

No. 24 in a series providing the latest information for patients, caregivers and healthcare professionals

Highlights

- Patients who eat well and maintain a healthy weight usually manage treatment side effects better.
- You may want to ask your doctor to refer you to an oncology registered dietitian (RD), also called a registered dietitian nutritionist (RND), for specific nutrition advice and guidance.
- Eating a variety of different foods rich in nutrients is important in order to maintain and improve good health.
- Certain foods may cause a bad reaction with some of the drugs that are used to treat cancer. Ask your treatment team if there are any foods you need to avoid.
- Cancer research related to nutrition is still ongoing. It may be hard to find evidence-based advice because of the myths and misinformation about this subject.

Introduction

Eating well is important for everyone. The types and amounts of foods that we eat affect our energy levels, our moods and how we feel about ourselves. A healthy lifestyle plays a key role in keeping the body strong, supporting the immune system (the cells and proteins that defend the body against infection) and reducing risk for some diseases, such as heart disease and some types of cancer.

Nutrition Consultations. Through LLS's Nutrition Education Services Center you can schedule a free one-on-one nutrition consultation with one of our registered dietitians who have expertise in oncology nutrition. Consultations are available to patients and caregivers of **all cancer types**. Dietitians can assist with information about healthy eating strategies, side effect management and more. **Please visit www.LLS.org/nutrition or call 877-467-1936 for more information.**

Food Safety

Handling food safely is important for everyone. People who are being treated for cancer can have weakened immune systems, which increases their risk for foodborne illnesses.

Safe food handling includes the following guidelines:

- Rinse fruits and vegetables well BEFORE peeling, so dirt and bacteria are not transferred onto the fruits or vegetables. Cut away any damaged or bruised areas before preparing or eating. Throw away the outside leaves of a head of lettuce or cabbage.
- Scrub fruits and vegetables that have rough surfaces and peels, such as melons, oranges and avocados. This should be done with a brush and water before you cut or peel them.
- Soak frozen fruits and vegetables in water and rinse them thoroughly if you are not going to cook them (for a smoothie, for instance). If you do cook them, you do not need to wash frozen fruits and vegetables.
- Use separate dishes, cutting boards and utensils when preparing raw or cooked meat, fish or poultry. Do not use the same serving dishes and utensils for meat, fish and poultry after they are cooked.
- Do not rinse raw meat and poultry before cooking because bacteria can spread to the sink or countertops.
- Keep raw eggs, meat, poultry, seafood, and the juices of all foods that will be cooked away from foods that won't be cooked. Do not use sponges on juices from raw meat.
- Your refrigerator should be set to 40°F or below. Your freezer should be set to 0°F or below.
- Wash any item that you use for preparing raw foods, including utensils, cutting boards and plates, before you use them for other foods or put cooked meat on them.
- Thaw frozen items in the microwave or refrigerator, not on the kitchen counter. Thaw foods by using one of the following methods:
 - o Put the food item in the refrigerator one day before cooking.
 - o Use the defrost setting on a microwave. Cook right away.
- Marinate food in the refrigerator.
- Use a food thermometer to make sure that meat is cooked to a safe minimum internal temperature.

Food and Nutrition During Cancer Treatment

Food	Type	Internal Temperature
Ground meat and meat mixtures	Beef, pork, veal, lamb	160°F
	Turkey, chicken	165°F
Fresh beef, veal, lamb	Steaks, roasts, chops Rest time: 3 minutes	145°F
Poultry	All poultry (breasts, whole bird, legs, thighs, wings, ground poultry, giblets and stuffing)	165°F
Pork and ham	Fresh pork, including fresh ham. Rest time: 3 minutes	145°F
	Precooked ham (to reheat) Note: Reheat cooked hams packaged in United States Department of Agriculture (USDA)-inspected plants to 140°F	165°F
Eggs and egg dishes	Eggs	Cook until yolk and white are firm.
	Egg dishes (such as frittata, quiche)	160°F
Leftovers and casseroles	Leftovers and casseroles	165°F
Seafood	Fish with fins	145°F or cook until flesh is opaque and separates easily with a fork.
	Shrimp, lobster, crab and scallops	Cook until flesh is pearly or white, and opaque.
	Clams, oysters, mussels	Cook until shells open during cooking.

Source: FoodSafety.gov by the U.S. Department of Health & Human Services

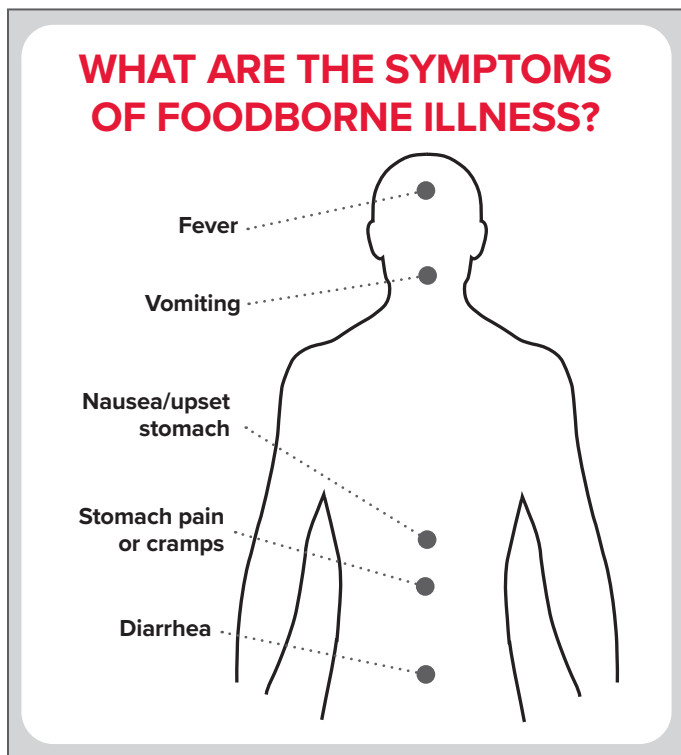
- Read the expiration dates on food products and look for signs of food spoilage. **If in doubt, throw it out.** Don't taste food that looks or smells "funny" or bad.
- Leftovers should be used within one to four days depending on the food product.
- Refrigerate or freeze all cooked and perishable food within two hours of purchasing and preparing. Refrigerate ready-to-eat food and leftovers right after you finish eating.
 - o Take special care to quickly store cooked rice and pasta below 40°F if you plan to re-use it. Grains, such as rice and pasta, can contain bacterial spores that may lead to food poisoning. It's best to use cooked rice and pasta within 24 hours.
- Keep your hands, counters, dishes, cutting boards, sinks, knives and utensils clean.
- Wash dish towels often.
- Wash sponges in the dishwasher regularly along with your dishes, or boil the sponges for five minutes to remove bacteria. Sponges should be cleaned daily and replaced if they begin to smell. They can harbor many harmful bacteria that can make you sick.
- After grocery shopping, go directly home and put perishable food into the refrigerator or freezer right away.
- If you need to make a stop after grocery shopping, place perishable foods in an insulated bag or cooler with ice packs.

Here is an easy way to remember food safety basics.

 <p>CLEAN WASH YOUR HANDS AND SURFACES OFTEN.</p>	 <p>SEPARATE DON'T CROSS-CONTAMINATE.</p>
 <p>COOK TO THE RIGHT TEMPERATURE.</p>	 <p>CHILL REFRIGERATE PROMPTLY.</p>

Source: Centers for Disease Control and Prevention (CDC)

Foodborne Illness. If you suspect that you have a foodborne illness, contact your treatment team immediately. Mark any recently eaten food or beverages as “do not eat.” Keep containers in the fridge in case your healthcare team wants to test any of the potentially contaminated food. If you experience vomiting or diarrhea, be sure to drink plenty of clear liquids to replace lost fluids and avoid dehydration. Do not take any medications without talking to your treatment team first.



Questions to Ask Your Healthcare Team

- Am I at an increased risk for foodborne illness?
- What steps should I take to protect myself?
- What should I do and whom should I call if I think I have a foodborne illness?

See *Other Resources* for information about The Partnership for Food Safety Education (PFSE).

Nutrition During and After Cancer Treatment

Eating well helps people with cancer feel better and stay stronger during and after cancer treatment. If you eat well and maintain a healthy weight, you will usually manage the side effects of treatment better. Good nutrition also helps the body replace blood cells and healthy tissues that are damaged as a result of cancer treatment.

Eating a variety of foods is the best method to ensure that you get all the nutrients that your body requires. A healthy eating pattern includes consuming a variety of foods and an adequate number of calories so that you maintain a healthy weight.

A healthy eating pattern includes the following:

- A variety of vegetables, including leafy vegetables and legumes (beans and peas)
- Fruits, especially whole fruits
- Grains, half of which should be whole grains. Limit refined grains like white rice and white bread.
- A variety of protein-rich foods, including seafood, lean meats, poultry, eggs, dairy products (e.g. milk, yogurt, cheese) beans, nuts, seeds and soy products
- Oils. Use healthy oils like olive oil and canola oil for cooking and in salad dressings.
- Following food safety guidelines (See *Food Safety*.)

Additionally, a health eating pattern limits the following:

- Saturated fat. Limit saturated fat to five to six percent of all calories consumed each day. (For example, if you need 2,000 calories a day, no more than 120 of them should come from saturated fat, which is about 13 grams.) Saturated fats are solid at room temperature. Beef, butter and cheese are examples of foods that contain saturated fats.
- Trans fat. Limit trans fat as much as possible. Cakes, cookies, chips, fried foods, creamers and margarine often contain trans fat.
- Added sugars. Limit added sugars to less than 25 grams for females and 37 grams for males per day.
- Sodium (salt). Limit sodium to no more than 2,300 mg per day. Ideally, try not to exceed 1,500 mg of sodium per day.

Hydration. Drink water and other caffeine-free fluids throughout the day to maintain hydration. If you do not like plain water, try sparkling water, flavored water, or add a splash of 100% fruit juice.

Avoid caffeinated beverages if you are experiencing diarrhea or reflux, as caffeine may make these symptoms worse. Limit sugary drinks such as soda.

Discuss alcohol with your doctor before dinking. If you do drink, do so in moderation. This means having no more than one drink per day if you are female and no more than two drinks per day if you are male. One drink is equal to any of the following: 12 ounces of beer, 5 ounces of wine, 1.5 ounces of 80-proof liquor.

Foods cannot be used to treat cancer, but some things you eat or drink and some actions you avoid can make a difference in your health and how you feel. For example, it's important to know if what you eat is causing a bad reaction to your medication. It's also important to know how much you should eat to achieve or maintain a healthy weight. You should also keep track of how much water you drink. Staying hydrated is very important.

For more information and resources on how to improve nutrition, see the National Cancer Institute's *Eating Hints: Before, during, and after Cancer Treatment* at www.heart.org/en/healthy-living/healthy-eating/eat-smart/fats/saturated-fats and visit www.myplate.gov.

For more information on general nutrition, visit www.LLS.org/booklets to view the *Nutrition Handbook* and the *Nutrition Handbook for Parents*.

Healthy Lifestyle. In addition to good nutrition, a healthy lifestyle includes:

- Drinking enough fluid
- Relaxation (managing stress)
- Getting enough sleep (for adults seven to nine hours of sleep per night is recommended)
- Not using tobacco or abusing drugs and limiting or not drinking alcohol
- Movement, which is an important part of a healthy lifestyle and can reduce anxiety, fatigue and improve heart function and self-esteem

Consult your doctor before beginning a new exercise program. Gradually increasing exercise levels through low-risk activities like short daily walks can be the best method to start an exercise program.

Cancer Drug Treatment and Nutrition

Certain foods may cause a bad reaction with some of the drugs that are used to treat cancer. Members of your treatment team will tell you which foods to avoid.

When you begin a new treatment or start using a new drug, tell your doctor about any food allergies you have and all vitamins and herbal supplements you are taking.

You should also ask the following questions:

- Will I have any special nutritional needs while taking this medication?
- Do I need to take this medication with food, or should I take it without food?
- Are there any known vitamins or supplements that I should not take while receiving this treatment?

- Are there any foods or beverages I should avoid while receiving this treatment?
- Do I need to drink extra water or other fluids while in treatment or while taking this medication?
- Can I drink alcohol (including beer and wine) while receiving treatment or taking this medication?
- What should I do if I vomit immediately after taking my medication?

Your Appetite

People living with cancer may have different nutrition goals and challenges, depending on any of the following things:

- Age
- Type of cancer
- Stage of cancer
- Type of treatment
- Other medical conditions such as high blood pressure, heart disease, diabetes or depression

Cancer and treatment may increase your body's need for calories and protein. Chemotherapy, certain other drug therapies and radiation therapy create a need for more calories and protein. Side effects of your treatment, such as loss of appetite, nausea, mouth sores and taste changes, may make it a challenge for you to take in enough calories and protein.

If your appetite decreases during your treatment or if you lose weight, try not to worry too much about following a "healthy diet." There may be times when only certain foods are appealing, and that is okay. Even if you think a food is not the "healthiest" option, the most important thing is to eat enough protein and calories. The following nutrition tips can help you get the most nutrition out of each bite of food when decreased appetite is a problem:

- Eat several small meals instead of 3 large meals each day. Aim for six small meals to get the calories you need.
- Make a list of your favorite foods and be sure to have these foods on hand.
- Keep prepared snacks or small meals on hand. Make sure to take them with you when you leave home for work or travel.
- When possible, take a walk before meals to improve appetite.
- Try new foods and recipes to accommodate changes in taste or smell.

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- Use plastic utensils instead of metal to avoid a metallic taste.
- Choose soft foods or foods that can be cooked until tender.
- For extra calories, add gravy, milk, butter or cream to your food whenever possible.
- Try over-the-counter high-protein shakes such as Carnation Breakfast Essentials®, Ensure®, Boost®, Orgain® or generic brands of these sorts of foods. Tip: look for versions labeled “plus.” These often include increased calories as well as protein.
- Try high-calorie liquids such as juices, soups or shakes if eating solid foods is a problem.
- Use healthy fats like olive oil, avocado and nut butters to boost calories.
- If water tastes unpleasant, try getting liquids through food, such as watermelon or soup. Flavor water with fresh cut fruit. You can also drink decaffeinated sports drinks, tea or low-fat milk.
- If food tastes bland, try seasoning it with spices or herbs.
- If meat is not enjoyable, try getting protein from other sources, such as eggs, cheese, nuts or high-protein smoothies.
- Eat with friends or family members when possible.
- Accept help with food shopping and meal preparation.
- Sign up for cooking classes for people with cancer. Ask members of your healthcare team if any are available in your area.

Decreased appetite can be very challenging and distressing especially when it results in weight loss. It can be difficult for patients and families to cope with changes in eating behavior that is caused by decreased or changed appetite. If your appetite continues to be poor, your doctor may prescribe medication to stimulate your appetite.

Visit www.LLS.org/booklets (filter by Side Effect Management) to view the full side-effect management series, including *Managing Mouth and Throat Side Effects*, *Managing Nausea and Vomiting*, and *Managing Low Appetite and Weight Loss*.

Weight Gain

For some patients, weight gain may occur as a result of increased appetite or fluid retention (“bloating”) associated with certain drug therapies. Do not attempt

to lose weight or start a weight-loss diet without proper medical guidance. For help, ask your oncologist to refer you to a registered dietitian nutritionist who can design an appropriate diet for you.

Obesity has been associated with an increased risk of being diagnosed with different types of cancer, including blood cancers. Further research is required to assess whether obesity has a clear effect on treatment outcomes for cancer.

More information about diet in relation to cancer risk and prevention can be found at www.cancer.gov/about-cancer/causes-prevention/risk/obesity/obesity-fact-sheet from the National Cancer Institute (NCI).

Get Enough to Drink

Certain cancer therapies, including chemotherapy, other drug therapies and radiation therapy, can increase risk for dehydration. Some side effects of treatment, such as diarrhea and vomiting, increase the need for more fluids. Fever can also increase the risk for dehydration.

Signs of dehydration include:

- Thirst
- Dry or sticky mouth and/or swollen tongue
- Dizziness and/or headaches
- Nausea
- Constipation
- Dry skin
- Weight loss
- Dark urine

Drinking water is the best way to hydrate. If plain water does not appeal to you, you can try sparkling water, flavored water or adding a splash of 100% fruit juice or sliced fruit or cucumbers to water. You can also try low-sodium broths, decaffeinated teas or low-sugar sports drinks. It is best to avoid drinks with caffeine and alcohol as these can increase your body’s fluid loss. Many foods contain water and can also help replenish lost fluids. Foods that are liquid at room temperature, such as soups or popsicles, count toward your fluids goal.

If you are taking medications by mouth, drink plenty of fluids throughout the day. If you can’t handle drinking adequate amounts of liquid all at once, sipping small amounts at regular intervals is a good alternative. If you feel fatigued, make sure fluids are within easy reach. Drinking large amounts of fluid all at once may cause

vomiting. Do not wait until you feel dehydrated and thirsty to drink. Try and maintain your fluid levels before you become dehydrated. If you have diarrhea, choose drinks that have sodium and potassium to help replace these lost minerals.

Fluid requirements are based on several factors, such as age (infants, children and older adults have a greater risk of dehydration), activity level, climate and medical treatment. Women and people with overweight or obesity are at greater risk for dehydration. Ask your treatment team about the amount of fluid you should drink each day.

Your treatment team may recommend liquids, such as broths or sports drinks. These can restore the body's electrolyte balance. Electrolytes, such as sodium and potassium, have many important functions in the body. Vomiting and diarrhea increase your body's loss of electrolytes. Ask your treatment team if you need extra help in keeping your body's fluids in balance by drinking liquids that contain electrolytes.

Diet Guidelines for Immunosuppressed Patients

Food safety is important during and after cancer treatment. Cancer and treatment weaken the immune system making the body more susceptible to foodborne illnesses. Ask your treatment team for any special nutrition guidelines to follow. This includes asking about foods to avoid. Do not eat the following foods (which are more frequently associated with foodborne illness) unless approved by your treatment team:

- Raw or undercooked meat and poultry, especially ground beef and salami
 - All meat should be cooked to a safe internal temperature.
 - Raw or undercooked seafood (especially shellfish, sushi, sashimi and smoked fish)
 - Unpasteurized beverages, such as fruit juice, milk and raw milk yogurt
 - Soft cheeses made from unpasteurized milk, such as blue-veined (a type of blue cheese), Brie, Camembert, feta, goat cheese and queso fresco/blanco
 - Check the label to see if the cheese is pasteurized. Pasteurized versions of the cheeses listed above may be available.
 - Uncooked eggs (such as soft boiled, over easy and poached); unpasteurized eggs; and foods made from
- raw eggs, such as homemade raw cookie dough, certain salad dressings and homemade mayonnaise
 - Refrigerated pate, cold hot dogs or deli lunch meat, including dry-cured uncooked salami and deli prepared salads containing eggs or seafood
 - Raw sprouts, such as alfalfa sprouts or bean sprouts
 - Unwashed fresh fruit and vegetables
 - Before eating, wash all fruit and vegetables, even if you are going to peel off the skin.
 - Foods from buffets and salad bars
 - Order all foods to be fully cooked and well done, and ask the wait staff if you are not sure of the ingredients in your meal.

If you have a well for your water source, a water filter should be installed on the tap or where the water enters the house. You can get your water tested at no cost. Contact your county government or local health department for information. If you do not have a filter, you can boil your drinking water. To sterilize water, keep it at a rolling boil for at least one minute, or three minutes at altitudes above 2,000 meters (about 6,562 feet).

Note on Neutropenic Diet. In your search for nutrition information for people who have weakened immune systems, you may come across the term “neutropenic diet.” This diet was supposed to help individuals with lower-than-normal neutrophil (a type of white blood cell) count avoid infection. (An abnormally low neutrophil count is called neutropenia, and it make the body susceptible to various bacteria and viruses.) However, a universally accepted definition of what foods should be included was never developed. In a review of studies, no definitive evidence was discovered that proved that these sorts of diets decrease the risk of infection. This diet does not seem to benefit patients in any way. There is currently no evidence to support the use of a neutropenic diet in neutropenic patients with cancer.

Safe preparation and handling of foods is more important than restricting intake of specific food groups, as balanced diet and nutrition is important for coping with chemotherapy and other cancer treatments. Patients and clinicians should continue to follow the safe food-handling guidelines recommended by the U.S. Food and Drug Administration (FDA). Visit <https://www.fda.gov/food/buy-store-serve-safe-food/safe-food-handling> to view these guidelines.

For specific instructions about your diet, talk to your treatment team and ask for a referral to an oncology registered dietitian nutritionist.

Decrease Your Risk of Foodborne Illness

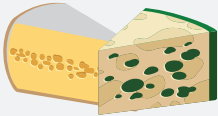
FOODS TO AVOID



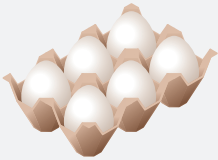
Raw or undercooked meat, poultry or seafood



Unpasteurized beverages, raw milk



Soft cheeses made from unpasteurized milk



Raw or undercooked eggs



Cold hot dogs, deli meat and paté



Raw sprouts (alfalfa or bean sprouts)



Unwashed fruits and vegetables



Foods from buffets and salad bars



Unfiltered water

FOODS TO EAT



Meat, poultry and seafood cooked to a safe internal temperature



Pasteurized milk and juice



Cheeses made from pasteurized milk



Cooked eggs with a firm yolk



Hot dogs or deli meats heated to 165°F



Washed fruits and vegetables



Filtered water

Dental Health

Dental care is an important part of overall cancer care. Problems with the teeth, gums or mouth can interfere with eating well. Poor nutrition can lead to dental problems. Ideally, patients should visit a dentist before treatment starts. Take these steps to care for your mouth and teeth and prevent gum disease and infection:

- Brush teeth two to three times a day with a fluoride toothpaste with mild taste. Flavorings can irritate the mouth.
- Gently floss once a day.
- Rinse the mouth with a solution of water, salt and baking soda every two hours.
- Use an antibacterial rinse two to four times a day to prevent gum disease. Avoid alcohol-based mouthwashes.
- Use a lip-care product to prevent your lips from drying and cracking.
- Brush dentures daily.
- Avoid hot, spicy, acidic and crunchy foods that may irritate your mouth.
- Try soft texture and moist foods if your mouth is dry or sore.
- If your mouth is sore, try non-acidic, non-spicy foods.
- Avoid sugary foods, such as candy or soda, that can cause cavities.
- Avoid alcohol and tobacco products.
- Inspect your mouth daily to detect any problems with sores, ulcers or infection.
- Speak with your oncologist and dentist as soon as possible if you have any pain or other problems with your mouth, teeth, cheeks or jaw.
- Ask your healthcare team for tips on how to keep your teeth and mouth clean and for their suggestions on how to reduce dental discomfort. If needed, your oncologist may refer you to a dental oncologist (a dentist who is specially trained to treat people with cancer).

When you go to the dentist, update your medical history records to include your cancer diagnosis and treatments, and provide your dentist and your oncologist with each other's name and telephone number so they can consult with one another. Your dentist should consult with your treatment team regarding your health status, especially

blood counts (red blood cells, white blood cells and platelets), before any procedures. You may be advised to have any necessary major dental procedures completed before beginning therapy (assuming this is possible). When dental problems are treated before cancer treatments begin, there may be fewer or less severe oral complications.

For more information, visit www.LLS.org/booklets to view the free LLS fact sheet *Dental and Oral Complications of Cancer Treatment and Side-Effect Management: Managing Mouth and Throat Side Effects*.

Evaluating Nutrition and Supplement Information

Nutrition and cancer research is still ongoing. It may be hard to sort out dependable, science-based advice from misinformation and myth.

If you are interested in understanding more about nutrition news that you have seen on the Internet, read about in a magazine or newspaper, or heard on the news or from a friend or relative, it is important to ask a member of your treatment team.

Do not try a diet, vitamin, or herbal supplement without talking to your treatment team. This is because these substances can interfere with your cancer treatment. Here are a few examples:

- St. John's wort, an herbal product used to treat depression, reduces the effectiveness of imatinib (Gleevec®), a drug used to treat chronic myeloid leukemia and Philadelphia-positive acute lymphoblastic leukemia.
- Green tea supplements can interfere with the effectiveness of bortezomib (Velcade®).
- Some studies have shown that high doses of vitamin C may reduce the effectiveness of chemotherapy drugs.

Medical marijuana can sometimes be used to help manage side effects from treatment. More research is needed to better understand the risks and benefits. Do not use marijuana or products made with cannabinoids without first talking to your healthcare team. Marijuana or related products (for example, CBD oils) could interfere with other medications. Do not obtain any kind of marijuana from anywhere that is not a licensed dispensary.

For detailed information regarding medical marijuana, visit www.LLS.org/booklets to view the free fact sheet *Integrative Medicine and Complementary Therapies*.

Dietitians and Nutritionists

You may want to ask your doctor to refer you to a registered dietitian (RD) for specific nutrition advice and guidance. The terms “nutritionist” and “dietitian” are often used to mean the same thing, but they are not the same. Dietitians may refer to themselves as nutritionists, but not all nutritionists are dietitians. The registered dietitian (RD) or registered dietitian nutritionist (RDN) credential signifies that a clinician has completed a degree from an accredited dietetics program, completed a supervised internship, passed a national exam, and continued professional development throughout their career.

Dietitians who are board certified specialists in oncology also have the CSO credential (Certified Specialist in Oncology) in addition to being an RD. You can find an RD at www.eatright.org/find-a-nutrition-expert on the Academy of Nutrition and Dietetics website. You can search by location and filter by specialty.

An RD can:

- Develop an individualized eating plan that meets your needs
- Help you manage changes in appetite and weight
- Help you deal with side effects of treatment
- Advise you about foods, vitamins, herbs and supplements
- Develop a personalized cancer survivorship wellness plan

Patients who cannot eat and drink enough for extended periods of time may be referred by their oncologists to a dietitian to help determine whether a feeding tube should be used for nutrition during treatment. They will also receive information on the best type of formula to use. Some patients may need to receive their nutrition through an IV. These forms of therapy may be needed to keep you as healthy and strong as possible during treatment.

Acknowledgement

The Leukemia & Lymphoma Society (LLS) appreciates the review of this material by:

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Resources and Information

LLS is the world’s largest voluntary health organization dedicated to funding blood cancer research, education and patient services. LLS has regions throughout the United States and in Canada. To find the region nearest to you, visit our website at www.LLS.org/LocalPrograms or contact an Information Specialist at (800) 955-4572.

LLS offers free information and services for patients and families affected by blood cancers. This section lists various resources you may find helpful.

For Help and Information

Consult with an Information Specialist. Information Specialists can assist you through cancer treatment, financial and social challenges and give accurate, up-to-date disease, treatment and support information. Our Information Specialists are highly trained oncology social workers and nurses. Language services are available. For more information, please:

- Call: (800) 955-4572 (Monday through Friday, 9 a.m. to 9 p.m. ET)
- Email and Live chat: www.LLS.org/InformationSpecialists

Clinical Trials (Research Studies). Research is ongoing to develop new treatment options for patients. LLS offers help for patients and caregivers in understanding, identifying and accessing clinical trials. Pediatric and adult patients and caregivers can work with our Clinical Trial Nurse Navigators who will help find clinical trials and provide personalized support throughout the entire clinical trial process. Visit www.LLS.org/CTSC for more information.

Nutrition Consultations. Schedule a free one-on-one nutrition consultation with one of our registered dietitians who have expertise in oncology nutrition. Consultations are available to patients of all cancer types and their caregivers. Dietitians can assist with information about healthy eating strategies, side effect management and more. Please visit www.LLS.org/nutrition for more information.

Free Information Booklets. LLS offers free education and support booklets for patients, caregivers and healthcare professionals that can either be read online or ordered. Please visit www.LLS.org/booklets for more information.

Food and Nutrition During Cancer Treatment

Telephone/Web Education Programs. LLS offers free telephone/Web and video education programs for patients, caregivers and healthcare professionals. Please visit www.LLS.org/programs for more information.

Financial Assistance. LLS offers financial support to eligible individuals with blood cancer for insurance premiums, co-pays, and non-medical expenses like travel, food, utilities, housing, etc. For more information, please:

- Call: (877) 557-2672
- Visit: www.LLS.org/finances

Resources for Families. Blood cancer occurs in a small number of children. Families face new challenges, and the child, parents and siblings may all need support. LLS has many materials for families including a caregiver workbook, children's book series, an emotion flipbook, dry erase calendar, coloring books and a coloring app, a school reentry program, and other resources. For more information, please

- Call: (800) 955-4572
- Visit: www.LLS.org/FamilyWorkbook

Podcast. *The Bloodline with LLS* is here to remind you that after a diagnosis comes hope. Listen in as patients, caregivers, advocates, doctors and other healthcare professionals discuss diagnosis, treatment options, quality-of-life concerns, treatment side effects, doctor-patient communication and other important survivorship topics. Visit www.LLS.org/TheBloodline for more information and to subscribe to access exclusive content, submit ideas and topics, and connect with other listeners.

3D Models. LLS offers interactive 3D images to help visualize and better understand blood cell development, intrathecal therapy, leukemia, lymphoma, myeloma, MDS, MPNs and lab and imaging tests. Visit www.LLS.org/3D for more.

Free Mobile Apps.

- LLS Coloring For Kids™ — Allows children (and adults) to express their creativity and offers activities to help them learn about blood cancer and its treatment. Visit www.LLS.org/ColoringApp to download for free.
- LLS Health Manager™ — Helps you track side effects, medication, food and hydration, questions for your doctor, and more. Visit www.LLS.org/HealthManager to download for free.

Suggested Reading. LLS provides a list of selected books recommended for patients, caregivers, children and teens. Visit www.LLS.org/SuggestedReading to find out more.

Connecting with Patients, Caregivers and Community Resources

LLS Community. The one-stop virtual meeting place for talking with other patients and receiving the latest blood cancer resources and information. Share your experiences with other patients and caregivers and get personalized support from trained LLS staff. Visit www.LLS.org/community to join.

Weekly Online Chats. Moderated online chats can provide support and help cancer patients and caregivers reach out and share information. Please visit www.LLS.org/chat for more information.

Local Programs. LLS offers community support and services in the United States and Canada including the *Patti Robinson Kaufmann First Connection® Program* (a peer-to-peer support program), local support groups and other great resources. For more information about these programs or to contact your region, please:

- Call: (800) 955-4572
- Visit: www.LLS.org/LocalPrograms

Advocacy and Public Policy. Working closely with dedicated volunteer advocates, LLS's Office of Public Policy elevates the voices of patients to state and federal elected officials, the White House, governors and even courts. Together, we advocate for safe and effective treatments. We pursue policies that would make care more accessible to all patients. And, most of all, we advocate for the hope for a cure. Want to join our work? Visit www.LLS.org/advocacy for more information.

Other Helpful Organizations. LLS offers an extensive list of resources for patients and families. There are resources that provide help with financial assistance, counseling, transportation, patient care and other needs. For more information, please visit www.LLS.org/ResourceDirectory to view the directory.

Additional Help

Información en Español (LLS information in Spanish). Please visit www.LLS.org/espanol for more information.

Language Services. Let members of your healthcare team know if you need translation or interpreting services because English is not your native language, or if you need other assistance, such as a sign language interpreter. Often these services are free.

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Information for Veterans. Veterans who were exposed to Agent Orange while serving in Vietnam may be able to get help from the United States Department of Veterans Affairs. For more information, please

- Call: the VA (800) 749-8387
- Visit: www.publichealth.va.gov/exposures/AgentOrange

Information for Firefighters. Firefighters are at an increased risk of developing cancer. There are steps that firefighters can take to reduce the risk. Please visit www.LLS.org/FireFighters for resources and information.

World Trade Center Health Program. People involved in the aftermath of the 9/11 attacks and subsequently diagnosed with a blood cancer may be able to get help from the World Trade Center (WTC) Health Program. People eligible for help include:

- Responders
- Workers and volunteers who helped with rescue, recovery and cleanup at the WTC-related sites in New York City (NYC)
- Survivors who were in the NYC disaster area and those who lived, worked or were in school in that area
- Responders to the Pentagon and the Shanksville, PA, crashes

For more information, please:

- Call: WTC Health Program at (888) 982-4748
- Visit: www.cdc.gov/wtc/faq.html

Help with Depression. Treating depression has benefits for cancer patients. Seek medical advice if your mood does not improve over time, for example, if you feel depressed every day for a 2-week period, contact a mental health professional. For more information, please:

- Call: The National Institute of Mental Health (NIMH) at (866) 615-6464
- Visit: NIMH at www.nimh.nih.gov and enter “depression” in the search box

Other Resources

Academy of Nutrition and Dietetics (AND)
www.eatright.org

The Academy of Nutrition and Dietetics provides reliable nutrition information and other resources. You can also search for a registered dietitian. For more information, you can also visit www.oncologynutrition.org, a dietetic practice group of AND.

American Institute for Cancer Research (AICR)
www.aicr.org

The American Institute for Cancer Research provides evidence-based answers for patients about managing diet. They offer practical, reliable advice on what to eat and how to get active again once your cancer treatment is over. They also offer recipes and tips for healthy, everyday changes.

American Society of Clinical Oncology (ASCO)
www.cancer.net
(888) 651-3038

ASCO provides nutrition recommendations for during and after treatment.

Cook for Your Life
www.cookforyourlife.org

An organization providing recipes, a blog and patient resources.

Food and Nutrition Information Center (FNIC)
www.nal.usda.gov/programs/fnic
(301) 504-5414

FNIC, part of the US Department of Agriculture, provides information on dietary supplements, food safety and the nutritional composition of foods.

FoodSafety.gov
www.foodsafety.gov

FoodSafety.gov includes information about keeping food safe and posts food recalls.

MyPlate.gov
www.myplate.gov

MyPlate.gov is a website of the United States Department of Agriculture. It provides information on healthy eating and on MyPlate Kitchen, provides recipes with nutrition information to help make healthy choices. It also has information on cost ranges for recipes when available.

National Cancer Institute (NCI)
www.cancer.gov
(800) 4-CANCER (422-6237)

The NCI website provides information on cancer, treatment and research. For nutrition information, visit www.cancer.gov/about-cancer/treatment/side-effects/appetite-loss/nutrition-pdq to view the “Nutrition in Cancer Care (PDQ®)—Patient Version” and www.cancer.gov/publications/patient-education/eating-hints to view *Eating Hints: Before during and after Cancer Treatment*.

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Nutrition.gov **www.nutrition.gov**

Nutrition.gov provides information about healthy eating, physical activity and food safety.

Partnership for Food Safety Education (PFSE) **www.fightbac.org** **(202) 220-0651**

PFSE is an organization dedicated to educating the public about safe food handling practices. The website is a resource for food-safety information.

References

Academy of Nutrition and Dietetics. Food safety cleaning tips. 2023. Accessed February 10, 2024. Available from: <https://www.eatright.org/food/home-food-safety/cleaning-tips/areyour-kitchen-surfaces-and-sponges-really-clean>

American Heart Association. Saturated fat. Last reviewed November 1, 2021. Accessed January 8, 2024. Available from: <https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/fats/saturated-fats>

Cancer.net. Dehydration. 2020. Accessed February 10, 2024. Available from: <https://www.cancer.net/coping-with-cancer/physical-emotional-and-social-effects-cancer/managingphysical-side-effects/dehydration>

Cancer.net. Food safety during and after cancer treatment. 2021. Accessed February 10, 2024. Available from: <http://www.cancer.net/survivorship/healthy-living/food-safetyduring-and-after-cancer-treatment>

Cancer.net. Foods to avoid during cancer treatment. 2014. Accessed February 10, 2024. Available from: <https://www.cancer.net/blog/2014-04/foods-avoid-during-cancer-treatment>

Cancer.net. Nutrition recommendations during and after treatment. 2022. Accessed February 10, 2024. Available from: <https://www.cancer.net/survivorship/healthy-living/nutritionrecommendations-during-and-after-treatment>

Cancer.net. Steps to a clean and safe fridge. 2016. Accessed February 10, 2024. Available from: <https://www.cancer.net/blog/2016-03/3-steps-clean-and-safe-fridge-people-withcancer>

Fox N, Freifeld AG. The neutropenic diet reviewed: moving toward a safe food handling approach. *Oncology*. 2012;26(6):572-575.

Jubelirer SJ. The benefit of the neutropenic diet: fact or fiction? *The oncologist*. 2011;16(5):704-707.

Lee HJ, Licht AS, Hyland AJ, et al. Is obesity a prognostic factor for acute myeloid leukemia outcome? *Annals of Hematology*. 2012;91(3):359-365.

Lichtman MA. Obesity and the risk for hematological malignancy: leukemia, lymphoma, or myeloma. *The oncologist*. 2010;15:1083-1101.

National Cancer Institute. Eating hints: before, during and after cancer treatment. 2022. Accessed February 10, 2024. Available from: www.cancer.gov/publications/patient-education/eating-hints

National Cancer Institute. Appetite loss and cancer treatment. 2022. Accessed February 10, 2024. Available from: <https://www.cancer.gov/about-cancer/treatment/side-effects/appetite-loss>

Poynter JN, Richardson M, Blair CK, et al. *Cancer epidemiology*. 2016;40:134-140.

Sonbol MB, Jain T, Firwana B, et al. Neutropenic diets to prevent cancer infections: updated systematic review and meta-analysis. *BMJ Support Palliat Care*. 2019;9(4):425-433. doi:10.1136/bmjspcare-2018-001742

U.S. Department of Agriculture, U.S. Department of Health and Human Services. *Dietary guidelines for Americans, 2020-2025*. 9th edition. December 2020. Available from: DietaryGuidelines.gov. Accessed January 9, 2024.

Yang TO, Cairns BJ, Kroll ME, et al. Body size in early life and risk of lymphoid malignancies and histological subtypes in adulthood. *International Journal of Cancer*. 2016;139:42-49.

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Information Specialist: **800.955.4572**

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