UW Integrative Medicine
Department of Family Medicine

University of Wisconsin
SCHOOL OF MEDICINE
AND PUBLIC HEALTH

Breast Cancer Care and Prevention: Non-Drug Approaches

What is breast cancer?

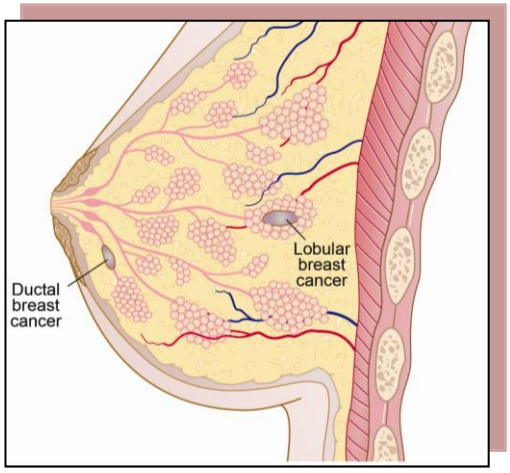
Breast cancer occurs when the cells in the breast do not behave normally. Cells are our bodies' building blocks. They make up our body tissue. Normally cells grow, divide, and die on a regular basis. New cells, however, can grow and divide when the body does not need them, and old, damaged cells may not die as they normally do. The resulting build-up of extra cells forms a lump (a tumor). Some tumors are not cancerous. Others have the ability to invade a surrounding area of the body and break off and travel to other parts of the body through the bloodstream or the lymphatic system. These tumors are breast cancer. Breast cancer will occur in one of eight women during their lifetimes. It is the most common cancer in women, excluding skin cancer. It also occurs in one out of a hundred men.

What causes breast cancer?

No one knows exactly what causes breast cancer. Doctors seldom know why one woman develops breast cancer and another does not. A combination of factors both within a woman's body and outside it may contribute. These include such things as changes in breast cancer genes, the amount of estrogen to which a woman has been exposed, the food she eats, and her lifestyle. Seventy percent of breast cancers are hormone receptor positive. This means that the hormone estrogen can further its growth. Changes in genes inherited from a woman's parents can increase her risk of developing breast cancer. For example, BRCA1 and BRCA2 are genes that prevent abnormal growth in the breast. If a woman inherits a change (a mutation) in one of these genes, they may no longer prevent abnormal growth. Then cancer is more likely to develop. Women who inherit these changes in the BRCA1 or BRCA2 genes have a 60-80% chance of developing breast cancer in their lifetime. Overall, only a small percentage of breast cancer in women is caused by these gene mutations.

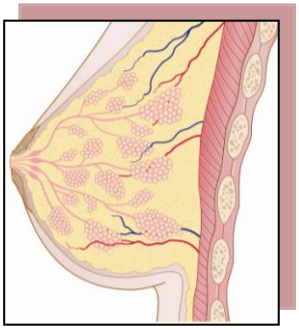
What factors increase and decrease the risk for breast cancer?

- **Factors that may increase risk:**
  - Having more than one alcoholic drink per day
  - Increased lifetime exposure to estrogen. This includes both estrogen made by the body (e.g., resulting from early menstruation and late menopause) and estrogen from hormone replacement.
  - Obesity
  - Getting older
  - A diet high in fat and processed foods and low in fiber, fruits, vegetables
  - Exposure to radiation
  - Family history of breast cancer (father's or mother's side)
  - Mutations in breast cancer genes, such as in BRCA1, BRCA2, or P53
  - Working the night shift causing changes in sleep patterns



Breast with Disease

- **Factors that may decrease risk:**
  - Regular exercise for 30-60 minutes 3-5 times per week.
  - Prolonged breastfeeding
  - The way the body processes estrogen. Risk may be reduced if a woman has more 2-hydroxyestrones rather than 16-hydroxyestrones in her body. Urine testing can measure this. (Diet can help as you will read below).
  - Fresh foods including 5-9 servings of fruits and vegetables daily



Healthy Breast

What is an integrative approach to breast cancer care?

Integrative medicine encourages a woman to take charge of her life. It helps women make choices in their lives to help prevent breast cancer, slow its growth if it occurs, and prevent the disease from coming back after it has been treated. It can also help reduce the side effects from cancer treatment. Integrative medicine combines standard medical care with additional ways to prevent or treat a condition. These other ways are called complementary medicine. If a complementary approach might interfere with standard cancer treatment, it is avoided while a woman is receiving treatment. Integrative medicine uses evidence-based therapies when available. These therapies are based on the best available research and clinical experience. Integrative Medicine focuses on healing the body, mind, and spirit. Each person has a unique path to healing. Oftentimes cancer may serve as an opportunity for growth and greater health.

What are some integrative non-drug ways to prevent and treat breast cancer?

Guidelines on Exercise and Nutrition

The American Cancer Society (ACS) publishes guidelines on nutrition and physical activity. A panel of experts updates these guidelines every five years. There are 2 sets of guidelines. One is for cancer prevention. The other is for the period during and after cancer treatment. If you are reading this on-line, click on the links below (or copy and paste them into your browser) to see summaries published in 2012.

- **Prevention:** http://www.cancer.org/acs/groups/cid/documents/webcontent/002577-pdf.pdf
- **Treatment:**http://www.cancer.org/Treatment/SurvivorshipDuringandAfterTreatment/NutritionforPeoplewithCancer/nutrition-and-physical-activity-during-and-after-cancer-treatment-answers-to-common-questions

- **Nutrition**

  The food you eat may reduce your risk for breast cancer and many other cancers. Eating lots of fruits and vegetables, fish, fresh foods, and olive oil and very little animal fat may reduce your risk. This is known as the Mediterranean diet. Eating foods with lots of fats and few fruits and vegetables may increase the risk. (This is the way people in the U.S. often eat.) Go to the website at the University of Michigan Integrative Medicine Program at http://www.med.umich.edu/umim/food-pyramid/about.htm to see a diagram describing the Mediterranean diet.

- ***Polyunsaturated Fatty Acids***
  Sunflower, safflower, soy, sesame and corn oils may cause inflammation in the body if these oils have been heated (hydrogenated) to extend their shelf life (the length of time you would use them). Omega 3 is a polyunsaturated fatty acid. Omega 3 fatty acids, including EPA and DHA, help prevent inflammation. Omega 3 fatty acids are in fatty fish (such as salmon, sardines and mackerel), walnuts, green leafy vegetables and flax seed meal. The VITamins and Lifestyle (VITAL) Study found that fish oil reduced the risk of ductal but not lobular breast cancers. Another study found that eating fatty fish and taking fish oil reduced the risk of breast cancer in both premenopausal and postmenopausal women. Risk was reduced the most in postmenopausal women.

  Fish oil: Take about 1000 mg of combined DHA and EPA daily in less than 3 gms of total fish oil. You can substitute flax seed oil if you are on a vegan diet. Look for a brand that is high in lignan or lignan rich. (Lignan is the fiber coating of the flax seed).

  Caution: If any bleeding occurs, stop fish oil immediately. Stop one week prior to surgery. Stop if your platelet count is less than 20,000 when you have a blood test.

- ***Monounsaturated Fatty Acids***
  About 20 to 30 percent of breast cancers make too much of a protein called HER-2, which is found on the surface of the cancer cells. These tumors tend to grow faster and are more likely to recur (come back) than tumors that do not overproduce HER–2. Oleic acid may help curb HER-2 tumor cell growth. Oleic acid is in olive oil, avocados, hazelnuts, and cashew nuts.

- ***Green Tea***
  Green tea is an aromatase inhibitor. This means that it can lower estrogen in the blood or in a tumor by interfering with the action of an enzyme called aromatase. Two studies have found that drinking 3 cups or more cups of green tea per day reduced the risk of breast cancer.

- ***Soy***
  There was debate in the past whether or not women with estrogen positive tumors (those that may grow with estrogen) should eat soy. That is because soy is a phytoestrogen (a plant or product made from a plant that acts like estrogen in the body). The estrogen positive tumors in rats grew when they were fed soy supplements. Soy foods, however, have had the opposite effect for women. The large Shanghai Breast Cancer Survival Study showed that women who ate soy food had better survival rates and less recurrence of tumors. These good outcomes occurred for women who had estrogen positive tumors as well as those with estrogen negative tumors. Women who took the drug tamoxifen and those who did not take it both had these good outcomes. Other studies found the same results. 1-3 servings of soy foods are recommended daily, unless you are sensitive to soy.

- ***Flax***
  Flax, taken either as flax seed meal or oil, is a rich source of protective phytoestrogens (like soy) and contains omega 3 fatty acids. If you use the oil, look for a brand that is high in lignan or lignan rich. (Lignan is the fiber coating of the flax seed). Flax has been found to reduce the risk of breast cancer and decrease the growth of breast cancer cells. Consider adding 1-2 tablespoons a day to your food.

- ***Antioxidants***
  Antioxidants protect the body from damage when it uses oxygen. Fruits and vegetables are high in antioxidants. Eating them may lower the risk of breast cancer. Research has shown that eating yellow, orange, and red fruits and vegetables may reduce the risk of breast cancer in women who are premenopausal. Getting antioxidants from food is safer than taking antioxidant supplements. These supplements may interfere with cancer treatment. Experts recommend 5-9 servings of fruits and vegetables daily.

- ***Whey protein***
  Whey protein is a by-product during the making of cheese. It is less likely to cause allergies than the casein protein found in cow's milk. It helps prevent mouth sores in patients receiving chemotherapy. It may also help prevent peripheral neuropathy. This condition can be a side effect of some chemotherapy drugs such as taxanes. It is a nerve problem that causes pain, numbness, tingling, swelling, or muscle weakness in different parts of the body. Take 20-30 grams of whey protein powder twice a day in smoothies to help prevent these chemotherapy side effects. If you are sensitive or allergic to whey, you can take glutamine as a supplement. (Whey protein is high in glutamine). The recommended dose is 3-5 grams one to three times daily.

- ***Cruciferous vegetables***
  Kale, broccoli, cauliflower, brussels sprouts and cabbage are cruciferous vegetables. Indole-3-carbinol in these vegetables helps slow the growth of cancer cells. It also increases the body's ability to get rid of abnormal or unneeded cells. And it changes the way the body processes estrogen. This results in more weak estrogens rather than strong ones. You may reduce your risk of breast cancer by 20-40% if you eat 1-2 servings of cruciferous vegetables each day. It is safer to eat cruciferous vegetables than to take indole-3-carbinol as a supplement. The supplement can interfere with the drug Tamoxifen, which is often prescribed for women with breast cancer.

- **Exercise**

  - ***To help prevent cancer***
    Exercise may help control your mood and weight and improve your ability to resist disease (your immunity). Results of the California Teachers' Study were reported in 2009. The study suggests that exercising long-term for more than 3 hours a week before breast cancer is diagnosed may help reduce the risk from dying of breast cancer. This is especially the case for women who are overweight.

- ***During and after cancer treatment***
  Exercise may improve your mood, energy levels, immunity, overall health, survival, quality of life and help to prevent the disease from coming back. Exercise improves fitness, so you are stronger while going through cancer treatment. Exercise can improve physical balance resulting in fewer falls. It may help reduce hot flashes occurring during menopause.

- **Supplements**
  Before you take a supplement during cancer treatment, it is important to learn if it could help chemotherapy work better or if it will interfere with treatment. The following book can help you and your doctor determine this: *The Definitive Guide to Cancer, 3rd Edition: An Integrative Approach to Prevention, Treatment and Healing* by Lise Alschuler, ND and Karolyn Gazella. It was published in 2010.

  - ***Vitamin D***
    People who live at latitudes farther from the equator often have too little Vitamin D in their bodies. This lack of Vitamin D may cause osteoporosis, weakness, and pain in the breastbone and lower back. Risk factors include: age 65 years or older, little sun exposure (without sunscreen), darker skin color, and taking glucocorticoids (steroid hormones such as cortisone) or drugs to prevent or relieve convulsions. There is strong evidence that adequate vitamin D may reduce the risk of breast cancer. One study found that levels of Vitamin D in the 60-80 ng/ml lowered the risk of breast cancer for women who had not gone through menopause.

    Try to spend at least 20 minutes in the sun midday without sunscreen, if you are not at risk for sunburn or skin cancer. If you live at a latitude farther from the equator, it may be hard to get enough Vitamin D from the sun. A blood test, the 25-hydroxy vitamin D test, is the most accurate way to measure how much vitamin D is in your body. If you live at a latitude greater than 35-40 degrees north of the equator, you may want to have this blood test done during winter. Except for oily fish, we cannot get enough Vitamin D from our food. So, if you are not able to spend enough time in the sun, it is a good idea to take a Vitamin D supplement each day. 1000-2000 IU of Vitamin D3 is recommended daily.

Latitude Map for the U.S.A.

- ***Melatonin***
  The supplement melatonin may be helpful in many ways. It may help protect the body from damage while the body is using oxygen. It may strengthen the immune system. It may help kill cancerous cells in the body. It may help regulate the estrogen in the body. And it may help treat problems with sleep. Melatonin should not be taken if you have bipolar disease. It may worsen depression for some people. Check with your doctor before taking melatonin if you use other medication that causes drowsiness. Melatonin comes in two forms: an immediate release preparation for individuals having difficulty falling asleep and a sustained release preparation for those having difficulty staying asleep. The dose ranges from 1 mg to 20 mg taken before you go to bed. Start with a dose of 3 mg before bedtime. Consult with your doctor to adjust this dose as needed to treat your sleep problem without causing a hangover the next day.

- ***Botanicals***
  Botanicals are made from plants. Some are used to help treat medical conditions. They may be helpful during cancer treatment but must be used carefully during chemotherapy. They may interfere with chemotherapy by affecting the way the drug is processed in the body. St. John's Wort is one botanical that may interfere with chemotherapy. Certain botanicals are known to interfere with the following chemotherapy drugs: taxanes, those that are platinum-based, cyclophosphamide, doxyrubicin, etoposide, and irinotecan. Generally botanicals do not interfere with radiation therapy.

Learn how botanicals and other supplements may interact with chemotherapy drugs. You or your doctor may want to refer to the book, *The Definitive Guide to Cancer, 3rd Edition: An Integrative Approach to Prevention, Treatment and Healing* by Lise Alschuler and Karolyn Gazella. It was published in 2010 by Celestial Arts.

- **Groups for stress reduction**
  A study, reported in 2008, found that women with breast cancer who met in small groups to reduce stress decreased their risk of breast cancer recurring and lived longer. A psychologist led the groups. Content included ways to reduce stress, improve mood, change health behaviors, and continue cancer treatment as planned.

You may also want to see our handouts on Breast Cancer Care and Prevention: Guidelines for a Healthy Lifestyle and Integrative Ways To Reduce Side Effects Of Breast Cancer Treatment.

WEBSITE RESOURCES

American Cancer Society	Guidelines for exercise and nutrition to prevent cancer and guidelines for exercise and nutrition during and after cancer treatment.	**Prevention:** http://www.cancer.org/acs/groups/cid/documents/webcontent/002577-pdf.pdf **During and after treatment:** http://www.cancer.org/Treatment/SurvivorshipDuringandAfterTreatment/NutritionforPeoplewithCancer/nutrition-and-physical-activity-during-and-after-cancer-treatment-answers-to-common-questions
Susan G. Komen Breast Cancer Foundation	Education and research about causes, treatment, and the search for a cure.	www.komen.org
Breast Cancer Recovery	Its mission is to help women heal in mind, body and spirit after breast cancer. All programs are designed and conducted by survivors for survivors.	www.bcrecovery.org
National Institutes of Health, National Cancer Institute (NCI) Office of Cancer Complementary and Alternative Medicine (OCCAM)	Evidence based information on Complementary and Alternative Medicine (CAM) for cancer.	http://www.cancer.gov/cancertopics/cam
National Institutes of Health, Office of Dietary Supplements	Information on dietary supplements.	http://www.dietary-supplements.info.nih.gov
Memorial Sloan-Kettering Cancer Center	Search a database for evidence-based information on herbs, botanicals, vitamins, and other supplements. It includes evaluations of alternative or unproven cancer therapies.	http://www.mskcc.org/mskcc/html/11570.cfm
The University of Texas MD Anderson Cancer Center	Evidence based review of CAM and integrative medicine therapies.	www.mdanderson.org/CIMER

The information in this handout is for general education. It is not meant to be used by a patient alone. Please work with your health care practitioner to use this information in the best way possible to promote your health.

This handout was created by Charlene Luchterhand, MSSW, Integrative Medicine Program Development Coordinator, adapted from a version written for clinicians by Lucille Marchand, MD, BSN, Professor, Dept. of Family Medicine and Director of Integrative Oncology. Both are at the University of Wisconsin-Madison School of Medicine and Public Health.

References, if needed, can be found in the clinician version of this handout.

Date Created: July 2011
Date Updated: November 2013

Notes: