



Breast Cancer and Environment – Peer Education Tool Kit

Zero Breast Cancer – Adolescent Education Project

Breast cancer is the most common cancer in women. It is influenced by many, complex factors. The following information is for high school **peer educators**. This includes tips to reduce breast cancer risk:

Breast Cancer Facts - Lifetime, California, and Marin County

- **Breast Cancer very rarely occurs in teens or young adults. Most breast cancer occurs in women older than age 50.** However, being informed about breast cancer *now* can help you understand risk factors for this disease, including things you can do to stay healthy and aware.
- **Approximately 2-3 % of California women will develop breast cancer over the course of their lifetime.** Of those who develop breast cancer, fewer than 25% will die from the disease.* Each year there are about 20,000 new cases of breast cancer in California. Most women who get treatment in the early stages **survive** the disease, or live 5-years or longer after their diagnosis.
(* Northern California Cancer Center)

Each year in **Marin County** there are approximately 240 new cases of “invasive” breast cancer, and about 40 deaths from breast cancer. *Invasive* means the cancer is spreading in the breast or the body. Breast cancer affects all races and ethnicities. White women have the highest rates. African American women tend to have lower rates, but also lower survival rates. Hispanic and Asian women have the lowest rates overall. These rates are based on cancer data and the census.

A woman in the Bay Area who lives to age 85 has a **1 in 7 lifetime risk** (chance) of developing breast cancer. More than 70% of breast cancer affects women from ages 50-85. Women who develop breast cancer before age 40 to 45 may have different profiles of this disease. Women under age 25 have *very low risk* – less than 1%. Many factors can influence breast cancer risk.

- The **San Francisco Bay Area** has one of the highest breast cancer rates in the nation – the reasons are not clear, but scientists are studying several clues. Many researchers think that girls’ breasts may be more susceptible to exposures (like second hand smoke) during puberty and the teen years. These exposures can potentially make a difference in future breast cancer incidence.

What is Breast Cancer?

- **The breast** is a (mammary) gland that grows rapidly from age 8 – 17. It is made up of fatty tissue, connective tissue that supports the structures in the breast, and a “network” of *lobules* and *ducts* that can produce and deliver milk through the nipple for breastfeeding. Breasts come in all shapes and sizes. Breast shape or size *does not* determine if a woman will develop breast cancer. Breasts can swell or feel lumpy at certain times of the month during the regular menstrual cycle.
- **Breast cancer begins** when normal cells start to change and grow out of control. A variety of biological, environmental, and genetic factors may contribute to breast cell abnormalities. A girl’s breasts may be more susceptible to exposures during her teen years. It can take years or decades for cells to change, multiply out of control, and form a tumor. Most breast cancer begins in the *milk ducts*; it can also start in the milk producing *lobules*. Breast cancers can invade nearby tissues, or spread to other parts of the body through the bloodstream or lymphatic system.



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- **Breast cancer is like a puzzle** – many factors are thought to play a role in how this disease develops. The body’s reproductive hormones, diet, physical activity, family history, genetic “pre-disposition,” inherited traits, lifestyle, and environmental factors may either *increase* or *decrease* the odds for this disease over time. These *puzzle pieces* are known as risk factors.

Risk and Risk Factors

- There is no guaranteed way to prevent breast cancer. Learning about risk factors, exposure avoidance, and early detection is a **prevention strategy**. The two main **risk factors** for breast cancer include ***being a woman and growing older***. This means that every woman has *some* risk.
- A **risk factor** is anything that **increases your chance** of getting a disease; it is not the same as the **cause**. Having one or more risk factors *does not* mean that you will definitely develop breast cancer. Many women who have more than one risk factor *do not* develop breast cancer. The only known cause of breast cancer is high doses of *ionizing radiation* to the chest area earlier in life (example: for treating childhood cancer). Ionizing radiation can damage the DNA in breast cells. (Alternately, too much exposure to the sun’s *ultraviolet radiation* can cause skin cancer).
- **Factors that can’t be changed or are less controllable** include beginning menstrual periods before age 12, delaying childbirth past age 30 (or not having children), and going through menopause (the end of monthly periods) after age 55. These are *hormonal* or *reproductive* life events that *may* increase a woman’s risk for breast cancer. Most of these factors are related to the *estrogen* in the body. Estrogen is a naturally occurring hormone involved in growth and reproduction. Adult women who have been pregnant one or more times and have nursed their babies are thought to have a *reduced risk* for breast cancer. That is because pregnancy and breastfeeding complete the biological cycle of the human breast and **may protect against risk**.
- Having a **family history** or a **personal history** of breast cancer **does increase the risk** for certain individuals. A **family history** refers to a close relative such as mother or sister, and if they developed breast cancer at an early age, and if their cancer was in both breasts. A **personal history** means that a woman has already had a cancer in one breast. She is at increased risk for developing cancer in the other breast. Women’s health services offer frequent check-ups for those who have a personal or family history for breast cancer. It is important to know your family history for breast cancer on both your mother and father’s side, and discuss this with your doctor.
- **Studies show that only 5- 10% of all breast cancer is hereditary** (carried through the genes). Several genes (in the DNA) may be involved in hereditary cancer, including mistakes (known as **mutations**) in the BRC-1 and BRCA-2 genes. These genes are present in all humans. Flawed genes that fail to suppress (or control) abnormal cells that may grow to be tumors. **Cancer genetic counselors** help people with inherited mutations in the BRCA 1 & BRCA 2 genes to make medical choices and family decisions to better manage their *high* risk for breast cancer.
- There is growing evidence that **drinking more than one alcoholic beverage a day, and gaining extra weight after menopause** are two factors that can increase an adult woman’s risk for breast



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cancer. **Awareness** of this information helps people to make **healthy choices** to reduce their breast cancer risk overall. “**Lifestyle factors**” such as diet, physical activity, tobacco and alcohol use are also known as “**modifiable**” – **things that you can do something about.**

Protecting Your Health – Starting in the Teen Years

- **Risk reduction** means steps people take to avoid a disease; however, it does not mean the same as **prevention**. Risk reduction for cancer is a “**prevention strategy.**” Having one or more risk factors is not *destiny*. There are many things a person can do to reduce their breast cancer risk.
- **Adolescent girls**, who are **physically active**, maintain **healthy diets** and who avoid **tobacco smoke** *may* be able to influence *some* of their long-term individual risks for breast cancer. **Physically active** means a minimum of 20-30 minutes of exercise on most days of the week, or at least 4 hours per week. **Healthy diets** mean eating more high fiber foods, ideally 5 – 7 servings of *whole* fruits and vegetables each day, and reducing total intake of fat in the diet. Tobacco smoke exposure is preventable, this means avoiding all **second-hand smoke** as well.
- **Lifelong healthy choices** beginning in the teen years have the **potential** to reduce a woman’s risk for breast cancer. Being physically active, eating more plant-based foods, keeping a healthy adult body weight, and breastfeeding after childbirth are all considered to be **protective factors.**

Environmental Exposures and Precautions

- **Exposures in our environment** such as specific chemical agents found in plastics, household products, and pesticides may *potentially* play a role in the how breast cells begin to change and progress to a cancer for *some* individuals. Studies show that **exposure to second-hand smoke during a girl’s teen years** is associated with higher breast cancer risk. There is evidence that specific chemicals in personal care products and cosmetics may interfere with breast cell growth.
- Being informed of **suspected environmental factors** for breast cancer helps people to **use caution** and make informed decisions involving their daily life exposures. **Reading labels** for suspected cancer-related chemicals in **personal care** and **household products** is one important **precautionary approach**. Not re-using **plastic water bottles**, and **microwaving in glass** instead of plastic food containers, are two steps to reduce your body’s exposure to chemicals in plastics that can affect normal breast cells. Using a HEPA filter in a vacuum cleaner helps avoid recycling chemical dusts in the home. Avoiding chemicals in foods known to cause cancer, like **PAH’s** in fried or charred foods, is another **environmental precaution** to reduce cancer risk.

More About Breast Cancer and Early Detection

- **Early detection**, also known as **breast health** practices, refers to **breast exams** for younger women and routine **mammograms** for middle-aged and older women. These can **help detect or locate breast cancer** early and may possibly lead to more effective treatment before the cancer spreads beyond its original site. **Medical treatment advances and early detection** can help to



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improve a person’s odds for surviving breast cancer. **Survivorship** means living 5 or more years after the diagnosis. Most women survive breast cancer and go back to their usual daily activities.

- **Men can develop breast cancer but it is rare** - less than 1% of cases. All men have a small amount of breast tissue. The body’s own hormones and genetic factors can play a role in male breast cancer and other male cancers. Younger men have a slight risk for developing testicular cancer and can learn to do self-exams. Older men face the risk for developing prostate cancer. Men should be aware of breast cancer risk factors, especially if they have a family history.
- **Symptoms:** A lump or sudden swelling of the breasts may be “benign” (“be-9” =non-cancerous) or “malignant” (cancerous). Changes in the appearance of the breast or the nipple are possible warning signs. Pain or inflammation needs to be checked immediately by a doctor or a nurse. Mammograms (an x-ray of the breast), ultrasound, and other medical tests can help diagnose breast cancer. Because breast cancer doesn’t always present with symptoms, regular check ups are important. Most women start annual breast exams at age 20 and mammograms at age 40.

Treatments: May include radiation, “chemo-therapy”, removal of the cancerous tissue in a confined area (“lump-ectomy”), or surgical removal of the breast (“mast-ectomy”) to save a woman’s life. There are several medical specialists who help patients with treatment for breast cancer. Women have options to “re-construct” their breast with implants, or wear special bras after a mastectomy. Treatment can last several weeks or several months and may include temporary, but difficult, side effects such as fatigue, nausea and hair loss. Hair grows back after chemotherapy is over. There are counselors and support groups to help women cope with cancer.

- **Breast cancer affects families and friends** as well as individuals. There are many resources for breast cancer information and support, including hospital-based cancer centers, Internet sites, walk-a-thons, and community breast cancer groups. Visit www.zerobreastcancer.org.
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Looking Ahead – Keeping Abreast

- By being educated and **informed about breast cancer** now, young men and women can understand what some family members and other adults in the community may be experiencing. You can talk more to friends and family about what you have learned in today’s presentation.

By **taking action to reduce exposures** suspected for breast cancer, a teen girl today may reduce some of her lifetime risk for this disease. By **practicing healthy behaviors**, young adults can reduce their risk for breast cancer and other health problems, and feel more fit in the process. With regular breast health exams, a woman can increase her odds for a good treatment outcome.

There are **new discoveries, technology and knowledge** that will change how breast cancer is prevented, detected and treated for your age group in the years to come. Beginning today, “*keeping abreast*” of information on modifiable risk factors are steps to staying healthy.