

NUTRITION AFTER TREATMENT ENDS

BENEFITS OF GOOD NUTRITION

Good nutrition is especially important if you have cancer because the illness itself, as well as its treatments, can affect your appetite. Cancer and cancer treatments can also affect your body's ability to tolerate certain foods and to use nutrients.

The nutrient needs of people with cancer vary from person to person. Your doctor, nurses, and a registered dietitian can help you identify your nutrition goals and plan ways to help you meet them. Eating well while you are being treated for cancer can help you:

- feel better
- keep up your strength and energy
- keep up your weight and your body's store of nutrients
- tolerate treatment-related side effects
- lower your risk of infection
- heal and recover quickly

Eating well means eating a variety of foods that will give you the nutrients you need to protect your health while fighting cancer. These nutrients include protein, carbohydrates, fat, water, vitamins, and minerals.

NUTRIENTS

Protein

We need protein for growth, to repair body tissue, and to keep our immune systems healthy. When your body doesn't get enough protein, it takes you longer to recover from illness and you have lower resistance to infection. People with cancer often need more protein than usual. After surgery, chemotherapy, or radiation therapy, extra protein is usually needed to heal tissues and to help prevent infection. Good sources of protein include lean meat, fish, poultry, dairy products, nuts, dried beans, peas and lentils, and soy foods.

Fats

Fats play an important role in nutrition. Fats and oils provide a rich source of energy for the body. They are used to store energy, insulate body tissues, and transport some types of vitamins through the blood. They also play an important role in food preparation by enhancing food flavor, making baked products tender, and conducting heat during cooking. You may have heard that some fats are better for you than others. When considering the effects of

fats on your heart and cholesterol level, choose unsaturated fats (monounsaturated and polyunsaturated).

Monounsaturated fats are found mainly in vegetable oils such as canola, olive, and peanut oils. They are liquid at room temperature.

Polyunsaturated fats are found mainly in vegetable oils such as safflower, sunflower, corn, flaxseed, and canola oils. Polyunsaturated fats are also the main fats found in seafood. They are liquid or soft at room temperature.

Certain polyunsaturated fatty acids, such as linoleic acid and alpha-linolenic acid, are called essential fatty acids, because the body cannot make them. They are needed to build cells and make hormones. Essential fatty acids must come from foods we choose.

Saturated fats (or saturated fatty acids) are mainly found in animal sources such as meat and poultry, whole or reduced-fat milk, and butter. Some vegetable oils like coconut, palm kernel oil, and palm oil are saturated. Saturated fats are usually solid at room temperature.

Trans fatty acids are formed when vegetable oils are processed into margarine or shortening. Sources of trans fats in the diet include snack foods and baked goods made with partially hydrogenated vegetable oil or vegetable shortening. Trans fats also are found naturally in some animal products, such as dairy products.

Carbohydrates

Carbohydrates give the body the fuel it needs for physical activity and for proper organ function. There are also good and bad sources of carbohydrates. The best sources of carbohydrates—fruits, vegetables, and whole grains—supply needed vitamins and minerals, fiber, and phytonutrients to the body's cells. Other sources of carbohydrates include bread, potatoes, rice, spaghetti, pasta, cereals, dried beans, corn, peas, and beans. Sweets (desserts, candy, and drinks with sugar) can supply carbohydrates, but provide very few nutrients.

Water

Water and fluids are vital to our health. All body cells need water to function. If you do not take in enough fluids or if you are vomiting or have diarrhea, you may become dehydrated. In general, a person should drink about eight 8-oz. glasses of water or clear liquid each day to be sure that all the body cells get the fluid they need.

Vitamins and minerals

Vitamins and minerals are needed for proper growth and development. They also allow the body to use the energy (calories) supplied in foods. A person who eats a balanced diet with enough calories and protein usually gets plenty of vitamins and minerals. But it can be hard to eat a balanced diet when you are being treated for cancer and have treatment side effects that last for long periods of time. When that is the case, your doctor or dietitian may suggest a daily multivitamin and mineral supplement. If you are thinking of taking a

vitamin or supplement, be sure to discuss this with your doctor first. Some people with cancer take large amounts of vitamins, minerals, and other dietary supplements to try and boost their immune system or even destroy cancer cells. Some of these substances can be harmful, especially when taken in large doses. In fact, large doses of some vitamins and minerals may reduce the effectiveness of chemotherapy and radiation therapy. During treatment, it may be best to choose one with no more than the Daily Value (DV) for all nutrients and one without iron, unless your doctor thinks that you need iron. Again, discuss this with your doctor first.

Antioxidants

Antioxidants are substances that protect the body's cells from damage caused by free radicals (by-products of the body's normal processes). Examples of antioxidants include vitamin C, vitamin E, vitamin A (beta carotene), and selenium. If you want to take in more antioxidants, health experts recommend eating a variety of fruits and vegetables, which are good sources of antioxidants. Taking large doses of antioxidant supplements is usually not recommended while having chemotherapy and radiation therapy. Talk with your doctor to determine the best time to take antioxidant supplements.

Herbs

Herbs have been used to treat disease for hundreds of years. Today, herbs are found in many products, such as pills, liquid extracts, teas, and ointments. While many of these products are harmless and safe to use, others can cause severe and harmful side effects. Some may even interfere with proven cancer therapies, including chemotherapy, radiation therapy, and recovery from surgery. If you are interested in using products containing herbs, talk about it with your doctor or nurse first.

SAFETY CONSIDERATIONS

Many people believe that if they find a pill or supplement in stores , it is safe and effective. The Food and Drug Administration (FDA) put out new rules in 2007 to help ensure that supplements contain what their labels claim they do. However, some of these rules will not be fully in effect until 2010. Even then, the supplement's safety and its effect on the body are not addressed by the new FDA rules. The FDA does not require manufacturers of these products to print possible side effects on their labels. The FDA cannot pull a dietary supplement or herbal product from the market unless it can prove that the product is unsafe.

Tell your health care team about any herbal products and supplements that you are using or are thinking about using. Bring the bottle(s) of the supplement to your doctor to talk about the dose and to be sure that the ingredients do not interfere with your health or cancer treatments. Some other safety tips:

Ask your doctor or nurses for reliable information on dietary supplements.

Check the product labels for both the quantity and concentration of active ingredients contained in each product.

Stop taking the product immediately and call your doctor if you have side effects such as wheezing, itching, numbness, or tingling in your limbs.

Some people with cancer take large amounts of vitamins, minerals, and other dietary supplements in an effort to enhance their immune systems or even destroy cancer cells. Some of these substances can be harmful. In fact, large doses of some vitamins and minerals may reduce the cancer-fighting effects of chemotherapy and radiation therapy.

Most eating-related side effects of cancer treatments go away after the treatment ends. Sometimes side effects such as poor appetite, dry mouth, change in taste or smell, trouble swallowing, or significant weight loss may last for some time. If this happens to you, talk to your health care team and work out a plan to address the problem.

As you begin to feel better, you may have questions about eating a healthful diet. Just as you wanted to go into treatment with the necessary nutrient stores that your diet could give you, you'll want to do the best for yourself at this important time. There's very little research to suggest that the foods you eat will keep your cancer from coming back. But eating well will help you regain your strength, rebuild tissue, and feel better overall. And certainly, what you eat can help reduce risk for other cancers.

SUGGESTIONS FOR HEALTHY EATING AFTER CANCER

- Check with your doctor for any food or diet restrictions.
- Ask your dietitian to help you create a nutritious, balanced eating plan.
- Choose a variety of foods from all the food groups. Try to eat at least 5 to 7 servings a day of fruits and vegetables, including citrus fruits and dark-green and deep-yellow vegetables.
- Eat plenty of high-fiber foods, such as whole grain breads and cereals.
- Buy a new fruit, vegetable, low-fat food, or whole grain product each time you shop for groceries.
- Decrease the amount of fat in your meals by baking or broiling foods.
- Choose low-fat milk and dairy products.
- Avoid salt-cured, smoked, and pickled foods.
- If you choose to drink, drink alcohol only occasionally.
- If you are overweight, consider losing weight by reducing the amount of fat in your diet and increasing your activity. Choose activities that you enjoy. Check with your doctor before starting any exercise program.

NUTRITION AFTER CANCER TREATMENT: ANSWERS TO COMMON QUESTIONS

Cancer survivors often look for information and advice from their health care providers about food choices, physical activity, and dietary supplement use to improve their quality of life and survival. It's important to point out

that no single study provides the last word on any subject. And news reports may focus on what seem to be conflicting results because they are new or different, or they challenge conventional wisdom.

In brief news stories, reporters can't always put new research findings in their proper context. The best advice about diet and physical activity is that it is rarely a good idea to change diet or activity levels based on a single study or news report. The following questions and answers address common concerns that cancer survivors have about diet and physical activity.

Alcohol

Does alcohol increase the risk of cancer recurrence?

Studies have found a link between alcohol intake and risk of getting cancers of the mouth, throat, larynx (voice box), esophagus, liver, breast, and probably colon. In people who have already been diagnosed with cancer, alcohol intake could also affect the risk for new cancers of these sites.

Alcohol intake can increase levels of estrogens in the blood, which in theory could increase the risk for recurrence of estrogen receptor-positive breast cancer, but studies done to date have not addressed questions like this.

Should alcohol be avoided during cancer treatment?

The cancer type and stage (extent), as well as the type of treatment should be taken into account when considering alcohol use during treatment. Alcohol, even in the small amounts found in mouthwashes, can be irritating to survivors with mouth sores and can even make them worse. It's reasonable to recommend that alcohol intake should be avoided or limited in survivors with mouth sores, as well as in those starting head and neck radiation or a chemotherapy regimen that puts them at risk for this problem.

Antioxidants

What do antioxidants have to do with cancer?

Antioxidants include vitamin C, vitamin E, carotenoids, and many phytochemicals. They help prevent damage to cells in the body from chemical reactions with oxygen. Because this damage may be important in the development of cancer, it has long been thought that antioxidants may help prevent cancer. Studies suggest that people who eat more vegetables and fruits, which are rich sources of antioxidants, may have a lower risk for some types of cancer. Because cancer survivors may be at increased risk for second cancers, they should eat a variety of antioxidant-rich foods each day. So far, studies of antioxidant vitamin or mineral supplements have not found that they reduce cancer risk. The best advice at this time is to get antioxidants through food sources rather than supplements.

Is it safe to take antioxidant supplements during cancer treatment?

Many dietary supplements contain levels of antioxidants (such as vitamins C

and E) that are much greater than the amount recommended in the Dietary Reference Intakes for optimal health. At this time, many cancer doctors advise against taking higher doses of antioxidant supplements during chemotherapy or radiotherapy because they could repair the damage to cancer cells that helps these treatments work. But others have noted that the possible harm from antioxidants is only in theory, and that there may be a net benefit by helping to protect normal cells from the collateral damage from these cancer treatments.

Whether antioxidants or any other dietary supplements are helpful or harmful during chemotherapy or radiotherapy is a critical question without a clear scientific answer at this time. Until more evidence is available that suggests more benefit than harm, it is best for cancer survivors getting these treatments to avoid dietary supplements that are more than 100% of the Daily Value for antioxidants.

Fat

Will eating less total fat lower the risk of cancer recurrence or improve survival?

Several studies have looked at the link between fat intake and survival after the diagnosis of breast cancer, with mixed results. Although there is little evidence that total fat intake affects cancer outcomes, diets high in fat tend to be high in calories. This may add to obesity, which in turn is linked with increased cancer risk at several sites, increased risk of recurrence, and reduced chances of survival for many cancer sites.

Do different types of fat affect cancer risk and survival?

There is evidence that certain types of fat, such as saturated fats, may have an effect on increasing cancer risk. There is little evidence that other types of fat, such as omega-3 fatty acids (found mainly in fish), mono-unsaturated fats (found in olive and canola oils), or other polyunsaturated fats reduce cancer risk.

In one study, high saturated fat intake reduced prostate cancer-specific survival, and in another, mono-unsaturated fat intake lowered the risk of death from prostate cancer. Excess saturated fat intake is a known risk factor for heart disease, a major cause of death in all populations, including cancer survivors.

Although trans fats have harmful effects on the heart, such as raising blood cholesterol levels, their link to cancer risk or survival is not clear. Still, survivors (especially those at increased risk of heart disease) should eat as few trans fats as possible. Major sources of trans fats are margarines and snack foods that contain partially hydrogenated oils.

Fiber

Can dietary fiber prevent cancer or improve cancer survival?

Dietary fiber includes a wide array of plant carbohydrates that are not digested by humans. Fibers are either “soluble” (like oat bran) or “insoluble” (like wheat bran and cellulose). Soluble fiber helps lower the risk of heart disease by reducing blood cholesterol levels. Fiber is also linked with improved bowel function. Good sources of fiber are beans, vegetables, whole grains, and fruits.

Links between fiber and cancer risk are weak, but eating these foods is still recommended because they contain other nutrients that may help reduce cancer risk and provide other health benefits, such as reduced risk of heart disease.

Food Safety

Are there special food safety precautions for people getting cancer treatment?

Infection is of special concern for cancer survivors, especially if the immune system is weakened. This can happen with certain cancer treatments, such as chemotherapy. During such treatments, survivors should be careful to avoid eating foods that may contain unsafe levels of germs. General food safety practices, such as washing hands before eating, washing vegetables and fruits well, and keeping foods at proper temperatures, should be encouraged, and survivors should be taught about food safety.

Meats

Should I avoid meats?

Several studies have linked eating large amounts of red meat and processed meats with increased risk of colorectal, prostate, and stomach cancers. Some research suggests that frying, broiling, or grilling meats at very high temperatures creates chemicals that might increase the risk of some types of cancer. For these reasons, American Cancer Society Guidelines for cancer prevention recommend limiting intake of processed and red meats. No studies have looked at the effect of processed meat, meat cooked at high temperature, or meat in general on cancer recurrence or progression.

Obesity

Does being overweight increase risk of cancer recurrence or getting another cancer?

More and more evidence suggests that being overweight raises the risk for recurrence and reduces the odds of survival for many cancers. Increased body weight has been linked with higher death rates for all cancers combined. It has also been linked with increased risk for cancers of the

esophagus, colon and rectum, liver, gallbladder, pancreas, kidney, non-Hodgkin lymphoma, and multiple myeloma, as well as to cancers of the stomach and prostate in men and cancers of the breast, uterus, cervix, and ovary in women.

Because of other proven health benefits to losing weight, people who are overweight are encouraged to lose weight and maintain a healthy weight. Avoiding weight gain as an adult is important not only to reduce cancer incidence and risk of recurrence, but the risk of other chronic diseases as well.

Organic foods

Are foods labeled organic recommended for cancer survivors?

The term organic is often used for plant foods grown without pesticides and genetic modifications, and for meat, poultry, eggs, and dairy products that come from animals that are given no antibiotics or growth hormones. The use of the term organic on food labels is regulated by the US Department of Agriculture. It is commonly thought that organic foods may be more healthful because they reduce exposure to some chemicals. It has also been suggested that their nutrient composition may be better than non-organic foods. Whether this translates into health benefits is unknown.

At this time, no studies in humans exist to show whether such foods are better at reducing cancer risk, recurrence, or progression than foods made by other farming and production methods.

Phytochemicals

What are phytochemicals, and do they reduce cancer risk?

The term phytochemicals refers to a wide range of compounds made by plants. Some have either antioxidant or hormone-like actions. Studies looking at the effects of phytochemicals on cancer recurrence or progression are very limited. The little data that exists is mixed or comes from only a few studies. Eating lots of vegetables and fruits reduces the risk of some types of cancer, so researchers are looking for the specific components that might account for this. At this time there is no evidence that phytochemicals taken as supplements are as helpful as the vegetables, fruits, beans, and grains they come from.

Soy products

Should cancer survivors include soy-based foods in the diet?

Soy-derived foods are an excellent source of protein and can be a good alternative to meat. Soy contains several phytochemicals, some of which have weak estrogen activity and seem to protect against hormone-dependent cancers in animal studies. Other compounds in soy have antioxidant or other helpful properties. There is a great deal of interest in the possible role of soy

foods in reducing cancer risk in general and breast cancer in particular. But the evidence for such a role is mixed.

For the breast cancer survivor, current research suggests neither specific benefits nor harmful effects when soy is eaten in the moderate amounts found in most Asian diets (no more than 3 servings per day) as part of a healthy diet. But higher doses of soy may have estrogen-like effects, and higher levels of estrogens clearly increase the risk for progression of some breast cancers. For this reason, it is best for breast cancer survivors to avoid the high doses that are found in more concentrated sources such as soy powders and isoflavone supplements.

Sugar

Does sugar “feed” cancer?

No. Sugar intake has not been shown to directly increase the risk of getting cancer or having it progress. But sugars (including honey, raw sugar, brown sugar, corn syrup, and molasses) and beverages that contain them (such as soft drinks and fruit-flavored beverages) add large amounts of calories to the diet and can cause weight gain, which can affect cancer outcomes. Most foods and beverages that are high in sugar do not add many nutrients to the diet and often replace more nutritious food choices. For this reason, limiting sugar intake is recommended.

Supplements

Would survivors benefit from using vitamin and mineral supplements?

During and after cancer treatment, there is a probable benefit of taking a standard multiple vitamin and mineral supplement that contains about 100% of the Daily Values because during these times, it may be hard to eat a diet with enough of these nutrients. The use of very large doses of vitamins, minerals, and other dietary supplements is not recommended because evidence exists that some high-dose supplements may increase cancer risk.

Can nutritional supplements lower cancer risk or the risk of recurrence?

There is strong evidence that a diet rich in vegetables, fruits, and other plant-based foods may reduce the risk of some types of cancer. And some recent studies suggest there may be a helpful effect on recurrence or survival for breast, prostate, and ovarian cancers. But there is no evidence at this time that supplements can provide these benefits. Many healthful compounds are found in vegetables and fruits, and it is likely that these compounds work together to exert their helpful effects. There are likely to be important, but as of yet unknown, compounds in whole foods that are not in supplements. Food is the best source of vitamins and minerals.

Vegetables and fruits

Will eating vegetables and fruits lower risk of cancer recurrence?

Eating more vegetables and fruits has been linked in most studies with a lower risk of lung, oral, esophagus, stomach, and colon cancer. But few studies have been done on whether a diet including many vegetables and fruits can reduce the risk of cancer recurrence or improve survival. Some recent studies suggest increasing intake of vegetables may have a helpful effect on recurrence or survival for breast, prostate, and ovarian cancers, but this is not definite.

Still, cancer survivors should be encouraged to get at least 5 servings of a variety of vegetables and fruits each day because of their other health benefits. Because it is not known which of the compounds in vegetables and fruits are most protective, the best advice is to eat 5 or more servings of different kinds of colorful vegetables and fruits each day.

Is there a difference in the nutritional value of fresh, frozen, and canned vegetables and fruits?

Yes, but they can all be good choices. Fresh foods are usually thought to have the most nutritional value. Often, though, frozen foods can be more nutritious than fresh foods because they are often picked ripe and quickly frozen, whereas nutrients can be lost in the time between harvest and eating fresh foods. Canning is more likely to reduce the heat-sensitive and water-soluble nutrients because of the high temperatures needed in the canning process. Be aware that some fruits are packed in heavy syrup, and some canned vegetables are high in sodium. Choose vegetables and fruits in a variety of forms.

Does cooking affect the nutritional value of vegetables?

Boiling vegetables, especially for long periods, can leach out their water-soluble vitamins. Microwaving and steaming are the best ways to preserve the nutritional content in vegetables.

Should I be juicing my vegetables and fruits?

Juicing can add variety to the diet and can be a good way to get vegetables and fruits, especially for those who have trouble chewing or swallowing. Juicing also helps the body absorb some of the nutrients in vegetables and fruits. But juices may be less filling than whole vegetables and fruits and contain less fiber. Fruit juice, in particular, can add excess calories to one's diet if large amounts are consumed. Commercial juice products should be 100% vegetable or fruit juices and should be pasteurized to remove harmful germs. This is true for the general population, but is of special concern for people who may have weak immune systems, such as cancer patients getting chemotherapy.

Vegetarian diets

Do vegetarian diets reduce risk of cancer recurrence?

No direct evidence has shown whether eating a vegetarian diet has any added benefit for reducing cancer recurrence when compared to a diet high in vegetables, fruits, and whole grains and low in red meats. But vegetarian diets can have many healthful traits because they tend to be low in saturated fat and high in fiber, vitamins, and phytochemicals. These diets are consistent with the American Cancer Society Nutrition Guidelines for the Prevention of Cancer.

Water and other fluids

How much water and other fluids should I drink?

Symptoms like fatigue, light-headedness, and nausea can be caused by dehydration. To help prevent these problems, survivors should be encouraged to try to take in enough fluids. Drinking water and other liquids may also reduce the risk of bladder and colon cancer. Drinking at least eight eight-ounce servings of liquid a day is usually advised for the general public. This is reasonable advice for survivors, too, with the exception of those who have a specific medical reason for restricting fluid intake.

Works Cited

Adapted from the American Cancer Society
www.cancer.org