



What You Need to Know About Cancer

Cancer is a general name for a group of diseases in which cells divide nonstop and can overrun nearby tissues. This overgrowth is called a tumor. Cancer can be spread all across the body through blood and lymph. Blood cancers (such as leukemia) do not generally form tumors. Different cancers grow at various rates and respond to different medications and treatments.

Metastasis

Some cancer tumors are benign. They do not spread across the body. Metastatic cancer occurs when a cancer spreads from its original place to somewhere else in the body. When this happens, the cancer has the same name and type as the original cancer. For example, breast cancer that spreads to and forms a metastatic tumor in the lung is called metastatic breast cancer, not lung cancer. The main goal in treating cancer that has spread is to control the growth of the cancer.

Conventional Oncology Treatments

Surgery

- Surgery is not for everyone; surgery is used on people with solid tumors that are in one area of the body (have not spread).
- The type of surgery you have depends on the location and size of the tumor.
- The purpose of having surgery is to remove the entire tumor(s) and to ease cancer symptoms.¹

Radiation therapy:²

- Radiation is given in high doses to kill cancer cells, to prevent them from returning, or to slow/stop their growth.
- There are 2 main types of radiation therapy:
 - **External beam radiation therapy:** This type of therapy uses a large, sometimes loud machine that moves around and aims radiation directly at the cancer. It does not touch you directly. It is meant to treat a specific part of the body, not the entire body.
 - **Internal radiation therapy:** This therapy requires a radiation source (“seed”) being placed inside your body. The source can be a liquid or solid. The liquid source of radiation is infused intravenously (through an IV) and travels through the body seeking out and killing cancer cells. This type is used usually to treat thyroid cancer. Therapy that involves a solid form of radiation is also called brachytherapy and usually comes in the form of seeds, ribbons, or capsules that are placed in the body next to or near the cancer.
- Unfortunately, radiation can cause side effects. It kills more than just cancer cells; it can also impact nearby healthy cells. These cells almost always recover from the treatments.



¹ National Cancer Institute, NIH. Cancer Treatment. Mayo Clinic. Accessed June 2, 2016. Found at: <http://www.cancer.gov/about-cancer/treatment/types/radiation-therapy>.

² National Cancer Institute, NIH. Cancer Treatment. Mayo Clinic. Accessed June 2, 2016. Found at: <http://www.cancer.gov/about-cancer/treatment/types/radiation-therapy>.

Chemotherapy

- Chemotherapy (“chemo”) works on cancer by slowing or stopping its growth.
- When used with other conventional therapies, chemo can shrink a tumor before surgery or radiation therapy is started.
- Chemotherapy comes in different forms:

Routes of administration	Forms
Oral	Pills, capsules, or liquids taken by mouth.
Intravenous (IV)	Infused into a vein (intravenously).
Injection	Shot in the muscle of the arm, thigh, or hip. Can also be injected into the fatty part of the arm, leg, or abdomen.
Intrathecal	Injected into the space between the layers of tissue that cover and protect the brain and spinal cord.
Intraperitoneal (IP)	Delivered directly into the peritoneal cavity of the abdomen, which contains organs such as the intestines, stomach, and liver.
Intra-arterial (IA)	Injected directly into the artery that leads to the cancer.
Topical	Cream that is rubbed on the skin.

Source: NIH National Cancer Institute. Accessed June 2, 2016. www.cancer.gov/about-cancer/treatment/types/chemotherapy.

Complementary and alternative medicine

It is important to understand, though, that many alternative cancer treatments have not been proven to be effective, and some could even be dangerous.³

Alternative medicine for cancer may not directly help in getting rid of it, but it may help you cope with the symptoms caused by both the cancer and the cancer treatments. For example, alternative treatments can help with anxiety, fatigue, nausea and vomiting, pain, difficulty sleeping, and stress.³

Which alternative cancer treatments are worth trying?

According to the Mayo Clinic, the following alternative cancer treatments may be of some benefit in helping people with cancer. Talk to your doctor if you’re interested in trying them:

- **Acupuncture.** During acupuncture treatment, a practitioner inserts tiny needles into your skin at precise points. Studies show acupuncture may be helpful in relieving nausea caused by chemotherapy. Acupuncture may also help relieve certain types of pain in people with cancer.

Acupuncture is safe if it’s performed by a licensed practitioner using sterile needles. Ask your doctor for names of trusted practitioners. Acupuncture isn’t safe if you’re taking blood thinners or if you have low blood counts, so check with your doctor first.

- **Aromatherapy.** Aromatherapy uses fragrant oils to provide a calming sensation. Oils infused with scents such as lavender can be applied to your skin during a massage, or the oils can be added to bath water. Fragrant oils can also be heated to release their scents into the air. Aromatherapy may be helpful in relieving nausea, pain, and stress.

Aromatherapy can be performed by a practitioner, or you can use aromatherapy on your own. Although aromatherapy is safe, the oils applied to your skin can cause allergic reactions. People with cancer that is estrogen-sensitive, such as some breast cancers, should avoid applying large amounts of lavender oil and tea tree oil to the skin.



³ Alternative cancer treatments: 10 options to consider. Mayo Clinic. Accessed June 2, 2016. Found at: www.mayoclinic.org/diseases-conditions/cancer/in-depth/cancer-treatment/art-20047246?pg=1.

- **Exercise.** Exercise may help you manage signs and symptoms during and after cancer treatment. Gentle exercise may help relieve fatigue and stress and help you sleep better. Many studies show that an exercise program may help people with cancer live longer and improve their overall quality of life.

If you haven't already been exercising regularly, check with your doctor before you begin an exercise program. Start slowly, adding more exercise as you go. Set a goal to work your way up to at least 30 minutes of exercise most days of the week.

- **Hypnosis.** Hypnosis is a deep state of concentration. During a hypnotherapy session, a therapist may hypnotize you by talking in a gentle voice and helping you relax. The therapist will then help you focus on goals, such as controlling your pain and reducing your stress.

Hypnosis may be helpful for people with cancer who are experiencing anxiety, pain, and stress. It may also help prevent anticipatory nausea and vomiting that can occur if chemotherapy has made you sick in the past. When performed by a certified therapist, hypnosis is safe. But tell your therapist if you have a history of mental illness.

- **Massage.** During a massage, your practitioner kneads (or presses) your skin, muscles, and tendons to help relieve muscle tension and stress and to promote relaxation. Several massage methods exist. Massage can be light and gentle, or it can be deep with more pressure.

Studies have found massage to be helpful in relieving pain in people with cancer. It may also help relieve anxiety, fatigue, and stress.

Massage can be safe if you work with a knowledgeable massage therapist. Many cancer centers have massage therapists on staff, or your doctor can refer you to a massage therapist who regularly works with people who have cancer.

Ask the massage therapist to avoid massaging near surgical scars, radiation treatment areas, or tumors. If you have cancer in your bones or other bone diseases, such as osteoporosis, ask the massage therapist to use light pressure, rather than deep massage.

Don't get a massage if your blood counts are very low.

- **Meditation.** Meditation is a state of deep concentration when you focus your mind on one image, sound, or idea, such as a positive thought. When meditating, you might also do deep-breathing or relaxation exercises. Meditation may help people with cancer by relieving anxiety and stress.

Meditation is generally safe. You can meditate on your own for a few minutes once or twice a day, or you can take a class with an instructor.

- **Music therapy.** During music therapy sessions, you might listen to music, play instruments, sing songs, or write lyrics. A trained music therapist may lead you through activities designed to meet your specific needs, or you may participate in music therapy in a group setting. Music therapy may help relieve pain and control nausea and vomiting.

Music therapy is safe and doesn't require any musical talent to participate. Many medical centers have certified music therapists on staff.



- **Relaxation techniques.** These techniques are ways of focusing your attention on calming your mind and relaxing your muscles. They might include activities such as visualization exercises or progressive muscle relaxation.

Relaxation techniques may be helpful in relieving anxiety and fatigue. They may also help people with cancer to sleep better.

Relaxation techniques are safe. Typically a therapist leads you through these exercises and eventually you may be able to do them on your own or with the help of guided relaxation recordings.

- **Tai chi.** Tai chi is a form of exercise that incorporates gentle movements and deep breathing. Tai chi can be led by an instructor, or you can learn tai chi on your own following books or videos. Practicing tai chi may help relieve stress.

Tai chi is generally safe. The slow movements of tai chi don't require great physical strength, and the exercises can be easily adapted to your own abilities. Still, talk with your doctor before beginning tai chi. Don't do any tai chi moves that cause pain.

- **Yoga.** Yoga combines stretching exercises with deep breathing. During a yoga session, you position your body in various poses that require bending, twisting, and stretching. There are many types of yoga, each with its own variations.

Yoga may provide some stress relief for people with cancer. Yoga has also been shown to improve sleep and reduce fatigue.

Before beginning a yoga class, ask your doctor to recommend an instructor who regularly works with people with health concerns like cancer. Avoid yoga poses that cause pain. A good instructor can give you alternative poses that are safe for you.

You may find some alternative treatments work well together. For instance, deep breathing during a massage may provide additional stress relief.

The Mayo Clinic makes the following recommendations:

If you're experiencing	Then consider trying
Anxiety	Hypnosis, massage, meditation, relaxation techniques
Fatigue	Exercise, massage, relaxation techniques, yoga
Nausea and vomiting	Acupuncture, aromatherapy, hypnosis, music therapy
Pain	Acupuncture, aromatherapy, hypnosis, massage, music therapy
Sleep problems	Exercise, relaxation techniques, yoga
Stress	Aromatherapy, exercise, hypnosis, massage, meditation, tai chi, yoga



Adherence

Taking your drugs as scheduled (“adherence”) is important. Not doing so leads to more doctor visits, higher hospitalization rates, longer hospital stays, condition progression or worsening, and increased mortality.

About one-third to two-thirds of all medication-related hospitalizations are due to medication non-adherence. In some cancers, non-adherence has been associated with a worse outcome.

Nutritional Education

The Academy of Nutrition and Dietetics provides the following recommendations for nutrition when you have cancer and also while you are undergoing treatment:

Achieving adequate nutritional status in people with cancer means getting enough calories and protein to prevent weight loss, regain strength, and rebuild healthy tissues. Important nutrients are highlighted below.

Protein

- Helps repair body tissue and maintain a healthy immune system.
- Cancer patients usually need additional protein, especially following surgery, chemotherapy, and radiation therapy.
- Good sources of protein include lean meat, fish, poultry, dairy products, nuts, beans, and soy.

Carbohydrate and Fat

- Help supply the body with the bulk of calories it needs.
- Good sources of carbohydrate include fruits, vegetables, whole grains, pasta, cereals, beans, and peas.
- Good sources of fat include olive oil, nuts, and seeds.

Vitamins and Minerals

- Help ensure proper growth and development.
- Allow the body to use the energy in foods.
- A well-balanced diet with enough protein and calories usually contains plenty of vitamins and minerals. Eat variety!



⁴ DiMatteo MR, Giordani PJ, Lepper HS, et al. Patient adherence and medical treatment outcomes: a meta-analysis. *Med Care.* 2002;40:794–811.

⁵ Osterberg L, Blaschke T. Adherence to medication. *N Engl J Med.* 2005;60:487–497.

Head and Neck Cancer Nutrition Therapy

Head and neck cancers can change your ability to eat and your nutrition considerations from the side effects of surgery, radiation, and chemotherapy. See below for specific nutritional considerations, and practice good oral hygiene.

Clinical feature	Nutritional considerations
Dry mouth (xerostomia)	<ul style="list-style-type: none"> • Increase fluids. • Minimize the amount and frequency of foods that cause tooth decay, also known as “cariogenic” foods. • Modify food consistency (moist, soft foods). • Limit spicy or hot foods. • Suck on sugar-free mints or candies. • Cut foods into small pieces and mix with sauces and gravies to moisten.
Sore mouth and throat	<ul style="list-style-type: none"> • Increase fluids. • Modify food consistency (moist, soft foods that won’t scratch mouth or throat). • Avoid citrus, spicy, and seasoned foods (especially salty foods). • Choose lukewarm or cool foods and avoid very hot or cold foods. • Use sauce or gravy to blend or moisten foods that are dry or solid.
Taste changes (dysgeusia)	<ul style="list-style-type: none"> • Use plastic utensils if you have a metallic taste in your mouth. • Season foods with tart flavors such as citrus fruits. • Flavor foods with onion, garlic, barbecue sauce, and other seasonings. • Add sugar to improve the flavor of salty foods. • Add salt to decrease the sweetness of sugary foods. • Serve foods cold or at room temperature.
Difficulty chewing	<ul style="list-style-type: none"> • Modify diet consistency as tolerated. • Try soft or pureed foods. • Moistening dry items such as meat, cereal, or crackers.



Clinical feature	Nutritional considerations
Nausea and vomiting	<ul style="list-style-type: none"> • Eat 6 small meals per day. • Eat dry foods (crackers, toast). • Avoid foods with strong odor. • Avoid foods that are overly sweet, greasy, fried, or spicy. • Eat cool foods instead of hot, spicy foods. • Sip clear liquids frequently to prevent dehydration. • Suck on sugar-free mints/candies.
Poor appetite	<ul style="list-style-type: none"> • Eat small meals or snacks every 1 – 2 hours. • Avoid liquids with meals. • Keep high-calorie, high-protein snacks on hand.

Cooking Tips

Nutrition is very important during cancer treatment. You should make sure you eat enough calories, protein, vitamins, and minerals to control symptoms of cancer and its treatment. The following tips will help to make sure you get the nutrients you need.

- Try small, frequent meals instead of 2 or 3 larger meals.
- Keep ready-to-serve and easy-to-prepare foods available to take advantage of times when you may feel like eating. Examples include ready-to-serve puddings, peanut butter, tuna, cereal bars, trail mix, cheese and crackers, and eggs.
- Let family and friends help with meal preparation.
- Keep meal preparation simple by using prepared and frozen foods.
- Keep liquid supplements refrigerated so they are ready to drink.
- If you have lost weight and/or are trying to prevent further weight loss, increase the calorie content of what you are eating by:
 - Using milk instead of water for soups and cooked cereals
 - Adding butter, salad dressing, and oils to vegetables.
 - Adding extra protein to soups by slicing cooked egg white into the soup.
- If the smell of food makes you nauseous, stay out of the room where food is being prepared.
- Take only small portions on the plate and go back for second helpings.
- Pain medication should be taken about one half-hour before mealtime to minimize interference with food intake, unless the drug is to be taken with food.



Nutrition Tips for Well-Being

Nutrition is an important part of your care, even if you choose not to have further treatment or can eat only small amounts. Eating regularly can help you feel stronger and have more energy.

Concerns to Discuss with Your Doctor

- Tell your doctor if you have pain, diarrhea, nausea, or vomiting. Medications can be prescribed to help you feel better and lessen your symptoms.
- If constipation is a concern, check with your doctor about following a daily bowel care program that includes the use of stool softeners or laxatives. In addition, try adding 1 or 2 tablespoons (15–30 grams) of wheat bran to your food or drinking warm prune juice 3 or 4 times a day. Constipation can contribute to a poor appetite.
- An appetite stimulant can sometimes be helpful. Talk to your doctor about whether one could help you.

Nutrition After Cancer Treatment

Nutrition is an important part of your cancer treatment as well as your recovery. The American Institute for Cancer Research 2007 Guidelines for Nutrition and Cancer Prevention provide good advice regarding healthy eating for cancer for all individuals, including cancer survivors. These guidelines are based on strong scientific evidence that shows that eating a healthy diet, along with regular physical activity, can promote health and reduce the risk of developing another cancer. The guidelines include the following suggestions for healthy eating.



What Should I Eat?

- Choose a diet with many types of plant-based foods. Try substituting legumes (dried beans and peas) for meat at some meals each week.
- Try to eat at least 5 servings a day of colorful fruits and vegetables, including citrus fruits and dark-green and deep-yellow vegetables. Colorful vegetables and fruits contain natural health-promoting substances called phytochemicals.
- Include more high-fiber foods, such as legumes and whole grain breads and cereals, each day.
- Limit high-fat foods, particularly those from animal sources. Choose lower-fat milk and dairy products. Reduce the amount of fat in your meals by choosing a lower-fat cooking method, such as baking or broiling.
- Choose salt-cured, smoked, and pickled foods less often.

Action Plan

- Achieve and maintain a healthy weight and be physically active.
- Drink alcohol in moderation, if at all.
- Prepare and store food safely.
- Try a new fruit, vegetable, low-fat food, or whole grain product each time you shop for groceries.
- Ask a registered dietician to help you personalize a nutritious, balanced eating plan.

Exercise

When you have cancer, you have to take extra care of your body. The best way to do that is with nutritious foods and physical activity. Cancer can cause you to feel very fatigued, or very tired, but that doesn't mean that you can't or shouldn't be active. In fact, riding a stationary bike or taking a daily walk is considered "moderate aerobic activity." By adding in light weights for strength training, you can enhance your physical well-being and spur your recovery.⁶

The National Comprehensive Cancer Network (NCCN) says that cancer patients who exercised regularly had 40% to 50% less fatigue, which is the typically the main complaint during cancer treatments. When should you start? As soon as possible. You can also talk to your doctor about referring you to a physical therapist who can help design a specific program that is best for you and your unique circumstances. For example, if you are receiving radiation therapy, your doctor may tell you to avoid swimming pools, as the chlorine may irritate radiated skin and you may be exposed to bacteria that can cause infections.

Before starting any new exercise, talk with your doctor about it. Here are a few points you can cover in your discussion:

- What kind of exercise is best for me with my cancer and symptoms?
- How long should I exercise, and how many times per week?
- Is it OK for me to use weights?
- How long should I stretch? Does yoga help?



⁶ Exercising During Cancer Treatment. Patient and Caregiver Resources. NCCN National Comprehensive Cancer Network. Accessed June 6, 2016. Found at: www.nccn.org/patients/resources/life_with_cancer/exercise.aspx.

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