

Your Secret Weapon Against Breast Cancer...Platefuls of Plants

Whether you have cancer, had cancer, have a strong family history of cancer, or are trying to make changes in your life to prevent cancer, I have a very empowering message for you. There are lifestyle changes that you can make that can have a significant impact on this dreaded disease.

Well-built scientific studies published in the peer-reviewed literature continue to demonstrate how this disease can be influenced with some simple but very potent lifestyle changes. Altering what you decide to eat is one of the most important steps that you can take. Per Michael Greger, MD, "Diet (food and alcohol) are the number one cause of cancer."

Some people with strong family histories may feel that their genetic predisposition may be too strong to affect with food, but we are finding that this not necessarily the case. Our genes have different penetrations, or strengths over ultimate outcomes. Those genes with 100% penetration act like dictators, like our eye color and our hair color. Few genetic abnormalities, with the exception of the genes for cystic fibrosis and Huntington's disease, approach 100%. The genes that may predispose us to chronic, degenerative diseases do not have 100% penetrance, and so act more like committees making recommendations. Even the most powerful breast-cancer associated genes, BRCA1 and BRCA2, have estimated penetrance of anywhere from 30-70%, and that is the chance of developing the disease by age 70, not dying from it, and these estimates tend to come from women who have both genes and a strong family history which means the actual gene penetrance is even lower for women without family histories. The expression of these genes is influenced by our environment, including what we eat, what we drink, and toxic chemicals with which we come into contact. Matthew Lederman, MD describes, "Our genes may load the gun, but environment pulls the trigger." T. Colin Campbell, PhD refers to cancer cells as grass seed. If they fall on fertile ground, they will grow given the right conditions. If grass seeds fall on barren, dry dirt, they will fail to thrive and will die. He urges us to make our bodies inhospitable to cancer.

So how do we make our bodies less hospitable to cancer? We adopt a low-fat, minimally processed, plant-based lifestyle. We remove the disease-promoting animal products and added oils, and replace them with protective plants. We are just beginning to discover the many benefits of the phytonutrients found only in the plant kingdom.

Here are just a couple of the amazing examples of recent research:

- Hormones not only help regular cells to grow, but also help cancer cells to grow. Estrogen levels are lower in post-menopausal women than in women of child bearing age and most breast tumors are estrogen receptor positive. Researchers recently discovered that 70% of breast cancer tumors in post-menopausal women were able to use aromatase, an enzyme within our body, to make its own estrogen. The researchers also discovered that consuming just 5 white button mushrooms a day effectively blocks this process. Bell peppers, broccoli, carrots, celery, green onions, and spinach also inhibit aromatase activity, but not nearly as effectively as the mushrooms.
- The sulforaphane created when we bite into broccoli appears to inhibit breast cancer stem cells and to suppress the metastatic potential of cancer. Investigators at Johns Hopkins were able to demonstrate this by adding sulforaphane to breast cancer cells in test tubes. They

found that both estrogen receptor positive and estrogen receptor negative tumors responded. But in real life, how do we know if the sulforaphane that we eat gets into our breasts where we need it? The investigators approached women planning to undergo breast reduction surgery. One hour prior to surgery, they had these women consume a predetermined amount of broccoli, then analyzed the breast tissue that was removed. They found effective concentrations of sulforaphane in the tissue and were able to calculate that by consuming between ¼ and 1 ¼ cups of broccoli sprouts per day women could sufficiently bathe their breast tissue with an effective concentration of this critical phytonutrient.

When we pack our plates with a variety of vibrantly-colored plants, which include minimally processed whole grains, legumes, vegetables and fruit with nuts and seeds:

- We eat rich sources of hundreds of different kinds of fiber. Our liver filters our blood and sends excess hormones, carcinogenic substances, and anything it feels we are better off without to our intestines for removal. Adequate fiber not only binds with these substances in our colon and renders them inactive, but also ensures that they are efficiently removed from our bodies in our fecal matter. When the liver sends these toxic substances to our colon for removal, if adequate fiber does not exist, the matter sits longer than necessary and can eventually be reabsorbed and recirculated needlessly throughout the body. This is called enterohepatic circulation and it is something we want to avoid. With the help of beneficial intestinal bacteria, which flourish by feeding on the plant matter in our diets, fiber is fermented into substances like butyric acid which inhibits the growth of cancer cells. When we follow a low-fat, minimally processed, plant-based lifestyle, we should have no problem meeting/exceeding the daily ½ pound fecal elimination target that is important for cancer prevention/battling.
- We eat broccoli and other cruciferous vegetables that contain glucosinolates which boost our liver's ability to fight carcinogens.
- We eat foods that are naturally low in fat. Those plants that are higher in fat are truly healthy fat. Dietary fat and fat stores on our body act like hormone factories within our bodies. Minimizing artificially extracted added oils helps to minimize excess hormone production and keeps our immune system running strong. In fact, vegetable oils are the strongest promoter of cancer with which we commonly come into contact. Both men and women that have more body fat tend to have less sex hormone-binding globulin (SHBG) in their blood. SHBG's job is to bind with excess hormones and render them inactive and unable to promote cancer. Your percentage of calories from fat should not exceed 15%.
- We eat plants that contain chlorophyll which may protect our DNA against mutation by intercepting carcinogens. They prevent their absorption into our blood and bind with them so that they don't fit into our DNA where they can cause mutations.
- We eat vegetables that can suppress vascular endothelial growth factor, which causes new blood vessels to sprout into a tumor and provide it with a good blood supply, which enables the tumor to grow and thrive.
- We eat ground flax seeds which appear to have the potential to reduce breast tumor growth.
- We eat foods that help to prevent cancer not only by blocking DNA damage but by increasing our DNA repair enzymes' ability to repair any damage that gets by our first line of antioxidant defense.

It is just as important to remove the foods that are harmful as it is to replace them with foods that are protective. It's difficult to imagine that the food that permeates almost every aspect of our culture could be so dangerous.

Animal products and added oils are best left off your plate altogether. Here are just some of the reasons:

- When meat is cooked, carcinogenic substances are created within the flesh called heterocyclic amines. Heterocyclic amines may also make breast cancer more aggressive. When meat is grilled, the fat dripping onto the grill and the resulting smoke that rises upward toward the meat create carcinogenic polycyclic aromatic hydrocarbons on the meat's surface. If you cook your meat, there is no getting around heterocyclic amines. The longer and hotter the meat gets, the more these substances form. Chicken is the largest source of heterocyclic amines in the American diet. If you don't cook your meat, then you have to worry about fecal bacterial, viral, and prion contamination.
- Many human cancers, including leukemia and some tumors of the colon, breast, ovary, prostate, and skin, have absolute methionine dependency. They need methionine to survive. Chicken and fish are particularly rich sources of methionine, although it is also found in high concentrations in all animal products. Methionine restriction is best achieved with a plant-based lifestyle.
- Consuming dairy raises blood levels of insulin-like growth factor-1 (IGF-1). IGF-1 not only encourages the growth of normal cells, it encourages the growth of abnormal cells.
- 87% of the protein in dairy comes from casein. According to traditional regulatory criteria, casein has been found to be the most significant carcinogen ever discovered.
- Meat and dairy contain no fiber or protective phytonutrients and crowd out the protective plant foods on our plates. They are also high in saturated fat. Dietary fat and fat stores on our body act like hormone factories within our bodies. Elevated hormone levels not only encourage the growth of regular cells, they encourage the growth of cancer cells. Fat also suppresses the immune system. Chemicals exposures are stored in the fat of animals and bioaccumulate up the food chain. Those that eat animal products are at the top of that food chain. Removing the fat from dairy products results in a higher concentration of dairy protein (casein) in the fat-free product.
- Cancer may use a molecule found in animal products, Neu5Gc, to trick our immune system into feeding it with inflammation. Our bodies still recognize cancer tumors as "self". The tumor incorporates Neu5Gc into itself, our bodies do not recognize the Neu5Gc as "self", and incite a low-grade inflammation that ultimately feeds the cancer tumor.

Per Neal Barnard, MD, research indicates that if a dietary change is to alter the course of this disease, the changes need to be significant. A low-fat, minimally processed, plant-based lifestyle can be a thoroughly enjoyable way to eat. It's not difficult to eat this way, it's just different. For more information or help adopting a plant-based lifestyle, please contact me.

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