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Nutrition for People With Cancer

Nutrition is an important thing to consider when you're getting cancer treatment. Eating healthy foods before, during, and after treatment can help you feel better and stay stronger. But cancer and its treatment can sometimes cause problems that can make it hard to eat. Not everyone with cancer has nutrition-related side effects, but this information can help you address them if and when they come up.

Nutrition During Cancer Treatment

Learn about nutrition needs during treatment and how to manage treatment side effects that could affect how well you eat.

- [Benefits of Good Nutrition During Cancer Treatment](#)
- [Preparing for Treatment with Good Nutrition](#)
- [Eating Well During Treatment](#)
- [Food Safety During Cancer Treatment](#)
- [High-Fiber and Low-Fiber Foods](#)
- [Managing Eating Problems Caused by Cancer Treatments](#)

More information

Get more nutrition information from the American Cancer Society.

- [Nutrition for the Person With Cancer During Treatment: A Guide for Patients and Families \[PDF\]](#)
- [Nutrition and Physical Activity During and After Cancer Treatment: Answers to Common Questions](#)
- [Eating Well After Treatment](#)
- [Nutrition for Children with Cancer](#)

- [Diet and Physical Activity](#)

Where to find help

If you have any questions or concerns about nutrition, you should talk to a doctor, nurse, or dietitian. A registered dietitian can be one of your best sources of information. If you are going to meet with a dietitian, be sure to write down your questions before your meeting so you won't forget anything. And be sure to ask the dietitian to repeat or explain anything that's not clear.

For more information or to find a registered dietitian, contact the [Academy of Nutrition and Dietetics](#).

From the ACS Bookstore

The second edition of *What to Eat During Cancer Treatment* contains more than 130 recipes. The book provides practical tips and suggestions to help patients and their caregivers anticipate—and overcome—the major challenges of eating well during treatment. Written by Jeanne Besser, an award-winning cookbook author; Barbara Grant, a board-certified specialist in oncology nutrition; and experts in nutrition and cancer care from the American Cancer Society.

For more information or to place an order, visit the [ACS Bookstore](#).

Benefits of Good Nutrition During Cancer Treatment

When you're healthy, eating enough food to get the nutrients and calories you need is not usually a problem. Most nutrition guidelines stress eating lots of vegetables, fruits, and whole-grain products; limiting the amount of red meat you eat, especially meats that are processed or high in fat; cutting back on fat, sugar, alcohol, and salt; and staying at a healthy weight. But when you're being treated for cancer, these things can be hard to do, especially if you have side effects or just don't feel well.

- [Proteins](#)
- [Fats](#)

- [Carbohydrates](#)



heal tissues and help fight infection.

Good sources of protein include fish, poultry, lean red meat, eggs, low-fat dairy products, nuts and nut butters, dried beans, peas and lentils, and soy foods.

Fats

Fats play an important role in nutrition. Fats and oils serve as a rich source of energy for the body. The body breaks down fats and uses them to store energy, insulate body tissues, and transport some types of vitamins through the blood.

Other sources of carbohydrates include bread, potatoes, rice, spaghetti, pasta, cereals, corn, peas, and beans. Sweets (desserts, candy, and drinks with sugar) can supply carbohydrates, but provide very little in the way of vitamins, minerals, or phytonutrients.

Water

Water and liquids or fluids are vital to health. All body cells need water to function. If you don't take in enough fluids or if you lose fluids through vomiting or diarrhea, you can become dehydrated (your body doesn't have as much fluid as it should). If this happens, the fluids and minerals that help keep your body working can become dangerously out of balance. You get water from the foods you eat, but a person should also drink about four 8-ounce glasses of liquid each day to be sure that all the body cells get the fluid they need. You may need extra fluids if you're vomiting, have diarrhea, or even if you're just not eating much. Keep in mind that all liquids (soups, milk, even ice cream and gelatin) count toward your fluid goals.

Vitamins and minerals

Your body needs vitamins and minerals to help it function properly and use the energy (calories) in food. Most are found naturally in foods, but they are also sold as pill and liquid supplements.

If you eat a balanced diet with enough calories and protein you will usually get plenty of vitamins and minerals. But it can be hard to eat a balanced diet when you're being

Antioxidants

Antioxidants include vitamins A, C, and E; selenium and zinc; and some enzymes that absorb and attach to free radicals (destructive molecules), preventing them from attacking normal cells.

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 or vitamin-enhanced foods or liquids is usually not recommended while getting chemo or radiation therapy. Talk with your doctor to find out the best time to take antioxidant supplements.

Phytonutrients

Phytonutrients or phytochemicals are plant compounds like carotenoids, lycopene, resveratrol, and phytosterols that are thought to have health-protecting qualities. They're found in plants such as fruits and vegetables, or things made from plants, like tofu or tea. Phytochemicals are best taken in by eating the foods that contain them rather than taking supplements or pills.

Herbs

Herbs have been used to treat disease for hundreds of years, with mixed results. Today, herbs are found in many products, like pills, liquid extracts, teas, and ointments. Many of the6 Tpp1 72drbofA g oe 0 sm ti be, but ogs (s (Ameca be72drbfulments.)Tj 0 g 1 0 0 37.1 3

potentially harmful drugs, additives, or contaminants that aren't listed on the label. This means there's no sure way to know if a supplement is safe or how it will affect you.

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

- Ask your cancer care team for reliable information on [dietary supplements](#)⁴.
- Check the product labels for both the quantity and concentration of active ingredients in each product.
- Stop taking the product and call your cancer care team right away if you have side effects, like wheezing, itching, numbness, or tingling in your limbs.

Hyperlinks

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Preparing for Treatment with Good Nutrition

Until you start treatment, you won't know what, if any, side effects you may have or how you will feel. One way to prepare is to look at your treatment as a time to focus on yourself and on getting well.

- [Make plans now](#)

Make plans now

You can lower your anxiety about treatment and side effects by taking action now. Talk to your cancer care team about the things that worry you. Learn as much as you can about the cancer, your treatment plan, and how you might feel during treatment. Planning how you'll cope with possible side effects can make you feel more in control and ready for the changes that may come.

Here are some tips to help you get ready for treatment:

- Stock your pantry and freezer with your favorite foods so you won't need to shop as often. Include foods you know you can eat even when you're sick.
- Cook in advance, and freeze foods in meal-sized portions.
- Talk to your friends or family members about ways they can help with shopping and cooking, or ask a friend or family member to take over those jobs for you. Be sure to tell them if there are certain things you have or might have trouble eating.
- Talk to your cancer care team about any concerns you have about eating. They can help you make diet changes to help manage side effects like [constipation](#),¹ [weight loss](#),² or [nausea](#)³.

If your treatment will include radiation to the head or neck, you may be advised to have a feeding tube placed in your stomach before starting treatment. This allows feeding when it gets hard to swallow, and can prevent problems with nutrition and [dehydration](#)⁴ during treatment.

Hyperlinks

1. www.cancer.org/cancer/managing-cancer/side-effects/stool-or-urine-changes/constipation.html
 2. www.cancer.org/cancer/managing-cancer/side-effects/eating-problems/weight-changes.html
 3. www.cancer.org/cancer/managing-cancer/side-effects/eating-problems/nausea-and-vomiting.html
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Eating Well During Treatment

If you're able to eat normally and maintain your weight without snacks, then don't include them.

Some quick-and-easy snacks

- Cereal (hot or cold)
- Cheese (aged or hard cheese, cottage cheese, cream cheese, and more)
- Cookies
- Crackers
- Dips made with cheese, beans, yogurt, or peanut butter
- Fruit (fresh, frozen, canned, dried)
- Gelatin made with juice, milk, or fruit
- Granola or trail mix
- Homemade milk shakes and smoothies
- Ice cream, sherbet, and frozen yogurt
- Juices
- Microwave snacks
- Milk by itself, flavored, or with instant breakfast powder
- Muffins
- Nuts, seeds, and nut butters
- Popcorn, pretzels
- Puddings, custards
- Sandwiches (such as egg salad, grilled cheese, or peanut butter)
- Soups
- Sports drinks
- Vegetables (raw or cooked) with olive oil, dressing, or sauce

- Try to eat high-calorie, high-protein foods at each meal and snack.
- Exercise lightly or take a walk before meals to increase your appetite.
- Drink high-calorie, high-protein beverages like milk shakes and canned liquid supplements.
- Drink most of your fluids between meals instead of with meals. Drinking fluid with meals can make you feel too full.
- Try homemade or commercially prepared nutrition bars and puddings.

High-protein foods*

Milk products

- Eat cheese on toast or with crackers.
- Add grated cheese to baked potatoes, vegetables, soups, noodles, meat, and fruit.
- Use milk in place of water for hot cereal and soups.
- Include cream or cheese sauces on vegetables and pasta.
- Add powdered milk to cream soups, mashed potatoes, puddings, and casseroles.
- Add Greek yogurt, powdered whey protein, or cottage cheese to favorite fruits or blended smoothies.

Eggs

- Keep hard-cooked eggs in the refrigerator. Chop and add to salads, casseroles, soups, and vegetables. Make a quick egg salad.
- All eggs should be well-cooked to avoid the risk of harmful bacteria.
- Pasteurized egg substitute is a low-fat alternative to regular eggs.

Meats, poultry, and fish

High-calorie foods*

Butter

Melt over potatoes, rice, pasta, and cooked vegetables.

day) and as you are able, work up to the goal of 300 minutes a week. Listen to your body, and rest when you need to. Do what you can when you're up to it.

Hyperlinks

1. www.cancer.org/cancer/managing-cancer/side-effects.html
2. www.cancer.org/cancer/risk-prevention/diet-physical-activity/get-active.html

References

National Cancer Institute. Nutrition in Cancer Care (PDQ) - Health Professional Version.

Food Safety During Cancer Treatment

counts by avoiding or eating certain kinds of foods. But here are some tips for handling, planning, and preparing food when your immune system is recovering:

- [Food-handling tips](#)
- [Do not cross-contaminate](#)
- [Cook foods well](#)
- [Microwave cooking](#)
- [Grocery shopping](#)
- [Dining out](#)

Food-handling tips

- Wash your hands with warm, soapy water for 20 seconds before and after preparing food and before eating.
- Refrigerate foods at or below 40° F.
- Keep hot foods hot (warmer than 140° F) and cold foods cold (cooler than 40° F).
- Thaw meat, fish, or poultry in the microwave or refrigerator in a dish to catch drips. Do not thaw at room temperature.
- Use defrosted foods right away, and do not refreeze them.
- Put perishable foods in the refrigerator within 2 hours of buying or preparing them. Egg dishes and cream- and mayonnaise-based foods should not be left unrefrigerated for more than an hour.
- Wash fruits and vegetables well under running water before peeling or cutting. Do not use soaps, detergents, chlorine bleach solutions, or commercial produce rinses. Using a clean vegetable scrubber, scrub produce that has a thick, rough skin or rind (melons, potatoes, bananas, etc.) or any produce that has dirt on it.
- Rinse leaves of leafy vegetables one at a time under running water.
- Rinse packaged salads, slaw mixes, and other prepared produce again under running water, even when marked pre-washed. Using a colander can make this easier.
- Do not eat raw vegetable sprouts.
- Throw away slimy or moldy fruits and vegetables.
- Do not buy produce that already has been cut at the grocery store (like melon or cabbage).
- Wash tops of canned foods with soap and water before opening.
- Use different utensils for stirring foods and tasting them while cooking. Do not taste the food (or allow others to taste it) with any utensil that will be put back into the food.

- Throw away eggs with cracked shells.
- Throw out foods that look or smell strange. Never taste them!

Do not cross-contaminate

- Use a clean knife to cut different foods.
 - In the refrigerator, store raw meat sealed and away from ready-to-eat food.
 - Keep foods separated on the countertops. Use a different cutting board for raw meats.
 - Clean counters and cutting boards with hot, soapy water, or you can use a fresh solution made of 1 part bleach and 10 parts water. Moist disinfecting wipes may be used if they're made for use around food.
- When grilling, always use a clean plate for the cooked meat.

- Check “sell-by” and “use-by” dates. Do not buy products (including meats, poultry, or seafoods) that are out of date. Pick only the freshest products.
- Do not use damaged, swollen, rusted, or deeply dented cans. Be sure that packaged and boxed foods are properly sealed.
- Choose unblemished fruits and vegetables.
- Do not eat deli foods. In the bakery, avoid unrefrigerated cream- and custard-containing desserts and pastries.
- Do not eat foods that are bought from self-serve or bulk containers.
- Do not eat yogurt and ice cream products from soft-serve machines.
- Do not eat free food samples.
- Do not use cracked or unrefrigerated eggs.
- Get your frozen and refrigerated foods just before you check out at the grocery store, especially during the summer months.
- Refrigerate groceries right away. Never leave food in a hot car.

Dining out

- Eat early to avoid crowds.
- Ask that food be prepared fresh in fast-food restaurants.
- Ask for single-serving condiment packages, and avoid self-serve bulk condiment containers.
- Do not eat from high-risk food sources, including salad bars, delicatessens, buffets and smorgasbords, potlucks, and sidewalk vendors.
- Do not eat raw fruits and vegetables .
- Ask for pasteurized fruit juices. Avoid “fresh-squeezed” juices in restaurants.
- Be sure that utensils are set on a napkin or clean tablecloth or placemat, rather than right on the table.
- If you want to keep your leftovers, ask for a container, and put the food in it yourself rather than having the server take your food to the kitchen to do this.

Tips when your white blood cell count is low⁺

	Recommended	Avoid (do not eat)

	<p>cookies, flavored gelatin; commercial ice cream, sherbet, sorbet, and popsicles</p> <p>Sugar</p> <p>Commercially prepared and pasteurized jam, jelly, preserves, syrup, and molasses</p>	<p>filled pastry products</p> <p>Raw honey or honeycomb. Select a commercial, grade A, heat-treated honey instead.</p>
Water and beverages	<p>Drink only water from city or municipal water services or commercially bottled water.</p> <p>Pasteurized fruit and</p>	

- It's important to drink enough fluids.
- Getting regular physical activity helps the digestive system to work better.
- Eating frequent, small meals can help digest food better than larger meals because the digestive system doesn't have to work as hard to digest food.

Always ask your cancer care team if you should follow any special diet before, during, or after treatment. And talk with your cancer care team or a dietitian if you have questions about certain foods or amounts.

What is dietary fiber?

Dietary fiber (often just called fiber) is the part of plant foods that we can't digest. Fiber is richly found in certain plant foods, including legumes or beans, whole grains, fruits and vegetables, and nuts and seeds.

What is soluble and insoluble fiber?

Dietary fiber can be either soluble or insoluble.

Soluble fiber attracts water into the intestines and becomes a gel. It can help lower blood sugar and cholesterol levels. Foods higher in soluble fiber include:

- Apples
- Bananas
- Citrus fruits
- Beans
- Berries
- Oats
- Peas

Insoluble fiber doesn't dissolve in the stomach. It can help move food through your digestive system and bulk up stool to help prevent constipation. But it can also have rough, hard bits that irritate the intestines as it passes through. Foods higher in insoluble fiber include:

- Nuts and seeds
- Some vegetables
- Whole grain foods

What is a low-fiber diet?

A low-fiber diet means you eat foods that do not have a lot of fiber. If you have certain medical problems, are having surgery, or are getting certain treatments for cancer, you may be asked to reduce the amount of fiber in your diet to rest your bowels (or intestines). A low-fiber diet reduces the amount of undigested food moving through your bowels, so that your body makes a smaller amount of stool. Low-fiber foods can be helpful if you have diarrhea, cramping, or trouble digesting food. Foods with little soluble fiber can often be eaten in small amounts (depending on why you're on a low-fiber diet) because the soft fiber gel doesn't irritate the intestines the same way.

How to eat a low-fiber diet

Here are low-fiber foods you can eat with tips to help you cook them if you're restricting your dietary fiber. To see what foods you should avoid while on a low-fiber

- Milk, chocolate milk, buttermilk, and milk drinks
- Yogurt without seeds or granola
- Sour cream
- Cheese
- Cottage cheese
- Custard or pudding
- Ice cream or frozen desserts (without nuts)
- Cream sauces, soups, and casseroles

You can use these items in desserts, snacks, or breads. Use in small to medium amounts and only if they don't cause problems for you.

Low-fiber bread, cereals, and grains

- White breads, waffles, French toast, plain white rolls, or white bread toast
- Pretzels
- Plain pasta or noodles
- White rice
- Crackers, zwieback, melba, and matzoh (no cracked wheat or whole grains)
- Cereals without whole grains, added fiber, seeds, raisins, or other dried fruit

Use white flour for baking and making sauces. Grains, such as white rice, Cream of Wheat, or grits, should be well-cooked. Include the above grains in casseroles, dumplings, soufflés, cheese strata, kugels, and pudding.

Low-fiber vegetables and potatoes

- Tender, well-cooked fresh or canned vegetables without seeds, stems, or skins
- Cooked sweet or white potatoes without skins
- Strained vegetable juices without pulp or spices

You can also eat these with cream sauces, or in soups, soufflés, kugels, and casseroles.

Low-fiber fruits and desserts

- Soft canned or cooked fruit without seeds or skins (small amounts)
- Small amounts of well-ripened banana

- Strained or clear juices
- Small amounts of soft cantaloupe or honeydew melon
- Cookies and other desserts without whole grains, dried fruit, berries, nuts, or coconut
- Sherbet and popsicles

Serving suggestions include gelatins, milk shakes, frozen desserts, puddings, tapioca, cakes, and sauces.

Other low-fiber foods

- Mayonnaise and mild salad dressings
- Margarine, butter, cream, and oils in small amounts
- Plain gravies
- Plain bouillon and broth

- Ketchup and mild mustard
- Spices, cooked herbs, and salt
- Sugar, honey, and syrup
- Clear jellies
- Hard candy and marshmallows
- Plain chocolate

Liquids and drinks for a low-fiber diet

Keep in mind that low-fiber foods can cause fewer bowel movements and smaller stools. You may need to drink extra fluids to help prevent constipation while you are on a low-fiber diet. Drink plenty of water unless your doctor tells you otherwise, and use juices and milk as noted above.

What is a high-fiber diet?

A **high-fiber diet** means you eat foods that are high or rich in dietary fiber. Dietary fiber has long been linked to a lower risk of certain types of cancer, including colorectal cancer. Because of this, many people who have not been diagnosed with cancer follow a high-fiber diet to try to prevent getting cancer. And some people living with cancer might choose high-fiber foods to help prevent other cancers from starting. Fiber can

also promote heart health and can help a person maintain or lose body weight by helping to control cholesterol and blood sugar levels.

If a person with cancer has no special dietary restrictions to follow during and after treatment, they might choose to follow a high-fiber diet to stay as healthy as possible.

But some cancer treatments can cause problems with the stomach and intestines. Adding high-fiber foods might increase those problems. If this happens, talking to a dietitian and cutting back on fiber can help.

High-fiber vegetables and potatoes

- All raw or steamed vegetables
- All types of beans
- Potatoes with skin
- Peas
- Corn
- Cabbage, broccoli, cauliflower, Brussels sprouts, and greens
- Sauerkraut
- Onions

High-fiber fruits and desserts

- All raw or dried fruits
- Berries
- Prune juice, prunes, and raisins

Other high-fiber foods

- Marmalade
- Pickles, olives, relish, and horseradish
- Popcorn
- Potato chips

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Managing Eating Problems Caused by Cancer Treatments

Different cancer treatments can cause different kinds of problems that may make it hard to eat or drink. Here are some problems you could have depending on the type of treatment you receive:

- [Surgery](#)
- [Radiation therapy](#)
- [Chemotherapy](#)
- [Common eating problems](#)

Surgery

After surgery, you will need extra calories and protein for wound healing and recovery. This is when many people have pain and feel tired. They also may be unable to eat a normal diet because of surgery-related side effects. Your body's ability to use nutrients may also be changed by surgery on any part of the digestive tract (like the mouth, esophagus, stomach, small intestine, pancreas, colon, or rectum).

Be sure to talk to your cancer care team about any problems you're having so they can help you manage them.

For more about information on surgery as a cancer treatment, see [Cancer Surgery](#)².

Radiation therapy

