Chemotherapy
What It Is, How It Helps
What's in this guide

If your doctor has told you that you have cancer, you may have a lot of questions. Can I be cured? What kinds of treatment would be best for me? Will it hurt? How long will treatment take? How much will it cost? How will my life change while I’m being treated and after treatment ends? These are all normal questions for people with cancer.

This guide will explain one type of treatment – chemotherapy (key-mo-THER-uh-pee) – a little better. We’ll try to help you know what chemotherapy is and what it will be like.

If you have more questions, ask your cancer care team to help you. It’s always best to be open and honest with them. That way, they can help you decide which treatment is best for you.
Questions about chemotherapy

What is chemotherapy?
Chemotherapy is the use of strong drugs to treat cancer. You will often hear chemotherapy called “chemo” (KEY-mo), but it’s the same thing.

Chemo was first used to treat cancer in the 1950s. The chemo drugs you get have been tested many times. Research shows they work to help kill cancer cells.

What does chemo do?
Doctors choose what drugs to give you based on the kind of cancer you have and how much cancer is in your body (the stage). Your cancer care team will talk to you about the goals of chemo before you start treatment.

Chemo may be used to:

• Keep the cancer from spreading.

• Make the cancer grow slower.

• Kill cancer cells that may have spread to other parts of the body (metastasized – meh-TAS-tuh-sized).

• Make side effects from cancer better, like pain or blockages.

• Cure cancer.
Will chemo be my only cancer treatment?
Sometimes chemo is the only cancer treatment needed. More often, it’s part of a treatment plan that can include surgery and radiation therapy (RAY-dee-A-shun THER-uh-pee).

Here’s why:

• Chemo may be used to shrink tumors before surgery or radiation.

• It may be used after surgery or radiation to help kill any cancer cells that are left.

• It may be used with other treatments if the cancer comes back.
How does chemo work?
The body is made up of trillions of cells. Cancer starts when something causes changes in a normal cell. This cancer cell then grows out of control and makes more cancer cells. If cancer isn’t treated, it can spread to other places in your body and cause more problems.

Chemo kills cells that grow fast, like cancer cells. It can affect normal cells that grow fast, too, like the cells that make hair or blood. But most normal cells can fix themselves.

You will probably get more than one chemo drug. This is called combination chemotherapy. The drugs work together to kill more cancer cells.

How is chemo given?
Most chemo drugs are given in one of these ways:

- Sometimes chemo is a pill or liquid. You just swallow it. You can take it at home, but you must be careful to follow the directions.

- Chemo can be given like a flu shot. The shots may be given in your doctor’s office, a hospital, a clinic, or at home.

- Most often, chemo drugs are put into your blood through a tiny plastic tube called a catheter (CATH-it-ur) that’s put in a vein. This is called IV (intravenous – in-truh-VEEN-us) chemo.

- Other types of chemo can be put right into the spine, chest, or belly (abdomen), or rubbed on the skin.
You may get chemo once a day, once a week, or even once a month. It may all be given in 1 day, or you may need to get it for a few days in a row. It depends on the type of cancer you have and the drugs you're getting.

Chemo is usually given with breaks between treatment cycles. The breaks give your body time to rebuild healthy new cells and help you get your strength back. How long you get chemo depends on the type of cancer you have, your treatment goals, and how the cancer and your body work with the drugs.

**Does chemo hurt?**
There may be a little pain when a needle is used (just like getting your blood taken can sting), but the drugs should cause no pain. If you do feel pain, burning, coolness, or anything new when getting chemo, tell your nurse right away.

**Can I take my other drugs while I’m taking chemo?**
Some other drugs can affect your chemo. Be sure to tell your cancer care team about all the drugs you take. Don’t forget prescription drugs and those you can get without a prescription. Tell them about vitamins, herbs, and anything else you take. Make and keep a list of all the drugs you take. Keep this list up to date and share it with all your doctors.

Your doctor can tell you whether it’s OK to take these drugs while you get chemo. Once chemo starts, be sure to check with your doctor before you start any new drugs, and before you stop the ones you’ve been taking.
How will I know if my chemo is working?

Your cancer team will tell how well your treatment is working by doing physical exams, blood tests, and x-rays. Ask your team to explain any test results to you, and how they show if your treatment is working.

Keep in mind that side effects do not tell you if the chemo is – or is not – working.

How much does chemo cost?

The cost of chemo depends on a lot of things, such as which drugs are used, how you get them, and how often you get them. You can ask your cancer care team about cost and, if you need it, where to get help paying for chemo.

If you have health insurance, check to see if it pays for your drugs. You will want to keep your health insurance, even if you must be out of work for treatment. If you have health insurance through your job, you may consider Family Medical Leave or see if you are protected under the Americans with Disabilities Act. You can call us at 1-800-227-2345 to learn more about this.

If your insurance does not pay for treatment, or if they told you they will not pay for a claim, talk to your cancer care team. You may also want to talk to a patient support person (patient navigator) at your treatment center. This person can help you look into government programs, like Medicare or Medicaid, or find other groups that may help you. Drug assistance programs are also offered through many of the companies that make the drugs.
Cancer treatment can cost a lot. It’s good to know what kind of coverage you have and what help you may be able to get.

**What should I ask my cancer care team?**

Your chemo will be planned just for you. Work with your cancer care team to decide what’s best for you. Ask questions. Ask the doctor, nurses, and others on your team all the questions you have. They know the most about chemo and how it works.

Be ready. Write down your questions ahead of time. Take them with you. Don’t be afraid to say you are confused or need more information. Nothing you say will sound silly or strange to your cancer care team. All patients getting chemo have questions. Here are some you might want to ask:

- What is the goal of chemo in my case? Is the goal to cure my cancer or to help control the cancer from getting worse?
- How will we know if the chemo is working?
- Are there other ways besides chemo to treat my cancer?
- If chemo doesn't work, are there other treatments for me?
- How will I get chemo, how often, and for how long?
- Where will I get chemo?
- What side effects should I watch for? Should I call you if I have any of these side effects – even at night or on a weekend? At what phone number?
- Is there anything I should do to get ready for treatment?
• Will I need surgery or radiation? If so, when and why?
• Does my insurance pay for chemo? If not, how will I pay for it?
• Will I be able to work (or go to school) during treatment?

**Will I be able to work during treatment?**

During chemo, many people can keep doing the things they were doing every day, such as going to work or school. But the side effects of chemo keep some people from being able to do some things they used to do. Also, some treatments may need to be given in the hospital.

If chemo means you can’t work or play like you used to, you may need to make some changes. One way to do this is to get your chemo late in the day or right before the weekend. This way it may not affect your daily life as much.

Fatigue (fuh-TEEG) – feeling very tired – is a common side effect of chemo. This can make it hard to put in a full day’s work or do other things you want to do. You might try changing your work hours either by working part time or working different hours so that you can get the rest you need.

Federal and state laws may say your employer has to allow you to change your work hours during treatment. If you’d like to know more about your rights at work, call your American Cancer Society toll free at **1-800-227-2345**, or visit [www.cancer.org](http://www.cancer.org), click on the “Live Chat” button, and connect with us through computer chat.
What about chemo side effects?

Chemo drugs are very strong. They kill any cell that’s growing fast, even if it’s not a cancer cell. So, some normal, healthy cells that grow quickly can be harmed. This can cause side effects.

Ask your cancer care team what side effects you may expect from the chemo you will get.

If you have bad side effects, blood tests may be done to find out if you need a lower dose of chemo, or if you need longer breaks between doses. Keep in mind that even if chemo causes problems, the “good” for you will likely outweigh the “bad” of the side effects.

For most people, side effects go away over time after treatments end. How long it will take is different for each person. Some side effects might not go away at all. If you start to feel upset or sad about how long treatment is taking or the side effects you have, be sure to talk to your cancer care team. They can help you with side effects.

Common chemo side effects

Nausea and vomiting
Some chemo drugs can cause nausea (feeling sick to your stomach) and vomiting (throwing up). These symptoms often start a few hours after treatment and last a short time. In some cases, they may last for a few days. Be sure to ask your cancer care team if your chemo might cause this and what you can do about it.
If your doctor gives you a drug to help nausea and vomiting, be sure to take it. Tell your team right away if the drug isn’t working. Call your team if you have been vomiting for more than 1 day or if you can’t keep liquids down.

**Hair loss**
Some chemo can make your hair fall out. You may lose the hair on your head, face, arms, armpits, and groin. You may lose hair slowly or almost overnight. Not all chemo drugs have this effect. Some only cause the hair to thin out. Your cancer care team can tell you what to expect from the chemo drugs you’re getting. In most cases, hair grows back after chemo. But it may not be the same color or may be different in other ways.

Ask your team for tips on taking care of your hair and scalp both before and during chemo. Some people choose to wear head covers, such as caps, scarves, turbans, or wigs and hairpieces. Many health plans cover at least part of the cost of a wig or hairpiece. Also, you can deduct these costs from your income taxes.

**Bone marrow changes**
The bone marrow is the liquid inner part of some bones. It’s where all your blood cells are made (red blood cells, white blood cells, and platelets). It’s often affected by chemo, which can cause your blood cell counts to drop.

- **Red blood cells** (RBCs) carry oxygen from the lungs to all parts of the body. During chemo, the bone marrow may not be able to make enough red blood cells. Not having enough red blood cells is called anemia (uh-NEE-me-uh). This can
make you feel short of breath, weak, and tired. It can also make your skin, mouth, or gums look pale.

- **White blood cells** (WBCs) fight infection. Chemo lowers the number of your white blood cells, which makes you less able to fight infections. Your cancer care team may suggest ways to stay safer from infection, such as staying away from people with colds or fevers, staying away from crowds of people, and washing your hands often.

- **Platelets** (PLATE-lets) form blood clots that stop bleeding from cuts or bruises. If your bone marrow can’t make enough platelets, you may bleed too much, even from small cuts. If your platelet count is very low, you will need to be very careful. Even brushing your teeth too hard could make your gums bleed. So, you might need to use a soft-bristle toothbrush or one made from foam. Check with your team about flossing.

These effects on the bone marrow will not last long. Blood tests will be done to see when your bone marrow is making new blood cells again. And there are treatments that can be used if your blood cell counts get too low.

**Mouth and skin changes**
Some chemo drugs can cause sores in the mouth and throat. Good mouth care is a key part of treatment. Be sure to brush your teeth and gums after each meal. Try to see a dentist before starting chemo. A dentist can show you the best ways to take care of your teeth and gums during treatment.
Some people have skin problems – such as redness, itching, peeling, dryness, and acne. Most skin problems are not bad, but some need to be treated. Some people are allergic to chemo. This can cause hives (or skin welts), itching, or trouble breathing. Chemo is usually given in the doctor’s office or clinic where a nurse can watch you for this type of problem. These problems must be treated right away.

Ask your cancer care team for tips on taking care of your mouth and skin both before and during chemo. If you have any side effects, tell your team about them right away. There are often things they can do to help you and keep the problems from getting worse.

**Changes in your sex life**
Sometimes sexual desire is low or even gone for some time, but it comes back when treatment ends.

Most patients can have sex during treatment, but some don’t feel like it. This does not mean that something is wrong.

To learn more about the sexual effects of cancer treatments and how to deal with them, please call us at **1-800-227-2345**.

Most chemo can cause birth defects if a woman gets pregnant during treatment. Some chemo can affect a man’s sperm, which may cause problems if he gets a woman pregnant while he is in treatment. Ask your doctor about what kind of birth control you should use and how long you need to use it.
Fertility problems
Some chemo drugs can leave you unable to have children. This effect does not always go away after treatment ends. If you think you may want to have children someday, tell your doctor before you start treatment.

Memory changes
Cancer and its treatment can affect your memory and thinking. This may be called “chemo brain” or “chemo fog.” In rare cases, it can last for a long time after treatment. This happens more often in treatments that use large doses of chemo drugs.

If you notice this, talk to your cancer care team. There are health care workers who can help you with thinking exercises and other types of treatment to help these effects.

Emotional changes
Chemo and cancer can affect a patient’s emotions. Chemo changes your normal life and can make it harder to get things done. You may feel sad or scared. There may be some strain on how you get along with others. But there are ways to cope with these things. Talk to your cancer care team about counseling, support groups, and things you can do to help be less stressed and more relaxed.

Your friends and family can give you emotional support, too. But your loved ones may not be sure how to talk to you about cancer and chemo. It’s good to let them know it’s OK to talk about these things.
Can chemo side effects be prevented and treated?
There are ways to stop most chemo side effects or make them better. Be sure to talk to your cancer care team if you have side effects.

Remember that not everyone gets the same chemo drugs. Some chemo drugs cause more side effects than others. Your overall health and fitness will also affect how your body reacts to chemo.

Most people have to change their work hours to get chemo. Ask your cancer care team what you’ll be able to do during treatment – on chemo days and in between treatments.

What can I do to take care of myself during chemo?
During your chemo, take extra care of yourself. Your cancer care team will give you tips on how to do this. But here are some basic things you should do:

• **Get plenty of rest.** You may feel more tired than normal during treatment. Give yourself time for rest breaks when you need them.

• **Eat healthy foods.** It’s important for your body to get enough protein and calories to make new healthy cells that it lost during treatment. Your doctor, nurse, or dietitian (die-uh-TISH-un) may work with you to make sure you are eating the right foods to get what you need. If you have trouble eating or don’t feel like eating, talk to your cancer care team.
• **Get exercise and fresh air if your doctor says you can.** Exercise can help reduce stress and tiredness, and can help you feel like eating. Check with your cancer care team about your exercise plan to make sure it’s OK.

• **Ask your cancer care team about alcohol.** Alcohol can cause problems with some chemo drugs. Your team can talk to you about a safe amount of alcohol to drink.

• **Check with your cancer care team before taking vitamins or supplements.** There is no “magic” diet, herb, or substance that can cure cancer, no matter what anyone claims. If you already take vitamins or supplements, tell your doctor what you take and ask if it’s OK to keep taking them.

• **Keep thinking about the treatment goals.** Dealing with chemo can be hard. A good way to handle the effects of chemo is to remind yourself why you’re getting it.

• **Learn more about your cancer and treatment.** The more you know, the better you will be able to cope.

• **Take time to enjoy your hobbies.** Doing the things you like to do can help you cope with chemo.

Will chemo affect my family?

People cannot catch your cancer diagnosis or your chemotherapy side effects by standing or sitting near you. You can be close to family and friends. Your cancer care team will tell you if there are any special things you need to do at home because of the chemo.
If you have side effects, your family and friends can do things to help. When someone asks, “How can I help?” have a few ideas ready.

- You may not feel like eating, so ask loved ones to take turns cooking foods that you think you can eat.

- You might get tired after each treatment and need extra rest. Ask your friends and neighbors to do little jobs for you until you feel better.

- Your treatment may take a long time. Ask a friend to drive you and keep you company during treatment.

Keep in mind that your family cares about you, and they may feel upset about your cancer and the chemo. Let your family and friends know how much their support means to you. Be honest about how you feel. Get into the habit of talking things over with your loved ones so they can share your ups and downs.

There will be times when the people closest to you feel tired or sad, too. You can help them feel better by reminding them how important they are to you. You can also point out how much their support and help mean to you.
Follow-up care

What does “follow-up” mean?

No matter what type of cancer you have had, after your chemo ends you will still need to see your cancer care team. They will check how you are doing and help you deal with any problems you may have. This part of your treatment is called follow-up care.

After treatment, there’s a chance that the cancer might come back. There’s no way to know if this will happen to you, but your team will want to watch for this.

Here are some questions you may want to ask your cancer care team after chemo ends:

• When can I go back to doing things I used to do?
• How often will I need to see you?
• Which tests will be done and why?
• Do I need to be on a special diet?
• What should I watch for to know if the cancer is back?

When should I call the doctor?

After treatment, you may be more aware of your body and changes in how you feel from day to day. If you have any of the problems listed here, tell your cancer care team right away.

• Pain that doesn't go away or is getting worse
• New lumps, bumps, or swelling
• Nausea, vomiting, diarrhea, not wanting to eat, or trouble swallowing
• Weight loss when you’re not trying to lose weight
• Fever or cough that doesn’t go away
• New rash, new bruises, or bleeding
• Any other signs your team tells you to watch for

How can I learn more about my cancer and cancer treatment?
If you’d like more details on chemo, please call us. You can also visit www.cancer.org to read more online.

For cancer information, day-to-day help, and emotional support, call the American Cancer Society at 1-800-227-2345. We’re here when you need us.
This is a short review of chemotherapy (key-mo-THER-uh-pee) or chemo. It tells you what chemo is, how chemo works, things you can do to take care of yourself while getting treatment, and common side effects to watch for.

It also gives you lists of questions you may want to ask your cancer care team so you can know what to expect with this common cancer treatment.

For the latest cancer information, day-to-day help, and emotional support, call the American Cancer Society at 1-800-227-2345. We're here for you every step of the way.
Radiation Therapy
What It Is, How It Helps
What’s inside

If your doctor has told you that you have cancer, you may have a lot of questions. Can I be cured? What kinds of treatment would be best for me? Will it hurt? How long will treatment take? How much will it cost? How will my life change while I’m being treated and after treatment ends? These are all normal questions for people with cancer.

This booklet will explain one type of treatment – radiation (RAY-dee-A-shun) therapy (THER-uh-pee) – a little better. We’ll try to help you know what radiation therapy is and what it will be like.

If you have more questions, ask your cancer care team to help you. It’s always best to be open and honest with them. That way, they can help you with any problems that come up.
Questions about radiation therapy

What is radiation therapy?
Radiation therapy is the use of strong beams of energy to treat cancer and other problems. There are many types of radiation. One that you may know about is x-rays. If you’ve ever had an x-ray of your chest or any other body part, you’ve had some radiation. Radiation is used in much higher doses to treat some cancers.

How does radiation therapy work?
Special machines send high doses of radiation to cancer cells or tumors. This kills the cancer cells. It keeps them from growing and making more cancer cells. Radiation can also harm normal cells near the tumor. But normal cells can fix themselves; cancer cells can’t.

Sometimes radiation is the only treatment needed. Other times it’s used along with chemo (KEY-mo) or surgery (SUR-jer-ee).

Sometimes radiation can cure cancer. Other times it may be used to slow down the cancer to help you feel better. Be sure to talk to your cancer care team about the goal of your treatment.

How much does radiation therapy cost?
Radiation therapy costs a lot. How much yours costs depends on the type of treatment you get and the number of treatments you need.

Most health insurance plans pay for some radiation therapy. Find out who you can talk to about your coverage and how much
you’ll have to pay. Try to do this before you start treatment. If your pay at your job is low, you may be able to get Medicaid. Medicaid will help pay for treatments.

If you don’t have insurance or Medicaid, talk with your hospital’s social services office. Or call your American Cancer Society at 1-800-227-2345 to find out what help there might be for you.

What should I ask my doctor?

Your radiation therapy will be planned just for you. Work closely with your cancer care team to decide what’s best for you. Ask the doctor, nurses, and others on your team all the questions you have. They know the most about radiation and how it works.

Be ready. Write down questions ahead of time. Take them with you, and don’t be afraid to say you need to know more. Nothing you say will sound silly or strange to your team. All patients who get radiation have questions. Here are some you might want to ask:

• What kind of radiation do you think will work best for me?
• What’s the goal of radiation in my case?
• Will it kill or shrink the tumor?
• How will we know if the radiation is working?
• If I’m getting radiation after surgery, will it kill any cancer cells left behind? Could I get radiation instead of surgery?
• How will I get radiation, how often, and for how long?
• Will you need to put marks on my skin? What will they look like?
• Will any side effects change my eating, drinking, exercise, work, or sex life?
• Will the treatment or side effects change the way I look?
• How long might the side effects last?
• What’s the chance that the cancer will spread or come back if I get radiation? What’s the chance that the cancer will spread or come back if I don’t get it?
• Does my insurance pay for radiation? If not, how will I pay for it?
• Will I still be able to work (or go to school) during treatment?
Will I be able to work during treatment?

Some people work all the way through treatment, and others don’t. Even if you do work, you may need to take some time off. It’s good to know about your rights at work and how to keep your health insurance. If you have any questions about work or your insurance, you can call your American Cancer Society at 1-800-227-2345.

If you have stopped working, you can go back to your job as soon as you and your doctor think you’re up to it, even while getting radiation. Make sure you tell your cancer care team what you do each day at work and how it makes you feel. If you have to do a lot of lifting or heavy work, you may need to find out if you can change what you do until you get stronger.

How is radiation given?

Radiation can be given in 3 ways. They are:

- External beam radiation
- Internal radiation
- Systemic radiation

Some people get more than 1 type of radiation.
External beam radiation

Radiation that comes from outside your body is called external beam radiation. (External means outside.) A big machine sends high-energy beams to the tumor and some of the area around the tumor.

How long does the treatment take?
Most people get radiation treatment 5 days a week for 1 to 10 weeks. The number of treatments you need depends on the size and type of cancer, where the cancer is, how healthy you are, and what other treatments you’re getting. Most people get a break on weekends so their normal cells can heal.

What happens during treatment?
External radiation therapy is like getting an x-ray. There’s no pain, and it only takes a few minutes. But it takes time to get the machine set up, so it may take 15 to 30 minutes to get each treatment. Most of the time, it’s given in a walk-in clinic, so you don’t have to be in the hospital.

You’ll lie on a treatment table, under the radiation machine. The radiation therapist may put shields or blocks between the machine and other parts of your body. These protect the rest of your body from the radiation. You may see lights that are lined up with the marks on your skin. Sometimes a mold or mask is used to make sure you are lying the same way each time. You’ll need to stay still during the treatment, but you don’t have to hold your breath.
Once you’re all set and the machine is ready, the therapist goes into a nearby room to run the machine. The therapist can see you and talk to you the whole time. While the machine is working, you’ll hear clicking, whirring, and something that sounds like a vacuum cleaner as the machine moves around you to aim the radiation. The radiation therapist controls this movement and checks to make sure the machine is working the way it should. It will not touch you.

If you’re worried about anything that happens while the machine is on, talk to the radiation therapist. If you start to feel sick or scared, let the therapist know right away. The machine can be stopped at any time.

**Internal radiation**

When radiation is put inside you, it’s called internal radiation therapy. (Internal means inside.) This lets the doctor give a large dose of radiation right to the cancer cells and/or tumor.

The radiation will come from an implant. It might look like a wire, pellets, or seeds. The implant is put very near or right into the tumor, and the radiation travels only a very short distance. The implant can be left in place forever or just for a short time.

Internal radiation is also called brachytherapy (BRAY-kee-THAIR-uh-pee).

**How are implants put in the body?**

Some implants are put in the body with needle-like tubes. This might be done in an operating room, and drugs may be used to make you relax or sleep.
Other implants are put in a body opening, like the uterus or rectum. These are only left in for a short time.

**Some implants are left in.**
If you have implants that will be left in your body, you may be told to not get close to children or pregnant women for some time. But you can go back to the other normal things you do right away.

The implants give off less and less radiation over time. They stop giving off radiation after a few months. Once the radiation is gone, the implants just stay in and cause no harm.

**Some implants are taken out.**
Some implants are taken out after they have been in for many hours or days. While the implants are in place, you’ll stay in a private hospital room. Doctors and nurses will take care of you, but they’ll need to limit how much time they spend with you.

Many times, these implants are taken out right in your hospital room. The treated area may be sore for some time, but most people get back to normal quickly.

**Systemic radiation**
Systemic (sis-TEM-ick) radiation uses drugs to treat some types of cancer. These drugs can be given by mouth, or a needle can be used to put them into a vein. They then go all through the body. They go to where the cancer is to give off their radiation and kill the cancer cells.
**Safety issues**

Because systemic radiation is a liquid that goes through your whole body, the radiation will be in your body for a few days. Over time your body will get rid of it. The radiation can leave your body through spit, sweat, blood, and pee, making these fluids radioactive. You may need to stay in the hospital for a few days.

Your cancer care team will tell you what you need to do to be safe until all the radiation is out of your body. What you must do depends on the drug used. Be sure you know what you need to do to protect the people around you.

**What can I do to take care of myself during radiation therapy?**

During radiation therapy, you need to take good care of yourself. Your cancer care team will give you tips on how to do this. But here are some things that you should do:

- **Get a lot of rest.** You may feel more tired than normal. This can last several weeks or months after your treatment ends. Sometimes the fatigue can last longer.

- **Eat healthy foods.** Your cancer care team can work with you to make sure you’re eating the right foods to get what your body needs. They may have tips to help with side effects if your stomach or throat is in the area being treated.

- **Take care of the skin in the treatment area.** Clean the skin each day with warm water and a mild soap that your team says is OK to use. Don’t use anything else on the treated skin unless your cancer care team tells you it’s OK.
• **Tell your cancer care team about all medicines you are taking.** If you take any medicines, even aspirin, herbs, or vitamins, let your team know before you start radiation.

**What about radiation side effects?**

Some people have no side effects at all, while others do. The most common side effects are:

• Feeling very tired (fatigue [fuh-TEEG])
• Skin changes over the treated area
• Not wanting to eat (appetite loss)

Other side effects depend on the part of the body being treated. For instance, if you get radiation to your head, you might have hair loss. Or if you get radiation to your chest, you might have a cough or sore throat.
Most side effects go away in time. But there are ways to help you feel better. If you have bad side effects, the doctor may stop your treatments for a while, change the timing of treatments, or change the type of treatment you’re getting. Tell your cancer care team about any side effects you have so they can help you with them.

Next we will talk about a few of the more common side effects.

How do I deal with fatigue?
Fatigue (fuh-TEEG) means you feel very tired. It can last for a long time. It can keep you from doing the things you want and need to do. It’s not like the fatigue you feel at the end of a long, hard day. That kind gets better after a good night’s sleep. The fatigue caused by cancer and/or cancer treatment is worse and causes more problems. Rest does not always make it go away.

Cancer fatigue is very common. By knowing about fatigue, you can cope with it better. No lab tests or x-rays can show fatigue or tell how bad it is for you. Only you know if you have fatigue and how bad it is.

If you have fatigue, be sure to tell your cancer care team. You can say it’s mild, moderate, or severe. Or, you can use a scale from 0 to 10. A 0 means you have no fatigue, and a 10 means you have the worst fatigue ever.
This weak or weary feeling will go away over time. Until then here are some things you can do to help feel better:

- Do the things that you need to get done when you feel your best.
- Ask for help, and let people help you.
- Put things that you use a lot within easy reach.
- Set up a day-to-day routine.
- Try to relax to have less stress. Many people feel better with things like deep breathing, prayer, talking with others, reading, or listening to music.
- Get both rest and activity. Don’t spend too much time in bed, which can make you weak. Don’t let rest or daytime naps keep you from sleeping at night. A few short rest breaks are better than one long one.
- Talk to your cancer care team about how to keep your pain under control and feel less sick to your stomach (if you have these).
- Depression can make you feel more tired. Talk with your doctor if you think you may be depressed. Feeling sad or worthless, losing interest in life, thinking about death a lot, or thinking of hurting yourself are some signs of depression.
- Get some exercise each day. Talk to your cancer care team before you start.
- You may be told to eat a special diet. If so, try to do it. It’s good to include protein (meat, milk, eggs, and beans). It’s also good to drink about 8 to 10 glasses of water a day.
Let your cancer care team know about your fatigue and talk with them if:

- It doesn’t get better, keeps coming back, or gets worse.
- You’re more tired than usual during or after an activity.
- Your fatigue doesn’t get better with rest or sleep.
- You become confused or can’t think.
- You can’t get out of bed for more than 24 hours.
- You can’t do the things you need or want to do.

**What can I do about skin changes?**

Skin over the part of your body being treated may look red, swollen, blistered, sunburned, or tanned. After a few weeks, your skin may become dry, flaky, itchy, or it may peel. Let your cancer care team know about any skin changes. They can tell you about ways to help your skin feel better, help keep it from getting worse, and try to keep it from getting infected.

Most skin changes slowly go away after treatment ends. In some cases, though, the treated skin will stay darker and might be more sensitive than it was before. **You need to be gentle with your skin.** Here are some ways to do this:

- Wear loose clothes that are soft and smooth.
- Do not rub, scrub, scratch, or use tape on treated skin. If your skin must be covered or have a bandage, use paper tape or other tape for sensitive skin. Try not to let the tape touch the treatment area. Don’t put the tape in the same place each time.
• Do not put heat or cold (such as a heating pad, heat lamp, or ice pack) on the treated skin.

• Protect the treated skin from the sun. It may be extra sensitive to sunlight. Protect your skin from the sun even after radiation therapy ends. Wear clothes that cover the skin, or use sunscreen with an SPF of at least 30.

• Use only lukewarm water and mild soap. Just let water run over the treated area. Be careful not to rub away the ink marks needed for your radiation therapy until it’s done.

• Do not use a pre-shave or after-shave lotion or hair-removal products. Use an electric shaver if you must shave the area, but first check with your cancer care team.

• Ask your cancer care team before using anything on the skin in the treatment area. This includes powders, creams, perfumes, deodorants, body oils, ointments, lotions, or home remedies while you’re being treated and for a few months afterward.

Will I have eating problems?

You may not feel like eating during treatment. Eating may be more of a problem if you’re getting radiation to your stomach or chest. Even if you don’t feel like eating, you should try to eat foods high in protein and calories.

Patients who eat well can better handle cancer treatment and side effects. There are many cookbooks for people who have eating problems. Ask your cancer care team about these.
If you have trouble swallowing, tell your team. If you have pain when you chew and swallow, you may be told to try a liquid diet. Liquid nutrition drinks come in many flavors. You can buy them at supermarkets and drugstores, or you can make them yourself. They can be mixed with other foods or added to milk shakes and smoothies.

Here are some tips to help when you don’t feel like eating:

• Eat when you’re hungry, even if it’s not mealtime.

• Eat 5 or 6 small meals during the day rather than 2 or 3 large ones.

• Try to eat with family or friends, or turn on the TV or radio.

• Keep healthy snacks close by.

• If others offer to cook for you, let them. Don’t be shy about telling them what you want to eat.

• Add calories to your diet by drinking milk shakes or liquid supplements, adding cream sauce or melted cheese to vegetables, and mixing canned cream soups with milk or half-and-half instead of water.

**Will my emotions be affected?**

You may feel tired from the radiation therapy, and this can affect your emotions or feelings. You also might feel depressed, afraid, angry, alone, or helpless. Talking to others sometimes helps.
One way to meet other people with cancer is to go to a support group. Ask your cancer care team or call your American Cancer Society to find out how you can meet with or talk to others with cancer who share your problems and concerns.

Will I have pain?
Radiation therapy isn’t painful, but some of the side effects it causes can be. For instance, if you’re getting radiation to the head and neck, you might have a sore throat, trouble swallowing, or mouth sores. These can hurt.

If you have a tumor that’s causing pain, radiation can shrink the tumor and help ease that pain.

If you have any pain, talk to your cancer care team. Talk about your pain and where it is in as much detail as you can. This will help your team know how best to help you with your pain.

Pain is not part of cancer treatment. Get help if you have pain.

Follow-up care
What does “follow-up” mean?
No matter what type of cancer you had, after your radiation treatments end you’ll still need to see your cancer care team. They will check to make sure you are getting better and help you deal with problems that may come up. This part of your treatment is called follow-up care.
After treatment, there’s a chance that the cancer might come back. There’s no way of knowing if this will happen to you, but your team will want to watch for this.

Here are some questions you may want to ask your team after radiation ends:

• When can I go back to doing my normal activities?
• How often do I need to see you?
• Which tests will be done and why?
• Do I need to be on a special diet?
• What problems do I need to watch for?

**When should I call the doctor?**

After treatment, you may be more aware of your body and any changes in how you feel from day to day. If you have any of the problems listed here, tell your cancer care team right away.

• Pain that doesn’t go away or is getting worse
• New lumps, bumps, or swelling
• Feeling sick to your stomach, throwing up, diarrhea, not wanting to eat, or trouble swallowing
• Weight loss when you’re not trying to lose weight
• Fever or cough that doesn’t go away
• A new rash, new black and blue marks, or bleeding
• Any other signs that your team tells you to watch for
How can I learn more about cancer and cancer treatment?

If you’d like to learn more about radiation therapy, please visit www.cancer.org to read more online or call us to talk to one of our caring, trained staff.

We are here for you every step of the way. Contact us for cancer information, day-to-day help, and emotional support. Visit www.cancer.org, or call us at 1-800-227-2345.
This is a short review of radiation therapy. It tells you:

• How radiation works
• Types of radiation used to treat cancer
• Things you can do to take care of yourself while getting treatment
• Common side effects to watch for

It also gives you lists of questions you may want to ask your cancer care team so you can know what to expect with this common cancer treatment.

For the latest cancer information, day-to-day help, and emotional support, call your American Cancer Society at 1-800-227-2345. We’re here when you need us.
Clinical Trials

You may have heard the words “clinical trial” and wondered what this is. Clinical trials are one way to get the most up-to-date cancer treatment.

Learning all you can and talking with your doctor or nurse and your family and friends can help you decide if a clinical trial is right for you. You are the only one who can make the choice to take part in a clinical trial.

What are clinical trials?

Clinical trials are research studies done with volunteers. These studies test whether a new treatment is safe and how well it works. Clinical trials may also test new ways to find or prevent a disease. These studies have led to many new ways to prevent, diagnose, and treat cancer.

The purpose of clinical trials

Clinical trials are done to get a closer look at new treatments or procedures. A clinical trial is only done when there’s good reason to believe that the treatment or test being studied may be better than the one being used now (the standard treatment). Treatments used in clinical trials are often found to be helpful. If that happens, they may go on to become the standard treatment.

Clinical trials can test things like:

- New drugs that have not yet been approved by the FDA (Food and Drug Administration)
- New uses for drugs that are already approved
- Treatments, such as radiation therapy or surgery
- Herbs and vitamins
- New ways to combine treatments

Researchers study new treatments to try to answer questions like these:
• Is the treatment helpful?
• What’s the best way to give it?
• Does it work better than other treatments now being used?
• What side effects does the treatment cause?
• Which patients will most likely be helped by this treatment?

What it’s like to be in a clinical trial

If you are in a clinical trial, you will have a team of experts taking care of you and watching your progress closely. You may have more doctor visits and lab tests than you would with the standard treatment.

But there are some risks. No one knows ahead of time whether the treatment will work or just what side effects you might have. That’s what the study is trying to find out. While most side effects go away in time, some may last a long time or even be life-threatening. But keep in mind that this is true for side effects from standard treatments, too.

Deciding to enter a clinical trial

If you would like to take part in a clinical trial, start by asking your doctor if your clinic or hospital does clinical trials. You must meet certain requirements, like having a certain type of cancer or not being pregnant, in order to take part in a clinical trial. But whether you take part is up to you.

Taking part in a clinical trial does not keep you from getting any other medical care you may need. And you are free to leave the clinical trial at any time, for any reason.

How can I find out more?

To find out more about clinical trials for your type of cancer, talk to your doctor or nurse.

The American Cancer Society can answer your questions about clinical trials, too. We can also give you a list of clinical trials that are being done for your type of cancer. (You will need to tell us a little about yourself and your type of cancer.) Call us at 1-800-303-5691, or find our Clinical Trials Matching Service on our website at www.cancer.org/clinicaltrials.

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For additional assistance please contact your American Cancer Society
1-800-227-2345 or www.cancer.org
Free cancer information center
The American Cancer Society National Cancer Information Center offers help as you’re dealing with cancer by connecting you to our caring, trained staff to answer questions about a diagnosis, identify resources, or provide a listening ear and guidance. We offer health insurance assistance, American Cancer Society programs, and referrals to other services. Call us at 1-800-227-2345 or visit cancer.org to live chat with us. We can assist in English, Spanish, and more than 200 other languages via a translation service.

Printed materials about cancer
Our materials can help you and your loved ones understand your diagnosis, treatment, and potential side effects, and provide detailed information on our programs and services. Our printed materials are available for free at 1-800-227-2345 or through your cancer care team.

Places to stay during treatment
Our Hope Lodge® program provides a free, nurturing home away from home for cancer patients and their caregivers when they have to travel for treatment. In some areas where we don’t have a Hope Lodge community or it is full, our Hotel Partners Program lets patients and caregivers stay for free or at reduced rates in hotels close to where they get treatment.

Rides to treatment
Lack of transportation can be one of the biggest roadblocks to treatment. That’s why the American Cancer Society started the Road To Recovery® program. It is at the very heart of our work of removing barriers to quality health care by providing patients transportation to treatment through volunteer drivers, partners, and community organizations.

Patient navigation
Our patient navigators, available at many hospitals nationwide, help patients get the services they need so the rest of their cancer care team can focus on treatment. Patient navigators can also provide cancer and treatment information customized for each patient’s diagnosis, help them find local resources to help make sure they get the treatment they need, and more.

Cancer Survivors Network℠
Visit csn.cancer.org to join our online community for people with cancer and their families. Find and connect with others in treatment, long-term survivors, or caregivers through our member search, discussion boards, chat rooms, and private email.

Reach To Recovery®
The Reach To Recovery program connects breast cancer patients with trained volunteers to receive peer-to-peer support on everything from practical and emotional issues to helping them cope with their disease, treatment, and long-term survivorship issues.

“tlc” – Tender Loving Care®
Our “tlc” (Tender Loving Care) publication offers affordable hair loss and mastectomy products for women coping with cancer, as well as advice on how to use them. Products include wigs, hairpieces, hats, turbans, and breast forms, as well as mastectomy bras, camisoles, and swimwear. Call 1-800-850-9445, or visit the “tlc”™ website at tlcdirect.org to order products or catalogs.
American Cancer Society books

We have more than 40 award-winning books on specific cancers, general cancer information, caregiving, coping with cancer and side effects, emotional support, books for families and children, and more. You can purchase American Cancer Society books and e-books at cancer.org/bookstore, or book retailers nationwide.

Survivorship guidelines and resources

We have materials and resources for survivors to help with quality-of-life and other needs during and after cancer treatment. Our cancer survivorship guidelines for specific cancers help doctors manage the unique needs of survivors, and our nutrition and physical activity guidelines for survivors help you know how to live your best life and reduce your risk for cancer coming back.

Springboard Beyond Cancer

This online tool for cancer survivors, created by the American Cancer Society and the National Cancer Institute, is available at survivorship.cancer.gov. Patients and survivors can create personalized Action Decks, collections of selected information to help them better communicate with caregivers and their care teams to manage their physical and emotional care after a cancer diagnosis.

Caregiver Support Resources

As part of our commitment to support family members and friends providing care to loved ones with cancer, the American Cancer Society developed the Caregiver Resource Guide (cancer.org/caregiverguide). In addition to information about the caregiving process and what to expect with a cancer diagnosis and its treatment, the tool focuses on caregiver self-care, communication, coping, and caregiver resources. Another helpful resource is our Caregiver Support Video Series (cancer.org/caregivervideos), which provides educational support to caregivers as they assist with everyday needs of loved ones and provides self-care techniques to improve their own quality of life.

Clinical trials

If you would like to learn more about clinical trials that might be right for you, start by asking your doctor if your clinic or hospital conducts clinical trials or contact us at 1-800-227-2345 and speak with one of our caring, trained staff.

cancer.org

Our website offers access to the most recent and accurate cancer information and helps you find programs and services in your area. A few pages of note are:

- cancer.org/survivors – a hub for support and treatment topics, treatment and survivorship tools, and stories of hope to inspire you
- cancer.org/videos – features to-the-point videos on cancer-related topics, including cancer basics, cancer treatments, clinical trials, American Cancer Society programs and services, the effects of survivorship, personal stories, and more
- cancer.org/treatmentdecisions – cancer treatment decision tools and resources to help you get through cancer diagnosis and treatment
- cancer.org/support – more information about the American Cancer Society and other programs and services in your area
- cancer.org/phm – information and tracking worksheets to help patients organize and navigate their cancer experience
- cancer.org/languages – links non-English speakers to cancer information in other languages
- Live Chat with our caring, trained staff simply by going to cancer.org and clicking on “Live Chat”
Cancer pain can be caused by:

- The cancer itself
- Cancer treatment
- Tests that are done

You can also have pain from headaches or arthritis.

Pain can affect all parts of your life.

If you have pain:

- You may not be able to do the things you need to do.
- You may have trouble sleeping and eating.
- You may feel tired or “down” all the time.
- You may be cranky, frustrated, sad, and even angry.

Loved ones may not understand how you are feeling, and you may feel very alone in your distress.

Some facts about cancer pain treatment:

- Cancer pain can almost always be controlled.
- Controlling pain is part of good cancer care.
- The best way to control cancer pain is to keep it from ever starting and keep it from getting worse.
- You have a right to ask for pain control.
- People who take cancer pain medicines the way the doctor or nurse tells them to rarely become addicted to them.
- Most people do not get high or lose control when they take cancer pain medicines the way they are told to.
- There are things you can do to manage or even prevent side effects from pain medicines.
How to talk about your pain

Pain medicine

There are many medicines, many ways to take the medicines, and many treatments without drugs that can help relieve your pain. Work with your cancer care team to find the cancer pain treatment that works best for you.

Here are some questions you may want to ask your doctor or nurse about pain medicine:

- How much medicine should I take? How often can I take it?
- If it doesn’t work, can I take more?
- Should I call you before taking more?
- What if I forget to take it or take it too late?
- Should I take my medicine with food?
- How long does it take the medicine to start working?
- Is it safe to drink alcohol, drive, or operate machinery after I have taken pain medicine?
- What other medicines can I take with the pain medicine?
- What medicines should I stop taking while I’m taking the pain medicine?
- What side effects could I have from the medicine, how can I prevent them, and what should I do if I have them?

When cancer pain is relieved, you are able to:

- Enjoy being active.
- Sleep better.
- Enjoy family and friends.
- Eat better.
- Enjoy sex.
- Prevent depression.
- Do the things you need or want to do.

Do not accept pain as a normal part of having cancer. You have a right to pain relief.
The fatigue that comes with cancer is different from the fatigue of daily life. Everyday, normal fatigue is a short-term problem that gets better with rest. Cancer-related fatigue is worse, and it causes more distress. Rest does not make it go away, and even a little activity may exhaust you.

Cancer-related fatigue is one of the most common and distressing side effects of cancer and its treatment.

What causes fatigue in people with cancer?
Cancer can cause fatigue. It is also very common with cancer treatments, such as chemo and radiation therapy. Other things that come with cancer can make fatigue worse, things like low blood counts, pain, and sleep problems.

Talking about your fatigue
Before your health care team can help you, they must know how bad your fatigue is. The best measure comes from your own report of your fatigue. But fatigue can be hard to describe.

Getting Help for Fatigue

Fatigue is when your body and brain feel tired. It means you don’t have the energy to do the things you want or need to do.

People describe fatigue in many ways. Some say they feel tired, weak, exhausted, weary, worn out, or slow. They may say they have no energy and can’t focus. Some also talk about their arms and legs feeling heavy, having little drive to do anything, and being unable to sleep or sleeping too much. They may say they feel moody, sad, irritable, or frustrated. Try to find words to explain how your fatigue makes you feel.

How bad is it?
You can describe your level of fatigue as none, mild, moderate, or severe. Or you can use a scale of 0 to 10, where 0 means no fatigue at all, and 10 means the worst fatigue you can imagine.

You may be asked questions like:

• When did the fatigue start? How long has it lasted?
• Has it changed over time? In what way?
• Does anything make it better? Worse?
• How has it affected what you do every day or the things that bring meaning to your life?
Tips to manage fatigue

Save your energy.
- Decide which things are the most important to do and focus on those tasks first.
- Do things slowly so that you will not use too much energy as you go.
- Ask for help, and have other people do things for you when possible.
- Put things that you often use within easy reach.
- Set up and follow a structured daily routine, keeping as normal a level of activity as you can.

Distract yourself.
Feeling tired can discourage and frustrate you. It’s easy to let it become the focus of your thoughts. Try to distract yourself with other things, like listening to music or reading a book. These things can give you an escape from your fatigue without using up too much energy.

Exercise.
An aerobic exercise program – started only with your doctor’s OK – can ease fatigue, help your heart and lungs work better, and make you feel better. You may need to see a physical therapist to learn the best exercise plan for you to follow at this time.

Eat well.
- Talk with your health care team about ways to manage problems like loss of appetite, diarrhea, nausea, or vomiting.
- Unless you are told otherwise, eat a balanced diet that includes protein (meat, milk, eggs, and beans) and drink about 8 to 10 glasses of water a day.

Get good sleep.
- Avoid caffeine in drinks (like coffee, tea, or soda), or even in foods (like chocolate).
- Do not exercise too late in the evening; this may cause sleep problems.
- You may need naps, but try to keep them short (less than 30 minutes) and early in the day so they don’t mess up your nighttime sleep.
- Try to avoid too much time in bed. It can make you weak.

Relax.
- Try walking, sitting in a peaceful setting, gardening, or bird-watching.
- Try to reduce stress using things like deep breathing, meditation, prayer, talking with others, painting, or any other things you like to do.
- Keep a record of how you feel each day. Take it with you when you see your doctor.
- Talk to your doctor about how to manage any pain, nausea, or depression you may have.

Remember: There is no one way to diagnose or treat distress. Let your doctor or nurse know how you are feeling so you can get the help you may need.

For cancer information, day-to-day help, and emotional support, call the American Cancer Society at 1-800-227-2345. We’re here when you need us – 24 hours a day, 7 days a week.
People often call vomiting “throwing up.” It happens when your stomach muscles squeeze and push the contents of your stomach up through your mouth.

About 8 out of every 10 people treated for cancer have nausea and vomiting. But there are many medicines that work well to control this, and you do not need to suffer.

What causes nausea and vomiting?
Nausea and vomiting in the person with cancer can be caused by many things. Most of the time they are short-term problems and go away when treatment is over. If they last, don’t get better with treatment, or make it hard to eat or drink, tell your health care team right away.

Can nausea and vomiting cause problems?
When nausea and vomiting are bad or last a long time, they can make it hard for you to do the things you need to do. They can also make it hard for you to get the cancer treatment you need.

Vomiting can lead to dehydration, which is a lack of fluids and minerals needed by your body. It can also make you feel tired, have trouble thinking, heal slower, lose weight, and not want to eat. These side effects should be dealt with right away to help you keep up your weight and energy.

How are nausea and vomiting treated?
Drugs used to control nausea are often called anti-nausea/vomiting drugs. You may also hear them called anti-emetics (an-tie-eh-MEH-tiks). Every person being treated for cancer can, and should, get medicines to prevent nausea and vomiting.

Anti-nausea/vomiting medicines are usually given on a regular schedule or “around the clock.” You take them even if you don’t feel sick. But sometimes you may take them on an as-needed schedule; you take the medicine at the first sign of nausea to keep it from getting worse. Sometimes 2 or more medicines are used at the same time.
What you can do if you have nausea or vomiting:

To reduce nausea and vomiting if you are getting chemo or radiation:

• Make sure you eat on the days you get treatment. Most people find that a light meal or snack before treatment is best.

• Try foods and drinks that are “easy on the stomach” or made you feel better when you were sick in the past. These are often things like ginger ale, bland foods, sour candy, and dry crackers or toast.

• Wear loose-fitting clothes.

• Let your health care team know when anti-nausea/vomiting medicines aren’t working. You may have to try a few different medicines to find the ones that work best for you.

• Limit sounds, sights, and smells that cause nausea and vomiting.

• Talk to your doctor or nurse about other things you can try, such as hypnosis, biofeedback, or guided imagery.

Things you can do to try to eat as well as possible during treatment:

• Don’t be too hard on yourself if you can’t eat. Try to eat small meals or snacks throughout the day rather than 3 large meals.

• Add extra calories and protein to foods. Nutrition supplements are easy and can help during this time. Try different brands and flavors of supplements to find out which ones taste best and work best for you.

• Eat the foods that sound good to you.

• Try food that is cold or at room temperature.

• Make the most of days when you feel well and want to eat. But listen to your body. Don’t force yourself to eat.

• Ask family and friends for help shopping and cooking.

• Keep your mouth clean. Brush your teeth and rinse your mouth out every time you vomit.

Eating well is important both during and after treatment. If you have side effects from the anti-nausea/vomiting medicines or they are not working, talk with your health care team.

Talk to your doctor or nurse.

Nausea and vomiting can be side effects of cancer treatment. But they are not a part of cancer treatment that can’t be changed. Talk to your health care team if you are having nausea. Be willing to work with them to find the right anti-nausea/vomiting medicines for you.

For cancer information, day-to-day help, and emotional support, call the American Cancer Society at 1-800-227-2345. We’re here when you need us – 24 hours a day, 7 days a week.
Some people notice these changes even before they start treatment. So the term chemo brain may not be the best one to use, but it’s what most people call it right now.

The brain usually recovers over time, but the mental changes cancer patients notice are real, not imagined. These changes can cause problems with school, work, or social activities.

What is chemo brain?
Research has shown that some cancer drugs can cause changes in the brain. These changes are in the parts of the brain that deal with things like memory, planning, and putting thoughts into action.

Here are just a few examples of what chemo brain may be like:

- Trouble remembering things you usually have no trouble recalling
- Trouble focusing on what you’re doing and taking longer to finish things
- Trouble remembering details like names, dates, and events

- Trouble remembering common words
- Trouble doing more than one thing at a time, like answering the phone while cooking, without losing track of one of them

For some people, these changes come on fast and only last a short time. Others may have mild, long-term changes. In most cases, the changes are subtle, and others around the person with cancer may not even notice any changes at all. Still, the people who have problems are aware of the differences in their thinking. Many people don’t tell their cancer care team about this problem until it affects their everyday life.

Can chemo brain be prevented?
We don’t know what causes chemo brain, and at this time there’s no way to prevent it. It seems to happen more with high doses of chemo. But because chemo brain is usually mild and goes away over time, treatment plans should not be changed to try to prevent it.
Things you can do to deal with chemo brain:

Day-to-day coping

- Use a daily planner. Keep everything in one place to make it easier to find the reminders you may need. Keep track of appointments and schedules, to-do lists, important dates, phone numbers and addresses, meeting notes, and even movies you'd like to see or books you'd like to read.
- Exercise your brain. Take a class, do word puzzles, or learn to do something new.
- Get enough rest and sleep.
- Exercise your body. Regular physical activity is good for your body; it improves your mood, makes you feel more alert, and helps you feel less tired.
- Eat your veggies. Studies have shown that eating more vegetables can help you keep up your brain power.
- Set up and follow routines. Put the things you often lose in the same place each time you're done with them. Try to keep the same daily schedule.
- Don’t try to multi-task. Focus on one thing at a time.
- Track your memory problems. Keep a diary of when you notice problems and what's going on at the time. Medicines taken, time of day, and where you are may help you figure out what affects your memory. Keeping track of when the problems are worst can also help you prepare by not planning important talks or meetings during those times.
- Try not to focus on how much chemo brain is bothering you. Accepting the problem will help you deal with it. Patients say that being able to laugh about things you can’t control can help you cope. And remember, you probably notice your problems much more than others do.

Telling others

Another thing you can do to better manage chemo brain is to tell family, friends, and your cancer care team about it. Let them know what you’re going through. It may help you feel better.

You’re not stupid or crazy; you just have a side effect that you have to learn to manage. Even though this is not a change that is easy to see, like hair loss or skin changes, your loved ones may have noticed some things and may even be able to help you. For instance, your partner may notice that when you’re rushed, you have more trouble finding things. Tell your loved ones what they can do to help. Their support and understanding can help you relax and make it easier for you to focus and pay attention.

Tell your cancer care team about the changes you’re feeling. They may suggest you see a specialist who can work with you on ways to manage memory or thinking problems.

For cancer information, day-to-day help, and emotional support, call the American Cancer Society at 1-800-227-2345. We’re here when you need us – 24 hours a day, 7 days a week.
Diarrhea is having bowel movements or passing stool more often than is normal for you. The stool may be loose or watery. It can happen with or without cramps or belly pain. You may need to get to the bathroom right away. Diarrhea happens when water in the intestine is not being absorbed back into the body. Uncontrolled diarrhea can lead to weight loss, fluid loss, poor appetite, and weakness.

**Diarrhea can be caused by:**
- Chemo
- Radiation therapy to the belly
- Infection
- Medicines
- Tumor growth
- Surgery
- Stress
- An overflow of intestinal liquids around stool that’s stuck in the intestine (this is called an impaction)

**Talk to your doctor if:**
- You have diarrhea or stomach pain for more than a day.
- You are dizzy or feel like you may pass out.
- The diarrhea doesn’t get better or gets worse.
- Your stools have an unusual odor or color.
- You have blood in or around your rectum or in your stool.
- You lose 5 or more pounds after the diarrhea starts.
- You don’t pass urine (pee) for 12 or more hours.
- You can’t drink liquids for 2 or more days.
- Your belly gets puffy or swollen.
- You have a fever of 100.5° F or higher, taken by mouth.
- You’ve been constipated and then start to have small amounts of diarrhea or oozing of liquid stool. (This may mean you have an impaction or severe constipation.)
Eat these things if you have diarrhea:

- Salty foods, such as broths, soups, sports drinks, crackers, and pretzels
- High-potassium foods, such as fruit juices and nectars, sports drinks, potatoes with the skin, and bananas
- Soluble-fiber foods, such as applesauce, bananas, canned peaches and pears, oatmeal, cooked carrots, and white rice
- Low-fiber foods, like rice, noodles, skinned turkey and chicken, white toast, mashed potatoes, and well-cooked eggs
- Limit milk or milk products to 2 cups a day. Yogurt and buttermilk are OK.

Do not eat these things if you have diarrhea:

- Foods that are very hot or spicy
- High-fiber foods, like nuts, seeds, whole grains, beans and peas, dried fruits, and raw fruits and vegetables
- High-fat foods, such as fried and greasy foods
- Alcohol or drinks with caffeine
- Acidic drinks, such as tomato juice, citrus juices, and fizzy soft drinks
- Sugar-free chewing gum and candies made with sugar alcohol (i.e., sorbitol, mannitol, or xylitol)

What you can do to feel better:

- Sip fluids all day to prevent dehydration. Try Popsicles, gelatin, and ice chips.
- Eat small meals and snacks often during the day.
- Try to drink at least 1 cup of liquid after each loose bowel movement.
- Clean your bottom with a mild soap after each bowel movement, rinse well with warm water, and pat dry. Or, use unscented baby wipes to clean yourself after each bowel movement.
- Apply a water-repellent ointment, such as A&D Ointment or petroleum jelly, to your bottom.
- Sit in a tub of warm water or a sitz bath to help reduce discomfort.

Other tips:

- Keep a record of your bowel movements to help decide when to call the doctor.
- Check with your doctor before using any over-the-counter diarrhea medicine.
- Talk to the doctor about using a prescription medicine.
- Take medicine for diarrhea as prescribed by your doctor.
- If your diarrhea gets bad (meaning that you have 7 or 8 loose stools in 24 hours), tell your doctor right away. You may need to try a clear liquid diet to give your bowels time to rest.
- Once the diarrhea has stopped, start small regular meals. Slowly start eating foods that contain fiber.
A certain amount of distress is normal. People are scared about what may happen to their bodies. They worry how they will cope with the cancer. And they have fears about the future. People often wonder, “Am I going to die?” and “Why is this happening to me?”

Learning how to talk about and cope with distress can help you and your loved ones.

Talking about your distress
The first step toward coping with distress is talking to your cancer care team about how you feel. Then, they can get you help if you need it. They are treating YOU, not just your cancer. They count on you to tell them how you are doing and what you are feeling. No one can do that except you.

Saying that you are distressed can mean that you feel:

- Sad
- Guilty
- Hopeless
- Anxious
- Powerless
- Angry
- Afraid
- Panic

Distress is pain and suffering of the body and mind. Here we use the word distress to cover the many emotions you may have as you deal with cancer and its treatment. Distress is also common in the loved ones of people with cancer.

Is distress normal?
Some distress is normal with cancer. But certain signs can warn you that your distress level is too high and is getting serious. Some of these are:

- Feeling overwhelmed to the point of panic
- Being overcome by a sense of dread
- Feeling so sad that you think you can’t go on with treatment
- Being more grouchy or irritable than usual
- Feeling unable to cope with pain, tiredness, and nausea
- Trouble getting to sleep or early waking (less than 4 hours of sleep a night)
- “Fuzzy thinking” and memory problems
- Having a very hard time making decisions, even little ones
- Feeling hopeless – wondering if there is any point in going on
- Thinking about cancer and/or death all the time
- Questioning faith and religious beliefs that once gave you comfort
- Feeling worthless and useless
Tips to help with distress

Do –

• Use coping styles that have worked for you in the past.

• Find someone you can talk to about your illness.

• Deal with cancer “one day at a time.” It’s hard to do, but try not to worry about the future.

• Use support and self-help groups if they make you feel better.

• Find a doctor who lets you ask all your questions. Know what to expect.

• Explore spiritual and religious beliefs and practices that have helped you in the past. Look at new practices if you think they might offer you comfort.

• Keep a personal journal as a way to express yourself without holding back.

Don’t –

• Believe that “cancer always equals death.”

• Blame yourself for causing your cancer.

• Feel bad if you can’t act “positive” and upbeat. Your attitude doesn’t help the cancer or make it worse. Low times will come, no matter how good you are at coping.

• Suffer in silence. Don’t try to go it alone; get help with what you need.

• Be embarrassed to get help from a mental health professional.

**Remember:** There is no one way to diagnose or treat distress. Let your doctor or nurse know how you are feeling so you can get the help you may need.

For cancer information, day-to-day help, and emotional support, call the American Cancer Society at **1-800-227-2345**. We’re here when you need us – 24 hours a day, 7 days a week.
Mouth sores are a common side effect of cancer treatment. You may hear this problem called stomatitis or oral mucositis. Mouth sores can be caused by chemotherapy and by radiation therapy. You might have soreness, or cracks or ulcers can form. These mouth sores can become infected and can bleed. They often get worse over time and can be very painful. They can make it hard for you to eat, drink, or even talk.

**Good mouth care is key.**
Regular mouth care is the best thing you can do for your mouth during cancer treatment. Start taking care of your mouth before it gets sore. If your mouth does get sore, good mouth care can help keep it from getting infected.

**Talk to your doctor.**
Ask your doctor what kind of mouth care you should do. Certain cancer treatments are more likely than others to cause mouth sores. And there are many kinds of mouthwashes and medicines used to prevent mouth sores.

Look at the inside of your lips and mouth and the top and bottom of your tongue every day. Look for cracks, ulcers, white or yellow patches, or red spots.

Tell your doctor about any changes in your mouth. There are things that can be done to help sores heal and keep them from getting worse. Some treatments are mouth rinses or gels you swish and spit or swallow. These may make your mouth numb, or coat and protect your mouth for a short time. Steroids, antibiotics, antihistamines, pain medicines, and other drugs may also be used.
What you can do if you have mouth sores:

To take care of your mouth:

• Use a mouth rinse that your health care team suggests.
• Do not use mouthwashes that contain alcohol.

• Keep your mouth clean. Brush your tongue, gums, top of your mouth, and teeth with a soft toothbrush within 30 minutes after eating and at bedtime. If the toothbrush hurts, ask about trying sponge-tipped swabs.
• Ask if it is OK to floss.
• If you wear dentures, wear them only during meals.

• Keep your lips and mouth moist with a water-based mouth moisturizer. Try to drink fluids often and use a cool mist humidifier at night.
• If you have pain, take your pain medicines as directed.

When you eat:

• Try to eat a well-balanced diet.
• Do not eat spicy foods.
• Stay away from hard or crunchy foods.
• Do not drink acidic fruit juices, like orange, grapefruit, and tomato. These can cause burning.

• Eat bland, soft foods.
• Try warm food and drink; both hot and cold can cause pain.

Talk to your doctor if:

• Your mouth bleeds. Put pressure on the site with a cloth dipped in ice water or rinse your mouth with ice water.
• You have a fever of 100.5° F or higher.

• The mouth sores get worse, bleed, or you have trouble swallowing.
• You have trouble eating or taking your medicines.

What you can do to prevent mouth sores:

To take care of your mouth:

• Rinse your mouth at least 4 times a day and at bedtime. Ask your doctor or nurse what kind of rinse you should use. Swish it around in your mouth for about 2 minutes.
• Use a soft toothbrush and dip it in warm water to make the bristles softer.

• Brush your tongue, gums, top of your mouth, and teeth within 30 minutes after eating and at bedtime.
• If it is OK with your doctor, floss once a day after brushing.
• If you wear dentures, remove and brush them. Also make sure they fit well and do not wear them overnight.

• Keep your mouth moist (sugarless candy and gum helps).
• Keep your lips moist with lip balm, petroleum jelly, or cocoa butter.

When you eat:

• Try to eat a well-balanced diet.
• Drink a lot of fluids between meals.

Talk to your doctor:

• Ask if you are likely to get mouth sores and what you can do to prevent them.
• Tell them about any mouth changes or sore throat.
Radiation, chemo, and other drugs used to treat cancer can cause skin changes like rashes, dry skin, color changes, and itching. These changes are often side effects—part of a normal body response to the treatment. In this case, they are not signs of a drug allergy.

It is very important to tell your doctor or nurse about any skin changes you notice. If not treated, they can get worse and lead to infection. This would delay or even stop treatment.

**What are the common skin changes I should watch for?**

**Rash** is a common skin change. The risk of getting a rash and how bad it is depends on the type of cancer and the type and dose of the drugs used to treat it. Rashes are mild for most people. They often look a lot like acne and show up on the scalp, face, neck, chest, and upper back. In bad cases, rashes can affect other parts of the body. They may hurt and may lead to infections.

**Dry skin** is another side effect. The skin can become very dry and scaly. It may even crack open. This can happen on its own or with a rash.

Many of the skin changes, like rash or dryness, can cause itching.

**Hand-foot syndrome** (HFS) has been linked to many cancer treatment drugs. The cause is not known. A painful tenderness in the hands and feet is the earliest symptom of HFS. Then, redness and swelling start in the palms of the hands and the soles of the feet. This redness looks a lot like sunburn and may blister. In bad cases, the blisters can open up and become sores. The skin also can become dry, peel, and crack. It may burn, tingle, or feel numb.

A **moist reaction** can happen during radiation treatment, most often in areas where the skin folds, like behind the ears or under the breasts. It can lead to an infection if not treated. If your skin hurts in the area where you get treatment, tell your doctor or nurse. Also ask your doctor or nurse how to care for these areas.

**Sun sensitivity** is common. You may become sunburned more easily than usual.

Some treatments can cause skin **color changes** or make it get darker during treatment.

Many skin changes can be treated, and there are things you can do to try to prevent them. Skin side effects can and should be treated as early as possible. Tell your health care team about any changes you have. Let them know right away so they can treat any problems and try to keep them from getting worse.
What you can do to prevent or control skin changes:

• Drink a lot of fluids.

• Use only mild soaps, body washes, shampoos, lotions, or creams that do not contain alcohol, perfume, or dye. Ask what products or brands you should use.

• Wash with warm or cool water. Keep baths short, and pat yourself dry with a towel rather than rubbing your skin.

• Moisturize your skin 2 times a day. The best time to do this is right after you bathe, while your skin is still damp.

• Shave less often, or stop shaving if your skin is sore. An electric razor can help keep you from getting cut when shaving.

• Do not use laundry detergents with strong perfumes.

• Stay out of the sun as much as possible. If you will be outside, use lip balm and sunscreen with an SPF of at least 30. Wear cotton clothing and a hat, too.

What you can do to make skin changes better:

• Do not treat your skin with over-the-counter medicines.

• Gel shoe inserts may help if the soles of your feet are tender.

• Some makeup brands can cover the rash without making it worse. Ask what products or brands you should use.

• If your skin is very dry, an oatmeal bath may be soothing.

• Try soft fabrics like cotton, and avoid fabrics that may irritate your skin, such as wool. Loose-fitting clothing often feels better than tight-fitting outfits.

• Do not spend time outside in very hot or very cold weather.

• If your doctor gives you medicines, use them the way the doctor tells you to and start them right away.

Let your doctor or nurse know if:

• You have any signs of a rash.

• Your skin is itchy, dry, flaking, cracked, or hurts.

The 2 most important things you can do are take good care of your skin and let your doctor know right away about any skin changes you may have.

For cancer information, day-to-day help, and emotional support, call the American Cancer Society at 1-800-227-2345. We’re here when you need us – 24 hours a day, 7 days a week.
Sleep problems can do many things:

- Make pain worse
- Increase your chance of depression
- Affect your memory
- Make it hard to think clearly
- Make tiredness (fatigue) worse
- Make your immune system weaker

Sleep problems can make everyday living harder, too.

- They can make you unable to go to work or school.
- They can make it hard for you to take care of yourself and your family.

You need a good night’s sleep.

Getting a good night’s sleep:

- Gives you a better outlook on the day
- Refreshes you
- Keeps you from being cranky
- Helps you do the things you need to do – like going to the doctor and keeping up with your cancer treatment plan

Talk to your cancer care team about any sleep problems you have so they can help you.
What you can do to get better sleep:

Anytime

• Sleep as much as your body tells you to.

• Use your bed only for sleep and sex. Do not read or watch TV in bed.

• Talk with your cancer care team about things you can do to help you relax.

• Get up at the same time each day.

During the day

• Try to exercise at least once a day. Do this at least 2 to 3 hours before bedtime.

• Rest in a quiet place for the same amount of time each day.

• Limit daytime naps to early in the day – not near bedtime.

• Think and talk about worries and fears early in the day, not at bedtime.

At bedtime:

• Drink warm, caffeine-free drinks, like warm milk with honey or decaf tea, before bedtime.

• Take sleeping medicine or pain relievers at the same time each night.

• Have someone give you backrubs or massage your feet before bedtime.

• Go to bed at about the same time each night.

• Keep sheets clean.

• Create a quiet place for sleep.

• Create a bedtime routine, like reading or taking a warm bath, before going to bed.

• Use deep-breathing exercises to help you relax.

• Avoid drinks with caffeine 6 to 8 hours before bedtime.

• Avoid alcoholic drinks in the late evening. They can keep you awake as they “wear off.”

Talk to your cancer care team about your sleep problems.

Tell them about:

• Your daytime and nighttime sleep habits

• The amount of exercise you get each day

• All medicines you are taking right now

This information will help your cancer care team know what’s causing your sleep problem. And once the cause is found, your sleep problem can most likely be treated with success.
Getting Help for Peripheral Neuropathy

Some chemotherapy drugs can cause peripheral neuropathy (also called PN, neuropathy, or chemo-induced peripheral neuropathy or CIPN). This happens when there is damage to nerves that control sensations and movements of our arms, legs, hands, and feet.

It may not be possible to prevent CIPN, but it’s important to talk to your health care team as soon as you notice any of these sensations in your hands or feet:

- Tingling (or a “pins and needles” feeling)
- Burning or warm feeling
- Numbness
- Weakness
- Discomfort or pain
- Decrease in ability to feel hot and cold
- Cramps (in your feet)

What causes neuropathy in people with cancer?

Certain types of chemotherapy drugs can cause CIPN. When symptoms of CIPN happen and how severe they get depends on the dose of chemo and how often chemo is given.

It can also be caused or made worse by:

- Medical conditions (such as diabetes or vitamin deficiencies)
- Some types of radiation therapy
- Other drugs
How bad can CIPN get?

It can happen any time after treatment starts. It often gets worse as treatments go on or if doses are increased.

Tips to manage CIPN

So far, there’s no sure way to prevent CIPN. It is a common problem for some people that may last for weeks, months, or even years after treatment is done. Here are some important things to know when you are living with CIPN:

• Clinical trials can help researchers find out more about what helps. Talk with your cancer care team if you are interested in finding a clinical trial.
• Your doctor may temporarily stop chemotherapy or adjust your chemotherapy dose if CIPN becomes too bothersome or serious.
• If you are taking pain medicines for CIPN, use them as your doctor prescribes them. Most pain medicines work best if they are taken before the pain gets bad.
• Prevent injuries and avoid things that seem to make your symptoms worse, such as touching hot or cold items with your bare hands and feet, or wearing clothes or shoes that are too snug.
• Don’t drink alcohol. It can make CIPN worse.
• If you have diabetes, control your blood sugar to help prevent more damage to nerves.
• If you have CIPN in your hands, be very careful when using knives, scissors, box cutters, and other sharp objects. Use them only when you can give your full attention to your task.

• Protect your hands by wearing gloves when you clean, work outdoors, or do repairs.
• Talk to your doctor or nurse about the problems CIPN may be causing in daily life. They might be able to suggest ways to make you feel better or function better.

Treatment

Treatment is mostly given to relieve the pain that can come with CIPN. Researchers are looking at which drugs work best to relieve this kind of pain. It may take more than one try or one type of treatment to find out what works best for you.

Some of the drugs and other treatments that may be ordered include:

• Physical therapy (PT) or occupational therapy (OT), if your CIPN is very bothersome or long-lasting. PT and OT therapists are experts in helping people lead more normal lives despite physical limits.
• Steroids, but only for a short time until a long-term treatment plan is in place
• Patches or creams of numbing medicine that can be put directly on the painful area (for example, lidocaine patches or capsaicin cream)
• Antidepressant medicines, often in smaller doses than are used to treat depression
• Anti-seizure medicines, which are used to help other types of nerve pain
• Opioids or narcotics, for when pain is severe
If hair loss is going to happen, it most often starts to fall out within 2 weeks of starting treatment and gets worse 1 to 2 months after starting therapy. But hair often starts to grow back even before treatment ends.

What causes hair loss in people with cancer?

Hair is constantly growing, with old hairs falling out and being replaced by new ones. Chemotherapy drugs often damage hair follicles, making hair fall out. Some chemo drugs can cause hair thinning or hair loss only on the scalp. Others can also cause the thinning or loss of pubic hair, arm and leg hair, eyebrows, or eyelashes. Radiation therapy to the head can also cause hair loss on the scalp.

Things you can do to prepare for hair loss

- Each person is different. Ask your doctor if hair loss is likely to happen. If it is, ask if it will happen quickly or gradually.
- Talk to your health care team about whether a cooling cap might help reduce your risk. More research is being done to understand how effective and safe cooling caps may be. There are some side effects of cooling caps to consider, such as headaches, scalp pain, and neck and shoulder discomfort. Talk to your health care team about the benefits, limits, and side effects of cooling caps.
- Wigs and other scalp coverings may be partially or fully covered by your health insurance. If so, ask your healthcare team for a wig prescription, which is typically written as a “cranial prosthesis.”
- You might choose to cut your hair very short or even shave your head before it starts falling out.
- Some people find wigs to be hot or itchy and use turbans or scarves instead. Cotton fabrics tend to stay on a smooth scalp better than nylon or polyester.
Other things you can do when you have hair loss:

• Your scalp may feel itchy or sensitive. Be gentle when brushing and washing your hair. Using a wide-toothed comb may help.

• Hair loss might be somewhat reduced by avoiding too much brushing or pulling (which can happen when making braids or ponytails, using rollers, blow drying, or using curling or flat irons).

• If your hair becomes very thin or is completely gone during treatment, be sure to protect the skin on your scalp from heat, cold, and sun. Use a broad-spectrum sunscreen with a sun protection factor (SPF) of at least 30 and wear a hat. In cold weather, wear a hat or scarf to cover your head and stay warm.

• When new hair starts to grow, it may break easily at first. Avoid perms and dyes for the first few months. Keep hair short and easy to style.
How to cope with common eating problems

- Appetite changes
- Constipation
- Diarrhea
- Fatigue
- Mouth dryness or thick saliva
- Mouth sores
- Nausea
- Swallowing problems
- Taste and smell changes
- Weight gain

Nutrition after treatment ends

- Tips for healthy eating after cancer

To learn more

- More American Cancer Society information
- National organizations and websites*

Recipes to try

- High-calorie, high-protein shake and drink recipes
- Homemade soup recipes
Nutrition for the Person With Cancer During Treatment: A Guide for Patients and Families

Nutrition is an important part of cancer treatment. Eating the right kinds of foods before, during, and after treatment can help you feel better and stay stronger.

Not everyone has nutrition-related side effects, but this guide will help you address them if and when they come up. You don’t have to read straight through all the information here. You can just read the sections you need and use what applies to you.
The information in this guide is not meant to replace the advice of a medical professional. If you have any questions or concerns, you should talk to a doctor, nurse, or dietitian about your nutritional needs. A registered dietitian (RD) can be one of your best sources of information about your diet. If you’re going to meet with a dietitian, be sure to write down your questions before your meeting so you won’t forget anything.

You can find more on nutrition before, during, and after cancer treatment in our book called *American Cancer Society Complete Guide to Nutrition for Cancer Survivors: Eating Well, Staying Well During and After Cancer*. Call us at 1-800-227-2345 or visit our bookstore online at [www.cancer.org/bookstore](http://www.cancer.org/bookstore) to find out about costs or to place an order.

For more general information or to find a registered dietitian, contact the Academy of Nutrition and Dietetics (see the “To learn more” section on page 47).
Benefits of good nutrition during cancer treatment

Good nutrition is especially important if you have cancer because both the illness and its treatments can change the way you eat. Cancer and cancer treatments can also affect the way your body tolerates certain foods and uses nutrients.

The nutrient needs of people with cancer vary from person to person. Your cancer care team can help you identify your nutrition goals and plan ways to help you meet them. Eating well while you’re being treated for cancer might help you:

• Feel better.
• Keep up your strength and energy.
• Maintain your weight and your body’s store of nutrients.
• Better tolerate treatment-related side effects.
• Lower your risk of infection.
• Heal and recover faster.
Nutrients

Proteins
We need protein for growth, to repair body tissue, and to keep our immune systems healthy. When your body doesn’t get enough protein, it might break down muscle for the fuel it needs. This makes it take longer to recover from illness and can lower resistance to infection. People with cancer often need more protein than usual. After surgery, chemotherapy, or radiation therapy, extra protein is usually needed to heal tissues and 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 are made of fatty acids and 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.

You may have heard that some fats are better for you than others. When considering the effects of fats on your heart and cholesterol level, choose monounsaturated and polyunsaturated fats more often than saturated fats or trans fats.

Monounsaturated fats are found mainly in vegetable oils like olive, canola, and peanut oils.

Polyunsaturated fats are found mainly in vegetable oils like safflower, sunflower, corn, and flaxseed. They are also the main fats found in seafood.
**Saturated fats** are mainly found in animal sources like meat and poultry, whole or reduced-fat milk, cheese, and butter. Some vegetable oils like coconut, palm kernel oil, and palm oil are saturated. Saturated fats can raise cholesterol and increase your risk for heart disease.

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

**Carbohydrates**
Carbohydrates are the body’s major source of energy. Carbohydrates give the body the fuel it needs for physical activity and proper organ function. The best sources of carbohydrates – fruits, vegetables, and whole grains – also supply needed vitamins and minerals, fiber, and phytonutrients to the body’s cells. (Phytonutrients are chemicals in plant-based foods that we don’t need to live, but that might promote health.)

**Whole grains** or foods made from them contain all the essential parts and naturally occurring nutrients of the entire grain seed. Whole grains are found in cereals, breads, and flours. Some whole grains, such as quinoa, brown rice, or barley, can be used as side dishes or part of an entrée. When choosing a whole-grain product, look for the words “whole grain,” “stone ground,” “whole ground,” “whole-wheat flour,” “whole-oat flour,” or “whole-rye flour.”
Fiber is the part of plant foods that the body can’t digest. There are 2 types of fiber. Insoluble fiber helps to move food waste out of the body quickly, and soluble fiber binds with water in the stool to help keep stool soft.

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
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). You get water from the foods you eat, but a person should also drink about eight 8-ounce glasses of liquid each day to be sure that all the body cells get the fluid they need. Keep in mind that all liquids (soups, milk, even ice cream and gelatin) count toward your fluid goals.

Vitamins and minerals
The body needs small amounts of vitamins and minerals to help it function properly. Most are found naturally in foods. They are also sold as supplements in pill and liquid form. They help the body use the energy (calories) found in foods.

A person who eats a balanced diet with enough calories and protein usually gets plenty of vitamins and minerals. But it can be hard to eat a balanced diet when you’re being treated for cancer, especially if you have treatment side effects that last for a long time. In this case, your doctor or dietitian may suggest a daily multivitamin and mineral supplement.
If you’re thinking of taking a vitamin or supplement, be sure to discuss this with your doctor first. These substances can be harmful, especially when taken in large doses. In fact, large doses of some vitamins and minerals may make chemotherapy and radiation therapy less effective.

**Antioxidants**
Antioxidants include vitamins A, C, and E; selenium and zinc; and some enzymes that absorb and attach to free radicals, 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 these products are harmless and safe to use, but others can cause
harmful side effects. Some may even interfere with proven cancer treatments, including chemo, radiation therapy, and recovery from surgery. If you’re interested in using products containing herbs, talk about it with your oncologist or nurse first.

Safety considerations
Many people believe that if they find a pill or supplement in stores, it’s safe and it works. The Food and Drug Administration (FDA) has rules to help ensure that supplements contain what their labels claim they do, but the supplement’s safety and its effects on the body are not addressed by any FDA rules. The FDA does not make manufacturers of these products print possible side effects on their labels. And the FDA can’t pull a dietary supplement or herbal product from the market unless they have proof that the product is unsafe.

Tell your cancer care team about any over-the-counter products or supplements you’re using or are thinking about using. Some other safety tips:

• Ask your cancer care team for reliable information on dietary supplements.

• 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.
Cancer and cancer treatment affect nutrition

During cancer treatment you might need to change your diet to help build up your strength and withstand the effects of the cancer and its treatment.

When your cancer was first diagnosed, your doctor talked with you about a treatment plan. This may have meant surgery, radiation therapy, chemotherapy, hormone therapy, biologic therapy (immunotherapy), or some combination of treatments. All of these treatments kill cancer cells. But in the process, healthy cells are damaged, too. This damage is what causes cancer treatment side effects. Some of the more common side effects that can affect eating are:

- Loss of appetite (anorexia)
- Sore mouth or throat
- Dry mouth
- Dental and gum problems
• Changes in taste or smell
• Nausea
• Vomiting
• Diarrhea
• Constipation
• Feeling very tired all the time (fatigue)
• Depression

We have a lot more information on the different side effects of cancer treatment. Call us or visit our website for more details.

Before treatment begins

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. Here are some other ways to get ready:
Make plans now

You can reduce 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 foods or spices you 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, weight loss, or nausea.

For those whose cancer 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 during treatment.

For more information on coping, see the “To learn more” section on page 47 and/or call your American Cancer Society at 1-800-227-2345.
Once treatment starts

Eat well

Your body needs a healthy diet to function at its best. This is even more important if you have cancer. In fact, some cancer treatments work better in people who are well-nourished and are getting enough calories and protein. Try these tips:

• Don’t be afraid to try new foods. Some things you may never have liked before may taste good during treatment.

• Choose different plant-based foods. Try eating beans and peas instead of meat at a few meals each week.

• Try to eat at least 2½ cups of fruits and vegetables a day, including citrus fruits and dark-green and deep-yellow vegetables. Colorful vegetables and fruits and plant-based foods contain many natural health-promoting substances.

• Limit the amount of salt-cured, smoked, and pickled foods you eat.

Snack as needed

During cancer treatment your body often needs extra calories and protein to help you maintain your weight and heal as quickly as possible. If you’re losing weight, snacks can help you meet those needs, keep up your strength and energy level, and help you feel better. Try these tips to make it easier to add snacks to your daily routine:

• Eat small snacks throughout the day.

• Keep a variety of protein-rich snacks on hand that are easy to prepare and eat. These include yogurt, cereal and milk, half a sandwich, a bowl of hearty soup, and cheese and crackers.
- Avoid snacks that may make any treatment-related side effects worse. If you have diarrhea, for example, avoid popcorn and raw fruits and vegetables. If you have a sore throat, do not eat dry, coarse snacks or acidic foods.
- If you’re able to eat normally and maintain your weight without snacks, then don’t include them.

<table>
<thead>
<tr>
<th>Some quick-and-easy snacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angel food cake</td>
</tr>
<tr>
<td>Gelatin made with juice, milk, or fruit</td>
</tr>
<tr>
<td>Popcorn, pretzels</td>
</tr>
<tr>
<td>Cereal (hot or cold)</td>
</tr>
<tr>
<td>Granola or trail mix</td>
</tr>
<tr>
<td>Puddings, custards</td>
</tr>
<tr>
<td>Cheese (aged or hard cheese, cottage cheese, cream cheese, and more)</td>
</tr>
<tr>
<td>Homemade milk shakes and smoothies</td>
</tr>
<tr>
<td>Sandwiches such as egg salad, grilled cheese, or peanut butter</td>
</tr>
<tr>
<td>Cookies</td>
</tr>
<tr>
<td>Ice cream, sherbet, and frozen yogurt</td>
</tr>
<tr>
<td>Soups (broth based or hearty)</td>
</tr>
<tr>
<td>Crackers</td>
</tr>
<tr>
<td>Juices</td>
</tr>
<tr>
<td>Sports drinks</td>
</tr>
<tr>
<td>Dips made with cheese, beans, yogurt, or peanut butter</td>
</tr>
<tr>
<td>Milk by itself, flavored, or with instant breakfast powder</td>
</tr>
<tr>
<td>Vegetables (raw or cooked) with olive oil, dressing, or sauce</td>
</tr>
<tr>
<td>Eggnog (pasteurized)</td>
</tr>
<tr>
<td>Muffins</td>
</tr>
<tr>
<td>Yogurt (low fat or Greek)</td>
</tr>
<tr>
<td>Fruit (fresh, frozen, canned, dried)</td>
</tr>
<tr>
<td>Nuts, seeds, and nut butters</td>
</tr>
<tr>
<td>Microwave snacks</td>
</tr>
</tbody>
</table>
Tips to increase calories and protein

• Eat several small snacks throughout the day, rather than 3 large meals.

• Eat your favorite foods at any time of the day. For instance, eat breakfast foods for dinner if they appeal to you.

• Eat every few hours. Don’t wait until you feel hungry.

• 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.
### High-protein foods*

#### Milk products

Add grated cheese to baked potatoes, vegetables, soups, noodles, meat, and fruit.

Use milk in place of water for hot cereal and soups.

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

Add cooked meats to soups, casseroles, salads, and omelets.

Mix diced or flaked cooked meat with sour cream and spices to make dip.

#### Beans, legumes, nuts, and seeds

Sprinkle seeds or nuts on desserts like fruit, ice cream, pudding, and custard. Also serve on vegetables, salads, and pasta.

Spread peanut or almond butter on toast and fruit or blend in a milk shake.
Don’t forget about physical activity

Physical activity has many benefits. It helps you maintain muscle mass, strength, stamina, and bone strength. It can help reduce depression, stress, fatigue, nausea, and constipation. It can also improve your appetite. So if you don’t already exercise, talk to your doctor about how to start a moderate exercise plan.

### High-calorie foods*

**Butter**

- Melt over potatoes, rice, pasta, and cooked vegetables.
- Stir melted butter into soups and casseroles and spread on bread before adding other ingredients to your sandwich.

**Milk products**

- Add whipping or heavy cream to desserts, pancakes, waffles, fruit, and hot chocolate; fold it into soups and casseroles.
- Add sour cream to baked potatoes and vegetables.

**Salad dressings**

- Use regular (not low-fat or diet) mayonnaise and salad dressing on sandwiches and as dips with vegetables and fruit.

**Sweets**

- Add jelly and honey to bread and crackers.
- Add jam to fruit.
- Use ice cream as a topping on cake.

Managing eating problems caused by surgery, radiation, and chemotherapy

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

**Surgery**

After surgery, the body needs 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. The body's ability to use nutrients may also be changed by surgery that involves any part of the digestive tract (like the mouth, esophagus, stomach, small intestine, pancreas, colon, or rectum).

See the section called “How to cope with common eating problems” on page 27 for tips on dealing with some of the problems that can result from surgery. Be sure to talk to your cancer care team about any problems you’re having so they can help you manage them.

**Radiation therapy**

The type of side effects radiation causes depends on the area of the body being treated, the size of the area being treated, the type and total dose of radiation, and the number of treatments.
The following chart shows possible eating-related side effects of radiation, according to the part of body being treated. Some of these side effects happen during treatment while others may not happen until after treatment.

<table>
<thead>
<tr>
<th>Part of body being treated</th>
<th>Eating-related side effects that might happen during treatment</th>
<th>Eating-related side effects that might happen more than 90 days after treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brain, spinal column</td>
<td>Nausea, vomiting</td>
<td>Headache, tiredness</td>
</tr>
<tr>
<td>Head or neck: tongue, voice box, tonsils, salivary glands, nasal cavity, pharynx (throat)</td>
<td>Sore mouth, hard to swallow or pain with swallowing, change in taste or loss of taste, sore throat, dry mouth, thick saliva</td>
<td>Dry mouth, damage to jaw bone, lockjaw, changes in taste and smell</td>
</tr>
<tr>
<td>Chest: lungs, esophagus, breast</td>
<td>Trouble swallowing, heartburn, tiredness, loss of appetite</td>
<td>Narrowing of the esophagus, chest pain with activity, enlarged heart, inflammation of the pericardium (the membrane around the heart), lung scarring or inflammation</td>
</tr>
<tr>
<td>Belly (abdomen): large or small intestine, prostate, cervix, uterus, rectum, pancreas</td>
<td>Loss of appetite, nausea, vomiting, diarrhea, gas, bloating, trouble with milk products, changes in urination, tiredness</td>
<td>Diarrhea, blood in urine, bladder irritation</td>
</tr>
</tbody>
</table>

Side effects usually start around the second or third week of treatment and peak about two-thirds of the way through treatment. After radiation ends, most side effects last 3 or 4 weeks, but some may last much longer.
If you have eating-related side effects, see the “How to cope with common eating problems” section on page 27 for tips on how to deal with them.

Tell your cancer care team about any side effects you have so they can prescribe any needed medicines. For example, there are medicines to control nausea and vomiting and to treat diarrhea.

**Chemotherapy**

Chemotherapy (chemo) side effects depend on what kind of chemo drugs you take and how you take them. Many of the common side effects of chemo that can cause eating problems are covered in the section called “How to cope with common eating problems” on page 27.

Most people get chemo at an outpatient center. It may take anywhere from a few minutes to many hours. Make sure you eat something beforehand. Most people find that a light meal or snack an hour or so before chemo works best. If you’ll be there several hours, plan ahead and bring a small meal or snack in an insulated bag or cooler.
For people with weakened immune systems

Cancer and its treatment can weaken your body’s immune system by affecting the blood cells that protect us against disease and germs. As a result, your body can’t fight infection, foreign substances, and disease as well as a healthy person’s body can.

Here are some tips on how to help protect yourself:

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.

• Rinse leaves of leafy vegetables one at a time under running water.

• 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.

Cook foods well

• Put a meat thermometer into the middle of the thickest part of the food to test for doneness. Test a thermometer’s accuracy by putting it into boiling water. It should read 212° F.

• Cook meat until it’s no longer pink and the juices run clear. The only way to know for sure that meat has been cooked to the right temperature is to use a food thermometer. Meats should be cooked to 160° F and poultry to 180° F.
Grocery shopping

• 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 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 when eating out.
• Ask if fruit juices are pasteurized. 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 for when your white blood cell count is low+

<table>
<thead>
<tr>
<th></th>
<th>Recommended</th>
<th>Avoid (do not eat)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meat, poultry, fish, tofu, and nuts</strong></td>
<td>Ensure all meats, poultry, and fish are cooked thoroughly. Use a food thermometer to be sure that meat and poultry reach the proper temperature when cooked. Vacuum-sealed nuts and shelf-stable nut butters</td>
<td>Raw or lightly cooked fish, shellfish, lox, sushi, or sashimi. Raw nuts or fresh nut butters</td>
</tr>
<tr>
<td><strong>Eggs</strong></td>
<td>Cook eggs until the yolks and whites are solid, not runny. Pasteurized eggs or egg custard</td>
<td>Raw or soft-cooked eggs. This includes over-easy, poached, soft-boiled, and sunny side up.</td>
</tr>
<tr>
<td><strong>Milk and dairy products</strong></td>
<td>Only pasteurized milk, yogurt, cheese, or other dairy products</td>
<td>Soft, mold-ripened or blue-veined cheeses, including Brie, Camembert, Roquefort, Stilton, Gorgonzola, and blue cheese Mexican-style cheeses, such as queso blanco fresco, since they are often made with unpasteurized milk</td>
</tr>
</tbody>
</table>
## Tips for when your white blood cell count is low+

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Avoid (do not eat)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breads, cereal, rice, and pasta</strong></td>
<td>Bulk-bin sources of cereals, grains, and other foods</td>
</tr>
<tr>
<td>Breads, bagels, muffins, rolls, cereals, crackers, noodles, pasta, potatoes, and rice are safe to eat as long as they are purchased as wrapped, pre-packaged items, not sold in self-service bins.</td>
<td></td>
</tr>
<tr>
<td><strong>Fruits and vegetables</strong></td>
<td>Fresh salsas and salad dressings found in the refrigerated section of the grocery store. Choose shelf-stable salsa and dressings instead.</td>
</tr>
<tr>
<td>Raw vegetables and fruits and fresh herbs are safe to eat if washed under running water and lightly scrubbed with a vegetable brush.</td>
<td>Any raw vegetable sprouts (including alfalfa, radish, broccoli, or mung bean sprouts)</td>
</tr>
<tr>
<td><strong>Desserts and sweets</strong></td>
<td>Unrefrigerated, cream-filled pastry products</td>
</tr>
<tr>
<td>Fruit pies, cakes, and cookies, flavored gelatin; commercial ice cream, sherbet, sorbet, and popsicles</td>
<td>Raw honey or honeycomb. Select a commercial, grade A, heat-treated honey instead.</td>
</tr>
<tr>
<td>Sugar</td>
<td></td>
</tr>
<tr>
<td>Commercially prepared and pasteurized jam, jelly, preserves, syrup, and molasses</td>
<td></td>
</tr>
<tr>
<td><strong>Water and beverages</strong></td>
<td>Water straight from lakes, rivers, streams, or springs</td>
</tr>
<tr>
<td>Drink only water from city or municipal water services or commercially bottled water.</td>
<td>Well water unless you check with your cancer care team first</td>
</tr>
<tr>
<td>Pasteurized fruit and vegetable juices, soda, coffee, and tea</td>
<td>Unpasteurized fruit and vegetable juices</td>
</tr>
</tbody>
</table>

How to cope with common eating problems

Cancer and cancer treatments can cause many problems that affect how well you can eat and drink. Here are some of the more common problems and tips on how to deal with them. Always tell your cancer care team about any problems you have. There are often things that can be done to treat the problem or keep it from getting worse.

Appetite changes

Cancer and its treatment can cause changes in your eating habits and your desire to eat. Not eating can lead to weight loss, and this can cause weakness and fatigue. Eating as well as you can is an important part of taking care of yourself. Treatment-related side effects like pain, nausea, and constipation can also cause loss of appetite. Managing these problems may help you eat better.
What to do

• Eat several snacks throughout the day, rather than 3 large meals.

• Avoid liquids with meals, or take only small sips of liquids to keep from feeling full early (unless you need liquids to help swallow or for dry mouth). Drink most of your liquids between meals.

• Make eating more enjoyable by setting the table with pretty dishes, playing your favorite music, watching TV, or eating with someone.

• Be as physically active as you can. Start off slowly, and increase your activity over time as you feel stronger. Sometimes a short walk an hour or so before meals can help you feel hungry.

Constipation

Pain medicines, changes in your eating habits, and being less active can cause your bowels to move less often and stools to become harder to pass (constipation). If you’re constipated, try eating high-fiber foods. Also drink extra fluids during the day, eat at regular times, and try to increase your physical activity, if possible.

What to do

• Try to have a bowel movement at the same time each day.

• Drink 8 to 10 cups of liquid each day, if it’s OK with your doctor. Try water, prune juice, warm juices, teas, and hot lemonade. (A hot beverage may help to stimulate a bowel movement.)
- Use laxatives only as directed by your cancer care team. Contact your team if you haven’t had a bowel movement for 3 days or longer.
- Ask your dietitian to recommend a high-calorie, high-protein, fiber-containing liquid supplement if you need more of these.
- Limit drinks and foods that cause gas if it becomes a problem. (See list, below.)

<table>
<thead>
<tr>
<th>Foods that might cause gas</th>
<th>Apple (raw), apple juice</th>
<th>Cucumbers</th>
<th>Peppers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus</td>
<td>Eggs</td>
<td>Pickles</td>
<td></td>
</tr>
<tr>
<td>Avocado</td>
<td>Fish</td>
<td>Radishes</td>
<td></td>
</tr>
<tr>
<td>Beans and peas, dried</td>
<td>Kohlrabi</td>
<td>Rutabaga</td>
<td></td>
</tr>
<tr>
<td>Beer</td>
<td>Lentils</td>
<td>Sauerkraut</td>
<td></td>
</tr>
<tr>
<td>Broccoli</td>
<td>Melons</td>
<td>Spicy foods</td>
<td></td>
</tr>
<tr>
<td>Brussels sprouts</td>
<td>Milk</td>
<td>Spinach</td>
<td></td>
</tr>
<tr>
<td>Cabbage</td>
<td>Mushrooms</td>
<td>String beans</td>
<td></td>
</tr>
<tr>
<td>Cauliflower</td>
<td>Mustard</td>
<td>Strong cheese</td>
<td></td>
</tr>
<tr>
<td>Collards</td>
<td>Nuts</td>
<td>Sweet potatoes</td>
<td></td>
</tr>
<tr>
<td>Corn</td>
<td>Onions, leeks, scallions</td>
<td>Turnip greens</td>
<td></td>
</tr>
</tbody>
</table>
# High-fiber foods to choose more often*

<table>
<thead>
<tr>
<th>Breads and cereals</th>
<th>Serving size</th>
<th>Dietary fiber (in grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bran cereals</td>
<td>½ cup</td>
<td>3-13</td>
</tr>
<tr>
<td>Popcorn</td>
<td>2 cups</td>
<td>5</td>
</tr>
<tr>
<td>Brown rice</td>
<td>½ cup</td>
<td>6</td>
</tr>
<tr>
<td>Whole-wheat bread</td>
<td>1 slice</td>
<td>1-2</td>
</tr>
<tr>
<td>Whole-wheat pasta</td>
<td>¼ cup</td>
<td>6</td>
</tr>
<tr>
<td>Wheat bran, raw</td>
<td>¼ cup</td>
<td>6</td>
</tr>
</tbody>
</table>

**Legumes**

| Kidney beans                  | ½ cup        | 8                        |
| Navy beans                    | ½ cup        | 9                        |
| Nuts                          | 1 ounce      | 1-3                      |

**Vegetables**

| Broccoli                      | ½ cup        | 4                        |
| Brussels sprouts              | ½ cup        | 3                        |
| Carrots                       | ½ cup        | 2                        |
| Corn                          | ½ cup        | 5                        |
| Green peas                    | ½ cup        | 3                        |
| Potato with skin              | 1 medium     | 3                        |

**Fruits**

| Apple with peel               | 1 medium     | 4                        |
| Banana                        | 1 medium     | 2                        |
| Blueberries                   | ½ cup        | 2                        |
| Pear with skin                | 1 medium     | 5                        |
| Prunes                        | 3            | 3                        |
| Orange                        | 1 medium     | 3                        |
| Raisins                       | ¼ cup        | 3                        |
| Strawberries                  | 1 cup        | 3                        |

Diarrhea

Cancer treatments and medicines can cause your bowels to move much more often and become very loose. Three or more loose or watery stools a day is called diarrhea. Uncontrolled diarrhea can lead to fluid loss (dehydration), weight loss, poor appetite, and weakness.

What to do

- Drink plenty of mild, clear, non-carbonated liquids during the day. Drink liquids at room temperature. This may be easier to take than very hot or cold drinks.
- Eat small, frequent meals and snacks during the day.
- Avoid greasy, fried, spicy, or very sweet foods.
- Limit milk or milk products to 2 cups a day. Yogurt and buttermilk are OK.
- Avoid drinks and foods that cause gas, like carbonated drinks, gas-forming vegetables, and chewing gum.
- Drink and eat high-sodium (salt) foods like broths, soups, sports drinks, crackers, and pretzels.
- Drink and eat high-potassium foods like fruit juices and nectars, sports drinks, potatoes with the skin, and bananas.
- Call your cancer care team if diarrhea continues or increases, or if your stools have an unusual odor or color.
### What to eat or not eat when you have diarrhea*

<table>
<thead>
<tr>
<th></th>
<th>Eat</th>
<th>Foods that may cause problems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High protein</strong></td>
<td>Baked or broiled beef, pork, chicken, turkey, veal, fish</td>
<td>Fried meats, high-fat cuts of meats, meats with gristle</td>
</tr>
<tr>
<td></td>
<td>Eggs, buttermilk, cheese, yogurt</td>
<td>Dairy products other than buttermilk or yogurt</td>
</tr>
<tr>
<td><strong>Breads, cereals, rice, and pasta</strong></td>
<td>Bread, rolls, and pasta made from refined, white flour; converted or instant rice</td>
<td>Whole-grain breads and cereals like whole wheat, oat, and rye; bran</td>
</tr>
<tr>
<td></td>
<td>Refined cereals like farina, Cream of Wheat, Cream of Rice, oatmeal, cornflakes</td>
<td>Shredded wheat</td>
</tr>
<tr>
<td></td>
<td>Pancakes, waffles, cornbread, muffins, graham crackers</td>
<td>Granola</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wild rice</td>
</tr>
<tr>
<td><strong>Fruits and vegetables</strong></td>
<td>Soups made with vegetables listed here: cooked asparagus tips, beets, carrots, peeled zucchini, mushrooms, celery</td>
<td>Fresh, unpeeled fruit; pears; melon</td>
</tr>
<tr>
<td></td>
<td>Tomato paste, tomato puree, tomato sauce</td>
<td>All other vegetables</td>
</tr>
<tr>
<td></td>
<td>Baked potato without skin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Canned, frozen, or fresh fruit</td>
<td></td>
</tr>
<tr>
<td><strong>Drinks, desserts, and other foods</strong></td>
<td>Butter, margarine</td>
<td>Desserts with nuts</td>
</tr>
<tr>
<td></td>
<td>Mayonnaise, salad dressing, vegetable oil</td>
<td>Coconut, dried fruit</td>
</tr>
<tr>
<td></td>
<td>Cake, cookies, flavored gelatin desserts, sherbet</td>
<td>Chocolate, licorice</td>
</tr>
<tr>
<td></td>
<td>Decaffeinated beverages</td>
<td>Pickles</td>
</tr>
<tr>
<td></td>
<td>Salt, pepper, spices, and gravy as tolerated</td>
<td>Popcorn</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foods with a lot of pepper, chili seasoning, or taco seasoning; hot sauces</td>
</tr>
</tbody>
</table>

*Adapted from Eldridge B, and Hamilton KK, Editors, The Complete Resource Kit for Oncology Nutrition, Academy of Nutrition and Dietetics, 2013.*
Fatigue

Fatigue is feeling very tired all the time. It doesn’t get better when you rest. It’s a common problem for people with cancer and those getting cancer treatment. If you’re feeling tired or lack energy, talk to your cancer care team.

Fatigue can have many causes, including cancer treatments, not eating enough, lack of sleep, depression, low blood counts, and some medicines. When the cause of the fatigue is medical, your doctor may be able to treat the cause to help you feel better.

Along with treatment, there are many nutrition steps you can take and other things you can try to help you cope with fatigue.

What to do

- Try to prioritize your activities. Do the most important ones when you have the most energy.
- Take short walks or get regular exercise, if you can. More and more research tells us that being moderately active can help decrease cancer-related fatigue.
- Drink plenty of fluids. Dehydration can make fatigue worse. Be sure to get at least 8 cups of fluid each day. If you are losing weight, be sure to include some fluids that have calories, like juices or milk.
- Try easier or shorter versions of your usual activities. Don’t push yourself to do more than you can manage.
- Stress can make fatigue worse. Ask your cancer care team about stress management.
Mouth dryness or thick saliva

Radiation therapy to the head and neck areas, some types of chemo, and certain other medicines can cause dry mouth or thick saliva. The glands that make saliva can become irritated and make less saliva, or your saliva can become very thick and sticky. Dryness can be mild or severe.

A dry mouth can increase your risk of cavities and mouth infection. If you smoke, chew tobacco, or drink alcohol, the dryness can be worse.

If you have either of these side effects, drink plenty of fluids throughout the day and eat moist foods as much as possible. Also brush your teeth and rinse your mouth often with a baking soda, salt, and water solution to help keep it clean and prevent infection (recipe follows).

What to do

- Drink 8 to 10 cups of liquid a day, and take a water bottle wherever you go. (Drinking lots of fluids helps thin mucus.)
- Take small bites, and chew your food well.
- Moisten foods with broth, soup, sauces, gravy, yogurt, or creams.
- Suck on sugarless candy or chew sugarless gum to stimulate saliva. Citrus, cinnamon, and mint flavors often work well.
- Avoid commercial mouthwashes, alcoholic and acidic drinks, and tobacco.
- Limit caffeine intake, from coffee, tea, energy drinks, and caffeinated soft drinks.
• Nutritional supplements, like liquid meal replacements, may be helpful. If you can’t get enough calories and nutrition through solid foods, you may need to use liquid supplements for some time. Talk to your cancer care team about this.

<table>
<thead>
<tr>
<th>What to eat or not eat when you have a dry mouth*</th>
<th>Eat</th>
<th>Foods that may cause problems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High protein</strong></td>
<td>Meats, poultry, and fish in sauces and gravies</td>
<td>Dry meats, poultry, and fish without sauces</td>
</tr>
<tr>
<td></td>
<td>Casseroles, soups, and stews</td>
<td></td>
</tr>
<tr>
<td><strong>Breads, cereals, rice, and pasta</strong></td>
<td>Bread, rolls</td>
<td>Dry breads, rolls</td>
</tr>
<tr>
<td></td>
<td>Cooked and cold cereals, cereal with milk</td>
<td>Pasta, rice</td>
</tr>
<tr>
<td></td>
<td>Rice soaked in gravy, sauce, broth, or milk</td>
<td>Pretzels, chips</td>
</tr>
<tr>
<td><strong>Fruits and vegetables</strong></td>
<td>Canned and fresh fruits that have a lot of moisture, like oranges and peaches</td>
<td>Bananas, dried fruit</td>
</tr>
<tr>
<td></td>
<td>Vegetables in sauce</td>
<td>Vegetables, unless in a sauce or with a high moisture content</td>
</tr>
<tr>
<td><strong>Drinks, desserts, and other foods</strong></td>
<td>Club soda, hot tea with lemon (decaf), fruit-ades, diluted juices, sports drinks</td>
<td>Cookies, cake, pie, unless soaked in milk</td>
</tr>
<tr>
<td></td>
<td>Commercial liquid nutrition supplements</td>
<td></td>
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<tr>
<td></td>
<td>Homemade milk shakes; ice cream, sherbet, pudding</td>
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</table>

Mouth sores

Certain chemo drugs or radiation to the head and neck can cause mouth sores.

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 may make you feel worse. You may also find that tart, salty, or acidic fruits and juices; alcohol; and spicy foods are irritating.

Rinse your mouth regularly with a salt, baking soda, and water solution (1 teaspoon of baking soda and 1 teaspoon salt mixed in 1 quart water). This helps prevent infections and helps your mouth feel better. Gargle with the mixture to relieve a sore throat, but don’t swallow it.
What to do for mouth sores

• Eat soft, bland foods like creamed soup, cooked cereal, macaroni and cheese, yogurt, and pudding.

• Puree or liquefy foods in a blender to make them easier to swallow.

• Eat foods cold or lukewarm, rather than hot, to reduce mouth irritation.

• Drink through a straw to bypass mouth sores.

• Avoid rough, dry, or coarse foods.

• Eat high-protein, high-calorie foods to speed healing.

• Avoid alcohol, carbonated beverages, and tobacco.

• Your doctor can prescribe a “swish and swallow” mouthwash with a numbing agent if needed. Ask about this.
<table>
<thead>
<tr>
<th><strong>What to eat or not eat when you have mouth sores</strong>*</th>
<th><strong>Eat</strong></th>
<th><strong>Foods that may cause problems</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High protein</strong></td>
<td>Ground, chopped, or blenderized meats, poultry, or fish&lt;br&gt;Casseroles&lt;br&gt;Egg, cheese, and bean dishes&lt;br&gt;Milk shakes, yogurt, and commercial liquid nutritional supplements</td>
<td>Whole meats, poultry, fish, dry meats</td>
</tr>
<tr>
<td><strong>Breads, cereals, rice, and pasta</strong></td>
<td>Moistened breads&lt;br&gt;Cooked cereals, cold cereal soaked in milk&lt;br&gt;Pasta and rice in sauce</td>
<td>Dry toast, hard rolls, dry crackers, English muffins, bagels</td>
</tr>
<tr>
<td><strong>Fruits and vegetables</strong></td>
<td>Cooked or blenderized fruits and vegetables</td>
<td>Fresh fruits and vegetables (unless very ripe, soft, and juicy, like applesauce, bananas, and watermelon); citrus fruit, pineapple, and other acidic fruits&lt;br&gt;Pickled fruit; raw and pickled vegetables&lt;br&gt;Tomatoes</td>
</tr>
<tr>
<td><strong>Drinks, desserts, and other foods</strong></td>
<td>Fruit nectars&lt;br&gt;Flavored gelatin&lt;br&gt;Ice cream, sherbet, pudding&lt;br&gt;Butter, margarine, and vegetable oils</td>
<td>Carbonated drinks&lt;br&gt;Cookies and cakes unless soaked in milk&lt;br&gt;Crunchy snacks like pretzels and chips&lt;br&gt;Vinegar&lt;br&gt;Condiments like pepper, pepper sauces, chili powder, cloves, nutmeg, salsa</td>
</tr>
</tbody>
</table>

Nausea

A person can have nausea with or without vomiting. If it’s caused by chemo, nausea can happen on the day you get your treatment and/or can last for a few days – depending on what drugs you get. If you’re getting radiation therapy to the belly, chest, brain, or pelvis, nausea can start shortly after treatment and last for several hours. Nausea and vomiting can have other causes, too.

Be sure to tell your cancer care team if you have nausea or are vomiting because there are medicines that can help.

What to do

- Eat 6 to 8 snacks or small meals a day, instead of 3 large meals.
- Eat dry foods, like crackers, toast, dry cereals, or bread sticks, when you wake up and every few hours during the day.
- Eat foods that don’t have strong odors.
- Eat cool foods instead of hot or spicy foods.
- Avoid foods that are overly sweet, greasy, fried, or spicy.
- If you need to rest, sit up or recline with your head raised for at least an hour after eating.
- Suck on hard candy, like peppermint or lemon, if there’s a bad taste in your mouth.
<table>
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<tr>
<th>What to eat or not eat when you have nausea*</th>
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<tbody>
<tr>
<td><strong>Eat</strong></td>
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<tr>
<td><strong>High protein</strong></td>
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<tr>
<td><strong>Breads, cereals, rice, and pasta</strong></td>
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<td></td>
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<tr>
<td><strong>Fruits and vegetables</strong></td>
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<tr>
<td><strong>Drinks, desserts, and other foods</strong></td>
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Swallowing problems

Cancer and its treatments can sometimes cause trouble with swallowing. If you’re having problems swallowing, try eating soft or liquid foods. You may be able to swallow thick fluids more easily than thin liquids. If you’re unable to eat enough regular foods to meet your nutritional needs, drink high-calorie and high-protein liquids.

Your doctor may refer you to a speech therapist. This is an expert health professional who can teach you how to swallow better and how to decrease coughing and choking when you eat and drink.

What to do

- Follow your speech therapist’s instructions for any special eating techniques.
- Call your cancer care team right away if you cough or choke while eating, especially if you have developed a fever.
- Eat small, frequent meals.
- Use canned liquid nutritional supplements if you’re unable to eat enough food to meet your needs.

*Try these thickening products:*

**Gelatin:** Use to help soften cakes, cookies, crackers, sandwiches, pureed fruits, and other cold food. Mix 1 tablespoon unflavored gelatin in 2 cups hot liquid until dissolved; pour over food. Allow food to sit until saturated.

**Tapioca, flour, and cornstarch:** Use to thicken liquids. Note that these must be cooked before using.
Commercial thickeners: Follow label instructions, and use to adjust a liquid’s thickness.

Pureed vegetables and instant potatoes: Use in soups. Note that these change the food’s flavor.

Baby rice cereal: Use to make a very thick product.

- If thin liquids are recommended for you, try these: coffee, tea, soft drinks, liquid nutritional supplements, Italian ice, sherbet, broth, and thin cream-based soups.
- If thick liquids are recommended for you, try these: buttermilk, eggnog, milk shakes, yogurt shakes, and ice cream.
### What to eat when you have trouble swallowing (pureed and thick-liquid diet)

<table>
<thead>
<tr>
<th></th>
<th>Pureéd thick-liquid diet</th>
<th>Mechanical soft diet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Protein</strong></td>
<td>Thickened milk, yogurt without fruit, cottage cheese, sour cream</td>
<td>Milk, yogurt, cheeses, sour cream</td>
</tr>
<tr>
<td></td>
<td>Casseroles</td>
<td>All eggs</td>
</tr>
<tr>
<td></td>
<td>Soft-scrambled eggs</td>
<td>Ground meats and ground-meat casseroles, fish, sandwiches made with ground meats or spreads</td>
</tr>
<tr>
<td></td>
<td>Pureéd meat, poultry, and fish</td>
<td></td>
</tr>
<tr>
<td><strong>Breads, cereals, pasta, and rice</strong></td>
<td>Slurry of cooked cereals like Cream of Wheat and Cream of Rice</td>
<td>Soft breads</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Graham crackers, cookies</td>
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<tr>
<td></td>
<td></td>
<td>Soft cold cereals in milk</td>
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<tr>
<td></td>
<td></td>
<td>Pancakes, waffles</td>
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<tr>
<td></td>
<td></td>
<td>Pasta, rice</td>
</tr>
<tr>
<td><strong>Fruits and vegetables</strong></td>
<td>Pureéd fruit and vegetables without seeds and skins</td>
<td>Bananas</td>
</tr>
<tr>
<td></td>
<td>Mashed potatoes</td>
<td>Canned fruit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soft, well-cooked, or pureéd vegetables</td>
</tr>
<tr>
<td><strong>Drinks, desserts, and other foods</strong></td>
<td>Thickened juices and nectars</td>
<td>All beverages</td>
</tr>
<tr>
<td></td>
<td>Thick milk shakes</td>
<td>Soft desserts that don’t require much chewing (like ice cream, sherbet, flavored gelatin, pudding, custard), soft cakes and cookies</td>
</tr>
<tr>
<td></td>
<td>Thickenened broths and cream soups</td>
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</tr>
<tr>
<td></td>
<td>Syrups, honey, butter, margarine</td>
<td>Syrups, honey, butter, margarine</td>
</tr>
</tbody>
</table>

Taste and smell changes

Cancer and its treatments can change your senses of taste and smell. These changes can affect your appetite and are often described as a bitter or metallic taste. If you’re having these problems, try foods, marinades, spices, drinks, and ways of preparing foods that are different from those you usually use. Also, keep your mouth clean by rinsing and brushing, which may help foods taste better.

What to do

- Try using plastic flatware and glass cups and plates.
- Try sugar-free lemon drops, gum, or mints.
- Try fresh or frozen fruits and vegetables instead of canned.
- Season foods with tart flavors like lemon wedges, lemonade, citrus fruits, vinegar, and pickled foods. (If you have a sore mouth or throat, do not do this.)
- Rinse your mouth with a baking soda, salt, and water mouthwash before eating to help foods taste better. (Mix 1 teaspoon salt and 1 teaspoon baking soda in 1 quart water. Shake well before swishing and spitting.)
- If red meats taste strange, try other protein-rich foods like chicken, fish, eggs, or cheese.
- Blend fresh fruits into shakes, ice cream, or yogurt.
- To reduce smells, cover beverages and drink through a straw; choose foods that don’t need to be cooked; and avoid eating in rooms that are stuffy or too warm.
Weight gain

Some people find they don’t lose weight during treatment. They may even gain weight. This is particularly true for people with breast, prostate, or ovarian cancer who are taking certain medicines or getting hormone therapy or chemotherapy.

If you notice you’re gaining weight, tell your cancer care team so you can find out what may be causing this change.

If you want to stop gaining weight, here are some tips that can help:

What to do

• Ask your cancer care team for a referral to a registered dietitian to help you get your nutrition needs met without gaining weight.

• Try to walk daily if you can and if it’s OK with your doctor. Talk with your cancer care team about referral to a physical therapist to help you safely increase activity levels.

• Limit food portion sizes, especially with high-calorie foods.

• Choose fish, poultry, or beans and peas instead of red meat. If you eat red meat, choose only lean cuts and eat smaller portions.

• Choose whole-grain breads, pasta, and cereals (such as barley and oats) instead of breads, cereals, and pasta made from refined grains, and brown rice instead of white rice.

• Limit your intake of refined carbohydrate foods, including pastries, candy, sugar-sweetened breakfast cereals, and other high-sugar foods.
Nutrition after treatment ends

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

Tips for healthy eating after cancer

- Check with your cancer care team for any food or diet restrictions.
- Ask your dietitian to help you create a nutritious, balanced eating plan.
- Choose a variety of foods from all the food groups. Try to eat at least 2½ cups of fruits and vegetables each day; include citrus fruits and dark-green and deep-yellow vegetables.
- Eat plenty of high-fiber foods, like whole-grain breads and cereals.
- Buy a new fruit, vegetable, low-fat food, or whole-grain product each time you shop for groceries.
- If you choose to drink alcohol, limit the amount to no more than 1 drink per day for women, and 2 for men. Alcohol is a known cancer-causing agent.
To learn more

More American Cancer Society information
You can buy these books from your American Cancer Society. Call us at 1-800-227-2345 or visit our bookstore online at www.cancer.org/bookstore to find out about costs or to place an order.

American Cancer Society Complete Guide to Nutrition for Cancer Survivors: Eating Well, Staying Well During and After Cancer
What to Eat During Cancer Treatment
American Cancer Society’s Eating Healthy Cookbook

No matter who you are, we can help. Visit www.cancer.org, or call us at 1-800-227-2345.

National organizations and websites*
American Institute for Cancer Research (AICR)
Toll-free: 1-800-843-8114
Website: www.aicr.org

Offers information and conferences on diet, nutrition, and cancer, as well as personalized answers to your nutrition questions

Academy of Nutrition and Dietetics
Toll-free: 1-800-877-1600, ext. 5000 (for referral to a local dietitian)
Website: www.eatright.org

Their website contains information on diet and nutrition; also has a directory of registered dietitians that can be searched by location and specialty. You can also get a referral to a local dietitian using the toll-free phone number.

* Inclusion on this list does not imply endorsement by the American Cancer Society.
Recipes to try

High-calorie, high-protein shake and drink recipes

If you need more calories or have trouble swallowing, try the following recipes – but keep in mind that they might not be right for everyone. If you want to increase calories but not fat, use reduced-fat dairy products. If you’re eating well and maintaining your weight, there’s no reason to increase your calorie intake.

Follow these basic instructions for all the drink recipes below:

• Place all ingredients in a blender container, or mix in a large container with a hand-held blender.
• Cover and blend on high speed until smooth.
• Chill before serving.
• Store unused drinks in the refrigerator or freezer.
• Add 1 to 2 tablespoons of powdered milk to each recipe to increase protein.

Note: If you can’t tolerate milk or milk products, or if you have diabetes, ask your nurse or dietitian for other recipe ideas.
Fortified milk

*Drink or use in cooking to add protein*

- 1 quart whole or low-fat milk
- 1 cup powdered non-fat dry milk

Blend and chill at least 6 hours. Can also be made with buttermilk or dry buttermilk.

(211 calories and 14 grams of protein per cup)

Sherbet shake

*A refreshing shake*

- 1 cup sherbet
- ¾ cup low-fat milk
- ½ teaspoon vanilla extract

(320 calories and 8 grams of protein)

Classic instant breakfast milk shake

*A protein- and calorie-packed favorite*

- ½ cup low-fat milk or fortified milk (see recipe, above)
- 1 envelope instant breakfast mix
- 1 cup vanilla ice cream (add flavorings or different flavor ice creams for variety)

(450 calories and 14 grams of protein)

Increase flavor and calories by adding fresh or frozen fruit or chocolate or strawberry syrup. Add peanut butter or dry milk for extra protein.
Homemade soup recipes

Chicken and white bean soup

1 rotisserie chicken breast section or 3 cups chopped white chicken meat
1 tablespoon canola oil
3 carrots, sliced
2 celery stalks, sliced
1 onion, chopped
2 cups water
6 cups reduced-sodium chicken broth
1 (15-ounce) can Great Northern beans, rinsed and drained
Pepper and salt to taste

Remove wings from chicken and reserve. Remove skin from breast and discard. Shred the meat from the breast and break off breast bones.

Heat oil in a stock pot over medium heat. Sauté the carrots, celery, onion, chicken wings, and breastbones for 8 to 10 minutes, or until vegetables soften.

Add water and chicken broth and bring to a boil, stirring to combine. Reduce heat, cover, and simmer for 15 to 20 minutes. Add beans and chicken meat and cook for 5 minutes. If too thick, add more broth or water. Discard bones and wings before serving. Season with salt and pepper. Makes 6 servings.

Approximate nutrients per serving: 235 calories, 5 grams of fat, 28 grams of protein
Hearty turkey minestrone soup

1 pound ground turkey breast or lean ground beef
1 onion, chopped
2 carrots, chopped
2 celery stalks, chopped
8 cups reduced-sodium chicken broth or beef broth
1 (14.5-ounce) can diced tomatoes
1 teaspoon dried basil
1 teaspoon dried oregano
½ cup small pasta, such as orzo or pastini
1 (10-ounce) package frozen chopped spinach
1 (15-ounce) can chickpeas or white beans, rinsed and drained
Pepper and salt to taste
Grated Parmesan cheese, optional

In a stockpot over medium-high heat, sauté the turkey and onion until the turkey is cooked through. Add the carrots and celery and sauté for 10 minutes, or until softened. Add the broth, tomatoes, basil, and oregano and stir to combine. Bring to a boil. Reduce the heat and simmer for 20 minutes, stirring occasionally.

Add the pasta, frozen spinach, and chickpeas or beans and cook for 10 minutes, or until pasta is tender, stirring occasionally. Season with salt and pepper. Serve with Parmesan cheese. Makes 14 servings.

Approximate nutrients per serving: 120 calories, 1 gram of fat, 13 grams of protein
Spicy cream of broccoli soup

3 cups broccoli florets and peeled stems, coarsely chopped
1½ cups reduced-sodium chicken broth, vegetable broth, or water
1 tablespoon olive oil
1 small onion, finely chopped
1 tablespoon all-purpose flour
3 cups low-fat milk
½ teaspoon salt (optional)
½ teaspoon pepper
¼ teaspoon paprika
¼ teaspoon celery seed
Pinch cayenne pepper, optional

In a large saucepan over high heat, bring the broccoli and broth to a boil. Reduce heat, cover, and simmer for 8 to 10 minutes, or until very tender. Cool slightly. Transfer to a blender or food processor and purée. Set aside.

In the same saucepan over medium heat, add the oil and onion. Sauté the onion for 3 to 5 minutes, or until softened. Add the flour and cook until fully incorporated, stirring constantly. Gradually add the milk and cook until thickened, stirring constantly. Add the reserved broccoli purée, salt, pepper, paprika, celery seed, and cayenne pepper and stir well to combine. Makes 5 servings.

Approximate nutrients per serving: 115 calories, 4.5 grams of fat, 7 grams of protein
Nutrition is an important part of cancer treatment. Eating the right kinds of foods before, during, and after treatment can help you feel better and stay stronger. The American Cancer Society has prepared this guide to help you and your loved ones cope with treatment side effects that might affect how well you can eat.

For cancer information, answers, and support, call your American Cancer Society at 1-800-227-2345.
Talking With Your Doctor

Your health care team

You will have a team of trained people helping you deal with cancer. Each of these people has special skills that you might need. They can tell you where you can learn more about cancer. They can answer your questions, support you, and refer you to sources of help near you.

Being able to talk with your health care team is vital when dealing with cancer. Doctors and nurses can tell you a lot. You can ask them about:

- Your type of cancer
- Treatment options
- Side effects
- What you can and should do during treatment

You need to feel at ease with the “players” on your health care team. It takes time, care, and effort to build a strong team, but it’s worth it. These are the people who are working with you to fight cancer.

Your doctor

Your doctor is a key “player” on your team. It may take a little time and work before you feel at ease with him or her. Take the time to ask your questions and share your concerns. Your doctor must also take the time to listen to you and answer your questions.

Everyone has their own way of sharing information. That’s why the best doctor for one person may not be a good match for someone else. Think about what you want in a doctor. Some people want a doctor who shares facts in an expert and business-like manner. They don’t expect their doctor to be their friend. Other people want their doctor to have a great “bedside manner.” They want a doctor they can feel close to. Try to figure out what you need, and let your doctor know.

Your relationship with your doctor is important. Problems may come up, but talking about these problems with your doctor can help. Clearly state your concerns and wishes. Give examples. If you’re not happy with this relationship, you may need to think about other options, such as switching doctors. If this happens, tell your doctor about your decision and the reasons for it. Ask for their help in turning over your care to the new doctor.
Ask yourself, “How much do I want to know?”

It’s OK to learn at your own pace. Only you know when you are ready to talk, when you want to learn more about your cancer, and how much detail you want.

You may want to know a lot about your illness. Some people feel more in control of what’s going on when they know all the facts. Or you may want only small amounts of information. It upsets some people to be told too much at one time. They may feel stressed or overwhelmed by details. Some of these people might prefer to leave most decisions to their doctor. Tell your doctor how much or how little you want to know.

Asking questions

Don’t be afraid to ask questions. Many doctors wait for you to ask questions, but you may not even know what to ask. It’s easy to forget the questions you or your loved ones may have. It helps to write them down as they come up, then take them with you when you go to the doctor’s office. Here are some common questions people have about cancer:

- What kind of cancer do I have?
- What treatment do you suggest?
- Are there other treatments?
- How will these treatments help me?
- How might they hurt me? What are the risks?
- What medicines will I get? What are they for?
- How will I feel during treatment?
- What side effects, if any, should I watch for?
- Are there any side effects or unusual signs that I need to tell you about right away?
- What can be done about the side effects?
- What’s the best time to call if I have a question or problem? How quickly can I expect to be called back?
- What should I do if I have a serious problem when your office is closed?
- Should I get a second opinion? From whom?

How can I remember everything?

It’s hard to remember all of the things you are told at each doctor’s visit. It helps to have the same person there with you each time. They can remind you of questions you want to ask and help you recall what the doctor said.
It may also be easier to have this person talk to your loved ones about how you are doing. This will help them know what’s going on, but keep you from having to deal with a lot of questions. You might want your loved ones’ help in making decisions, so keeping them up to date is a good idea.

Be sure you or your loved one writes down what your doctor tells you. You may even want to record your talk. Be sure to ask your doctor if it’s OK first.

If you need more details after your doctor answers a question, say so. It may be helpful to ask the same question again in some other way. Sometimes, doctors use words that are hard to understand. If you don’t understand something, ask your doctor to explain it. It may help to ask for pictures, websites, videos, or other things you can take home and look at.

When you get instructions from your doctor, write them down. Make sure you understand them before you leave the office. Then follow them exactly. It’s OK to call the doctor’s office if you have more questions later. Nurses can often help you, too.

Above all, your doctor should take your questions seriously. They should want to know about your concerns and not make you feel rushed. If your doctor does not respond this way, let them know.

**Make sure all your doctors talk with each other.**

You will often have more than one doctor, and each one should know what’s being done. Make a list of all your doctors’ names, specialties, phone numbers, and addresses. Give a copy of this list to each doctor who’s on it. This will make it easier for them to talk with each other and share reports and medical records.

You may have to sign forms saying it’s OK for them to share information and talk about your case. This is done to protect your privacy. When you visit a doctor, ask if they have talked with your other doctors or gotten their reports.

**It’s your health care team.**

You are a key member of your health care team. Your team will count on you to be an active partner. This means going to office visits, taking medicines as prescribed, telling your doctor or nurse about any problems or concerns you’re having, and asking questions.

Taking an active role in your care will help you learn what you need to know. It will also help make sure that everyone is working with you to fight the cancer. For some, it takes time to learn how to be an active team member. You may be surprised at how good you and your loved ones will get at this over time.

You may never know as much about cancer and its treatment as your doctor, but you and your loved ones are the only ones who can decide what’s best for you. As part of your team, keep in mind that you have a key part to play in your care.

If you need to learn more about how to be an active member of your health care team or have questions about your cancer or cancer treatment, please call us anytime, day or night, at **1-800-227-2345**.
For additional assistance please contact your American Cancer Society
1-800-227-2345 or www.cancer.org
Your Lab Tests

When you have cancer it seems that someone is always taking blood for some kind of test. Lab tests are done to watch how your body responds to treatment. Lab tests can also find problems and be used to help prevent side effects. Here are some of the most common types of blood tests and what they can tell your doctor about your health.

**Complete blood count**

The most common lab test that you’ll have done is called a complete blood count or CBC. Blood is made up of water, proteins, nutrients, and living cells. A CBC tells your doctor about your blood cells. It measures 3 types of cells in the blood: red blood cells, white blood cells, and platelets.

Each of these cell types has a special job. Any of these cells can be changed by cancer treatment.

- **Red blood cells (RBCs)** are needed to carry oxygen to all of your body. The simplest way to measure red blood cells is to measure the hemoglobin (HGB) or the hematocrit (HCT). When either of these gets too low, the person is said to be anemic (uh-nee-mick). A normal HGB is about 12 to 18, and a normal HCT is about 37 to 52.

- **Platelets (plt)** help stop bleeding. A healthy person has between 150,000 and 450,000 platelets. You may bruise or bleed easily when your platelet levels are low. The chance of bleeding goes up when the number of platelets drops below 20,000.

- **White blood cells (WBCs)** fight infection. A healthy person has between 5,000 and 10,000 WBCs. There are many types of white blood cells, and each works in a special way. The most important white blood cell for fighting infection is the neutrophil (new-truh-fil). A healthy person has between 2,500 and 6,000 neutrophils. Your doctor will watch your WBC counts closely because the chance of infection is much higher when the neutrophil count is below 500.

**Chemistry panel**

A chemistry panel is a blood test that can tell your doctor a lot about how well your organs are working. For instance, one part of this test tells your doctor how well your liver is working. Other parts look at how well your kidneys, heart, and lungs are working. It also measures the electrolytes in your blood, such as sodium and calcium.
What’s normal?

The range for what’s normal on complete blood counts and blood chemistry results is a little bit different from lab to lab. As a rule, the normal ranges are written on the lab report, next to your test results. Some people find it helpful to ask for a copy of their test results and have a member of their health care team go over the numbers with them.

If you have questions about your cancer or your lab tests, please call us anytime, day or night, at 1-800-227-2345.
Life After Treatment
The Next Chapter in Your Survivorship Journey
As you near the end of your cancer treatment, you may have unanswered questions about what lies ahead. There are many resources to help you get answers to your questions and find the support you need. This guide contains key information for you and your family to discuss with your doctor or nurse, and additional support to help throughout your cancer experience.

“I was afraid and not prepared. Everyone said it would be fine, but it was not very reassuring. I was terrified. I got so familiar with people at the doctor’s office, and then I realized I would not see them anymore.”
Your Treatment Summary and Survivorship Care Plan

You most likely have been working with a team of doctors and nurses during your cancer treatment. As you near the end of treatment, you will have fewer visits with your cancer care team. Some people prefer making fewer trips to visit their cancer care team. Others may feel lost and alone without a doctor or nurse to answer their questions. To help ease this transition, ask your oncologist to provide a summary of the treatments you received. This summary will be helpful when discussing your cancer experience with your primary care provider, family doctor, or new members of your health care team. Working together with your oncologist and your family doctor, you can develop a survivorship care plan. Visit the American Cancer Society website at www.cancer.org/survivorshipcareplans for a list of organizations that provide survivorship care plans.

Treatment Summary

- Describes your cancer diagnosis
- Describes medical treatments you received or are receiving
- Helps you talk with health care professionals who were not part of your cancer care team
- Gives you a record of your cancer treatments way you’re feeling
Survivorship Care Plan

• Should include a treatment summary

• Describes what follow-up appointments and tests you will need and when you should have them

• Describes preventive measures you can take to help you stay healthy

• Describes possible side effects of your cancer treatments and ways to manage them

• Describes ways to manage your physical and mental health

“I received information from my doctor on side effects, and it made me realize what I was experiencing was normal.”
Side Effects of Cancer Treatment

Physical Issues

Even after cancer treatment ends, you may have some physical side effects. The kind of side effects you have and how long they last will depend on the treatment you received. By being aware of the common side effects of cancer treatment, you can work with your doctor to help treat them. They might include:

- Fatigue
- Pain
- Problems fighting infection
- Lymphedema (swelling of arms or legs)
- Memory loss or trouble concentrating
- Changes in sexual function or fertility
- Nerve problems such as numbness and tingling
- Bone and joint problems or muscle weakness
- Skin changes
- Secondary cancers
- Anemia
Emotional and Social Issues

Cancer affects much more than just your physical health. There is often stress along with a cancer experience, and it does not always end when treatment ends. In fact, those feelings may increase for some people after treatment. Areas of concern may include:

- Going back to work after a long time away
- Dealing with financial concerns
- Rebuilding relationships with friends and family
- Establishing a new “normal” and returning to day-to-day life
- Feeling uncertain about the future
- Coping with fears of cancer returning

Managing Your Health and Wellness After Treatment

After treatment is over, there are a number of things you can do to stay healthy and reduce your risk for heart attack, stroke, and even other cancers.

- Avoid smoking cigarettes and using other tobacco products, such as chewing tobacco or cigars.
- Limit the number of alcoholic beverages to no more than 1 drink a day for women and 2 drinks per day for men, if you drink at all.
- Be physically active to help stay healthy and reduce stress.
• Eat a healthy diet with more fruits and vegetables and less red and processed meats.

• Maintain a healthy weight.

• Protect your skin from exposure to ultraviolet radiation from the sun, sunlamps, and tanning beds.

• See your doctor and dentist for regular checkups.

“At first I was hesitant to begin exercising again, but it was reassuring to learn I could resume at my own pace.

You may think of a number of questions that you want to ask your doctor or nurse, or that you want to read about online. Keep track of these questions and the answers you find in the following spaces, and share them with your doctor or nurse at your next visit.

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Cancer Information Resources

Many people may find help by talking about their concerns with others who have had cancer. Support is available online, by phone, and face-to-face. You can find more information on support services by calling any of the following trusted cancer organizations or by visiting their websites.*

American Cancer Society
Visit www.cancer.org or call 1-800-227-2345, 24 hours a day, 7 days a week to talk with a trained cancer information specialist to get answers to your questions about cancer or to learn about programs and resources to help you get healthy and thrive after treatment. The American Cancer Society is here for you every step of the way.

The Survivorship Center

National Cancer Institute
Visit www.cancer.gov or call 1-800-422-6237 to talk with a trained cancer information specialist. The National Cancer Institute has information and resources to help answer your questions after you finish cancer treatment.

LIVESTRONG
Visit www.livestrong.org to get information about support programs for cancer survivors. You can also fill out and print your own survivorship care plan.
Cancer Support Community
Visit www.cancersupportcommunity.org to view cancer survivorship information and resources.

National Coalition for Cancer Survivorship
Visit www.canceradvocacy.org to listen to survivor stories and to order resources. *Teamwork: The Cancer Patient’s Guide to Talking With Your Doctor* is a resource you can download that includes information dedicated to life after cancer treatment ends.

“It’s important for me to share what I experienced. I’m so passionate about this because someone took my hand and walked me through. I’d like to take someone else’s hand.”
CancerCare
Visit www.cancercare.org to learn about free emotional and practical support for people with cancer, caregivers, loved ones, and the bereaved.

Survivorship A to Z
Visit www.survivorshipatoz.org/cancer to find practical, financial, and legal information to help you after a cancer diagnosis and treatment.

Patient Advocate Foundation
Visit www.patientadvocate.org to find out about services offered to assist you with insurance and employment-related issues.

* Inclusion on this list does not imply endorsement by the American Cancer Society.

Tips for Finding Trusted Information
The listing above represents a few organizations involved in helping to save lives from cancer. If you visit other sites, the following tips may help you sort through the information to determine if it is current, correct, and right for you.

• **Who is giving you the information?** Often, the most trusted information sources are government agencies, hospitals, universities, and cancer-focused organizations. They typically have web addresses that end in .org, .edu, and .gov.

• **When was the information last updated?** Health information is always changing, so look for the most current information possible. Web pages should include the date the information was posted or updated, and booklets and brochures should have the date they were printed inside the front cover or on the back page.
• **Whom is the information written for?** Use websites that are written for cancer survivors, which are easy to read and understand, rather than websites for doctors, nurses, or other health care professionals.

• **Does the resource list its purpose?** Look for websites whose goal is to inform you about a specific topic, and avoid those that promote or sell products. They may have biased or incorrect health information.

• **Is an author or source listed?** Try to find the name of the author or the source of the information, and whether they are an expert on the topic. Websites you can trust often list the source of information from scientific journals to support the information on their website.

• **Is the information balanced or unbiased?** Information should be balanced, giving the pros and cons of a topic. Having more than one viewpoint suggests an unbiased resource. Expert opinions should be supported by scientific evidence.

**The Survivorship Center**

The National Cancer Survivorship Resource Center (The Survivorship Center) is a collaboration between the American Cancer Society, The George Washington University Cancer Institute, and the Centers for Disease Control and Prevention, funded by cooperative agreement #5U55DP003054 from the Centers for Disease Control and Prevention, to address the needs of those living with, through, and beyond cancer. Visit [www.cancer.org/survivorshipcenter](http://www.cancer.org/survivorshipcenter) to learn more about The Survivorship Center.
For cancer information, day-to-day help, and emotional support, visit the American Cancer Society website at www.cancer.org or call us at 1-800-227-2345. We’re here when you need us – 24 hours a day, 7 days a week.
Keeping Copies of Important Medical Records

Managing your health care records can be complicated, especially if you’re juggling information from several different medical providers and other sources, such as pharmacies. But keeping copies of your records and knowing how to find them is an important way to improve the quality of care you receive, especially if you change doctors.

Why should I keep copies of my medical records?

At some point after your cancer treatment, you might find yourself seeing a new health care provider who doesn’t know your medical history. It’s important to be able to give your new provider the details of your diagnosis and treatment. One of the best ways to help your provider get accurate information is to give them copies of your medical records.

It can be harder to get medical records that are more than a few years old, so it’s best if you can gather these details during your treatment, or soon after. If you aren’t sure where to start, ask your cancer care team how to go about getting these reports.

What types of records should I keep?

If you’ve been treated for cancer, there are certain pieces of information that you should have handy:

- Copies of the pathology reports from all of your biopsies and surgeries.
- Copies of imaging test results (CT or MRI scans, etc.), which can usually be stored digitally on a DVD, etc.
- If you had surgery, a copy of the operative report(s).
- If you stayed in the hospital, copies of the discharge summaries your health care
provider wrote when you were sent home.

- If you had chemotherapy or other drug treatments (such as targeted therapy, immunotherapy, or hormone therapy), a list of the drugs, their doses, and how long you took them.
- If you had radiation therapy, a copy of your treatment summary.
- Contact information for the health care providers who treated your cancer.

While your new provider may want copies of this information for his or her records, always keep copies for yourself as well.

You also need to keep records of payments made by your health insurance provider. For tips on how to do this see Keeping Health Insurance Records When Someone Has Cancer.

**Electronic health records (EHRs) and personal health records (PHRs)**

Many health care providers and hospitals now use electronic health records (EHRs) to keep track of their patients’ medical information. Some EHRs let you log into a secure web portal to see your own records.

If you have this type of access to your records, you might be able to gather information from your records into a printed-out document that summarizes your care. You can then hand it to any provider when you see them for the first time, or even send it to them ahead of time, so they have all the information they need from the first time they see you.

A personal health record (PHR) is something you create to organize your health information from different sources, including reports from your health care providers. Electronic PHR programs are becoming more available through health plans, health care providers, employers, and others. These tools offer features for getting, storing, and understanding your health information.

Blue Button is a tool that lets you view and download electronic copies of your own health information from many different sources so you can better understand and track your records. If you choose, you can share it with your health care providers or other people you trust.

To help you get started, the US Department of Health and Human Services (HHS) has created the Blue Button Connector, a website that lets you search for your providers. However you choose to keep track of your medical information – online or on paper – you have a federally guaranteed right (called “right to access”) to get copies of your
health records.

For a list of tools you can use to manage your medical information, visit: healthit.gov/patients-families/ehealth.

To learn more

We have a lot more information that you might find helpful. Explore www.cancer.org or call our National Cancer Information Center toll-free number, 1-800-227-2345. We’re here to help you any time, day or night.

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For additional assistance please contact your American Cancer Society
1-800-227-2345 or www.cancer.org