



DIETARY DIRECTION

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Topics included in this section are:

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12 DIETARY CHANGES THAT WILL LOWER YOUR CANCER RISK

Diet is a fertile area for immediate individual and societal intervention to decrease the risk of developing certain cancers. A link between diet and cancer is difficult to study because of the many factors that contribute to the development of disease. For example, persons with healthier diets tend to have healthier overall lifestyles. Researchers use various statistical methods to factor in their variables when drawing diet-cancer correlations.

Numerous studies have provided a wealth of often-contradictory information about the detrimental and protective factors of different foods. Some foods actually contribute to the development of cancer; other foods lessen the risk. The following anti-cancer diet greatly lowers your risk of colorectal cancer and nearly all other types of cancers. It can also prevent cardiovascular disease. For people with a genetic tendency toward colorectal cancer, it is not just an option, it's a lifesaving necessity.

Keep your diet low in total fat and very low in saturated fats. There are at least two ways in which dietary fat contributes to cancer. First, tumor cells need low density lipoproteins (LDL's) to grow. Therefore, a diet that helps to lower LDL levels could keep potentially cancerous cells from growing. Eating fat also stimulates the production of bile, which is needed to digest fat. If a lot of bile is allowed to stagnate in the large intestine for a long period of time, it's converted into apcholic acid, a proven carcinogen. Here are tips for eating not only less fat, but eating the right fats:

Eat Less Total Fat.

It is important to limit fat intake, as evidence still supports a relationship between cancer and partially hydrogenated, saturated and animal fats. Specifically, studies show that high consumption of red meat and dairy products can increase the risk of certain cancers. One strategy for positive dietary change is to replace red meat with chicken, fish, nuts and legumes. High fruit and vegetable consumption has been associated with a reduced risk for developing at least 10 different cancers. Some researchers believe that this may be a result of potentially protective factors such as carotenoids, folic acid, vitamin C, flavonoids, phytoestrogens and isothiocyanates, often referred to as antioxidants.

Limit your daily fat intake to no more than 20 percent of your total food calories. This means that if you average 2,500 calories a day, fat should provide no more than 500 of these calories. This means you should eat around 55 grams of fat per day, maximum. (On a 2,000 calories per day diet, you would eat about 45 grams of fat.)

Eat The Right Fat.

Eating the wrong kinds of fat may be even more cancer-causing than eating too much fat. Cancer researchers became aware of this fat fact when they noticed that the incidence of most cancers is less in some cultures who actually have a high-fat diet, such as Eskimos (who eat a lot of seafood rich in omega 3 fatty acids) and the Mediterranean diet (which is plant-based, but high in monounsaturated oils). Some fats don't contribute to cancer and may in fact have some anticancer properties:

- **Unsaturated fats, found in plant foods, such as legumes**
Vegetable oils that are high in monounsaturated fats, such as olive (Greek women who tend to eat a diet rich in olive oil have a very low incidence of breast cancer) and canola oil. A 1998 study showed that men who eat less animal fat and more vegetable fat in their diets had less prostate cancer.
- **Seafood, such as salmon and tuna, that is high in omega 3 fatty acids**
Oils that contain more omega 3 than omega 6 fatty acids, such as flaxseed, pumpkin seed, canola, soybean (not hydrogenated), walnut, safflower, sunflower, sesame, and virgin olive oils. (Heating vegetable oils at high temperatures can change fatty acids and make them carcinogenic. Peanut oil and extra virgin olive oil stand up best to cooking, but try not to boil them. It helps to keep stirring stirfrys so the oil doesn't get burnt.)

Studies in experimental animals showed that fish-oil-supplemented (high in omega 3 fatty acids) animals had significantly fewer colorectal tumors. Omega 3 fatty acids (such as those found in fish oils and flax seed oil) are not only the heart-healthiest fats, but they may have anticancer properties. Eskimo women who have a high concentration of omega 3 fatty acids in their diet have a lower incidence of breast cancer. (It is thought that omega 3 fatty acids may block the effect of estrogen on breast cells, thus lowering the risk of them becoming cancerous.)

Don't Eat Bad Fats.

Avoid oils high in saturated fats, such as palm, palm kernel, coconut, and cottonseed oils. Hydrogenated fats (those that have been chemically changed from unsaturated to saturated fats), are potentially carcinogenic. Adding hydrogen to a fat molecule may enable the molecule to interfere with the normal metabolism of cells in the body, setting the cell up for cancerous changes. So get used to reading labels. If any food contains "hydrogenated" or "partially hydrogenated" fats, leave it on the shelf. Most fast-food outlets use hydrogenated fats. (Ask! If they do, don't eat the food.) Nearly all packaged foods, such as potato chips, contain hydrogenated fats, since these allow a longer shelf life.

MORE LEAN - LESS CANCER

Too much body fat is one of the leading risk factors for cancer, especially colorectal cancer. Obesity is also a risk factor for breast cancer; increased fat tissue raises circulating estrogen levels, which increase the risk of breast cancer. Vegetarian women who typically consume a low-fat, high-fiber diet tend to have lower blood levels of estrogen, excrete more estrogen in their stools, and therefore are less prone to breast cancer. Obese men have a higher rate of prostate cancer. The two ways to stay lean are to exercise and to maintain healthy eating habits.

Increase Your Fiber Intake.

It was long thought that a high fiber diet diminished one's risk of colon cancer. Most evidence was epidemiological, from population studies. The interaction with dietary fat was also thought to be important - a reduction in dietary fat with increased fiber. For many years, researchers speculated that the low incidence of colorectal cancer in parts of Africa could be linked to a high-fiber diet; however, several studies have failed to support this theory. In 1999, three pivotal clinical studies evaluating the effects of a high-fiber diet on colorectal cancer failed to establish a correlation between high fiber consumption and reduction in the incidence of colorectal cancer. In two of these studies, researchers directly compared 2 groups of individuals with either high or low fiber consumption and found an equal number of polyps in each group. There are many reasons to eat a diet high in fiber, particularly to help reduce the risk for coronary artery disease; however, such a diet does not appear to help prevent the development of colorectal polyps or cancer.

Since fiber has so many other beneficial effects (bowel regularity, decreasing serum cholesterol etc), Our recommendation is to get plenty of dietary fiber, and if you are not close to 25 grams/day, use a psyllium based supplement. Why psyllium? It has beneficial properties that help promote stool bulk, absorption of bile salts (which may be a promoter in colon cancer formation) and possibly elimination of other toxins. Additional benefits include a feeling of fullness, which may promote weight loss, and a well-documented reduction in serum cholesterol.

The benefit of fiber for health follows common sense as well. Fiber moves potential carcinogens through the intestines faster, decreasing the contact time between carcinogens and the intestinal wall. The less exposure to carcinogens, the less chance of colon cancer. Besides pushing them through faster, fiber binds carcinogens, keeping them away from the intestinal wall. Fiber also absorbs bile

acids, keeping them from acting on bacteria to produce *fecapentanes*, the cancerous substances that are formed by decaying foods within the colon. There are about twenty of these compounds that can mutate colon cells into cancerous cells. Fiber also promotes the growth of healthy bacteria in the intestines, which crowd out the undesirable bacteria that produce fecapentanes.

A high fiber diet seems particularly protective against cancer in persons who have a hereditary risk of developing precancerous colorectal polyps. In a study of persons who were at high risk for developing colorectal cancer, those who ate at least thirteen grams of wheat bran fiber a day (All-Bran is a good source) for eight weeks showed less growth of potential cancer cells in the colon.

Based on both these scientific and common sense findings, we suggest you eat at least *25 grams of fiber a day*. Best anticancer fiber sources are: wheat bran, kidney beans, garbanzo beans, navy beans, whole wheat, whole grains, legumes, whole grain bread, and prunes. Get used to looking at the package label to find the fiber content of foods. Simple modifications in your diet can increase the amount of fiber you eat. Use whole grain breads instead of white bread (white bread is junk bread). Eat beans regularly (try a salad composed of kidney beans, garbanzo beans, broccoli, and other raw vegetables). Have a big bowl of high fiber bran cereal for breakfast.

NUTRITIP:

An Apple a Day May Keep the Cancer Doctor Away

Pectin, the fiber in apple skin, is fermented in the intestines, producing short-chain fatty acids that prevent the growth of harmful bacteria. They also nourish the cells of the intestinal lining, making them more resistant to becoming cancerous.

Eat Lots Of Raw Fruits And Vegetables.

The consensus of the hundreds of studies exploring the link between diet and cancer is that eating more fruits and vegetables reduces the risk of all types of cancers. Eating more fruits and vegetables decreases your appetite for fatty foods, which themselves increase the risk of cancer. Plants also contain *phytochemicals*. Substances that may help your body fight cancer. The five major classes of compounds that occur in fruits and vegetables as natural blocking agents against carcinogens are: phenols, indoles, flavones, cumines, and isothiocyanates. These neutralizing agents prevent carcinogens from reaching critical target sites within the cell. The vegetables most important to reducing the risk of cancer are the *cruciferous vegetables*: broccoli, cabbage, brussel sprouts, mustard greens, kale, and cauliflower. These vegetables contain three cancer-protective biochemicals:

1. *sulforaphane*, which not only boosts immunity but blocks enzymes that draw carcinogens into healthy cells;
2. *carotenoids*, compounds that prevent the formation of carcinogenic nitrosamines in the intestines
3. *indoles*, which lessen the risk of breast cancer.

Researchers estimate that eating lots of cruciferous vegetables could lower your risk of breast and colon cancer by 40 percent. Making your main meal, such as lunch, a huge salad (with no more than a tablespoon of vegetable oil as a dressing)

would be one of the healthiest habits you could get into. Best salad sources of anti-cancer nutrients are: dark green leafy spinach (instead of iceberg lettuce, which is nutritionally useless), broccoli, tomatoes, red peppers, kidney beans, and garbanzo beans. As an added benefit sprinkle your salad with a bit of garlic, which has also been shown to have health-promoting and possibly anti-cancer properties. In addition, phytoestrogens from plant foods, especially cruciferous vegetables, can lower the risk of estrogen-dependent cancers, such as breast cancer. The phytoestrogens fill estrogen receptor sites on cells, keeping the cancer-causing estrogen from promoting the growth of malignant cells.

NUTRITIP:

An Anti-Cancer Salad

Antioxidants, such as vitamin C and E and beta carotene, seem to have a synergistic effect when taken together. So, eating lots of fruits and vegetables in a salad together produces a greater anti-cancer effect than eating each one individually.

Switch from red meat to seafood. Populations who eat the most red meat and fat in their diet have the highest incidence of colon cancer. Instead of red meat being the main course, let it be an accent in a dish based on vegetables or grains, such as stir-fry or pasta.

Beginning in 1976 a group of researchers at the Harvard School of Public Health set out to study the role of dietary factors in colon cancer and test some of the theories suggested by earlier studies. They followed 88,000 healthy women, ages 34 to 59 years of age, and discovered these correlations:

- The risk of colon cancer was 2.5 times higher in women who ate beef, pork, or lamb as a main dish every day, as compared with those eating it less than once a month.
- The risk of developing colon cancer correlated with the amount of animal fat in the diet.
- Eating meat, especially processed meats, was highly associated with increased risk of colon cancer. Eating fish and chicken without skin was related to a decreased risk.
- A low intake of fiber also increased the risk of developing colon cancer.
- No association was found between the risk of colon cancer and vegetable fat or linoleic acid (the most abundant polyunsaturated fat) in the diet.

The reason for the red meat-colon cancer connection is still being studied. Current research suggests a combination of factors. High fat diets increase the excretion of intestinal bile acids, which act as tumor promoters. Some processed meats contain nitrosamines, which can be carcinogenic to the colon. Also, compared with vegetarians, meat-eating persons have different colonic flora. The effects of the meat may cause intestinal bacteria to transform bile acids into potential carcinogens. In a fourteen-year study of 16,000 Swedish men and women, the foods that were associated with the highest risk of colon cancer were beef and lamb.

Not only can red meat itself be carcinogenic, but how you prepare it can also elevate the cancer risk. Grilling under high heat (such as searing or flame-cooking meat to well-done) can release carcinogens into the meat called *heterocyclic amines*, which can damage cellular DNA. Poaching, stewing, microwaving, or slow low-heat cooking releases fewer carcinogens.

Switch from an animal-based diet to a plant-based diet. The most compelling research linking diets to cancer are studies of groups of people who have primarily plant-based diets, for example vegetarians and Seventh Day Adventists, and who have a much, lower risk of cancer. One of the theories on the high incidence of cancer in modern times is the belief that the switch from plant based to animal based diets correlates with the increase in cancer. Plant food / less cancer correlation is primarily due to three health-promoting factors:

1. Plants have less fat.
2. Plants have more fiber.
3. Plants have more phytonutrients.

Besides providing the anti-cancer properties of fiber, legumes (such as seeds, rice, soy beans, beans, and chick peas) contain anticancer properties called protease inhibitors, which have been shown to reduce the growth of breast, colon, and skin cancers in experimental animals.

Eat More Soy Products.

Soy is a more healthful source of protein than meat. The primary anti-cancer value of soy seems to come from phytonutrients (for example, isoflavones) which inhibit the growth of new blood vessels necessary for tumor survival. Soy also protects against colon cancer by blocking the carcinogenic effects of bile acids (a process called angiogenesis).

Isoflavones also help regulate the production of sex hormones, which could affect the risk of prostate and breast cancer. Studies have shown that women who eat more soy foods have less risk of breast cancer. Don't rely on highly-processed soy foods, such as soy burgers, soy sauce, and soy beverages to contain a lot of cancer-fighting isoflavones.

American women, especially those whose diets are low in soy products, are four times more likely to die of breast cancer than Japanese women whose diets are plentiful in soy. The reason this reduced risk is contributed mainly to the soy and not to the genes is that even in their own country those Japanese who eat the most soy foods get the least cancer. Soy seems to protect against the most common types of cancer, including lung, rectal, colon, stomach, prostate, and breast. Experimental animals that are fed high soy diets and then given a chemical that causes cancer, develop fewer tumors than the animals who are not fed soy. And you don't need to eat much to reap the benefits. One serving of soy (equal to a 1/2 cup of cooked soybeans, tofu, tempeh, or one cup of soy milk) a day can lessen the risk of cancer.

GENISTEIN CONTENT IN SOY

The isoflavone in soy that has the most potent anticancer properties is *genistein*. The highest content of genistein is found in these soy foods, rated from highest to lowest:

SOY FOOD	GENISTEIN CONTENT (milligrams/100 grams)
Soy flakes	156
Soy nuts	94
Soy flour	94
Soybeans, roasted	87
Soy protein isolate	56
Tempeh	40
Miso	26-38
Tofu, firm	5-30
Soy burgers	20 (varies)
Soy milk	4-10

Be sure to consume soy products from a manufacturer that uses a water extraction process and not alcohol extraction, which can remove much of the genistein from the soy. Check the label or call the manufacturer.

Change Your Oils.

Oils that are rich in omega-3 fatty acids (i.e., fish and flax oils) have anti-cancer properties. Studies in experimental animals have shown that fish-oil-supplemented animals develop significantly fewer colorectal tumors. Omega 3 fatty acids, such as those found in oily fish and flax seeds, help produce cancer-fighting phytochemicals. Flax oil also contains the anticancer phytonutrient *lignans*. Best protection against cancer is a diet that contains more omega 3 than omega 6 fatty acids, just the reverse of the typical American diet. Coldwater fish, such as salmon and tuna, are high in omega-3 fatty acids. Most vegetable oils (except flax oil) contain little omega 3 fatty acids and a lot of omega 6 fatty acids. One can take 25 grams of ground flax seed per day, which mixes beautifully in a yogurt shake, sprinkled on cereal, salads and casseroles or added to muffins breads and cookies.

Monounsaturated oils, such as olive oil, also play a role in cancer prevention. Populations with an olive oil -rich diet, such as Mediterranean cuisine, have a lower incidence of cancer. Greek women, who tend to have an olive-oil rich diet, have a much lower risk of breast cancer. One study found that the incidence of breast cancer correlated with the amount of hydrogenated oils in women's diets. As much as possible, avoid saturated and hydrogenated oils

Eat Foods Containing Calcium.

Studies have shown that populations with a high intake of calcium (e.g., people in Sweden) have a lower incidence of colorectal cancer. Calcium controls the multiplication of epithelial cells lining the colon. When these cells proliferate at a fast rate, the risk of cancer increases. Calcium also binds cancer-producing bile acids and keeps them from irritating the colon wall. One study showed that an average intake of 1,200 mg. of calcium a day was associated with a 75 percent reduction in colorectal cancer. In another study of persons with an increased risk of colorectal cancer, a daily supplement of 2,000 mg. of calcium carbonate significantly decreased the risk by suppressing the uncontrolled growth of the cells that line the colon. To lower your risk of colorectal cancer, consider taking between 500 and 1,000 milligrams of calcium carbonate or calcium citrate daily, depending on how much calcium you get from food each day. Best sources of calcium are dairy products.

Eat a diet high in antioxidants. While there are many unsubstantiated claims about the benefits of antioxidants, there is reliable scientific evidence that beta carotene, vitamin C and vitamin E definitely lower the risk of colorectal cancer. Fruits and vegetables are the main sources of these naturally occurring antioxidants.

Antioxidants protect against cancer in several ways:

- They protect the membrane of intestinal cells.
- They prevent free-radical reactions that can cause bowel contents to be carcinogenic
- They prevent faulty metabolism in the cell, which can predispose a cell to becoming carcinogenic.

Beta Carotene.

Beta carotene fights against cancer by both boosting the immune system and releasing a specific chemical called tumor necrosis factor. Beta carotene can block the growth of potentially cancerous cells. The recommended cancer prevention dose of beta carotene is 15 mg. per day. This is about ten times the amount in the average American diet, but it's actually easy to get enough beta carotene in your diet **without** taking supplements. One should be careful not to supplement with excess doses of beta-carotene as higher doses of this compound have been linked to increases in lung cancer.

Best sources of beta carotene are sweet potatoes, carrots, cantaloupe, pumpkins, butternut and other types of winter squash, spinach, broccoli, mango, and papaya. Eating pink grapefruit (which contains beta carotene) instead of white grapefruit gives you a beta carotene boost. You could get enough protective beta carotene each day by eating: half a sweet potato, half a cup of pumpkin, two medium-size carrots, 1.5 cups of cooked spinach, or two medium-size mangos.

Best sources of beta carotene are these:

- carrots - 1 carrot contains 4.4 milligrams
- sweet potatoes - 1 medium contains 12 milligrams
- butternut and other types of winter hard-shell squash - 1/2 cup contains 2.4 milligrams

- Tomatoes contain lycopene, which enhances the absorption and utilization of beta carotene, so eating tomatoes with beta carotene-rich foods provides an added boost. Carrots and tomatoes are a good combination.

Vitamin C.

A daily intake of vitamin C fights the big "C." Studies have shown that persons with the highest intake of vitamin C have the lowest incidence of intestinal cancers. Many of the cruciferous vegetables are abundant with vitamin C and many other carotenoids that help defend the body against potential harm. These carotenoids along with vitamin C block the formation of nitrosamines in the gut. These are potent carcinogens made from nitrates and nitrites found in food, especially processed meats. Vitamin C also boosts the immune system by increasing the production of lymphocytes. Best sources of vitamin C are fresh fruits and vegetables.

Vitamin E.

The anti-cancer properties in vitamin E are similar to vitamin C. In a ten-year study that followed 21,000 men, those with high levels of vitamin E in their diet showed a 30 percent lower risk of all types of cancer. Women with low blood levels of vitamin E and selenium had ten times the risk of breast cancer in one study. In another study at the University of Toronto, researchers gave colon cancer patients, vitamin C and E supplements after surgery and found two years later that the supplements reduced the recurrence of precancerous colon polyps by 20 percent. Studies suggest a dose of 200 to 400 IU a day, which is nearly impossible to get from foods. You may get less than ten percent of this amount from even the best diet.

NUTRITIP:

Natural vs. Synthetic E

Whether or not natural vitamin E from foods or the factory-made vitamin is biologically better is still a subject of debate, yet the natural vitamin E may be more biologically active. Natural vitamin E is recognized on the package label by the "d" prefix or "d-alpha tocopherol;" the synthetic compound will have a "dl" prefix.

Flax Seed.

Flaxseeds contain two cancer-preventive compounds: omega 3 fatty acids and lignans, which may reduce the risk of breast cancer and colon cancer. Ground flaxseeds, because they contain both the fiber and the oil, have more potent anticancer properties than flax oil alone. Cancer researchers suggest 25 grams of ground flaxseeds a day. You can grind your own in a coffee grinder or purchase pre-ground flaxseed meal, which mixes well in smoothies or sprinkled like bran flakes over yogurt and cereal.

Drink Less Alcohol.

Alcohol consumption slightly increases the risk of colorectal cancer, and the alcoholic beverage with the strongest link to colon cancer is *beer*. Beer is thought to contain nitrosamines, a carcinogen or pre-carcinogen that is activated in the intestines. Tannins are a carcinogenic compound that is found in red wine and some coffee and tea. While red wine is touted to have health-promoting properties, due to the natural phytonutrients that are found in the grape skin, you're better off simply eating the grapes.

Vitamin D.

Vitamin D, which you get from exposure to sunshine (around 10 to 15 minutes a day) and from vitamin D-fortified milk and other foods, has anticancer properties. It suppresses angiogenesis, the formation of new blood vessels that nourish the growth of tumors. The rates of breast, prostate, and colon cancer are lower in climates that have the most sunshine.

Selenium.

This overlooked mineral is a potent antioxidant or scavenger of carcinogenic free radicals. Studies have shown a lower incidence of colon cancer in people taking selenium supplements in the range of 100 to 200 mcg a day. Studies have shown that persons who have lower levels of selenium in their blood are more likely to have colon polyps, and those with higher levels of selenium have much less of a chance of getting cancer. Selenium is most effective when taken along with foods or supplements that are high in vitamin E. Consider taking 100 mcg of selenium a day as a supplement. Best sources of selenium in food are fish (especially red snapper) lobster, shrimp, whole grains, and vegetables, depending on the selenium content of the soil they're grown in. Other sources include: brown rice, cottage cheese, lambchops, chicken (white meat), sunflower seeds, and garlic.

Acidophilus.

These intestinal-friendly bacteria have been shown to have anti-cancer properties. They promote the growth of healthy bacteria in the colon and reduce the conversion of bile acids into carcinogens. Studies have shown that consuming dietary supplements of lactobacillus acidophilus greatly diminishes the level of colon enzymes that produce carcinogenic decomposition products from food. In studies on experimental animals, 75 percent of the animals tested showed slower tumor growth when fed yogurt containing live bacterial cultures.

Populations such as the Finns who have a diet relatively high in fat but who also eat a lot of fiber and a lot of yogurt, have a relatively low incidence of colon cancer. In an experiment in which carcinogens were given to rats, the animals that were fed large amounts of lactobacillus acidophilus developed less colon cancer compared with those who were not given doses of these health-promoting bacteria. Take 1 to 2 teaspoons of live lactobacillus daily, the one that is in the refrigerated section of the nutrition store. This can be added to a smoothie or a shake. Or, eat yogurt with the L.A.C. (live active cultures) seal.

Garlic.

Whether or not garlic has health-promoting and anticancer properties is still controversial, but it's possible that garlic may have some anticancer benefits. The Kyolic brand of garlic supplements seems to be the most thoroughly tested and the one that is often used in research studies.

Green Tea.

Green tea has been shown to inhibit the growth of cancer cells, possibly because of a phytochemical it contains called "catechins."

THE TOP ANTI -CANCER FOODS

Anti-Cancer Vegetables:

broccoli	brussel sprouts
cabbage	carrots
cauliflower	eggplant
green beans	kale
onions (red)	peppers
radishes	soy
squash	sweet potatoes
tomatoes	yams

Anti-Cancer Fruits:

apricots	blueberries
grapefruit	grapes
lemons	mangoes
oranges	papayas
peaches	persimmons
apricots	blueberries
grapefruit	grapes
lemons	mangoes

THE 10-STEP ANTI-CANCER PROGRAM

1. Reduce stress.
2. Stay lean.
3. Increase exercise.
4. Limit fat to 20 percent of total calories, with less than 10 percent of total calories as saturated fats. Eliminate hydrogenated fats.
5. Increase fiber to between 25 and 35 grams a day.
6. Eat lots of fresh fruits and vegetables.
7. Eat foods high in antioxidants beta carotene, vitamin C and E.
8. Switch from red meat to seafood and soy products.
9. Eat foods high in calcium.
10. Consider daily supplements of the following:

SUPPLEMENT	AMOUNT	SUPPLEMENT	AMOUNT
Vitamin C	500 mg.	Vitamin E	400 IU
Calcium	500 mg.	Selenium	100 mcg.
Flaxseed Meal (ground)	25 grams		

With trillions of cell duplications occurring inside you every day, it stands to reason that a few of those cells will become out of control renegades. If your body's immune system is strong enough to search out and destroy these cells, you don't "get cancer." If the cells win the battle with your body, you do get cancer. Good nutrition is one of many ways you can help your body fight this daily battle. If you think of phytonutrients in plant foods as *chemo-prevention*, you may someday spare yourself chemotherapy. Enjoy your food and your health!

EXAMINING THE LINK BETWEEN DIET AND CANCER

Cancer is a Preventable Disease. In fact, the Harvard Report on Cancer Prevention lists the relative risk factors as the following:

CANCER RISK FACTORS	PERCENT OF CANCER DEATHS
Smoking	30
Diet (animal food-based)	30
Lack of exercise	5
Carcinogens in the workplace	5
Family history of cancer	5

Since one-third of cancers are diet related, change your diet and you drastically decrease your chances of getting cancer. Each year the United States spends billions of dollars on cancer research, and our country excels in the treatment of

cancer. We have some of the best cancer specialists and cancer treatment centers in the world. Yet, the United States has not focused on cancer prevention and nutrition. Cancer research is a glaring example of funding the wrong end - too much money spent on treatment, too little spent on prevention.

Some people have genes that give cells an increased chance of mutating, meaning becoming malignant. These are called oncogenes, meaning cancer risk genes. The influence of these genes does not become apparent unless they're activated by certain carcinogens. If you inherit oncogenes for a particular cancer, there are three ways to lower your risk of getting that cancer:

1. ***Decrease Your Exposure to Carcinogens*** - cancer-causing irritants, pollutants, or substances in your diet.
2. ***Boost Your Immune System*** so it can fight against and eliminate cells that have become precancerous by mutation.
3. ***Consume Foods That Decrease The Formation, or Growth of Potentially Malignant Cells.***

While there is ongoing debate in many fields of preventive medicine, the diet-cancer link is no longer controversial, thanks to a monumental six-year study called the "China Project," conducted by universities in America, China, and Great Britain. This study concluded that the standard American diet contributes greatly to the high incidence of cancer and cardiovascular disease.

The most influential studies linking cancer and diet showed the following significant correlations:

- A plant-based diet instead of an animal-based diet lowers the rate of breast, prostate, and colon cancers.
- Lung, breast, prostate, and colon cancers (the "big bad four") account for more than half of all cancer deaths. The good news is these are also the cancers for which dietary changes can lower the risk.
- Diet can be implicated in at least one-third of all cancers.
- Increasing your daily consumption of fruits and vegetables can greatly lower your cancer risk.

Diet probably plays more of a role in cancer development than genes. It is well known that the incidences of most cancers are less in Asian cultures. The evidence for the diet-cancer link is studies have shown that when Asians moved to the United States and switched from primarily a plant-based diet to an animal-based diet, the cancer rates in these immigrants increased to approach those of Americans.

You don't all of a sudden "get cancer." Chances are great that you, and even your children, have a few cancer cells lurking in your body. This is why we emphasize beginning the anticancer regimen, especially the anticancer diet, in early childhood, since cancer cells develop very slowly over decades and may not be detected until decades later.

HOW EXERCISE FIGHTS CANCER

There is convincing evidence that excess body fat substantially increases the risk for many types of cancer. While much of the cancer-related nutrition information cautions against a high-fat diet, the real culprit may be an excess of calories. Studies indicate that there is little, if any, relationship between body fat and fat composition of the diet. These studies show that excessive caloric intake from both fats and carbohydrates lead to the same result of excess body fat. The ideal way to avoid excess body fat is to limit caloric intake and/or balance caloric intake with ample exercise.

Moving your body moves your bowels, which reduces the risk of colon cancer. Many scientific studies have shown that people who exercise regularly have a much lower incidence of cancer than people who don't exercise much. A study that tracked 17,000 Harvard alumni for 25 years showed that the group of men who were highly active (burning at least 2,500 calories in exercise each week, the equivalent of 45 minutes a day) had half the incidence of colon cancer when compared with their sedentary peers. Another study showed that men who had sedentary jobs had a 1.6 higher risk of developing colon cancer than their more active colleagues. Cancer researchers believe that a high-fat diet (especially a diet high in saturated fats) and inactivity accounts for as much as 60 percent of all colorectal cancers in men and 40 percent in women.

Exercise moves waste products through the intestines more quickly, thereby reducing the time that the intestinal walls are exposed to carcinogens.

Exercise promotes insulin efficiency, which decreases the risk of all diseases, thus accounting for a common theme among cancer researchers:

"If you have no time for exercise, you better reserve a lot of time for disease."

Exercise boosts your immune system by increasing the amounts of lymphocytes, interleukin, neutrophils, and other immune substances circulating in your body. One study showed that exercise more than tripled the circulating level of killer T-cells.

Exercise also raises the level of high density lipoproteins, the good cholesterol that sweeps excess cholesterol off the walls of your arteries.

When you build muscle mass through exercise, the muscle itself burns more fat and therefore helps the body maintain its leanness. Once you're lean it's easier to stay lean. Increasing your muscle mass actually enables you to consume more calories without increasing your body fat. A study of 13,000 men and women followed for fifteen years by aerobic expert, Dr. Kenneth Cooper, showed that the incidence of all forms of cancer closely correlated with a lack of physical fitness and that the combination of a high-fat diet and inactivity accounted for as much as 60 percent of all colorectal cancers in men and 40 percent in women. Unfit men and women were 300 percent more likely to develop cancer. The study concluded that a half-hour of exercise several days a week can dramatically lower your risk of cancer. In another study of 8,000 men over 21 years, those with the lowest resting heart rate had the lowest risk of colorectal cancer.