

## APPENDIX C

### Questions and Answers About Foods and Cancer Prevention and Survival

*How do you get enough **protein** on a vegan diet?*

Protein is an important nutrient required for the building, maintenance, and repair of tissues in the body. Amino acids, the building blocks of protein, can be synthesized by the body or ingested from food. There are 20 different amino acids in the food we eat, but our body can only make 11 of them. The 9 essential amino acids cannot be produced by the body and must be obtained from the diet. A variety of grains, legumes, and vegetables easily provides all of the essential amino acids our bodies require. It was once thought that various plant foods had to be eaten together to get their full protein value (“protein combining” or “protein complementing”). We now know that intentional combining is not necessary to obtain all of the essential amino acids. As long as the diet contains a variety of grains, legumes, and vegetables, protein needs are easily met.

With the traditional Western diet, the average American consumes about double the protein her or his body needs. Additionally, the main sources of protein consumed tend to be animal products, which are also high in fat and saturated fat. Most individuals are surprised to learn that their protein needs are actually much lower than what they have been consuming. The Recommended Dietary Allowance (RDA) for protein for the average, sedentary adult is only 0.8 grams per kilogram of body weight.

To find out your average individual need, simply perform the following calculation:

**body weight in pounds \_ 0.36 = recommended protein intake in grams**

However, even this value has a large margin of safety, and the body’s true need is even lower for most people. Protein needs are increased for women who are pregnant or breastfeeding. In addition, needs are also higher for very active persons. As these groups require additional calories, increased protein needs can easily be met through larger intake of food consumed daily. Extra serving of legumes, tofu, meat substitutes, or other high protein sources can help meet needs that go beyond the current RDA.

## *What about my **kids**? Is it ok for them to eat a vegan diet?*

Eating habits are set in early childhood. Choosing a vegetarian diet can give your child—and your whole family—the opportunity to learn to enjoy a variety of nutritious foods.

Children raised on fruits, vegetables, whole grains, and legumes grow up to be slimmer and healthier and live longer than their meat-eating friends. It is, in fact, much easier to build a nutritious diet from plant foods than from animal products, which contain saturated fat, cholesterol, and other substances that growing children can do without. As for essential nutrients, plant foods are the preferred source because they provide sufficient energy and protein packaged with health-promoting fiber, antioxidant vitamins, minerals, and phytochemicals.

Naturally, children need protein to grow, but they do not need high-protein, animal-based foods. Many people are unaware that a varied menu of grains, beans, vegetables, and fruits supplies plenty of protein. The “protein deficiencies” that our parents worried about in impoverished countries were the result of starvation or diets restricted to very few food items. Protein deficiency is extremely unlikely on a diet drawn from a variety of plant foods.

Very young children may need a slightly higher fat intake than adults do. Healthier fat sources include soybean products, avocados, and nut butters. Soy “hot dogs,” peanut butter and jelly sandwiches, seasoned veggie burgers, and avocado chunks in salads, for example, are very well accepted. However, the need for fat in the diet should not be taken too far. American children often have fatty streaks in the arteries—the beginnings of heart disease—before they finish high school. In contrast, Japanese children traditionally grow up on diets much lower in fat and subsequently have fewer problems with diabetes, heart disease, obesity, and other chronic diseases.

Parents will want to make sure their child’s diet includes a regular source of vitamin B<sub>12</sub>, which is needed for healthy blood and nerve function. Deficiencies are rare, but when they happen, they can be a bit hard to detect. Vitamin B<sub>12</sub> is plentiful in many commercial cereals, fortified soy- and rice milks, and nutritional yeast. Check the labels for the words cyanocobalamin or B<sub>12</sub>. Children who do not eat these supplemented products should take a B<sub>12</sub> supplement of 3 or more micrograms per day. Common children’s vitamins contain more than enough B<sub>12</sub>. Spirulina and seaweed are not reliable sources of vitamin B<sub>12</sub>.

The body also requires vitamin D, which is normally produced by sun on the skin. Fifteen to twenty minutes of daily sunlight on the hands and face is enough for the body’s skin cells to produce the necessary vitamin D. Children in latitudes with diminished sunlight may need the vitamin D found in multivitamin supplements or fortified non-dairy milks.

Good calcium sources include beans, dried figs, sweet potatoes, and green vegetables, including collards, kale, broccoli, mustard greens, and Swiss chard. Fortified soymilk and rice milk and calcium-fortified juices provide a great deal of calcium as well. In addition, eating lots of fruits and vegetables, excluding animal proteins, and limiting salt intake all help the body retain calcium.

Growing children also need iron found in a variety of beans and green leafy vegetables. The vitamin C in vegetables and fruits enhances iron absorption, especially when eaten together with an iron-rich food. One example is an iron-rich bean burrito eaten with vitamin C-rich tomato salsa. Few people are aware that cow’s milk is very low in iron and can induce a mild, chronic blood loss in the digestive tract, which can reduce iron and cause an increased risk of anemia.

*What is the difference between **soluble** and **insoluble fiber**?*

Both soluble and insoluble fiber are valuable in preventing disease. Soluble fiber makes up about one-quarter of the fiber in food. It dissolves in water, slows digestion by slowing down the time it takes for the stomach to empty, and helps the body absorb nutrients from food. Oats, beans and other legumes, and some fruits and vegetables are all good sources of soluble fiber. Psyllium, a grain found in some cereals and in certain bulk fiber supplements, is also a good source of soluble fiber. Soluble fiber can help lower blood cholesterol, particularly if you have elevated cholesterol levels, and may help control blood sugar levels in people with diabetes.

Insoluble fiber makes up about three-quarters of the fiber in food. It does not dissolve in water, and “holds” water which helps to create bulk and moisture to the stool. The water-holding quality of insoluble fiber creates a feeling of fullness in the stomach and helps foods pass through the stomach and intestines. It’s made up from the structural material of the cell walls of plants. It consists of cellulose, hemicellulose, and lignin. Insoluble fiber passes through the gastrointestinal tract mostly undigested (the human body does not have the enzymes to break down insoluble fiber). Additionally, unlike soluble fiber, insoluble fibers are *not* metabolized by intestinal bacteria. The skins of many fruits and vegetables, seeds, nuts, wheat, and whole grains (also whole-grain breads, cereals and pasta) are good sources of insoluble fiber. Though all plant cells contain both soluble and insoluble fibers in varying amounts, some foods are more abundant in one type of fiber. Some foods especially rich in the insoluble type of fiber are grapes, prunes, apple skins, pear skins, berries, celery, beets, carrots, Brussels sprouts, turnips, cabbage, cauliflower, broccoli, rhubarb, red chard, asparagus, corn, popcorn, kidney beans, potato skins, and bran.

*What are the best **oils** to use in cooking? And what about **nuts**? They’re healthy, right?*

*A Although vegetable oils and nuts generally contain less saturated fatty acids than animal fats, when it comes to hormone production and the functioning of your immune system, total fat is what matters—regardless of whether or not it’s a “good” or “bad” fat. For cancer prevention and survival, it’s best to avoid sources of concentrated fat. Use fat-free substitutes for vegetable oils, such as vegetable broth or water, whenever possible. Nuts and nut butters should be used as a condiment at most. If oils are absolutely necessary, choose ones that are rich in omega-3 fatty acids, such as canola or walnut oil. If you eat nuts, be conscious of your serving size (it’s easy to overdo it—shoot for a serving of no more than 1 tablespoon chopped nuts per day, which contains about 5 grams of fat and 50 calories), and choose nuts that are rich in essential nutrients. For example, one Brazil nut supplies you with your daily requirement of the antioxidant selenium. Almonds are good sources of calcium and vitamin E. And walnuts are rich in omega-3 fatty acids.*

*I’ve heard that **macrobiotic diets** are great for cancer prevention and survival. What are macrobiotic diets, and what do you think of them?*

Numerous epidemiological studies have shown that a low-fat, plant-based diet based on whole grains, legumes, vegetables, and fruit is the healthiest for cancer prevention and preventing recurrence. Macrobiotics includes a number of healthful lifestyle, diet, and eating environment recommendations.

The macrobiotic diet in itself is nearly vegan. However, some people following macrobiotic diets occasionally consume fish. We discourage the consumption of fish and shellfish because their flesh contains toxic chemicals at concentrations as high as 9 million times those found in the polluted water in which they swim. Mercury, found in especially high levels in tuna and swordfish, can cause brain damage. This is of particular concern to growing children. Pesticides, such as DDT, PCBs, and dioxin, have been linked to cancers, nervous system disorders, fetal damage, and many other health problems. Avoiding fish eliminates half of all mercury exposure and reduces one's intake of other toxins as well, not to mention the fact that fish flesh provides excessive amounts of protein, fat, and cholesterol, with no cancer-fighting fiber, complex carbohydrates, or vitamin C. Many people say they eat fish rather than beef in hopes of limiting fat and cholesterol. But many fish, such as catfish, swordfish, and sea trout, contain almost one-third fat. Salmon is 52 percent fat. And, ounce for ounce, shrimp have double the cholesterol of beef.

*I've heard that you need to get certain **essential oils** in your diet and that fish are a good source. Are there plant sources of these essential oils?*

Two essential fatty acids cannot be synthesized in the body and must be taken in the diet from plant foods. Their names—linoleic and linolenic acid—will never show up on a food label and are not important to remember. What *is* important is that these basic fats are used to build specialized fats called omega-3 and omega-6 fatty acids.

Omega-3 and omega-6 fatty acids are important in the normal functioning of all tissues of the body. Deficiencies are responsible for a host of symptoms and disorders including abnormalities in the liver and kidneys, changes in the blood, reduced growth rates, decreased immune function, and skin changes including dryness and scaliness. Adequate intake of the essential fatty acids results in numerous health benefits. Prevention of atherosclerosis, reduced incidence of heart disease and stroke, and relief from the symptoms associated with ulcerative colitis, menstrual pain, and joint pain have also been documented.

While supplements and added oils are not typically necessary, good sources of omega-3 fats should be part of a daily diet. Alpha-linoleic acid (ALA), a common omega-3 fatty acid, is found in many vegetables, beans, and fruits. More concentrated sources can be found in oils such as canola, flaxseed, soybean, walnut, and wheat germ. Corn, safflower, sunflower, and cottonseed oils are generally low in ALA. Omega-6 fatty acids, such as gamma-linolenic acid, can be found in more rare oils, including black currant, borage, evening primrose, and hemp oils.

Some people eat fish and use fish oils for their omega-3s. However, plant-derived omegas-3s have none of the fish odor that can be apparent in the perspiration of people using fish oil. They also tend to be more chemically stable and are lower in saturated fats. Fish oils tend to decompose and unleash dangerous free radicals in the process. Another downside to fish oils is that they are between 15 and 30 percent saturated fat, which is about double that of plant oils. Fish oils are in no way unique. Fish

make their omega-3 oils from ALA in plankton, just as mammals—including humans—synthesize omega-3s from land plants. Research has shown that omega-3s are found in a more stable form in vegetables, fruits, and beans. Adding flaxseed oil to your salad or grinding flax seeds for your breakfast cereal are simple ways to incorporate extra omega-3 fatty acids to your diet.

*Other than the essential fatty acids in **flaxseeds**, isn't there another reason **why breast cancer survivors** should eat them?*

A recent Canadian study examined the effect of consuming flaxseed oil on tumor growth in postmenopausal women with breast cancer. Twenty-nine women were assigned to either eat a muffin containing 25 grams of flaxseed oil or a muffin with no flaxseed oil. The flaxseed oil muffins offered some clear benefits, as the majority of the women eating them had a significant reduction in breast cell tumor size. This effect is similar to that seen with tamoxifen, a drug given to some women to prevent breast cancer. The drug acts as a selective estrogen receptor modifier (SERM), and flaxseed, which is rich in plant-based estrogens, appears to act in a similar way.

Want to incorporate more flaxseed into your diet? Try adding ground flaxseed to salads, soups, casseroles, and cereals. You can also top salads with flaxseed oil. Store ground flaxseeds and flaxseed oil in your refrigerator to keep them fresh and to avoid rancidity. The best way to use flaxseed is as an addition to a low-fat, vegan diet.

*I've read that **milk consumption decreases risk for breast cancer** in premenopausal women. How could this be if milk consumption increases a woman's level of IGF-I and may increase breast cancer risk after menopause?*

A study in Norway in 2001 created a stir, because it concluded that milk consumption reduces breast cancer risk in premenopausal women. But, breast cancer is quite uncommon in premenopausal women (only 0.6 percent in this study). Also, the study relied solely on self-reported milk intake during adulthood and the *recollection* of milk intake during childhood, not on key blood markers related to breast cancer risk or overall dairy product intake.

The nutrient that is hypothesized to be protective is conjugated linoleic acid (CLA), a component of dairy fat, which has been shown to increase risk for heart disease. A number of other studies have shown either no association between breast cancer incidence and dairy product consumption or an *increase* between the two. Research has shown that foods influence breast cancer development by their actions on circulating hormone levels (especially estrogen). Fatty foods increase estrogen levels while high-fiber foods naturally decrease them. High-fat diets also fuel obesity, which is associated with elevated estrogen and increased breast cancer risk.

In Asia, where whole grains, vegetables, fruits, tofu, soymilk, and other soy products are commonly consumed and milk is not a normal part of the diet, people are generally healthier and breast cancer is much rarer than in the United States and Europe.

*Aside from not smoking, are there any **lifestyle factors** that help decrease risk for **lung cancer**?*

A study published in *Lancet* in 2000 suggests that the natural chemicals in broccoli, cabbage, bok choy, and other cruciferous vegetables may protect against lung cancer. Of 18,000 men studied, those with detectable *isothiocyanate*, a phytochemical, in their blood had a 36 percent lower chance of developing lung cancer than those with none.

Researchers warned the public not to depend on vegetables as infallible immunity against the strong cancer-causing effects of smoking or to rely on isothiocyanate supplements if they are ever produced. More than 20 different varieties of these compounds work intricately together in the body in ways that can't be duplicated in pill form. In fact, antioxidants taken in doses higher than those which occur naturally in plant foods can actually increase cancer risk. The lesson, report investigators, is simple: "Just eat your vegetables, and lots of them."

*I'm having trouble **keeping weight on**. What are some healthy plant-based snacks that will help me keep weight on?*

Dry beans and peas, nuts, peanut butter, and seeds are examples of foods commonly eaten by non-vegetarians, but perhaps not very often or in small quantities. These can supply a greater percentage of calorie and protein requirements. Shakes can be made with soymilk, tofu, and non-dairy frozen desserts and can be flavored with fruit, chocolate syrup, or extracts to make a tasty, calorie-rich treat. Also, many varieties of trail mix are readily available and great for high-energy snacking.

*Can a plant-based diet reduce the risk of **testicular cancer**?*

There isn't a wealth of literature showing that a plant-based diet or any particular diet decreases a man's risk for developing testicular cancer. However, some evidence links dairy products, such as cheese, to testicular cancer, just as dairy products appear to be linked to prostate cancer. Fatty foods generally escalate testosterone activity, which may mean higher cancer risk over the long run. There are also other biological mechanisms linking fatty foods and cancer risk.

*How important is it to eat **organic food** (e.g., to avoid pesticides and other carcinogens)?*

Buying organic produce is a good idea, particularly for strawberries, bell peppers, spinach, cherries, and peaches—the produce items containing the highest concentration of pesticide residues, according to data from the U.S. Food and Drug Administration.

Another great way to avoid concentrated sources of pesticides is to avoid meat because pesticides on cattle feed become concentrated in the tissues of the animals.

*What about **soy products**? Are the **phytoestrogens** in soy foods helpful or risky for cancer survivors? Do estrogens in soy increase breast cancer risk? What about the estrogens in soy for men and boys?*

Soy products, such as miso soup, tofu, and tempeh, contain very weak plant estrogens called *phytoestrogens* that hinder the body's natural estrogen from attaching to cells. (The prefix "phyto" simply means "plant.") Normally, estrogens hook onto tiny receptor proteins in your cells that allow them to change the cell's chemistry.

Think of it this way: An estrogen molecule is like a jumbo jet that attaches to the Jetway of an airport. It discharges passengers into the terminal, which is suddenly a busy, noisy place. Phytoestrogens, being weak estrogens, are like small, private planes with few passengers and no cargo, yet they still occupy the Jetway after landing. When phytoestrogens occupy the cell, normal estrogens cannot. Plant estrogens do not eliminate all of estrogen's effects, but they do minimize them, apparently reducing breast cancer risk and menstrual symptoms.

For men and boys, the phytoestrogens in soy do not appear to have any effect on hormone levels and have not been shown to affect sexual development or fertility. Research studies show that men consuming soy have less prostate cancer and better prostate cancer survival.

In Asia, where tofu, soymilk, and other soy products are commonly consumed, not only is the population healthier overall, but cancer and heart disease are much rarer than in the United States and Europe, and longevity is greater. As these populations differ in other ways—Asians eat much less meat and dairy products and generally exercise more, but they also smoke more cigarettes and eat more salt—researchers have simply attempted to tease out the effects of soy itself. Also, it's possible that the more processed soy products, such as veggie burgers and veggie hot dogs, are not as beneficial as the less processed soy products, such as tofu and tempeh, traditionally consumed in Asia. In general, the less processed your diet is, the more nutrient-dense it will be. Thus, replacing processed soy products such as veggie burgers and veggie hot dogs with tofu, tempeh, beans, and lentils may provide you with a more nutrient-dense diet.

Research findings are not clear on whether soy products are safe for women who have had breast cancer. Some researchers believe that two servings per day of soy products such as soymilk, tofu, or tempeh are fine for these women, and others discourage soy consumption completely. If your oncologist or physician has told you to avoid soy, it's important to listen to those recommendations.

Like all foods, soy has its advantages and disadvantages. Soybeans are rich in essential omega-3 fatty acids but tend to be higher in total fat than other beans. Many soy products derive roughly half their calories from fat, while black beans, pinto beans, or other varieties are only about 4 percent fat. Also, soy extracts, such as genistein, may not have the same beneficial effects as products made with the whole bean.

However, it's also to remember that a vegan diet of beans, vegetables, grains, and fruits does not have to include soy products to be nutritionally complete. Soy products make convenient and tasty substitutes for meat and other unhealthy foods that people, quite rightly, are looking to avoid. However, the benefits of complete protein and soluble fiber can easily be found in an array of plant foods.

In human research studies, soy products have been shown to lower serum cholesterol levels, in part due to their rich content of soluble fiber, and the isoflavones also play a role in bone formation. Soy products have been shown to reduce estrogen activity, at least in premenopausal women, which,

over the long run, reduces cancer risk. The evidence is not as clear for postmenopausal women.

*What about **raw vegan diets**? Are they even better than vegan diets that include cooked foods?*

The Cancer Project has not yet evaluated the research on the health benefits of raw food diets. However, a low-fat diet that is rich in raw or cooked vegetables, fruits, and other plant-based foods is loaded with antioxidants and other cancer-fighting nutrients and has been shown in numerous studies to have the most disease-protecting power of any diet regimen. There are significant advantages to having vegetables and fruits in their raw form since cooking sometimes causes the loss of some nutrients that are powerful antioxidants and help protect us from developing cancer. However, there are foods that become more nutrient-dense when cooked, as seen with the increased lycopene activity in cooked tomatoes, for example. Lycopene intake has been shown to reduce the risk for developing prostate cancer. Also, some foods, such as cruciferous vegetables (e.g., broccoli, Brussels sprouts) are difficult to eat raw. However, there is no doubt that humans existed on uncooked foods throughout most of our evolution, even though it is not clear which plant foods were dominant in the diet of early humans.

*Does **cooking** vegetables generally destroy cancer-fighting compounds?*

Water-soluble nutrients, such as vitamin C and the B vitamins, do seep out of foods during boiling or steaming. However, if you reuse the cooking liquid in soups or to cook grains, you will get all the nutrients that have seeped out of the vegetables. On the contrary, some antioxidants are actually released or activated by cooking, including the lycopene in tomatoes and the beta-carotene in carrots and sweet potatoes. Researchers have found that you can multiply the antioxidant power of your carrots three times by cooking and puréeing them before eating. It turns out that cooking and puréeing releases cancer-fighting compounds from the carrot cells. To reap the full cancer-fighting benefits from the carrots you prepare, wash them thoroughly, but avoid peeling them as the skins are rich with cancer-fighting compounds. Also, try these tips to increase the beta-carotene in your diet:

- When making mashed potatoes, add 2 carrots to the pot of potatoes when you boil them. Then mash the two vegetables together for a delicious and conversation-starting result.
- Try making a carrot soup with 6 carrots boiled in just enough water to cover them. When the carrots are soft, purée them with the cooking liquid in a blender or food processor. Add 1 cup of orange juice and 1 teaspoon of grated ginger and salt and pepper to taste. Heat and serve.

*Do you recommend taking the popular “green food” **supplements** that are on the market now? Will they help prevent cancer?*

Vegetable-based supplements are increasing in popularity and often come with a variety of health claims. It is important to consider, however, that no single supplement can replicate all the healthy components found in a variety of whole plant foods, including those that ward off cancer.

Vegetables, fruits, whole grains, and legumes are packed with lots of healthful substances *beyond* vitamins, such as fiber, minerals, and cancer-protective phytochemicals. Increasing your fruits and veggies can be almost as simple as popping a pill and is far more beneficial.

Try these simple ideas to get your five (and more) servings a day:

- Add vitamin-rich veggies, like bell peppers, broccoli, carrots, tomatoes, and spinach, to salads.
- Add cooked, puréed pumpkin to soups and stews as a thickener.
- Take a bowl of fruit to work each week (apples, bananas, pears, oranges) and snack from it throughout the day.
- Pack raisins and other dried fruits in your purse, briefcase, or backpack to keep you fueled with healthy foods.

One supplement that is important, however, is vitamin B<sub>12</sub>, which is needed for healthy blood and healthy nerves. It is found in any common multiple vitamin, as well as in simple B<sub>12</sub> supplements. It is also found in fortified cereals (e.g., Product 19, Total, Kellogg's Corn Flakes), fortified soymilks, and some brands of nutritional yeast.

*How do fruit and vegetable **juices** compare to eating them whole?*

One-half a cup (4 ounces) of juice can be considered the equivalent of a single serving of fruits or vegetables. As a rule of thumb, it's important to shoot for consuming at least 3 servings of fruit and 3 servings of vegetables every day. However, since juice is not as high in fiber as whole fruit or vegetables, it's always best to consume the whole food whenever possible. It has been shown that diets higher in fiber are not only beneficial for protecting against a number of cancers and chronic illnesses, but also help you fill up so that you don't "fill out"—and maintaining a healthy weight is yet another way to ward off cancer.

Juicing fruits and vegetables can be a great way for people who don't enjoy eating lots of fruits and vegetables to bring these healthy plant foods into their routine—and the juicers that keep the fiber in the foods are best. Or, the fibrous end-product that juicers produce can be re-used (instead of discarded): shredded carrots make a salad topping, for example, or they can be thrown into soups, stir-fries, or pasta sauces.

*If a **completely plant-based diet isn't possible** for me, is it ok if I can at least eliminate red meat and cheese and eat a low-fat diet with egg whites, chicken, fish, and skim milk in addition to lots of fruits and vegetables?*

A low-fat, completely vegan diet is the healthiest diet of all. It's naturally high in fiber and cholesterol-free—two proven means to reduce cancer risk. Eliminating red meat and cheese is a start. However, you'll want to go one step further, and base your diet on whole grains, legumes, vegetables, and fruit. You'll get much higher doses of cancer fighting vitamins, minerals, fiber, and phytochemicals. Although skim milk and egg whites are lower in fat than whole milk and whole eggs, these foods—as well as chicken and fish—contain high amounts of cholesterol and other harmful compounds, so they should be avoided completely. An easy way to shift to a completely plant-based diet is to do it 100

percent for three solid weeks. It will take your body that amount of time to adjust to new flavors and tastes and get used to not having some of the foods you've been eating all your life. Those 21 days will fly by. When you reach the end of three weeks, evaluate how you feel—you'll realize that you feel a lot better and lighter and that you don't miss the high-fat foods you had been used to.

*For an **overweight** breast cancer survivor, is it important to just focus on eating healthy, or is weight loss important too?*

You'll want to focus on both. Evidence suggests you can improve your chances of surviving breast cancer and reduce recurrence by achieving a healthy weight post-treatment. The best way to lose weight is to choose healthy, low-fat meals built from legumes, grains, vegetables, and fruit, and to incorporate moderate physical activity into your lifestyle. Of course, it's important to check with your doctor to get the green light for the type and level of exercise you'd like to do. You'll feel better for it!

*What vitamins and minerals are important to take to protect someone with a history of **prostate cancer**? What foods are best?*

*In addition to avoiding dairy products and emphasizing lycopene-rich foods, such as tomatoes, watermelon, or pink grapefruit in your diet, there may be value in paying attention to the mineral selenium.*

When researchers compared blood samples of men with prostate cancer to age-similar controls without cancer, they found that men with prostate cancer had lower levels of serum selenium. Another study hypothesized that this protective effect of selenium may be due to the mineral's ability to raise plasma levels of 25-hydroxyvitamin D, the active form of vitamin D.

So, how can you protect yourself against prostate cancer? Whole grains are a good source of selenium, so get started by choosing a vegan diet rich in whole grains. Replace dairy products with vegetable sources of calcium, such as leafy greens and legumes. And add some tomatoes to your salad.

*How important is diet for young girls in families with a **history of breast cancer**?*

The foods girls eat while in pre-school and grade school appear to have an important effect on breast cancer risk later in life. Researchers at Harvard have discovered that girls who eat more protein from animal sources and less protein from plant sources tended to reach menarche earlier. Younger age at first menstruation is connected with increased risk of breast cancer later in life.

*Do you have to eat **garlic** raw to get its health benefits?*

Cook onions and garlic in an open skillet and nearly anyone who walks into your house will tell you

how good it smells. The same sulfur-containing substances that make onions and garlic so aromatic are excellent cancer fighters. The protective chemicals in garlic and onions appear to block carcinogens from reaching their targets, destroy cancer cells, and suppress tumor growth.

Eaten regularly, garlic and onions are associated with as much as a 50 to 60 percent decreased risk of stomach and colorectal cancers. The cancer fighters in these tasty foods work whether they are raw or cooked, so enjoy fresh onions sliced on your veggie burger or as a topping for your black bean soup, or roast whole heads of garlic in the oven and spread the cloves (naturally softened and sweetened by cooking) onto bread or crackers to take advantage of the benefits of these foods.

Cooking temperatures can eliminate garlic's beneficial effects on cells unless the garlic is allowed to stand for about 10 minutes between being crushed and the cooking process.

*How do **dairy** products cause cancer? And if you don't drink milk, how do you get all the **calcium** you need?*

Recent scientific studies have suggested that specific components in dairy products may be linked to an increased risk for ovarian, breast, and prostate cancers. For ovarian cancer, galactose, a component of the milk sugar lactose, has been under study as a possible culprit. In prostate cancer, both the fat content and the high calcium content may play a role. In addition, dairy product consumption has been shown to increase levels of insulin-like growth factor I (IGF-I) in the body, a potent stimulus for cancer cell growth. High IGF-I levels are linked to increased risk of prostate cancer and breast cancer.

Replace cow's milk in your diet with healthier alternatives, such as rice milk, almond milk, and soymilk. If you're having trouble giving up ice cream, try Rice Dream and Tofutti brand frozen desserts. There are even a number of cheese, cream cheese, sour cream, and yogurt alternatives readily available in grocery and health food stores. As you eliminate dairy products from your diet, you may notice that your body is also benefiting in other ways with an improvement in digestion, a reduction in arthritis pain, and fewer symptoms of seasonal and/or other allergies.

What about calcium? There's plenty of easily absorbed calcium in dark leafy greens, such as bok choy, kale, mustard greens, collard greens, and turnip greens, as well as broccoli, dried beans, soy nuts, figs, almonds, calcium-fortified juices, and soymilk and other non-dairy milks. Plus, these foods contain other cancer-fighting nutrients that aren't present in dairy products.

## How Much Calcium Is Absorbed from Foods?

For comparison, 32% of the calcium from dairy products is absorbed.

Food Source	Calcium Absorption Percentage Rate
Beans, white	17.0 %
Broccoli	52.6 %
Brussels sprouts	63.8 %
Kale	58.8 %
Kohlrabi	67.0 %
Mustard greens	57.8 %
Orange juice, calcium fortified	37.0 %
Soymilk	31.0 %
Tofu, calcium set	31.0 %
Turnip greens	51.6 %

### *How do you ensure proper **food safety** when cooking for someone undergoing chemotherapy?*

A clean and safe food supply is healthy for everyone, but it is especially important for people with compromised immune systems. Older persons and individuals undergoing cancer treatment can be especially at risk from bacteria, viruses, or other foreign substances that can turn up in food. To keep your meals safe and clean, follow these simple practices:

- Wash hands with soapy water before and after preparing food and before eating.
- Avoid preparing or eating all types of meat, eggs, and dairy products, as these foods are most likely to be contaminated with bacteria. Poultry products are especially likely to be contaminated. Raw milk and home-prepared ice creams or mayonnaise, as well as cake and cookie batter made with eggs, may easily contain infectious bacteria.
- Keep cold foods cold (below 40°F) and hot foods hot (above 165°F).
- Wash fruits and vegetables thoroughly under running water before using them.
- Wash the tops of cans before opening.
- During food preparation, if you taste the food you are making, use a different utensil than the one used for stirring or serving.
- Do not taste food that looks or smells strange.