli – Compounds in cruciferous vegetables called sulforaphane helps prevent the spread of tumors. Kale, bok choy, and cabbage are also cruciferous vegetables.

BREAST CANCER RISKS

Risks Associated With Lifestyle (con't)

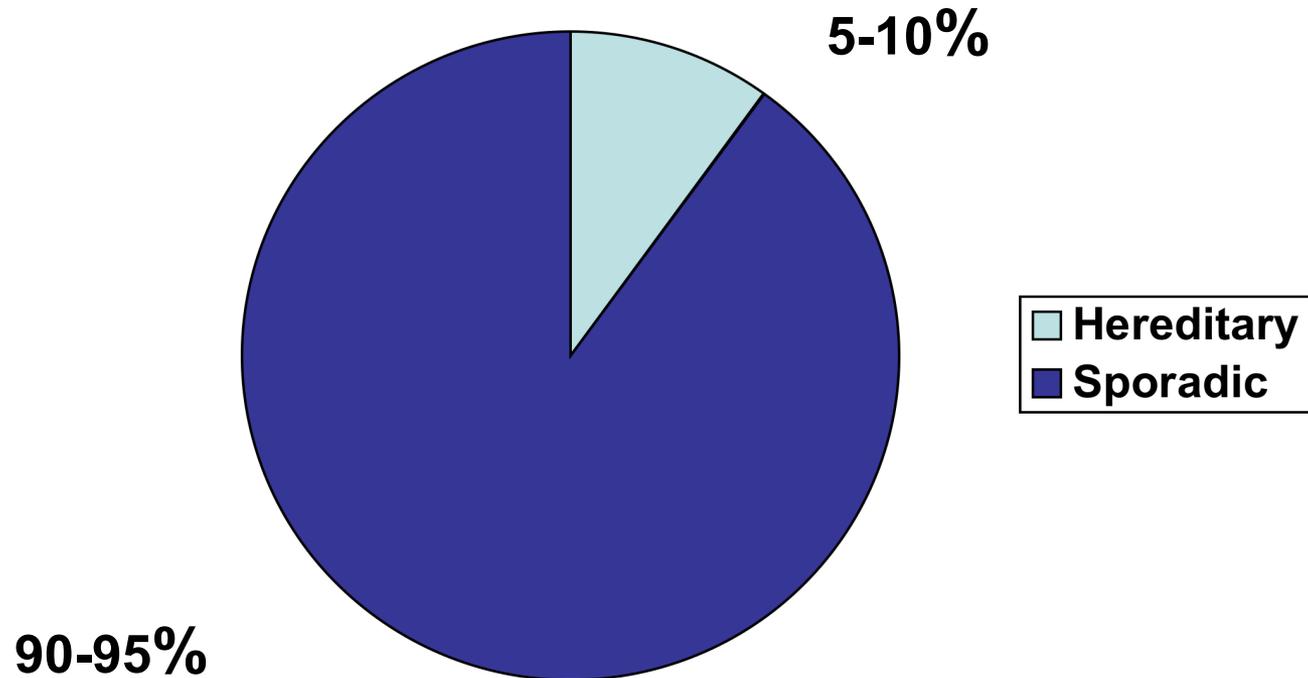
- Diet – con't
 - Pomegranates – studies have shown that antioxidant-rich pomegranates can inhibit the growth of estrogen-expressing breast cancer cells.
 - Tomatoes – A recent study found that fruits and vegetables high in carotenoids such as tomatoes, carrots and cantaloupe may reduce your risk of breast cancer by 20%.
 - Turmeric – Besides anti-inflammatory and antiseptic properties, the active ingredient in turmeric, curcumin, has shown promising activity in inhibiting breast cancer cell growth.
- Alcohol
 - Studies have shown that consuming 3-6 alcoholic beverages weekly can increase your risks by 15% compared to non-drinkers.
 - Alcohol is converted to a toxic chemical called Acetaldehyde, which can damage DNA and stop our cells from repairing the damage.

BREAST CANCER RISKS

Risks Associated With Lifestyle

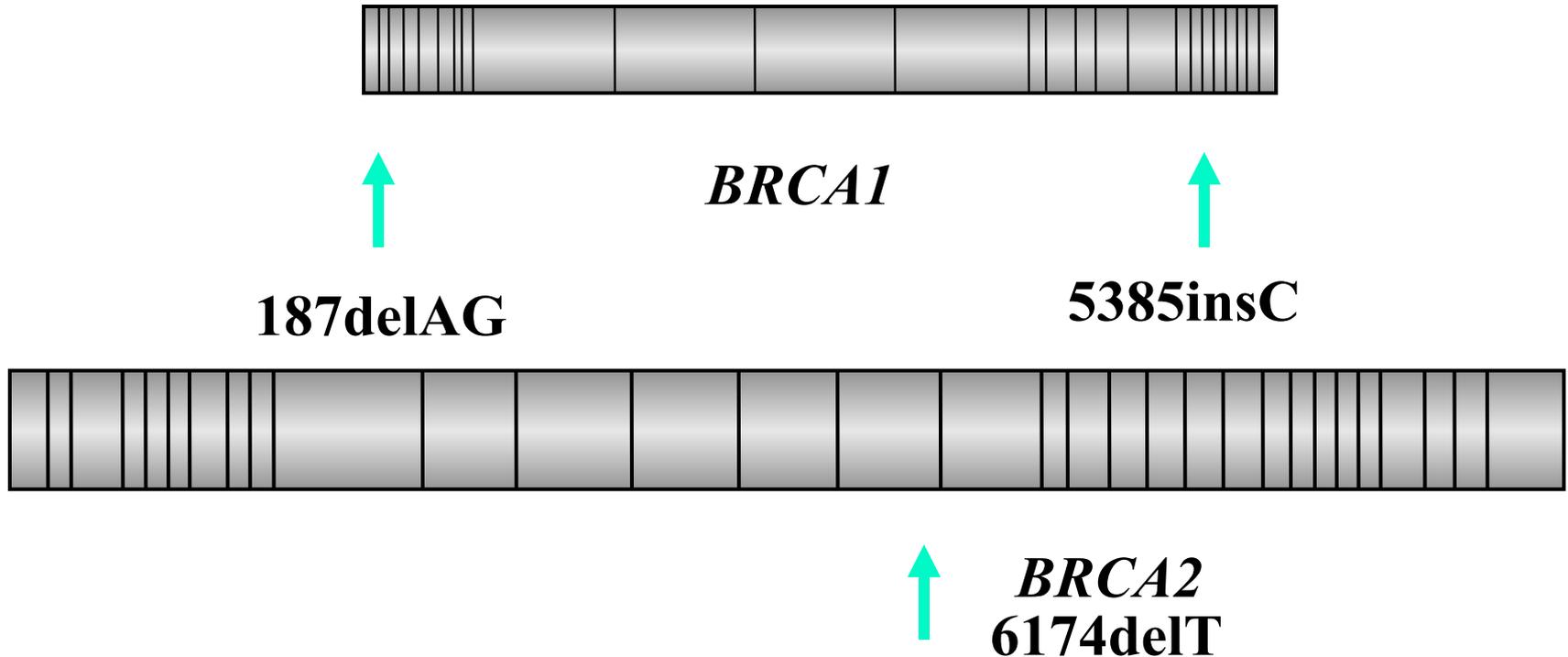
- Smoking
 - Smoking increases the risk for developing breast and other cancers. The correlation increases with the frequency and length of time an individual smokes.
- Other Risk Factors
 - Dense breasts increase your risk for breast cancer and make it harder for a mammogram to find cancer.
- Family History and Genetics
 - Relatives with breast cancer or ovarian cancer at a young age.
 - Changes in the BRCA1 or BRCA2 genes related to breast cancer.

GENES AND CANCER



Of the 5-10% of genetic breast cancer, 25% are attributed to BRCA mutations

BRCA 1 and BRCA2



- >800 mutations exist
- 1/40 Ashkenazi Jews carry one of these three mutations

LIFETIME RISKS FOR BRCA1/2 ASSOCIATED CANCERS

- 1 in 40 Ashkenazi Jews carries a BRCA gene mutation
 - General population is 1 in 600
- BRCA mutations increase the risk being diagnosed with breast cancer to 60-80%
 - General population is 1 in 8
 - Increases the risk of a second breast cancer to 45-60%
- BRCA mutations increase the risk of ovarian cancer to 15 – 60 %
 - General population is 1 in 72
 - Risk are lower for BRCA2 carriers

CANCER RISK IN FAMILIES

- Early-onset breast cancer (dx <age 50)
- Multiple individuals in multiple generations on the same side of the family diagnosed with breast cancer (particularly early-onset)
- Ovarian cancer (even just one relative)
- Multiple primary related cancers in the same woman (in this case breast cancer AND ovarian cancer or two primary breast cancers)
- Male breast cancer
- Ashkenazi Jewish ancestry

FAMILY HISTORY: AN IMPORTANT TOOL FOR ASSESSING YOUR RISK

- Information you will need:
 - Individuals in your family who have had cancer
 - Type of cancer
 - Age of diagnosis
- Records, such as pathology reports or death certificates, can be very helpful.
- Remember: Family history from BOTH sides is important! Men pass on genetic mutations too.
- The Holocaust

