

Breast Cancer Awareness Month



The human breast is a gland that contains milk ducts, lobes, fatty tissue, and a network of lymphatic vessels. Cancerous tumors can arise in virtually any part of the breast and are most often detected when a woman feels a lump. In general, cancerous lumps are firm, never go away and are usually (though not always) pain-free.

Breast cancer, like cancers in other tissues, begins with changes in the DNA of the breast cell. If DNA is damaged during the replication process, a cell can become abnormal. Typically, the body will find and destroy the abnormal cell, but if the mutated cell is not deactivated, it will continue to replicate itself. Cancer's goal is to survive even at the expense of its host. Your best defense against any type of cancer is to minimize your risk and give your body the tools it needs to keep you healthy.

There is much research that indicates the female sex hormone estrogen and excessive levels of estrogen metabolites to be the most likely culprit in many cases of breast cancer. Estrogen is made primarily in the ovaries and is broken down in the liver, creating different forms of estrogen. Some estrogens are protective and some are toxic. An imbalance in estrogen and progesterone in which estrogen is in excess is known as estrogen dominance. Estrogen promotes cellular growth in the tissues of the breasts and reproductive organs, and cancer is a disorder of unrestrained cellular growth. Some of the known risk factors for breast cancer include onset of menstruation before age nine, menopause after age fifty-five, having a first child after age forty, and having no or few children. One thing these risk factors have in common is that they result in the breasts being exposed to more estrogen for longer periods. There may also be a link between obesity and breast cancer since obese women tend to have higher levels of estrogen in their bodies than thin women do.

The metabolism of estrogen involves reactions that take place primarily in the liver. Estrogen is broken down through detoxification pathways –

Phase I and Phase II – and then is excreted in the urine and stool. Glucuronidation is one of the key Phase II liver detoxification pathways for estrogens and other toxins. It involves estrogen bound to glucuronic acid in the liver. This then moves into the intestines and is excreted through the stool. When estrogens are broken down in the liver, several estrogen metabolites are formed. The metabolites are broken down into good and bad estrogens. C2 estrogens are harmless while C4 and C16 are carcinogenic. The C4 and C16 estrogen pathways are activated by numerous xenoestrogens as well as poor lifestyle and dietary choices.

Xenoestrogens are man-made environmental chemicals that mimic the effects of natural estrogens in the body. They are implicated in several women's health conditions and can contribute to estrogen dominance. These chemicals can affect fertility, increase the risk of cancer and cause developmental problems in children. Many of these are found in our day to day activities. Some common xenoestrogens are:

Bisphenol-A A 2010 report demonstrated that BPA encourages abnormal proliferation in human breast epithelial cells. BPA is a synthetic estrogen used to harden polycarbonate plastics and epoxy resins. There is an estimated 6 billion pounds of BPA produced worldwide annually. These products break down, particularly when heated or washed with strong detergent. You can take steps to reduce your exposure with these tips:

- Avoid foods exposed to BPA in cans.
- Look for BPA free canned foods.
- Use glass water bottles and food containers. Plastics with the recycling labels #1, #2 and #4 on the bottom do not contain BPA.
- Avoid microwaving plastic containers.

Phthalates These are industrial chemicals known as plasticizers to make plastics more flexible and resilient. They are also common in beauty care products such as hairspray, nail polish, deodorant and colognes. They can be inhaled by the lungs or absorbed through the skin. Be watchful for the word "fragrance" on body care and home care product labels. This

word typically replaces up to 200 chemical ingredients with phthalates often in the mix. You can take steps to reduce your exposure with these tips:

- Read labels and avoid DEHP, DINP, DIDP, DBP, DnOP and DnHP.
- Purchase non-plastic toys. Opt instead for toys made of wood, fabric or metal.
- Buy phthalate free cosmetics and nail polish. See www.ewg.org “Skin Deep: Cosmetic Safety Database.”
- Buy phthalate free detergents and household cleaning products.

Dioxins These are released into the air via manufacturing processes of pesticides, herbicides, paper and pulp. They also may be released during the burning of waste materials. Dioxins may be found in tampons and may be ingested through consuming beef, fish and dairy. You can take steps to reduce your exposure with these tips:

- Use natural, unbleached paper products including tampons.
- Eat organic whenever possible.
- Avoid high pesticide sprayed foods. See www.ewg.org “Dirty Dozen and Clean Fifteen.”
- Drink pure, filtered water.

Ammonium Perchlorate This and its other compounds are contaminants of drinking water and some foods such as milk and vegetables. Research has established that significant amounts of perchlorate disrupt production of thyroid hormones. You can take steps to reduce your exposure with these tips:

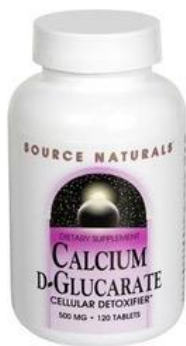
- Drink pure, filtered water.
- Eat organic whenever possible.
- Avoid pesticide and herbicide sprayed foods.

Parabens These are most widely used as preservatives and fragrances in cosmetics. An estimated 80% of cosmetics use parabens. They are used

because they are cheap, plentiful and don't typically cause skin reactions. Yet, they are proven to exert estrogenic activity on females and males. They have been found intact in human breast cells. Avoid parabens by reading labels. Check out www.ewg.org "Skin Deep: Cosmetic Safety Database". See www.davidsuzuki.org "Dirty Dozen Cosmetic Chemicals" for a more extensive list of chemicals to avoid. Check out www.environmentaldefence.ca.

The following nutrients and lifestyle considerations are for those diagnosed with breast cancer or those desiring to increase their odds of avoiding it.

KEY SUPPLEMENTS



Calcium-D-Glucarate It is the calcium salt of D-Glucaric acid produced in small amounts by humans. It is found in highest concentrations in citrus fruits and cruciferous vegetables. This compound inhibits an enzyme produced in the flora of the colon and involved in Phase II liver detoxification. A high level of this enzyme is associated with a risk of hormone dependent cancers.

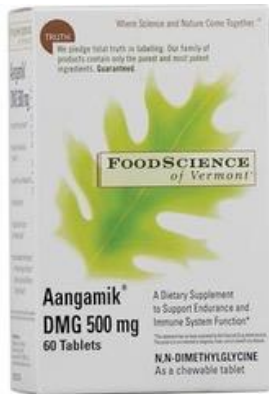
Calcium-D-Glucarate is involved in estrogen metabolism.

Suggested dosage 450-1500 mg daily.



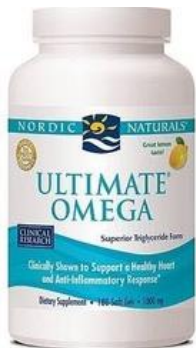
Coenzyme Q10 Ubiquinol This nutrient improves cellular oxygenation and studies support the theory that it reduces the risk of breast cancer. It is an important antioxidant necessary for the health of all human tissues and organs. It is also required for our energy source, ATP.

Suggested dosage 300 mg daily.



DMG Dimethylglycine is a derivative of glycine the simplest of amino acids. It is present in small amounts in meat, seeds and grains. It is a safe, nontoxic food substance that does not build up in the body. It helps the body maintain high energy, boosts the immune system and improves cellular oxygenation.

Suggested dosage as directed on label.



Essential Fatty Acids These are necessary for proper cell reproduction. In the form of flaxseed or uncontaminated fish oil, EFA's decrease the formation of PGE2, a prostaglandin that acts as a messenger molecule to promote inflammatory pathways in the body. They are made by every cell in our body, inhibiting cancer growth and supporting immune function or promoting cancer. Omega 3's in fish and flax oils support the healthy pathways.

Suggested dosage suggestion is up to 2 tbsp. of flax oil daily or up to 3000 mg fish oil daily with a minimum of 1000 mg EPA and 600 mg DHA.

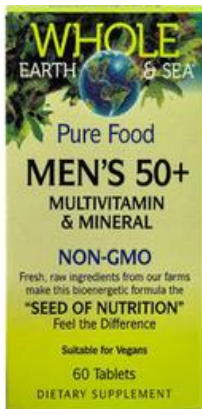


Germanium This is a mineral that is a powerful immunostimulant that improves cellular oxygenation and rids the body of toxins and poisons. Like hemoglobin, germanium acts as a carrier of oxygen to the cells. Germanium is found in all organic material of animal and plant origin but the greatest concentrations are in broccoli, celery, garlic, shiitake mushrooms, milk, onions, rhubarb, sauerkraut, tomato juice, aloe vera, comfrey, ginseng and suma. Suggested dosage 200 mg daily.



Melatonin You may know this as a sleep aid but it is also a helpful anti-cancer supplement. It blocks estrogen receptor sites on breast cancer cells. Melatonin appears to increase the survival time and improve quality of life in patients with various types of cancer. Some studies indicate that it competes with estrogen for the estrogen receptors thus preventing excess estrogen activity in the body.

Suggested dosage 3-20 mg before bed.



Multi Mineral and Multi Vitamin Complex Do you consider minerals as important as vitamins? You should because they are essential for normal cell division and function. Kelp and seaweed are abundant sources of minerals. A comprehensive multi mineral and vitamin formula is good for strengthening the immune system.

Suggested dosage as directed on label.



Vitamin A Carotenoid Complex Powerful antioxidants that destroy free radicals.

Suggested dosage 10,000 IU daily or as directed on label.



Selenium This mineral protects the immune system by preventing the formation of free radicals, which can damage the body. Much of our soil is deficient in this trace mineral, leaving us vulnerable to cancer risk. Selenium has been found to function as a preventive against the formation of certain types of tumors, including breast tumors. Recommended dosage is 200mcg 2x daily.



Vitamin B Complex Improves circulation, builds red blood cells, aids the liver detox function and is necessary for normal cell division and function. Brewer's Yeast is a great source of **B Vitamins** and aids in reducing estrogen production.

Suggested dosage is 50mg 2-3x daily.



Vitamin C is a powerful anticancer agent that has been well researched for its potent antioxidant role in the treatment of many cancers. It enhances immune function and has anti-viral effects. It is key in building connective tissue which can prevent the formation of metastasis. Suggested dosage up to 6000 mg daily or to bowel tolerance.



Vitamin D New research underlines the crucial role of this vitamin in promoting breast health. Studies show that it not only kills breast cancer cells, it also inhibits metastasis and tumor angiogenesis (how a cancer cell feeds itself). It also inhibits cancer cell division and growth. Low levels of vitamin D have been linked to higher breast cancer rates. Suggested dosage is 2000 IU daily.



Vitamin E People with breast cancer have been found to have lower than normal levels of vitamin E and selenium, two important antioxidants that work together to neutralize free radicals. Vitamin E blocks free radical damage in fatty breast cells.

Suggested dosage 400 IU daily.



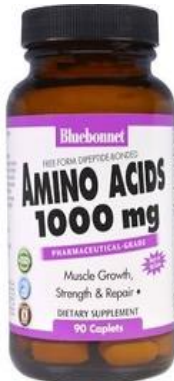
Vitamin K3 This vitamin seems to be the newcomer to the block of research. Its health benefits are quickly gaining attention. Studies show that K3 not only induces cancer cell death but along with Vitamin D slows the growth of cancer cells while boosting antioxidant enzymes.

Suggested dosage as directed on label.



Maitake Mushroom Extract Boosts the immune system response and inhibits the growth or spread of tumor cells.

Suggested dosage 4000-8000 mg daily.



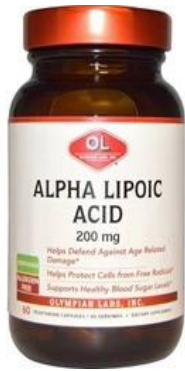
Amino Acids L-Cysteine, L-Methionine and Glutathione detoxify harmful substances.

Suggested dosage as directed on label. Take with B6 and C for better absorption.



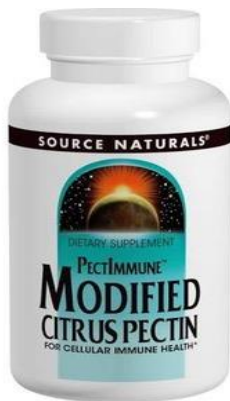
Pycnogenol A powerful antioxidant.

Suggested dosage as directed on label.



Alpha Lipoic Acid ALA is a potent antioxidant that has the ability to increase the effectiveness and lifespan of many other antioxidants including vitamins C and E, quercetin and CoQ10. It promotes the production of glutathione, another powerful antioxidant and liver detoxifier. ALA increases the number of T helper cells, protecting us from environmental insults.

Suggested dosage 300 mg daily.



Modified Citrus Pectin MCP is a compound obtained from the peel and pulp of citrus fruits. Research indicates that for cancer to grow, divide and migrate it must first clump together with helper cells called galectins. MCP is thought to have an affinity for galectins on the surface of the cancer cells thus blocking cancer cell aggregation, growth and metastasis. Suggested dosage at least 15 grams daily in 3 divided dosages.



Proteolytic Enzymes – These are powerful free radical scavengers that also reduce inflammation. It is important to know they need to be taken between meals or they will act as digestive enzymes.

Suggested dosage as recommended on the label.

HERBS

Herbs and spices are especially beneficial in the prevention of breast cancer.



Turmeric and its phytochemical derivative, **curcumin** have potent antioxidant, antitumor, anti-inflammatory, liver detoxification properties.

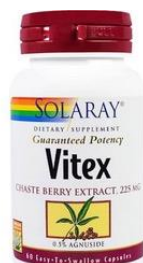


Rosemary increases the 2-hydroxylation of estradiol and estrone to form more of the good C-2 estrogens and decrease the formation of bad C-16 estrogens.



Sage is also a powerful immune tonic and **ginger** aids the liver detoxification process.

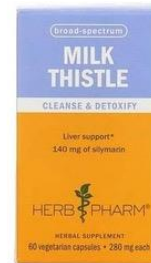
Black Cohosh, Chaste Berry, Red Clover and Turmeric are herbs that are high in phytoestrogens. These plant estrogens are much weaker than the body's estrogens but can block the stronger, damaging estrogens. They fit into the same breast cell receptors thereby preventing estrogen's ability to dock there. Phytoestrogens also lengthen the menstrual cycle, possibly lowering the lifetime exposure to estrogen.



Chaste Berry also known as vitex may inhibit the growth of breast cancer cells by increasing progesterone levels and decreasing excess estrogen.

Red Clover is full of phytochemicals used to purify the blood, relieve menopausal symptoms and strengthen the immune system.

Burdock Root, Dandelion Root and Milk Thistle protect the liver and cleanse the bloodstream. Silymarin, an antioxidant extract of milk thistle has shown promise for fighting breast cancer by stabilizing cell membranes and preventing toxic chemicals from entering the cell. It has been found to neutralize a wide range of free radicals.



Green Tea Extract contains catechins and flavonoids which may be protective against estrogen-dominant cancer. It acts as an antioxidant and immune system stimulant.



Ginkgo Biloba enhances circulation and tissue oxygenation. Most people use it for brain health but it shows promise for many health concerns.

NUTRITION CONSIDERATIONS

Much research has focused on nutrition to reduce cancer risk, particularly carbohydrate consumption. In several studies throughout the world, involving almost 150,000 women, scientists concluded that there is indeed an association between high Glycemic Index foods and breast

cancer. Highly refined sugars such as white flour, soft drinks, canned juices, candy, chocolate bars, and pastries have a huge impact on immunity and the body's defense system of white blood cells. The number of phagocytes decreases within 30 minutes after ingestion of sweets and can last for over five hours leaving the body highly vulnerable to infection and disease.

GLYCEMIC INDEX CHART									
Low Glycemic (55 or Below)					High Glycemic (70 or Higher)				
SNACKS	G.I.	STARCH	G.I.	VEGETABLES	G.I.	FRUITS	G.I.	DAIRY	G.I.
Pizza	33	Bagel, Plain	33	Broccoli	10	Cherries	22	Yogurt, Plain	14
Chocolate Bar	49	White Rice	38	Pepper	10	Apple	38	Yogurt, Low Fat	14
Pound Cake	54	White Spaghetti	38	Lettuce	10	Orange	43	Whole Milk	30
Popcorn	55	Sweet Potato	44	Mushrooms	10	Grapes	46	Soy Milk	31
Energy Bar	58	White Bread	49	Onions	10	Kiwi	52	Skim Milk	32
Soda	72	Brown Rice	55	Green Peas	48	Banana	56	Chocolate Milk	35
Doughnut	76	Pancakes	67	Carrots	49	Pineapple	66	Yogurt, Fruit	36
Jelly Beans	80	Wheat Bread	80	Beets	64	Watermelon	72	Custard	43
Pretzels	83	Baked Potato	85	Onions	75	Dates	103	Ice Cream	60

Eat a diet high in fiber from vegetables, whole grains, legumes, raw nuts and seeds. Sufficient fiber in the diet reduces the amount of circulating estrogen in the blood by binding and eliminating it through the bowels. Diets high in fiber and complex carbs stabilize blood sugar and improve insulin sensitivity which will improve estrogen dominance. Fiber improves good bacteria in the bowel thus reducing reabsorption of estrogen in the body. Include apples, cherries, grapes and all types of berries. If possible, consume only organically grown foods. Pesticides and other chemicals have been linked to breast cancer. Take extra fiber daily. Fiber keeps toxic wastes from being absorbed into the bloodstream. The colon must be kept clean and the bowels must move daily for healing. Grind two tablespoons of flaxseed daily and add it to your cereal, yogurt or salad. Flax is an excellent source of lignan precursors which can help prevent the development of breast cancer.

Cruciferous vegetables such as cabbage, broccoli, cauliflower and Brussels sprouts along with flax seeds are as high in lignans as a class of phytoestrogens. Phytoestrogens are weak plant versions of the human hormone estrogen with an average of about 2% of the strength of estrogens. They are beneficial when estrogen is either too high or too low. When metabolized they bind on the same cellular sites as do estrogens, altering estrogenic effects. They are also high in

phytochemicals such as indole-3-carbinol (I-3C) and sulphoraphane found to inactivate harmful estrogens and detoxify xenoestrogens via the liver, helping combat breast cancer.

Garlic has been proven to inhibit the growth of estrogen positive and estrogen receptor negative breast cancer cells. It is high in the trace minerals selenium and germanium, both of which help reduce the risk of cancer. Garlic, onions, and leeks contain compounds which help the liver in its detoxification pathways.

Lycopene is a potent antioxidant and gives the red color to fruits and vegetables. Tomatoes are the highest source of lycopene but it is more bioavailable when the tomatoes are heated and processed into sauces. Research shows that lycopene protects against cancer by stopping cell division in cancer cells.

Fish and flax seed are high in Omega 3 Essential Fatty Acids which have been found to lower cancer risk.

Select organic, hormone free meat, poultry and dairy products. Otherwise, these foods could contain residues of estrogenic hormones that are given to animals to promote growth.

LIFESTYLE CONSIDERATIONS



Reduce weight if you are overweight or obese. Stick to a low glycemic diet. You can find low glycemic charts on the internet. Some studies suggest that getting regular exercise in youth might give lifelong protection and even moderate physical activity as an adult may lower breast cancer risk. Exercise 30-60 minutes per day at least three times weekly.

Outdoor exercise will also provide more exposure to Vitamin D as lower levels of Vitamin D are associated with a greater risk of breast cancer.

Minimize alcohol consumption. There is a clear link between consuming alcohol and an increased risk of breast cancer. The American Cancer Society estimates that those who have two to five drinks daily increase

their risk to about 1.5 times of that of women who drink no alcohol. The ACS recommends that you limit the amount of alcohol you consume to two drinks, two times a week.

QUIT SMOKING



Avoid using birth control. Along with an increased risk of breast and liver cancer there is an increased risk of blood clots, heart attack and stroke particularly in smokers over age 35. Discuss all options with your medical professional to determine effectiveness, benefits and risks.

Avoid the use of synthetic hormone replacement therapy involving the use of estrogen and progestin. Use herbal alternatives for menopausal symptoms.

Do a cleanse at least once per year to detoxify heavy metals and chemicals from the bowels, kidneys and liver.

Support your adrenals by supplementing with adaptogenic herbs to normalize the stress hormone, cortisol. Natural Killer cells are sensitive to increased cortisol, so a strong immune system is necessary. Adaptogenic herbs such as rhodiola, ashwaghandha, eleuthero and schisandra are well studied, effective herbs for the adrenals.

A study published in the Journal of the National Cancer Institute in June 2000 found that women with advanced breast cancer had increased levels of the stress hormone cortisol and fewer Natural Killer cells, leaving the body less able to fight the cancer cells. They also had significantly earlier death rates than patients with normal cortisol levels.

REDUCE YOUR STRESS. Relaxation techniques such as yoga, massage therapy and meditation are great ways to calm the body down, whether for prevention or treatment.

There is probably no single answer as to what causes breast cancer. According to the American Cancer Society more than half of all cancer

deaths could be prevented by making healthy choices like not smoking, maintaining a healthy weight and keeping active.

Reference Sources

Prescription for Nutritional Healing – Fifth Edition – Phyllis A Balch, CNC

Making Sense of Women’s Health – Dr. Marita Schauch, BSc, ND