Think Pink, Live Green: Protect Your Breast Health for Women and Girls

Keynote Speaker: Dr. Marisa Weiss, Founder and President, Breastcancer.org

Dr. Weiss's presentation shared early research results of a study done in collaboration with Harvard Medical School and breastcancer.org. The researchers were interested in finding out why is the breast the favorite place for cancer to occur in women and what opportunities women have to reduce the risk of getting breast cancer or having breast cancer recur.

Dr. Weiss noted that tremendous advances have been made in breast cancer over the years, including improved diagnostics with digital mammography, better ways to image the breast using MRI scans, new surgical techniques, and better targeted therapies that produce better benefits and reduce the side effects of more broad treatments like radiation or chemotherapy. We also have a better understanding of the genetic factors that may influence breast cancer risk and more extensive support networks, such as breastcancer.org.

Despite these advances, however, breast cancer has become the most common cancer to affect women and the incidence of breast cancer is likely to double by 2040. Right now there are 1.3 million cases per year around the world; that will double and it will increasingly be seen in younger women. The highest increase in the incidence rates will be seen in big, developing countries like China and India. In the United States we expect a 19% increase in the next 20 years.

Dr Weiss summarized the factors that are playing a role in these increasingly high numbers as the unique structure and development of the breast as an organ, our modern life style, reproductive choices and environmental factors.

The Role of Breast Development in the Risk of Developing Breast Cancer

While the breast lives in the same body with all the other organs, for reasons researchers aren't completely sure of, it is much more vulnerable to cancer. According to data from the Centers for Disease Control (CDC) of all the cancers that affect women 27% of them are breast cancers. The next most common is lung cancer, which is almost always due to smoking, or second hand smoke. Colorectal cancer is 10%. Everything else falls in the 3-6% range or less.

Dr. Weiss's team suggested that one reason the breast is vulnerable is because it develops over an extended period of time, and intra-uterine growth of the fetus, puberty, and the time span between when the breast is fully formed and a women's first fullterm pregnancy are times of particular susceptibility for the breast. During these periods the breast cells are very responsive to outside influences including hormones and other chemicals that may mimic hormones.

One of the key "windows" of susceptibility is during the first trimester of pregnancy when all of our organs are built. All the organs other than the breast are generally fully formed and working during pregnancy or at birth. Only a tiny bit of the breast is made during pregnancy, however. It is the only organ that is mostly formed during adolescence, which basically involves a ten-year period of breast development.

Puberty, when the breast is still being developed is another key time, and research is showing that puberty and breast development are starting earlier. Early puberty is a risk factor for developing breast cancer because it increases overall lifetime exposure to estrogens, other hormones that can work in conjunction with estrogen, as well as a number of chemicals that can act like hormones. Dr. Weiss noted that in the 1800s the average age of first period was 17. In 1900 it was 14, and the more recent trends for African-American girls is a median age of 8 to 9. In Latina girls the median age is 9.3 years and in Caucasian girls the median is 10 years.

Another sensitive time in the life of the breast is between the completion of the breast development and the first full term pregnancy because until a woman's first full-term pregnancy, the breast cells remain immature, very active, ready to respond to a whole host of hormones and chemicals and do not have a function or job to perform, i.e., breast feeding.

The Role of Life Style in the Risk of Developing Breast Cancer

As Dr. Weiss noted, genes alone are not responsible for breast cancer. In fact, the main reason breast cancer as become more common today than before is because of changes in both the inside environment of the breast and the outside environment. Outside environmental influences include our modern lifestyle, the choices we make and the environmental factors we come into contact with. Inside environmental changes include obesity, extra hormone production, inflammation of our cells, more emotional stress and physical strain, and less exercise and rest.

Obesity. Many states report that at least 25-30% of their adult female residents are obese. Obesity is one condition that produces multiple breast cancer risks. The extra fat makes extra hormones that may lead to extra breast cell growth including abnormal breast cell growth. Obesity is also a trigger for early puberty. In addition, a lot of the hormonally active pollutants dissolve in fat (if a person has extra fat there is extra storage space to hold on to chemical exposures from the environment). Extra fat can also produce inflammation in cells that can wear down the immune system as well.

Obese mothers also are more likely to have heavy babies and high birth weight increases the risk of breast cancer later in life. And of course, obesity is associated with being inactive and with less healthy food choices and alcohol appears to be a greater risk in obese women.

Delayed pregnancy. Fewer women are having full-term pregnancies and/or breast-feeding and of those women having children, many are delaying pregnancy and breastfeeding for shorter periods of time.

Decreased physical activity. We are less physically active both as children and adults. Girls in middle and high school are less active and their activity tends to further decrease after high school.

Alcohol. More women are drinking alcohol and drinking more than they used to. And, the more alcohol consumed the higher the risk of breast cancer.

Smoking. Many women still smoke and smoking is a risk factor for breast cancer.

Vitamin D deficiency. More women are Vitamin D deficient because we are inside more and when we are outside we often use sunscreen lotion.

Stressed out and sleep-deprived. More women are stressed and sleep deprived. These factors are of serious concern without a proven connection to breast cancer risk yet. But we know that stress subjects your cells to more wear and tear from everyday living and that nighttime sleep is important time for our bodies to repair the resulting damage.

Age. The aging process is the biggest risk factor for breast cancer after being a woman. As we grow older we're exposed to more wear and tear of daily living where a genetic mutation may be introduced and as we age our ability to repair the genetic damage is not as good as when we are younger.

Pharmaceutical hormones. More girls and adult women are using pharmaceutical hormones. Many women are still taking hormonal replacement therapy after menopause which is a proven breast cancer risk. Many young and mature women also are using birth control pills for many years for many reasons other than just contraception, including clearing up acne, regulating periods and managing PMS. They are starting birth control pills earlier and using them for longer.

The Role of the Environment in the Risk of Developing Breast Cancer

The final risk factor Dr. Weiss addressed was environmental factors. Women and girls are exposed to an increasing number of environmental pollutants that can stimulate abnormal breast cell growth. They can directly damage DNA, mimic estrogen or create problems with hormonal balance that can lead to more breast cell

activity including abnormal breast cell growth.

Estrogen is one of these chemicals, but other chemicals can act like estrogen and stimulate breast cells. Of the 200 pesticides tested by the government in 2004, for example, 25% were able to mimic estrogen in breast cells in the laboratory. Some of the most common weed killers we use to day are among the culprits. Atrazine, one of the most commonly used weed killers, often used to grow corn, can turn on estrogen production by turning on the enzyme, aromatase. Another example is Roundup, which is used to grow soy. It can act as a hormone disrupter able to mess up the normal balance of hormones that are partly responsible for controlling normal cell function. Many of these disrupters enter our bodies through the foods we eat. Genetically modified corn and soy are modified so that it can grow in the presence of chemicals like Roundup, but our bodies are not.

Our fruits and vegetables are often exposed to more than one type of pesticide or weed-killer. For example, when the FDA tested peeled and washed fruits and vegetables and issued their pesticide data program report in 2009, they found traces of 13 different pesticides on conventionally grown and well-washed blue berries.

Hormones are still being used in the beef and dairy cattle industry as well.

There are many hormonally active ingredients in the items we come into contact in with in our everyday life as well, such like flame-retardants. These are used in mattresses, blankets, kids pajamas, and electronic devices.

Phthalates, chemicals found in vinyl shower curtains, wallpaper and some fragrances, are also hormone disruptors that may disrupt normal breast cell growth. Bisphenol A (BPA) is another concern. This chemical is often used in the resin lining of food cans to protect the food from getting a metallic taste. The hard #7 plastic water bottles also contain BPA, as do the plastic coating used on cashier receipts to make the ink adhere to the paper.

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As breast cancer is the most common cancer in women and its incidence is expected to double further in the next few decades, breast cancer prevention is an urgent global public health need. For sure, an ounce of prevention is worth a pound of cure (early detection and effective treatments). Dr. Weiss and her team claim that if women and girls better understand what increases their risk of breast cancer, they will better be able to decrease their risk. (While it's true some women inherit a gene that increases risk, only about 10% of breast cancer cases can be attributed to a single, relatively rare gene that predicts a high risk: BRCA-1 and BRCA-2).

To conclude Dr. Weiss urged us to think pink and live green because life style changes made today can lower a person’s risk tomorrow. What women and girls eat,

drink, breathe in, the supplements and medicines they take, and the personal and household products they use, are all utilized to build and run their breast cells. Her team has identified 31 things we can do to think pink, live green in our everyday lives. The full guide can be found by visiting: http://www.breastcancer.org/about_us/press_room/press_kit/think_pink.jsp

1. Think Twice - Challenge the ways you've always done things.
2. Avoid Taking Extra Hormones
3. Get To A Healthy Weight And Stick To It
4. Get Regular Exercise
5. Limit Alcohol Use
6. Stop Smoking
7. Get Fresh Air
8. Avoid Unnecessary Radiation especially as a girl or young woman
9. Get Enough Vitamin D
10. Eat Your Fruits And Veggies
11. Select Foods And Beverages Carefully
12. Know Your Labels
13. Know Your Packaging
14. Vary Your Diet And Lifestyle
15. Avoid Empty Calories
16. Eat Small Meals
17. Cook Real Food
18. Choose Healthy Cooking Methods
19. Use Safe Cookware, Storage Containers, Serving Items
20. Drink Filtered Tap Water
21. Choose Safe Personal Care Products
22. Use "Green" Household Products
23. Manage Your Emotional Stress
24. Manage Your Physical Strain
25. Sleep Well
26. Consider Earlier Pregnancy
27. Know Your Personal And Family History
28. Take Extra Steps To Reduce High Risk
29. Vote At The Cash Register And The Polls
30. Start Now And Try Your Best
31. Believe In Yourself. Lead By Example