



## Nutrition During Cancer Treatment

Good nutrition is especially important for people with cancer. That is because the illness itself, as well as its treatments, may affect your appetite. Cancer and cancer treatments may also alter your body's ability to tolerate certain foods and to use nutrients.

The nutrient needs of a cancer patient vary from person to person. Your doctors, nurses, and dietitians can help you identify your nutrition goals and plan strategies to help you meet them. Eating well while undergoing cancer therapy can help you to:

- Feel better.
- Keep up your strength and energy.
- Keep up your weight and your body's store of nutrients.
- Tolerate treatment-related side effects.
- Decrease your risk of infection.
- Heal and recover quickly.

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

### Nutrients

**Protein:** Protein helps to ensure growth, to repair body tissue, and to maintain a healthy immune system. Without enough protein, the body takes longer to recover from illness and you will have a lower resistance to infection. As such, people with cancer often need more protein than usual. Following surgery, chemotherapy, and radiation therapy, additional 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.

**Carbohydrates and fats:** Carbohydrates and fats supply the body with the bulk of the calories it needs. The amount of calories each person needs depends on his or her age, size, and level of physical activity. Sources of carbohydrates include fruits, vegetables, breads, pasta, grains and cereal products, dried beans, peas, and lentils. Sources of fat include butter, oils, nuts, seeds, avocado, dairy products, meats, fish, and poultry.

**Vitamins and minerals:** Vitamins and minerals help ensure proper growth and development. In addition, they 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. However, eating a balanced diet can be challenging when you are receiving cancer treatment, particularly if treatment side effects persist for long periods of time. When that is the case, your doctor or dietitian may recommend a daily multivitamin and mineral supplement.

**Water:** Water and fluids are vital to health. If you do not take in enough fluids or if you are vomiting or have diarrhea, you may become dehydrated. Ask your medical team how much fluid you need each day to prevent dehydration.

You can use the American Cancer Society Guidelines for Nutrition for Cancer Prevention below to help you plan what to eat each day. The guidelines serve as a general guide for healthy people that lets you choose a

healthful diet. People with cancer, however, may have increased nutritional needs. For example, your doctor or dietitian may suggest increasing the number of servings of specific types of food.

- Eat five or more servings of a variety of vegetables and fruits each day.
- Choose whole grains in preference to processed (refined) grains and sugars.
- Limit consumption of red meats, especially those high in fat and processed meats (examples include bacon, hotdogs, and lunchmeats).
- Choose foods that help you maintain a healthy weight.

## Managing Side Effects That Can Affect Nutrition

### Poor Appetite

Changes in your eating habits and a loss of appetite may occur as a result of cancer and its treatment. If this happens to you, try eating small, frequent meals and snacks every one to two hours. Keep high-protein, high-calorie snacks and foods handy to eat when you are hungry. Avoid food smells caused by food preparation.

#### **What to Do**

- Eat small meals or snacks every one to two hours.
- Avoid liquids with meals (unless needed to help swallow or for dry mouth) to keep from feeling full early.
- Make eating more enjoyable by setting the table with pretty dishes and flowers and playing your favorite music or watching television, and visiting with friends.
- Keep high-calorie, high-protein snacks on hand. Try hard-cooked eggs, peanut butter, cheese, ice cream, granola bars, nutritional supplements, puddings, nuts, trail mix, and yogurt.
- Review the tips on adding calories and protein to foods and include these in meals and snacks all during the day.
- Ask your doctor about medications to help relieve constipation, nausea, pain, or other side effects you have.

### When Things Don't Taste Right

Cancer and its treatments can cause changes in your senses of taste and smell. If you are having this problem, try foods or beverages that are different from ones you usually eat. Also, keep your mouth clean by rinsing and brushing, which in turn may improve the taste of foods.

#### **What to Do**

- Try using plastic utensils if you have a metallic taste while eating.
- Season foods with tart flavors such as lemon wedges, lemonade, citrus fruits, vinegar, and pickled foods. (If you have a sore mouth or throat, do not use this tip.)
- Chew lemon drops, mints, or gum, which can help get rid of unpleasant tastes that linger after eating. (If you have diarrhea, avoid sugarless candies and gums.)
- Flavor foods with onion, garlic, chili powder, basil, oregano, rosemary, tarragon, barbecue sauce, mustard, ketchup, or mint.
- Increase the sugar in foods to increase their pleasant tastes and decrease salty, bitter, or acid tastes. You may want to try honey or maple syrup.
- Rinse your mouth with tea, ginger ale, salted water, or water with baking soda before eating to help clear your taste buds.

- Serve foods cold or at room temperature. This can decrease the foods' tastes and smells, making them easier to tolerate.
- Freeze and eat foods such as cantaloupe, grapes, oranges, and watermelon.
- Eat fresh vegetables, as they may be more appealing than canned or frozen ones.
- Blend fresh fruits into shakes, ice cream, or yogurt.
- Cover beverages and drink through a straw to reduce smells.

## Constipation (bowel movement problems)

Pain medications, changes in your eating habits, and decreased physical activity can cause your bowels to move less frequently and stools to become more difficult to pass (constipation). If you have constipation, try eating high-fiber foods that can stimulate your bowels to move. Examples of high-fiber foods include whole grain breads and cereals, raw fruits and vegetables, dried fruits, seeds, beans, legumes, and nuts. In addition, drink plenty of fluids throughout the day, eat at regular times, and increase your level of physical activity.

### What to Do

- Try to eat at the same times each day. Establish a meal and snack schedule.
- Try to have a bowel movement at the same time each day to establish regularity.
- Drink 8 to 10 cups of liquid each day, if OK with your doctor. In addition to water, try fluids that have calories like prune juice, warm juices, teas, and hot lemonade.
- Limit drinks and foods that cause gas if it becomes a problem. These include carbonated drinks, broccoli, cabbage, cauliflower, cucumbers, dried beans, peas, and onions. To lessen the amount of air you swallow while eating, try not to talk much at meals, drink without straws, and avoid chewing gum.
- Eat high-fiber and bulky foods, such as whole grain breads and cereals, fruits and vegetables (raw and cooked with skins and peels on), popcorn, and well-cooked dried beans.
- Eat a breakfast that includes a hot drink and high-fiber foods.
- Ask your dietitian to recommend a high-calorie, high-protein, fiber-containing liquid supplement if you need more calories, protein, and fiber.
- Use laxatives only on the advice of your provider. Contact your provider if you have not had a bowel movement for 3 days or longer.

## Sore or Irritated Mouth or Throat

Some people with cancer may have a sore mouth, mouth sores, or a sore throat. If you have these problems, eating soft, bland foods and lukewarm or cool foods can be soothing. On the other hand, foods that are coarse, dry, or scratchy should be avoided. In addition, you may find that tart, salty or acidic fruits and juices, alcohol, and spicy foods may be irritating and should be avoided. Rinsing your mouth regularly with one teaspoon of baking soda and eight ounces of water or salt water can help prevent infections and improve healing of a sore mouth and throat.

### What to Do

- Avoid tart, acidic, or salty foods and drinks such as citrus fruit juices (grapefruit, orange, lemon, and lime), pickled and vinegary foods, tomato-based foods, and some canned broths.
- Avoid rough-textured foods, such as dry toast, granola, and raw fruits and vegetables.
- Choose lukewarm or cool foods that are soothing. Very hot or very cold foods can cause discomfort.
- Stay away from alcohol, caffeine, and tobacco. These substances can dry out your mouth and throat and promote further irritation.

- Avoid irritating spices such as chili powder, cloves, curry, hot sauces, nutmeg, and pepper.
- Season foods with herbs such as basil, oregano, and thyme.
- Eat soft, creamy foods such as cream soups, cheeses, mashed potatoes, yogurt, eggs, custards, puddings, cooked cereals, ice cream, casseroles, gravies, syrups, milkshakes, and commercial liquid food supplements.
- Blend and moisten foods that are dry or solid with sauces, gravies, and casseroles.

## Diarrhea

Cancer treatments and medications can cause your bowels to move much more frequently and stools to become very loose (diarrhea). If you have diarrhea, you may need to avoid high-fiber foods, which may make the problem worse. These include nuts, seeds, whole grains, legumes, dried fruits, and raw fruits and vegetables. You should also avoid high-fat foods such as fried and greasy foods, as they can also promote diarrhea. In addition, stay away from gassy foods and carbonated beverages. Be sure to sip fluids throughout the day to prevent dehydration. Once the diarrhea has stopped, slowly begin eating foods containing fiber.

### What to Do

- Drink plenty of mild, clear, non-carbonated liquids throughout the day. Drink liquids at room temperature, as they are better tolerated than hot or cold beverages. Flat soda is another good choice.
- Eat small, frequent meals and snacks throughout the day.
- Avoid greasy, fried, spicy, or other high fat foods.
- Limit milk and other lactose-containing foods.
- Avoid drinks and foods that cause gas, such as carbonated drinks, chewing gum and gas-forming vegetables (broccoli, cauliflower, cabbage, Brussel sprouts and beans). You may drink carbonated beverages if you leave them open for at least 10 minutes before drinking.
- Drink and eat high-sodium foods such as broths, soups, sports drinks, crackers, baked chips and pretzels.
- Drink and eat high-potassium foods such as fruit juices and nectars, sports drinks, potatoes without the skin, and bananas.
- Eat foods high in pectin such as applesauce and bananas.
- Consume white rice cooked in chicken or vegetable broth (this should be a thick porridge-like consistency).
- Drink at least one cup of liquid after each loose bowel movement.
- Avoid chewing gums, sugar-free gums, and all candies made with sorbitol.
- Call your doctor if diarrhea continues or increases, or if your stools have an unusual odor or color.

## When You Are Feeling Queasy

Some people with cancer may experience nausea and vomiting. If you have these problems, be sure to take in plenty of fluids to prevent dehydration. Sip water, juices, and other clear, calorie-containing liquids throughout the day. You may tolerate clear, cool liquids better than very hot or icy fluids. When you have stopped vomiting, try eating easy-to-digest foods such as clear liquids, crackers, gelatin, and plain toast.

### What to Do

- Eat six to eight small meals a day, instead of three large meals.
- Eat dry foods, such as crackers, toast, dry cereals, pretzels or bread sticks, when you wake up and every few hours during the day.

- Eat foods that do not have a strong odor.
- Eat cool foods instead of hot spicy foods.
- Avoid foods that are overly sweet, greasy, fried, or spicy, such as rich desserts and French fries.
- Sit up or recline with your head raised for at least 1 hour after eating if you need to rest.
- Sip clear liquids frequently to prevent dehydration.
- Ask your doctor about medications that prevent or stop nausea.
- Try bland, soft, easy-to-digest foods on scheduled treatment days. Foods such as Cream of Wheat® and chicken noodle soup with saltine crackers may be better tolerated than heavy meals.
- Avoid eating in a room that is warm, or that has cooking odors or other smells. Cook outside on the grill or use boiling bags to reduce cooking odors.
- Rinse your mouth before and after meals.
- Suck on hard candy, such as peppermint or lemon, if there is a bad taste in your mouth.
- Drink eight or more cups of liquid each day if you can. Drink an additional half cup to one cup of liquid for each episode of vomiting. Try sipping liquids 30 to 60 minutes after eating solid food.

## Dry Mouth or Thick Saliva

Some cancer treatments and medications can cause dry mouth or thick saliva. If you have either of these side effects, drink plenty of fluids throughout the day and eat moist foods as much as possible. In addition, brush your teeth and rinse your mouth regularly with baking soda and water or salt water to help keep it clean and prevent infection. Avoid commercial mouthwashes and alcoholic and acidic beverages because they can dry and further irritate the mouth.

### What to Do

- Drink 8 to 12 cups of liquid a day, and take a water bottle with you when you leave home. (Drinking lots of fluids helps loosen mucus.)
- Use a straw to drink liquids.
- Take small bites and chew food completely.
- Eat soft, moist foods that are cool or at room temperature. Try blenderized fruits and vegetables, soft-cooked chicken and fish, well-thinned cereals, popsicles, and slushies. Avoid foods that stick to the roof of the mouth.
- Moisten foods with broth, soup, sauces, gravy, creams, butter, or olive oil.
- Suck on sour lemon drops, frozen grapes, popsicles, or ice chips. (Avoid chewing ice, as it can damage teeth.)
- Keep your mouth clean. Use a soft-bristle toothbrush; rinse your mouth before and after meals with plain water or a mild mouth rinse (made with one quart of water, one-half to one teaspoon of salt, and one teaspoon of baking soda); and floss regularly. It is a good idea to gently brush your tongue as well.
- Avoid commercial mouthwashes, alcoholic and acidic beverages, and tobacco.
- Stay away from caffeine-containing drinks such as coffee, tea, colas, and chocolate.
- Use a cool mist humidifier to moisten room air, especially at night. (Be sure to keep the humidifier clean to avoid spreading bacteria or mold in the air.)

## Weight Gain or Weight Loss

People going through cancer treatment can experience weight loss during times of decreased appetite or other treatment related side effects that affect the ability to eat. It is important to eat whatever works during this

time to maintain body weight and protein stores. You may benefit from the use of liquid nutritional products during this time like Ensure®, Boost®, etc.

Women that receive breast cancer treatment can also gain unwanted weight during and/or after the treatment process. The reason for this weight gain is not clear but may be due to hormonal changes as well as decreased activity, depression, and other factors. While this side effect is disconcerting to most, it is helpful to know about it in advance. This way, you can adjust your eating habits accordingly if you begin gaining weight. Your dietitian can also assist you with modifying your diet to minimize weight gain.

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