

Chemotherapy Guide



THE UNIVERSITY OF TEXAS
MDAnderson
Cancer Center

Making Cancer History®

Chemotherapy Guide

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Chemotherapy

Basic Information

Chemotherapy (chemo) is the use of medicines to treat cancer. It kills or slows the growth of the primary tumor. It also works in the body against cancer cells that have moved away (metastasized) from the primary tumor.

Some of the other medicines used to treat cancer include biotherapy, targeted therapy or vaccines. Each works differently, so the action in the body may be very different. The side effects may also be different.

You may have chemotherapy alone or it may be given before or after other treatments. Other treatments may include surgery or radiation. You may also receive multiple medicines. Combining medicines and therapies often improves the success of treatment.



Chemotherapy can react with other substances. Talk with your oncology team before taking:

- Prescription medicine
- Non-prescription (over-the-counter) medicines
- Nutritional supplements
- Vitamins, minerals or herbal products
- Street drugs
- Alcohol

Cancer Cells

To understand cancer therapy, it is helpful to understand cancer cells. Cells are the body's basic unit of life. Normal body cells grow and divide in a controlled way. Each cell has a certain job in the body and dies after a natural length of time. The body cleans up these dead cells on an ongoing basis.

Cancer cells are abnormal cells that no longer work correctly. Cancer cells:

- Grow and divide in a rapid, uncontrolled way
- Have ways to be "invisible" so that the body's immune system does not kill them
- Find a way to live longer than normal cells, which makes a tumor
- Cause new blood vessels to grow to the tumor, giving energy to the cancer

How Chemotherapy Works

Chemotherapy attacks all rapidly growing cells in the body. The goal is to kill or stop cancer cells from growing.

Chemotherapy may affect cancer cells by:

- Breaking down parts of the cell
- Stopping the cells from growing
- Using up nutrients needed by the cancer cells

- Limiting blood vessel growth to the tumor

Questions to Ask Your Doctor

You should understand the expected benefits, side effects and risks of chemo before you start. Ask your doctor about your treatment plan. This list may help you get started.

- What is the goal of chemotherapy for my cancer? (Such as: Will it control the growth of the tumor? Is it to increase comfort? Do we expect the tumor to shrink?)
- What are the chances that the chemotherapy will work?
- How will I know if the chemotherapy is working?
- What are the short and long-term risks and side effects?
- How long will I receive chemotherapy? How often and for how long? How is it given?
- What can I do to prepare myself for chemotherapy and decrease my chance of side effects?
- Are there any side effects I should report right away?
- How will the treatment affect my diet? Activities? Work? Sexual activity?

To help you remember your doctor's answers, write down your questions and take notes during your appointments. Ask if you can record the conversation so you won't miss anything. Take a friend or relative with you. The more you understand, the better choices you can make about your care.

Administration

Chemotherapy is given in several ways, called routes of administration. You may get chemo by:

- **Injection**
 - Into a muscle, under the skin, directly into the cancerous area or into a vein
 - Into the cerebral spinal fluid (called an intrathecal injection)
- **Infusion**
 - Through a needle connected to a tube in your arm or through a central venous catheter (CVC or port)
 - Into an artery through a catheter inserted directly into the area that has the tumor
- **Mouth:** Tablet, capsule or liquid form
- **Topical application:** Creams, ointments or lotions rubbed into the skin

Chemotherapy is given in **cycles**. Your first day of chemotherapy is Day 1 of the treatment cycle. You will receive chemotherapy for one or more days. Then you will stop chemotherapy (rest) for one or more days. The time between your first day of chemotherapy and your last rest day is one cycle.

Some patients go into the hospital for chemotherapy. Others receive chemo in an outpatient clinic. Some patients learn how to give themselves chemo at home. They may use an infusion pump or take it as a pill by mouth.

The amount of time needed for treatment is different for each person. Your doctor or pharmacist will tell you how long it will take to give your chemotherapy. Please allow extra time at the clinic. Your blood counts need to be checked before you receive chemotherapy. If these are OK,

there is a wait time while the chemo is mixed. You may also need other fluids or medicines before treatment. Your treatment nurse can tell you how long your entire treatment should last.

Ask your oncology team for the information sheet on your specific chemotherapy medicine.

Follow Your Treatment Plan

To get the best results, it is important to follow your treatment plan. Stay on schedule. **Do not** miss appointments. Here are a few tips to help.

- Use a cell phone or watch alarm as a reminder to take your medicine.
- Write your appointments in a day planner or calendar. There is a calendar the **Chemotherapy Guide**.
- Stay motivated by talking with your doctor about the benefits of your treatment.
- Talk with your social worker if you are having problems with finances or transportation.
- Track your treatment with a calendar.

Side Effects of Chemotherapy

Chemotherapy affects all rapidly growing cells in the body. This includes normal, fast-growing, healthy cells. When this happens, side effects may result. Not everyone responds the same. Areas of the body most often affected by chemo are:

- Digestive tract (mouth, esophagus, stomach and intestines)
- Bone marrow (where blood cells are made)
- Skin and hair
- Sex organs
- Nervous system (nerves in the hands and feet)

Most side effects are short term. They can often be managed with medicines and proper care. Some side effects can be permanent. Discuss any changes with your oncology team when you first begin to notice them. Many side effects you may experience are addressed in the **Chemotherapy Guide**.

Resources

Copies of the **Chemotherapy Guide** are available in The Learning Center. Locations include:

- Law Learning Center: Main Building, Floor 4, near Elevator A
713-745-8063
- Levit Learning Center: Mays Clinic, Floor 2, near Elevator T
713-563-8010

For more information, visit:

American Cancer Society

<http://www.cancer.org/treatment/treatmentsandsideeffects/treatmenttypes/chemotherapy>

National Cancer Institute

<https://www.cancer.gov/about-cancer/treatment/types/chemotherapy>

Targeted Therapy and Biotherapy

Basic Information

Targeted therapy is a type of medicine that treats cancer. Some types of targeted therapy kill cancer cells directly by affecting how the cells grow and survive. Other targeted therapies help the body's immune system, its natural defense, attack and fight cancer. Some targeted therapies are considered biotherapy. Biotherapy uses substances made from living organisms or laboratory-produced versions of such substances to treat cancer.

Targeted therapy can be used alone or with other cancer treatments. Other methods used to treat cancer are chemotherapy, radiotherapy and surgery.

How Targeted Therapy Works

Targeted therapy does not attack all rapidly growing cells. Targeted therapy is specific because it works on certain actions within cancer cells versus normal cells. For example, the therapy may do one or more of the following:

- Stop the cancer cells from growing, dividing and spreading
- Stop a cancer cell from living longer than a normal cell should
- Stop blood supply to the tumor
- Help the immune system destroy cancer cells
- Deliver cell-killing substances to cancer cells
- Starve cancer of the nutrients it needs to grow

Targeted therapy may be less harmful to normal cells compared to other types of treatment. Patients who receive targeted therapy may still have side effects. Side effects are different for each type of targeted therapy, but may include skin rash, nausea, fatigue or mouth sores.

Patients receive targeted therapies in the same ways as traditional chemotherapy – in pill form or by an injection under the skin, into a muscle or into a vein.

Targeted therapy does not treat all cancers, and some cancers do not respond to it. Your doctor will discuss your treatment options with you and help decide if targeted therapy is the best treatment for your cancer.

Types of Targeted Therapy

Kinase inhibitors: small-molecule medicines that are small enough to enter cells easily. Because of this, they are used for targets that are inside cells. They are often taken by mouth.

Monoclonal antibodies: medicines that are not able to enter cells easily. Instead, they attach to specific targets on the outer surface of cancer cells. They can cause an immune response to destroy cancer. They are often injected into a vein or muscle or under the skin.

Adoptive cell transfer: treatment that boosts the ability of your T cells to fight cancer. T cells are part of the immune system. The T cells are collected from your body and are then modified to better find and destroy your cancer cells. These “engineered” T cells are grown in the lab and will be given back to you through a vein.

Cytokines: protein molecules which are naturally produced by your body. They help regulate and direct the immune system. They can act as messengers to promote and boost the immune system to target cancer cells. For cancer treatment, cytokines are made in the lab and injected in larger doses than your body produces. The 2 main types of cytokines used to treat cancer are called interferons and interleukins.

Cancer vaccines: vaccines that boost the immune system to work against cancer.

Side Effects

Targeted therapies share some of the same side effects but each is different and may have its own unique side effects. Some possible side effects include:

- Flu-like symptoms
- Skin and hair changes
- Effects on the digestive tract (mouth, esophagus, stomach and intestines)
- Effects on blood counts
- Nervous system changes
- Kidney and liver changes
- Weight gain or loss

Your health care team will tell you which side effects may occur with the therapy you take.

When to Call the Doctor

Your health care team will teach you about the signs and symptoms you should report. For certain therapies, your health care team may advise you to report side effects as soon as you notice them.



Watch for the following and report. These are only general guidelines. If your health care team gives you different instructions, follow them.

- Fever greater than 101°F (38.3°C)
- Easy bleeding or bruising
- Signs of infection (some signs are fever, chills or sweats, stiff neck)
- Weight loss or gain of 10 or more pounds
- Feeling out of breath
- Soreness in the mouth and throat
- Diarrhea

- Pain in the area where you received your shot
- Feeling very tired
- Feeling dizzy or lightheaded
- Chest pain
- Changes in heartbeat
- Feeling confused or depressed

Because many targeted therapies are new, all side effects may not be known. If you notice any unusual or unexpected side effects, discuss these changes with your health care team. You may be asked to keep a chart or diary of your side effects. You can expect regular follow-up visits with the health care team to check your progress. They may also ask you to keep track of any medicines you take and the times you take them.

You might not develop any of these side effects. You may have very few or none at all. Even if the side effects do not occur, this does not mean the therapy is not working. Targeted therapy does not mean you have to limit your normal life. Many people find that they are able to work and do their day-to-day activities with very few changes.

Other Medicines

Do not take any medicine without the consent of your health care team. This includes aspirin and other over-the-counter medicines. It is important that you tell your health care team about all other medicines prescribed by your family doctor. Examples include medicines for high blood pressure, heart trouble or birth control. If you need a pain medicine, be sure to discuss this with your health care team. Be sure to discuss the use of alcohol or any other drugs with your health care team.

You and Your Care

You, the patient, are the most important person on the care team. During targeted therapy, you have a major part in taking care of yourself.

It is very important that you follow instructions **exactly as they are given**. For example, medicines should be taken at the right times. You should always store your medicine in the correct way. Take good care of yourself by eating the right foods, drinking a lot of liquids (water, juice) and resting when you feel the need.

Because you may be on therapy for a long time, you may need to learn how to give yourself the medicine(s). Some targeted therapies are given by shots in the muscle (**intramuscular**) or under the skin (**subcutaneous**). If you have to give yourself shots, your nurse or pharmacist will teach you or a family member how to prepare your medicine.

Your nurse will teach you how to give the shot, where to give it, and how to store and dispose of the medicine, syringes and needles. Information is available to help you with this process. If you cannot give yourself a shot, other ways can be found to do this. Discuss any concerns with your health care team.

Many patients have a special **catheter** put into a large vein in the arm (PICC line) or shoulder (a subclavian) to receive medicine. Some patients may have an implanted port which allows direct access to the large vein to serve this purpose as well. This is to avoid repeated needle sticks and prevent skin damage. These catheters may be used for many months. If you have a catheter, you or a family member will need to attend a class to learn how to take care of the catheter.

Sometimes, other types of catheters may be placed (such as in the abdomen). If this happens, your nurse will teach you how to care for this catheter.

Resources

Copies of the **Chemotherapy Guide** are available in The Learning Center. Locations include:

- Law Learning Center: Main Building, Floor 4, Elevator A
713-745-8063
- Levit Learning Center: Mays Clinic, Floor 2, near Elevator T
713-563-8010

Patient education classes are offered for symptom management. Please call Patient Education at 713-792-7128 for days and times or view the class calendar online at <https://www.mdanderson.org/tlc>. Scroll down to and click on Patient Education, then click on class calendar.

For more information, visit the American Cancer Society website:

<https://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/targeted-therapy.html>

<https://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/immunotherapy.html>

Blood Counts

Blood carries oxygen and nutrition to the cells of the body. It also carries away wastes. Special blood cells fight against infection. Other blood cells help with clotting. There are cells to repair cuts and clear bruises. When you get a blood test, each of these blood cell types is measured.

Blood cells are produced mainly in the bone marrow. The marrow is the soft, spongy part in the center of the bone. It is like a factory that produces blood cells. Chemotherapy, some cancers and radiation can suppress the bone marrow. This may lower the number of blood cells.

Types of Blood Cells

There are 3 main types of blood cells: red blood cells, white blood cells and platelets.

Red Blood Cells

Red blood cells (RBC) carry oxygen to all parts of the body. They contain hemoglobin which holds the oxygen. A person who does not have enough RBCs is anemic. An anemic person is often pale and may feel tired or become short of breath. Anemia may be treated by a blood transfusion. There may be other treatments, depending on the cause.

White Blood Cells

White blood cells (WBC) are also called leukocytes. They include neutrophils, monocytes and lymphocytes. They protect the body against infection. If your WBC counts drop, your risk of infection rises. Here are ways you can help prevent infection:

- Wash your hands often with soap and water.
- Avoid people who you know are sick.
- Avoid getting cuts or breaks in the skin.
- Wear gloves while working in the garden or doing housework.
- Bathe or shower daily and practice good mouth care.
- Take your temperature as instructed. For a fever of 101°F (38.3°C) or above, or if you have a fever of 100.4°F (38°C) for more than 1 hour, go to the nearest hospital emergency center. Your oncology team may give you other temperature guidelines.
- **Do not** take aspirin or any other pain reliever such as ibuprofen (Advil® or Motrin®), naproxen (Naprosyn® and Aleve®) or acetaminophen (Tylenol®) unless your doctor says it is OK. These medicines can mask a fever.
- **Do not** use suppositories, rectal thermometers or enemas. If the rectum is injured, bacteria may enter more easily.

Lymphocytes

Most cancer patients have normal lymphocyte values. However, if you have too few or if they are not working properly, you may get infections more easily. When your immunity is low, you may also get infections from immunizations that contain live viruses. Follow these guidelines:

- **Do not** get any immunizations unless they are approved by your health care team at MD Anderson Cancer Center.

- Ask if household members may receive live vaccines.
- Avoid anyone exposed to measles or chicken pox. If you are exposed to anyone with these diseases, report this to your health care team right away.
- Upon request, a letter can be provided to a school or workplace to explain all precautions that should be taken to protect you.

Platelets

Platelets are important for blood clotting (to stop bleeding). If your platelet count is low, you may bruise and bleed more easily. You may also notice tiny red dots under your skin. When your platelet count is low:

- Avoid vigorous activity, such as contact sports.
- Blow your nose gently.
- Tell your health care team about any dietary and herbal supplements you take. Some may increase the risk of bleeding.



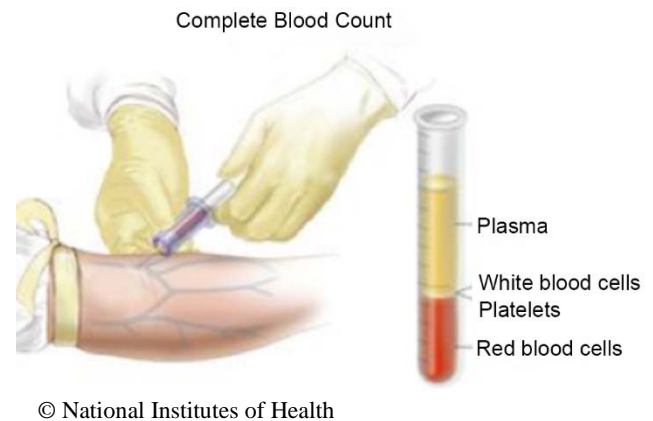
- **Do not** take any aspirin or other pain relievers such as ibuprofen (Advil or Motrin) or naproxen (Naprosyn and Aleve) unless your doctor says it is OK. These medicines can affect the way your platelets work and may increase your risk of bleeding.
- **Do not** use suppositories, enemas or rectal thermometers. They may cause rectal bleeding.
- If you have bleeding, apply pressure until bleeding stops (usually 5 to 10 minutes). If you are still bleeding after 10 minutes, apply ice and pressure and go to the nearest hospital emergency center.
- Go to the nearest hospital emergency center if you cough up blood or have bleeding that does not stop.

Blood Counts

Your blood counts are checked regularly during chemotherapy.

Normal Values

- Hemoglobin
 - Adult male, 14-18 g/dl
 - Adult female, 12-16 g/dl
- Platelets, 140-440 k/ul
- White blood cells, 4-11 k/ul
 - % Neutrophils, 42-66% (per 100 cells counted)
 - Absolute Neutrophil Count (ANC), 1.70-7.30 k/ul



Blood Counts after Chemotherapy

Some types of chemotherapy decrease the bone marrow's ability to make new blood cells. This lowers the number of cells in the blood. When blood counts are lowest, it is called **nadir**.

Recovery depends on treatment and your general health. Infections and some medicines can delay the recovery of blood counts.

Before resuming normal activities of daily living (such as returning to work, gardening, having sex), discuss the risks with your health care provider.

Blood Transfusions

When blood counts are low, you may receive replacement through intravenous transfusion. You may receive whole blood with all the types of cells. Or you may receive only the cells that are low. Refer to the patient education sheet titled **Transfusion of Blood Components** for more information.

Packed Red Blood Cells

For low RBCs, you may receive a packed RBC transfusion. This is 1 or 2 units of red blood cells. Each is usually given over a 2 to 4 hour period.

Report, **right away**, any of the symptoms below if you notice them during your transfusion:

- Chills
- Hives
- Itching
- Breathing problems

Platelet Transfusions

Patients may need several platelet transfusions when their platelets fall. Refer to the patient education sheet titled **Transfusion of Blood Components** for more information.

Blood Donations



Many cancer patients have a critical need for blood transfusions. All healthy people are urged to donate blood.

Your family and friends can donate whole blood in your name. This earns you replacement credit. Credit is \$10 for each unit donated, not to exceed the blood charges. The donor's blood type does not need to match yours. They must know your name and medical record number to credit your account.

Platelets can also be donated. Family members and friends who wish to donate platelets should not donate whole blood, since they would not be able to donate other blood products for 8 weeks.

There are 3 blood bank donation locations:

- Holly Hall (off-site location), 2555 Holly Hall St. Houston, TX
- Main Building, Floor 2, near Elevator D
- Mays Clinic, Floor 2, near The Tree Sculpture

Call the MD Anderson Blood Bank at 713-792-7777 for information or questions.

Resources

For more information, visit the American Cancer Society website:

<http://www.cancer.org/treatment/treatmentsandsideeffects/treatmenttypes/bloodproductdonationandtransfusion/blood-transfusion-and-donation-why-cancer-patients-may-need-transfusions>

<http://www.cancer.org/treatment/treatmentsandsideeffects/physicalsideeffects/dealingwithsymptomsathome/caring-for-the-patient-with-cancer-at-home-blood-counts>

Hand Washing

Preventing infection is critical to your health. It is especially important in the hospital. Many people are in close quarters and a sick body doesn't fight infection as well. **The most important way to prevent the spread of infection is through hand washing and using hand sanitizers.**

How to Wash Your Hands

Wet your hands and use enough soap for a good lather. Rub your hands together using friction for 20 seconds. Scrub all areas of your hands, including fingers. Then rinse well with water. Dry your hands with a clean paper towel. Use a paper towel to turn off the faucet to keep your hands clean.



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Hand Sanitizer



Alcohol-based hand sanitizer kills the germs on your hands. Use it when your hands are not visibly dirty. Apply enough to cover your hands. Rub your hands together using friction for 20 seconds until the product is dry. If your hands dry in less than 20 seconds, there was not enough sanitizer. Get more sanitizer and repeat for 20 seconds.

When to Clean Your Hands

- When your hands are dirty
- Before and after contact with another patient, family member or health care worker
- Before eating and drinking
- Before and after handling food (especially raw meats)
- After handling dirty items
- After using the restroom
- After blowing your nose, coughing or sneezing

Patients with Increased Risk for Infection

- Cancer patients who are receiving treatment
- Neutropenic patients (patients with a low white blood cell count)
- Stem cell transplant (SCT) patients
- Leukemia, lymphoma and myeloma patients (blood cancers)

Other Ways to Protect Against Infections

- Remind members of your health care team to wash their hands.
- Remind visitors to wash their hands.
- **Do not** touch your nose, eyes or mouth with contaminated (unwashed) fingers.
- **Do not** share personal items, such as dishes, towels, creams, toothbrushes, etc.
- Avoid anyone who is ill.
- Avoid anyone who has a respiratory illness or the flu (sneezing, coughing, sore throat). If this is not possible, you and they should wear masks until their symptoms are gone.

Extra Precautions

Ask your health care team if the precautions below are recommended for you:

- Wear a mask when outside your hospital room and/or outside your home.
- Wear a mask in crowded public areas.
- Wear a mask in construction areas. (This includes any area where parts of buildings or streets are being repaired, torn down or constructed. Large amounts of dust and debris may be present in the air.)
- Ask your visitors or family members to wear a mask. (In many cases, visitors should always wear a mask while in a patient's room and should change the mask when it becomes damp.)

Ask your health care team if it is OK to:

- Visit public areas during peak hours (such as theaters, restaurants, indoor playgrounds)
- Visit animal facilities (such as zoos, butterfly museums, pet stores)
- Clean up after your pet (such as litter boxes, birdcages, dog waste)

More Information

If you have questions concerning how to prevent infections, ask your health care team or call:

Infection Control and Prevention

713-792-3655

Over-the-Counter (OTC) Medicines

Check with your doctor or pharmacist before taking **any** OTC medicines while you are on cancer treatment. This includes nutritional supplements, vitamins, minerals and herbal products. Some OTC medicines may interact with your cancer treatment or worsen side effects. If you are not sure if you should take an OTC medicine, ask your health care team.



Keep in contact with your family doctor during your treatment. He or she needs to know what medicines you take for your cancer. Keep a current list of all the medicines you take and bring the list with you to every appointment.

These are some OTC medicines that your health care team may recommend to help manage the side effects of cancer treatment.

If you have...	You may consider using...
Constipation	Senokot [®] (Senna), Colace [®] (docusate)
Diarrhea	Imodium [®] (loperamide)
Sinus congestion	Sudafed [®] (pseudoephedrine or phenylephrine)*, Afrin [®] nasal spray (oxymetazoline)
Sinus allergies or itching	Benadryl [®] (diphenhydramine), Zyrtec [®] (cetirizine), Claritin [®] (loratadine), Allegra [®] (fexofenadine)
Cough	Robitussin [®] (guaifenesin), Delsym [®] (dextromethorphan)
Prevention and treatment of mouth sores	Baking soda rinse (1/2 teaspoon baking soda in 8 ounces of water)
Nasal congestion or dryness	Simply Saline [®] Nasal Mist, Ocean [®] Nasal Spray (saline nasal spray)
Indigestion/stomach gas	Pepcid [®] (famotidine), Zantac [®] (ranitidine), GasX [®] (simethicone)
Rash	Hydrocortisone cream 1%, Benadryl [®] tablets or liquid (diphenhydramine)

*Consult with your health care team before taking this if you have high blood pressure or a heart problem.

Medicines are listed by brand name (generic name in parentheses). You may use either the brand or generic version.

Follow package directions unless given other instructions by your health care team.

Read Labels



Your health care team needs to know if you have a fever. However, some ingredients in OTC medicines may lower your temperature and mask a fever. Examples are aspirin, Advil[®] (ibuprofen) or Tylenol[®] (acetaminophen). Some ingredients may affect your blood platelets. Examples are aspirin and ibuprofen, among others.

Read the labels of OTC products. Look for the following ingredients:

- **Salicylates:**
 - Aspirin or aspirin-like compounds
 - Acetylsalicylic acid, ASA
 - Bismuth subsalicylate, salicylamide
 - Methyl salicylate, sodium salicylate
 - Potassium salicylate, magnesium salicylate, etc.
- **Ibuprofen:** IB, IBU, ibuprofen
- **Naproxen:** naproxen sodium
- **Ketoprofen**
- **Acetaminophen:** APAP, acetaminophen, paracetamol

Do not take OTC medicines to relieve pain or for a fever unless your health care team says it is OK to do so.

Resource

For more information, visit the American Cancer Society website:

<http://www.cancer.org/treatment/treatmentsandsideeffects/treatmenttypes/chemotherapy/understandingchemotherapyaguideforpatientsandfamilies/understanding-chemotherapy-taking-other-meds>

Chemotherapy in the Hospital

What to Expect

Before You Come to the Hospital

Before you are admitted, you may get a central venous catheter (CVC or port). A doctor inserts the catheter into your arm or under the collarbone. This stays in place for the length of your treatment.

You and your caregiver learn how to care for the catheter. Depending on the type of catheter, class attendance may be required. Ask for a schedule of class days, times and locations.

While You Are in the Hospital

You may have more diagnostic tests. If so, part of your treatment plan may be determined while you are in the hospital.

Health Care Team

Many people care for you. This team may include a:

- Doctor in charge of your inpatient stay
- Fellow (a doctor who is at MD Anderson to learn more about cancer care)
- Pharmacist
- Nurse practitioner or physician assistant
- Nurse
- Certified nursing assistant
- Dietitian
- Social worker and/or case manager

The doctors take turns caring for patients who are staying in the hospital. Therefore, your clinic doctor may or may not manage your care while you are in the hospital. Your clinic doctor is still in charge of your overall treatment plan. The doctors communicate with each other about your treatment plan. The inpatient doctor treats your day-to-day needs while you are in the hospital.

Side Effects

Some patients have side effects from chemotherapy. To prepare for this, your doctor orders medicines to help you feel better. Not all patients have side effects. Tell your nurse if you have any problems. Let us know if you have:

- Constipation
- Diarrhea
- Nausea (upset stomach) or vomiting
- Problems sleeping
- Pain
- Mouth sores
- Heartburn
- Fever or chills

Daily Routine

During your hospital stay, we take your vital signs often. Vital signs are your pulse, breathing rate, temperature and blood pressure.

In the morning, a nursing assistant may weigh you. A lab technician may draw blood. Throughout the day and night, nurses will check on you and give you medicines. You may need blood transfusions. We may give you medicine through a vein, by mouth or by injection.

We want to give you the best care possible. Your inpatient doctor may ask other specialists to meet with you. For example, he or she may ask a dietitian to talk with you about what you eat.

The health care team usually sees all inpatients during the day. Write down all of your questions for the doctor.

Discharge from the Hospital

To get ready to leave the hospital, you meet with members of the health care team. Some things your team may do include:

- Ask if you have completed the CVC classes, if needed.
- Discuss when you may resume your normal daily activities.
- Review your outpatient appointments.
- Provide a written schedule of appointments and instructions for follow-up care.
- Talk with you about the medicines or supplies that you will need at home.
- Provide new prescriptions or orders, if needed.

Other Information after Discharge

Contact your clinic health care team if you have urgent problems. If you live out-of-town, contact your local doctor. He or she may call your MD Anderson doctor as needed.

Go to the nearest hospital emergency center if you have any of these symptoms:

- Fever of 101°F (38.3°C) or higher, chills or sweating. If you have any of these symptoms, talk with your health care team before you take any medicine to lower the fever. **Do not** wait for your temperature to increase.
- Shortness of breath
- Chest pain
- Severe abdominal pain
- Severe nausea, vomiting or if you cannot keep food, water or medicine in your stomach
- Pain not relieved by medicine or pain that gets worse over time
- Seizures
- Change in level of awareness or alertness

You may be told to avoid large crowds and people who are sick. Remember to wash your hands often, especially:

- After you use the bathroom
- Before you prepare food
- Before you eat

Ambulatory Treatment Center (ATC)

Welcome Letter

The Ambulatory Treatment Center (ATC) provides care to patients receiving:

- Chemotherapy, targeted and/or immunotherapy
- Injections (chemo/non-chemo)
- Intravenous Immunoglobulin (IVIG)
- Antibiotics
- Hydration and electrolyte replacement
- Blood products

Locations

Listed below are the ATC infusion centers throughout the Houston area. Talk to your physician if you see an infusion location that is more convenient, as you may be eligible to receive treatment in that location.

<p>ATC Main R2 2nd floor, Elevator C Monday through Friday 7 a.m. - 11 p.m. Weekends and holidays 7 a.m. - 11 p.m. (713)792-2310</p>	<p>ATC Main TU 2nd Floor, Elevator A Monday through Friday 7 a.m. - 7:30 p.m. (713) 794-1490</p>	<p>ATC Main R10 10th floor, elevator C Monday through Friday 7 a.m. - 8:30 p.m. Saturday 7 a.m-5:30 p.m. (713) 792-4732</p>	<p>ATC Mays ACB 8th floor, elevator T Monday through Friday, 7 a.m. - 10:30 p.m. (713) 745-1000</p>
<p>MD Anderson League City Monday through Friday 8 a.m. - 5 p.m. (713) 563-0670</p>	<p>MD Anderson Sugar Land Monday through Friday 8 a.m. - 5 p.m. (281) 566-1900</p>	<p>MD Anderson West Houston Monday through Friday 8 a.m. - 5 p.m. (713) 563-9600</p>	<p>MD Anderson The Woodlands Monday through Friday 8 a.m. - 5 p.m. (713) 563-0050</p>

Laboratory services are available at all locations. Many labs ordered by your provider can be done the day before treatment (excludes a type & cross match for same day blood transfusions). Check with your provider if you are unsure.

Scheduling Appointments

Patient Service Coordinators (PSCs) schedule appointments based on treatment type, length and availability. If you need to reschedule your appointment time, call the ATC. If you need to reschedule your appointment date, contact your home center.

For the safety of all patients and visitors, no one under the age of 13 is allowed in the ATC treatment area. Please keep this in mind when you schedule your appointments.

Check-in Process

1. Please arrive at your scheduled time. If you arrive early or late, it may affect your wait time.
2. A PSC will complete the check-in process upon your arrival.
3. You will be given a patient ID wristband and ask that you verify the information.
4. You can check your wait time by scanning your patient ID wristband at the “wait time” kiosk (TMC location only).
5. The charge nurse reviews your chart to make sure you are “treatment ready,” and assigns you to a room. Treatment ready means that certain safety requirements have been met. Requirements include but are not limited to:
 - Treatment orders are signed.
 - Lab results have been reviewed and are within parameters.
6. A nursing assistant records your weight, take your vital signs (temperature, heart rate and blood pressure) and brings you to a treatment room.

What to Wear

- Dress comfortably in loose-fitting clothes.
- Wear well-fitting shoes with non-skid soles, no backless shoes or flip-flops.

What to Bring

- All medicines you routinely take at home (blood pressure, pain, etc.)
- Equipment (colostomy bags, portable oxygen, tube feeding, etc.)
- Sweater, jacket or extra layer of clothing
- Snack

Meals

A complimentary light meal is available for patients receiving treatment at the TMC location from 12 p.m. to 2 p.m. and 5 p.m. to 7 p.m.

Reasons for Delay

The ATC staff works to avoid treatment delays. However, appointment delays can happen from time to time. Reasons may include, but are not limited to:

- Pending lab results
- Missed lab appointments
- Unsigned treatment orders
- Financial block
- No available room

Discharge

- Your infusion appointment treatment details can be reviewed by asking your nurse for a copy of your follow-up appointment or by checking your MyChart after your appointment discharge.

Fatigue

Fatigue means feeling tired physically or mentally. Cancer or cancer treatments can cause fatigue. Cancer-related fatigue can be overwhelming. Your caregiver can also become fatigued.

Causes

Fatigue may have many causes:

- The cancer itself
- The treatment
- Persistent pain
- Untreated symptoms or side effects from anemia or medicines
- Other medical conditions such as hypothyroidism or heart problems
- Stress from other factors such as family problems, divorce or work
- Depression that lasts for more than 2 weeks
- Not getting enough rest
- Poor diet
- Not drinking enough fluids
- Lack of exercise
- Lack of support from family and friends
- Over doing it with regular activities and routines

Symptoms

Some signs and symptoms of fatigue are:

- A weak feeling over the entire body
- Problems concentrating
- Waking up tired after sleep
- Lack of energy or low energy
- Lack of motivation to be physically active
- Increased irritability, nervousness, anxiety or impatience
- No relief from fatigue, even with rest or sleep

Prevention

Here are some tips that may help prevent or manage fatigue:

- Prioritize your activities. Complete the most important tasks when you have the most energy.
- Delegate activities to others when you can.
- Place things that you use often within easy reach to save energy.
- Treat any medical problems that may contribute to your fatigue.
- Drink plenty of fluids.

- Eat a balanced diet. Include plenty of protein such as fish, lean meat/poultry, low-fat dairy, eggs/egg whites and legumes.
- Exercise: take short walks or other physical activity.
- Before you start any exercise program, discuss it with your health care team.
- Manage stress with exercise, relaxation, visual imagery, meditation, talking with others and counseling.
- Balance rest and activities.
- Do not stay in bed. Limit naps/rest periods to 30 minutes at a time.

When to Call Your Doctor



Apply the above tips first. Talk with your doctor if you:

- Have fatigue that does not get better, keeps coming back or becomes severe. Signs of severe fatigue include spending all day in bed and inability to do daily activities.
- Are much more tired than you should be after an activity. Or if the fatigue is not related to doing any activity.
- Have fatigue that cannot be relieved by rest or sleep.
- Have fatigue that disrupts your social life or daily routine.

Depending on the cause of your fatigue, there may be prescription medicines to help reduce it. Your doctor may refer you to the Fatigue Clinic.

Energy Conservation Tips

Conserving energy during regular daily activity helps decrease fatigue. How you do an activity, stand, walk and move your body, as well as the spacing of your work area, can affect your energy use. The following information gives you helpful tips for conserving energy. Saving energy may decrease your level of fatigue.

Plan and Organize

Alternate tasks between those that take a lot of energy with those that take less. Plan activities for each day as well as for each week to better alternate tasks. Delegate as much as possible. This helps you get tasks done. It also allows others, who want to help, to feel useful.

Combine similar chores or errands. Arrange your household so that most activities can be done on one level of the house. Organize ahead of time so you do not have to rush.

Pace Yourself

Balance activities with rest periods so you are **doing, resting, doing, resting**. Stop to rest before you get tired, even if it means stopping in the middle of a task. Do not rush to do everything in one day. Overdoing it on one day may make you so tired that you need more than one day to recover.

Try to avoid activities that take big spurts of energy. This can drain energy. Pace activities on good days as well as bad days. Develop a routine to prevent overdoing.

Position

Sit to do activities whenever possible. Use assistive devices to help you maintain good posture while walking or moving around. Examples of assistance devices are walkers, scooters, canes, handrails, crutches, reachers and grab bars. This equipment can save energy by allowing you to do things without having to bend or reach.

Avoid heavy lifting such as lifting children, groceries and laundry. Use carts or wagons to move things from room to room or place to place. Wear a fanny pack, carpenter's belt, or a jacket or sweater with pockets to carry things.

Prioritize

Focus on the things you enjoy doing. Be realistic with yourself about how much you can do. For example, make a list of all your activities for the day, then number them according to priority. Perform activities with the highest priority first.

When you're Too Tired to Eat

When the thought of cooking or eating a meal makes you tired, try these tips:

- Let others help prepare or bring food. Family or friends often like to help.
- Use canned, frozen, or other prepared foods or order out.
- On days when you feel well, cook extra food. Freeze it in small containers. Heat and eat this food on days when you are tired.
- Ask about community resources that deliver prepared meals.
- Eat small, frequent meals rather than several large meals each day.
- Have snack foods readily on hand.
- Keep favorite foods and beverages in a cooler near you so you can eat while resting.
- Make quick meals with a microwave or blender.

Activities to Preserve Energy

Basic Activities

- Dressing
 - Wear loose-fitting clothes which are easier to get on and off.
 - Bring your foot to your knee to put on socks and shoes so you won't have to lean over.
 - Wear slip-on shoes or shoes that have Velcro® or elastic shoelaces.
 - Use a long-handled shoe horn or sock aid.
 - For women, fasten bra in front and turn it to the back.
 - Wear clothes that button in front rather than pullovers or clothes with back buttons.
 - Use a reacher or dressing stick to help with zippers in back.
 - Place chairs throughout home to allow rest stops.
- Bathing and grooming
 - Wash your hair in the shower rather than over a sink.
 - Use a terrycloth robe instead of towels to dry off.
 - Use organizers to keep items within reach.
 - Use a chair in the shower or tub.
 - Use a long-handled sponge or brush to reach your back and feet.
 - Rest your elbows on a computer or dressing table to avoid leaning unsupported.
 - Use long-handled brushes or combs to avoid holding your arms overhead.
 - Use liquid soap or soap on a rope.
 - Use an elevated toilet seat.
- Miscellaneous
 - Install and use ramps.
 - Use a lift chair.
 - Use cruise control when driving.

Advanced Activities

- Housework
 - Spread tasks out over the week or month.
 - Hire help.
 - Use long-handled dusters, mops and dustpans.
 - Use an automatic washer and dryer, if possible.
 - Use a lightweight iron.
 - Use a robotic vacuum.
- Shopping
 - Make a list.
 - Organize list by store aisle.
 - Request store assistance or use scooters when available.
 - Have groceries delivered, if possible.
 - Shop at less busy times.
 - Use grocery services to order online and pick up at the store or have it delivered.
- Meal Preparation
 - Assemble all ingredients before starting.
 - Use mixes or pre-packaged foods.
 - Use cookware you can serve from.
 - Use small, lightweight appliances.
 - Use labor-saving devices.
 - Buy utensils that fit comfortably in your hand.
 - Store frequently used items at chest level to minimize bending or reaching.
 - Line ovens and drip pans with foil for easier cleanup.
 - Let dishes soak rather than scrubbing them.
 - Let dishes air-dry.
- Childcare
 - Plan activities or outings at a place that will allow sitting or lying down.
 - Take advantage of day care programs.
 - Teach children to make a game of household chores.
- Work
 - Plan your work around the time of day when you have the most energy.
 - Organize work centers so equipment is within easy reach.
 - Create shortcuts.
 - Take rest breaks.
 - Work partial days, if possible.
- Leisure
 - Plan activities that allow you to sit or lie down.
 - Plan social events at your peak energy times.

Sleep

Tips for a Good Night's Rest

Try the tips below to help you get a good night's sleep.

During the Day

- Exercise regularly. A 20-minute walk during the day can help you relax. Do not exercise in the evening before bedtime.
- Limit naps if you can. If you must rest, limit your nap to 30 minutes or less.

Before Bedtime

- Avoid alcohol, caffeine, chocolate and nicotine in the late afternoon and evening. Limit liquids in the evening before going to bed.
- Turn off the TV 1 hour before bedtime. Listen to quiet music or take a warm bath to relax before bed.
- If you are worried or anxious, or thoughts are keeping you awake, try these tips. Write down your thoughts or make a list of things you need to do. This will allow you to worry less about forgetting anything and will help you relax.

At Bedtime

- Go to bed and get up at the same time every day. Keep this routine even on weekends.
- A light bedtime snack of warm milk, turkey or a banana may make you sleepy. Use your bedroom for sleep and intimacy only. Do not read, watch TV, or work in the bedroom.
- If you tend to watch the clock at night, turn the clock around.
- If you have a partner, both people should go to bed at the same time, if possible.

Problems Falling Asleep or Waking up During the Night

- If you have not fallen asleep in 15 minutes, go to another room to relax.
- Listen to quiet music.
- Avoid things that provide mental stimulation such as watching TV or reading exciting books.
- Go back to bed when you feel sleepy. If you still cannot fall asleep, get up again and repeat these steps as necessary.

Improving Sleep During Your Hospital Stay

- Try the same strategies as above as if you are at home.
- Bring familiar items from home to make you more comfortable.
- Talk with your nurse and doctor about clustering your care.

- Consider using an eye mask to avoid light and earplugs to block out noise during sleep.
- Maintain a daily routine and do physical activity to promote a better night's sleep.
- Take a 20 to 30 minute nap, if needed, during the day to improve alertness and increase mood.
- Try not to lie in bed all day. Get up and do activities throughout the day.

Apps for Sleep

There are many types of apps available to help with sleep and relaxation. Do a search on your smart phone or tablet for new ideas to help improve your sleep quality.

Loss of Appetite

Cancer and its treatment can cause a decrease in appetite or a complete loss of appetite. Eating less can lead to muscle and weight loss, which may affect your energy level and your ability to tolerate treatment. It is important to eat well to help your body stay strong during and after treatment. Tell your doctor, nurse or registered dietitian if you lose weight during treatment.

Causes

Loss of appetite may be caused by many things, such as:

- Cancer and side effects from cancer treatments. These include nausea, vomiting, constipation, diarrhea, altered taste, etc.
- Medical conditions, such as fever, pneumonia or shortness of breath
- Certain medicines
- Pain
- Sadness, depression or anxiety

Self-Care Tips

To help you manage appetite loss, try the following:

- Try to eat 6 to 8 small meals throughout the day instead of 3 regular size meals. Include high-calorie and high-protein foods and fluids with your meals.
- Choose a time to eat instead of waiting to be hungry. Set an alarm to remind you to eat every 2 to 3 hours.
- Limit fried and greasy foods. They can be hard to digest and may limit you from eating later.
- Drink most of your fluids between meals and sip as needed with meals to help swallow foods. Choose beverages that also provides calories (milk, juices, shakes, smoothies).
- Keep your kitchen well stocked with foods that are easy to prepare, such as single-serve entrees and ready-to-eat foods. Some ideas are peanut butter crackers, cheese and crackers, high-protein shakes, nuts and frozen meals. Your dietitian can provide more suggestions.
- Eat your largest meal at the time of day when you are most hungry.
- Try to make eating enjoyable. Eat your favorite foods in a pleasant, relaxed atmosphere.
- Avoid strong food odors that increase feelings of appetite loss and nausea.
- Make a list of your favorite foods (snacks, entrees and desserts) to share with your friends and family so that they can prepare and deliver them to you.
- Light exercise, such as walking, before a meal may help improve your appetite.
- Add nutritional supplements to your diet to increase calorie and protein intake. Your clinic dietitian can give you more information.
- Ask your doctor if medicine to increase your appetite is an option for you.

If you would like to see a dietitian, ask your medical team for a consult, send a message through MyChart, or call the Department of Clinical Nutrition at 713-563-5167.

Nausea

Tips to Control

Some chemotherapy (chemo) medicines may cause nausea and/or vomiting. This most often happens within 24 hours of receiving chemo. You may have nausea for a few days after chemo is completed. This is referred to as “delayed” nausea. After repeated chemo, some people worry that they will have nausea. So they begin to feel it even before the treatment starts. This is called anticipatory nausea.

Not all chemotherapy causes nausea and vomiting. When these side effects are felt, there are medicines and methods to ease symptoms. If you have nausea and vomiting and are having a hard time eating, ask for a consult with a dietitian.

Antiemetics

Antiemetics are medicines that help control nausea and vomiting. They work best if given before chemo. Antiemetics may be given by mouth, IV or by other routes.

You may be given an antiemetic to use at home. You may be told to take this medicine on a regular basis or as needed. Some patients are asked to take their antiemetic at home before coming in for chemo.



You may need to try more than one antiemetic before you get relief. Do not give up. Tell your health care team if your nausea is not controlled. It is normal to need to take 2 or more different medicines to prevent or relieve nausea and vomiting.

Prevention

- Ask your doctor which antiemetic will be prescribed to prevent and control nausea and vomiting. Learn how, when and how often to take them.
- Take your nausea medicine as directed. **Do not** wait until nausea is a problem before taking medicines.
- Eat several small meals throughout the day instead of 3 big meals.
- Avoid having an empty stomach.
- Avoid heavy, high fat and greasy meals right before chemotherapy.
- Avoid strong smells and unpleasant odors.
- Drink enough liquids so that your urine is light colored. Sip on liquids throughout the day. Do not gulp large amounts at one time.
- Practice good mouth care.
- Wear comfortable, loose-fitting clothing.
- Avoid exercising right after eating.
- Sit or recline with your head elevated for at least 30 to 60 minutes after eating.

Treatment

- Take your antiemetic(s) as directed.
- Apply a cool wet cloth to your forehead or neck.
- Eat dry foods (such as crackers or toast) when you awaken, before moving around.
- Move slowly.
- Open a window or use a fan to feel fresh air movement.
- Sip room temperature carbonated drinks such as cola or ginger ale.
- Try tart or sour flavored foods, hard candies or liquids.
- Do not force yourself to eat.
- Drink enough liquids so that your urine is light colored. Sip liquids throughout the day or eat ice chips made from water, Gatorade®, juices or ginger ale.
- Pay attention to which foods trigger and/or soothe nausea. Do not eat your favorite foods when nauseated. Doing so may cause them to no longer be your favorite foods due to being linked to feeling sick.
- Use distraction such as music, puzzles, games, TV or reading.
- Learn relaxation techniques. Ask your health care team for other treatment options (like acupuncture or complementary therapies, such as ginger).

Resources

From the National Comprehensive Cancer Network:

http://www.nccn.org/patients/resources/life_with_cancer/managing_symptoms/preventing_nausea.aspx

Diarrhea

Diarrhea (also called liquid stool) is a symptom that can be caused by many things. It is important to treat the cause of diarrhea. This handout explains some of the causes of diarrhea and how to treat it.

Causes and Treatment

Radiation

Radiation treatment to the abdomen affects the lining of your colon. This may cause diarrhea. Treat this by taking loperamide (brand name Imodium[®], available without a prescription). You can also get Lomotil[®] by prescription. These medicines slow the movement of stool through the intestine.

Surgery

Surgery that removes part of the intestine may result in frequent stools. These stools are often soft and formed, not liquid.

Try these solutions to help slow stools:

- Take Imodium or Lomotil at the time your doctor or nurse suggests.
- Take medicinal fiber, such as psyllium (Metamucil[®]) or methylcellulose (Citrucel[®]) with 2 ounces of water. The fiber absorbs excess fluid like a sponge. **Do not** drink liquids for 1 hour after taking medicinal fiber. When you take the right amount of psyllium, other medicines may not be needed. As you increase the dose of psyllium, decrease the dose of Imodium or Lomotil.
- Add foods from the BRAT diet to your normal diet. These include **b**ananas, white **r**ice, **a**pplesauce and dry **t**oast.
- Avoid spicy foods, deep fried foods and hot liquids. These can cause frequent stooling after surgery.

Chemotherapy

Certain types of chemotherapy (chemo) drugs cause diarrhea. Ask your doctor how to control diarrhea. You may be told to take Imodium. **Do not** take Imodium if you are being checked for *C. difficile* or other bacteria. When taking Imodium, **do not** take more than 8 pills (16 milligrams) per day. Read the package label and follow directions. Take over-the-counter medicine for diarrhea **only** if your health care team says it is OK.

If you took fiber before you started chemo, it may not be needed during chemo. Ask your health care team if you have questions.

Medicines

Some medicines can cause diarrhea. Ask your health care team before taking these.

- Antacids that contain magnesium
- Laxatives

- Aldomet[®] (methyldopa)
- Theophylline
- Cytotec[®] (misoprostol)
- Non-steroidal medicines
- Reglan[®] (metoclopramide)
- Medicines with artificial sweeteners (sorbitol or xylitol)

Food Allergies

Eating foods that you are allergic to can cause diarrhea. You should stop eating foods that cause diarrhea. Discuss your food allergies with your health care team.

Lactose Intolerance

You may have diarrhea if your body cannot digest lactose, the sugar in dairy foods. Some people do not have the enzyme needed to digest lactose. Dairy products include milk, yogurt, cheese, cottage cheese and ice cream. If you get gas or bloating after eating dairy products, you can take the over-the-counter product Lactaid[®]. You may also try lactose-free dairy foods available in most grocery stores.

Infections and Parasites

Certain types of bacteria and parasites can cause diarrhea. To help with treatment options, your doctor may request a stool sample from you.

Antibiotic Therapy

Antibiotics (medicines to treat bacterial infections) may cause diarrhea by destroying the normal bacteria that live in the intestine. If you have diarrhea when you take antibiotics, try these tips:

- Eat 2 servings of yogurt that contain acidophilus or live cultures daily. Avoid yogurt that can cause your gastrointestinal (GI) system to become more active (such as those containing bifidus regularis).
- Drink buttermilk.
- Take acidophilus or lactobacillus in pill form if approved by your health care team. You can buy it in drug stores or health food stores.

Ask about over-the-counter products that can help with diarrhea caused by antibiotics.

Impaction (Severe Constipation)

An impaction is the collection of a large amount of stool in the colon. A severe impaction can cause diarrhea. Diarrhea can occur when liquid stool seeps around the formed stool. **Do not** take anti-diarrhea medicine because the impaction may get worse.

Other Causes

- Alcohol and caffeine
- Tube feeding formula that is given too quickly
- Gastroenteritis - inflammation of the stomach
- Diverticulitis - inflammation of areas in the intestine
- Irritable bowel syndrome
- Adding medicinal fiber too fast to your diet may cause more diarrhea, cramping and bloating. For more information, ask for the handout **Medicinal Bulk-Forming Fiber**.

Unknown Causes

If you have diarrhea and do not know the cause, talk with your health care team. Your treatment will vary depending on the cause of diarrhea.

Nutrition and Diarrhea

Regardless of the cause of diarrhea, follow these guidelines:

- Drink 8 to 10 cups (64 to 80 ounces) of fluids every day. Diarrhea can make you dehydrated if you do not drink enough. If your urine is dark, you are not drinking enough.
- Sodium and potassium are lost when you have diarrhea. Eat salted crackers, pretzels or broth to replace sodium. Include high potassium foods such as orange juice, potatoes (no skin) and bananas as tolerated. Low carbohydrate electrolyte drinks also help replace electrolytes. Some examples include half strength Gatorade® or Powerade® (mix equal parts of drink and water), G2® (sugar-free Gatorade), Pedialyte® and CeraLyte-70®.
- Eat small, frequent meals every 2 to 3 hours.
- Limit high-fiber foods such as peas and beans, seeds, whole grains, and high-fiber fruits and vegetables or those with thick peels/skins.
- Limit high-fat foods such as fried foods, rich desserts (pies, cakes, cookies), and foods with large amounts of butter, oil or cream.
- Drinking hot fluids (including soups) may make diarrhea worse. Allow hot fluids to cool to room temperature.
- Avoid alcohol, caffeine and spicy foods which cause food to move more quickly through the intestine.
- Milk and other dairy products that contain lactose **may** make diarrhea worse. You may need to limit or avoid these foods until diarrhea stops. Cultured milk products such as yogurt, buttermilk and hard cheeses may be better tolerated. Lactose-free milk or Lactaid may be used instead of limiting milk and other dairy products.
- Limit the use of sugar-free gums and candies that contain sorbitol or xylitol.

Self-Care Tips

- After each bowel movement, clean your anal area with a mild soap. Rinse well with warm water. Pat the skin dry. Or, you may want to use baby wipes to clean after each bowel movement.
- Apply a water-repellent ointment, such as A&D® or petroleum jelly to the anal area.
- Sit in a tub of warm water or a sitz bath to help soothe the area.
- Protect furniture by using pads with plastic backing where you lie down or sit.

When to Call Your Doctor



Report any of these symptoms to your doctor:

- You have 6 or more loose bowel movements a day and this does not get better in 2 days.
- You have blood in your stool or around your anal area.
- You lose 5 pounds or more after the diarrhea starts.

- You have new belly pain or cramps for 2 days or more.
- You do not make urine for 12 hours or more.
- You are unable to drink liquids for 24 hours or more.
- You have a puffy or swollen belly.
- You have constipation for several days followed by diarrhea, which could be caused by an impaction.

Resources

If you would like to meet with a dietitian, contact your care team for a consult, send a message through MyChart or call the Department of Clinical Nutrition at 713-563-5167.

Bowel Management Class

Attend this free class. You will learn how to promote good bowel health and how to prevent and manage constipation and diarrhea. For information, visit The Learning Center for a class schedule.

Constipation

Constipation is when you have hard, dry stool that is difficult to pass. Bowel movements may also be less frequent. Symptoms may include pain, discomfort, gas, nausea and a decrease in appetite. This handout explains some of the causes of constipation and how to manage it.

Causes

Medicines

Pain medicines and some anti-nausea medicines can often cause constipation. They slow the normal movement of stool in the colon. Because stool stays in the colon longer, more water is removed from the stool. This can cause hard, dry stools and painful bowel movements.

In order to manage your pain and nausea, it is important to take medicines as needed. It is a good idea to take a stool softener and/or laxative with these medicines to help prevent constipation. Stool softeners hold water in the gastrointestinal (GI) tract to keep stool soft. Laxatives stimulate movement through the GI tract.

Ask your health care team if your medicines may cause constipation.

Decreased Activity

Many people feel tired and are less active during chemotherapy (chemo) treatment. Less physical activity slows down the GI tract. Physical activity such as walking, can help stimulate the bowels and bring on a bowel movement. Be as active as you can.

Decreased Appetite and Fluid Intake

Chemo can cause nausea, vomiting and lack of appetite. You may not be able to eat and drink as much as you normally do. A decrease in appetite and fluid intake can cause constipation. Ask your health care team for tips to improve your appetite and how to manage nausea and vomiting.

Treatment

- Take medicines to help promote a bowel movement and soften stool. A medicine that contains both a laxative and a stool softener is senna with docusate (Senokot-S[®]). You can safely take up to 8 Senokot-S pills per day. Start with 1 pill, 2 times a day (1 in the morning and 1 at bedtime) or as directed by your health care team. If this does not bring on a bowel movement, slowly increase the dosage 1 pill at a time until you have soft-formed stools every day or every other day. **Do not** take more than 8 tablets per day.
- Miralax[®] is another laxative that can help prevent constipation. Miralax draws water into the colon and helps soften stool, making it easier to pass. Use by mixing 17 grams of Miralax in 8 ounces of water or other liquid and drink it every day. You may take Miralax once per day

in addition to Senokot-S if needed. If this does not help bring on a bowel movement, contact your nurse.

The products mentioned above can be purchased without a prescription at most drug and grocery stores. Many store brand stimulant laxative/stool softeners work as well as brand names and often cost less.

Nutrition and Constipation

These general nutrition tips may help improve appetite and fluid intake.

- Eat small, frequent meals every 2 to 3 hours.
- Add high-fiber foods to your diet every day, unless you have been told to limit fiber.
Examples:
 - High-fiber cereals
 - Fresh vegetables
 - Fresh fruits with skins, especially prunes
 - Whole grains (quinoa, oatmeal, brown rice, whole grain breads)
 - Legumes (beans)
- Drink 8 to 10 cups (64 to 80 ounces) of fluids every day. Drinking enough liquid helps soften stools. If your urine is dark, you are not drinking enough.
- Drink warm or hot fluids (including soups). This stimulates the GI tract. Drinking **warm** prune juice before a meal and a **hot** beverage after your meal can help bring on a bowel movement.
- Try taking medicinal fiber like Metamucil® or Citrucel®. This type of fiber helps soften stool. Mix 1 tablespoon (6.8 grams) of the fiber in 8 ounces of water. Next, drink 8 more ounces of fluid **right away**. Taking fiber without drinking enough fluid can make constipation worse. Psyllium is the generic name for Metamucil, and methylcellulose is the generic name for Citrucel.
 - **Do not** substitute:
 - Fiber pills for powdered fiber or wafers. These products can make constipation worse.
 - Soluble fiber (such as Benefiber® or Fiber Choice®) for a bulk-forming fiber. Soluble fiber does not have the same effect as bulk-forming fiber. Soluble fiber feeds the normal bacteria in the colon and helps move stool down the GI tract. The inside of an apple and other fruits and vegetables are examples of soluble fiber.

Self-Care Tips

- Keep track of your bowel movements.
- Treat constipation **right away** when symptoms first appear. **Do not wait** to take action.
- **Do not** ignore the urge to have a bowel movement. Holding stool results in harder and larger stool that is difficult to pass.
- Find out which foods cause you constipation and avoid those foods.
- **Do not** use enemas and suppositories if your platelet or white blood cell counts are low or if you take blood thinners.

When to Call Your Doctor



Report any of these symptoms to your doctor:

- You go 3 days without a bowel movement.
- You have constipation for several days followed by diarrhea. This might indicate an impaction (severe constipation) which needs attention.
- You see blood in your stool.
- You have cramps or vomiting that does not stop.

Resources

If you would like to meet with a dietitian, contact your care team for a consult, send a message through MyChart or call the Department of Clinical Nutrition at 713-563-5167.

Bowel Management Class

Attend this free class. You will learn how to promote good bowel health and how to prevent and manage constipation and diarrhea. For information, visit The Learning Center for a class schedule.

American Cancer Society

<https://www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/stool-or-urine-changes/constipation.html>

American Institute for Cancer Research

<https://blog.aicr.org/2018/03/06/for-colorectal-cancer-month-learn-how-to-keep-your-gut-healthy-in-treatment-says-oncology-expert/>

Mouth Care for Chemotherapy Patients

Chemotherapy (chemo) treatment may affect your mouth. Use this information to help manage your mouth care.

Possible Problems

You can see or feel most of these problems. Check your mouth every day for:

- Sores in your mouth or throat (ulcers)
- Infected sores
- Painful mouth and/or gums
- Burning, peeling or swelling of the tongue
- Changes in thickness of saliva
- Dry mouth
- Changes in taste
- Painful swallowing
- Difficulty eating or talking



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Mouth Care

Visit your dentist a month or 2 before you start chemo. Tell your dentist and oncology team if you have had mouth or dental problems. These may include:

- Bleeding gums when brushing
- Broken teeth or fillings
- Sensitive teeth
- Gum disease (periodontal disease/pyorrhea)
- Loose teeth
- Persistent irritation from dentures



© iStock; AntonioGuillem

Use a soft toothbrush and fluoride toothpaste. **Do not** use toothpaste with tartar/whitening control. Brush your teeth and tongue after each meal and at bedtime. Even if you are not eating, brush your teeth to remove the film and bacteria.

After you brush your teeth, rinse your mouth with a baking soda solution. Mix 1/2 teaspoon baking soda in 8 ounces of water. Swish gently and spit. Leukemia patients should ask the nurse for special baking soda rinse instructions. **Do not** use store-bought mouthwashes. They may have alcohol or other chemicals that can irritate your mouth.

If you floss daily, use **waxed** floss. If you do not floss regularly, speak with your doctor before you begin to floss. **Do not** floss if your platelets are below 50,000 (50 k/uL).

Dentures or Partial

Be careful when you put in or take out dentures or partial dentures. If your dentures/partial do not fit well, **do not** wear them. Wearing them may injure your mouth tissues and delay your treatment. At bedtime, soak dentures in a store-bought denture soak. Rinse them well with water before you put them back in your mouth. Remove your dentures on the days you receive chemo.

Dentures may increase nausea and vomiting with chemo. **Do not** wear dentures if your blood counts are low. Your oncology team will talk with you about your blood counts and tell you when you should leave your dentures out.

Preventing Dry Mouth and Lips

- Rinse your mouth with water and/or baking soda solution as instructed.
- Drink 64 to 96 ounces of non-alcoholic, non-caffeinated fluids each day. Your urine should be light colored or clear.
- Suck (do not chew) on ice chips (if not taking oxaliplatin) or popsicles.
- Chew sugar-free gum.
- Use a saliva substitute if needed.
- Use lip balm as needed. **Do not** use petroleum jelly (like Vaseline™).

Food Considerations

Soft foods with fewer spices are often easier to tolerate. Avoid temperature extremes. Lukewarm or cool foods are less irritating. Take small bites of food and chew slowly. Sip liquids with meals.

Choose soft, liquid, blended or moist foods. For example:

- Scrambled eggs
- Finely ground meats with gravy
- Oatmeal or other cooked cereals
- Nutrition drinks
- Milkshakes
- Puddings

Do not eat foods that may irritate your mouth. For example:

- Acidic foods, such as oranges or other citrus
- Spicy foods, such as hot peppers
- Hard foods, such as potato chips or toast

Resource

For more information, visit the National Institutes of Health:

<https://www.nidcr.nih.gov/sites/default/files/2017-09/chemotherapy-and-your-mouth.pdf>

Mouth and Throat Soreness Relief

Treatment may cause soreness in your mouth and throat. Some chemotherapy can cause oral mucositis. This is a red, sore mouth. There may be open ulcers. Tell your doctor or nurse if you have sores in your mouth. Report any bleeding or white patches on your tongue.

Treatments

Sometimes mouth rinses provide relief. Ask your health care team if you should use any of these:

- Baking soda rinse
 - Each day, make your own baking soda solution. Mix 1/2 teaspoon of baking soda with 8 ounces of warm water.
 - Swish 1 to 2 ounces in your mouth for 30 seconds and then spit it out.
 - You may also gargle with the rinse for several seconds. Then spit it out.
 - Rinse every 2 or 3 hours while you are awake. Rinse after meals and at bedtime. **Do not** rinse with the baking soda more than 6 times a day.
- Salt and baking soda rinse
 - In 8 ounces of warm water, add 1/8 teaspoon of salt and 1/4 teaspoon of baking soda. Stir until dissolved.
 - Swish and spit 2 tablespoons at a time, 4 times each day.
- Mucosa coating agents
 - This is a thick, colored liquid. You need a prescription for it.
 - Swish to coat the inside of your mouth. Swallowing it soothes the throat too. If you are nauseated and not able to swallow it, you may spit it out.
 - **Do not** drink anything for 15 minutes after you rinse.
- Topical anesthetics
 - Comes in thick liquids, gels or sprays.
 - You need a prescription. Follow directions for use.

Diet

Eating may be difficult. You may need to pay attention to food texture and temperature. Eat what is most comfortable for you.

- Choose soft, moist foods that are easy to swallow. Avoid rough-textured, acidic, tart and spicy foods that may cause irritation.
- Cut foods into small bites to reduce chewing.
- If spoons or forks cause pain, drink blended meals from a cup. Puree or liquefy foods with a blender or food processor.
- Drink liquids through a straw to help push the food past painful areas in your mouth.
- Avoid extremely hot and cold foods. Drink fluids and eat foods that are at room temperature.

- Use liquid nutrition supplements. Examples include Boost[®], Ensure[®] and Carnation Breakfast Essentials[®]. These help you get enough calories and protein.
- Limit caffeine.
- Drink plenty of fluids to prevent dehydration and a dry mouth.
- Practice good mouth care every day.
- Keep your lips and mouth moist: drink often, suck on ice chips (if not taking oxaliplatin) and enjoy sugar-free popsicles. Use lip balm, as needed.

Resources

For more information or help, ask your clinic for a referral to Clinical Nutrition. You can also make an appointment with a dietitian in your clinic.

Visit the National Cancer Institute:

<https://www.cancer.gov/about-cancer/treatment/side-effects/mouth-throat/oral-complications-pdq>

Hair, Skin and Nails

Potential Changes with Chemotherapy

Side effects such as hair loss, changes in skin color or texture or cracked or brittle nails may occur during chemotherapy (chemo). Some chemo medicines may cause these changes, others do not. If you have any of these changes, ask your health care team if your medicines may be the reason.

Hair Loss or Thinning

Hair loss (known as alopecia) can occur on any part of the body. This includes the head, face, arms, legs, underarms or pubic areas. It may involve mild thinning or complete hair loss. Hair loss does not normally happen right away. It can start from 7 to 21 days after chemo begins. Hair loss is usually temporary. Hair can grow back a different color or texture after chemo is done. It can also return to its original appearance.

If you have hair loss, keep your scalp clean and moisturized to prevent skin breaks. Use sunscreen, sun block, a hat, scarf or wig to protect your scalp from the sun. Some health insurance policies pay for the cost of a wig during chemo treatment.

MD Anderson's Beauty and Barber Shop provides shampoos, haircuts, shaves, wigs, scarves and hats at no cost to patients. They are open Tuesday through Friday from 7:30 a.m. to 4:30 p.m. The shop closes from 12:30 to 1:30 p.m. for lunch. Take Elevator F to Floor 6 in the Main Building. Call 713-792-6039 for more information.

Other tips:

- Use mild shampoos and soft hair brushes.
- Do not overheat your hair with blow dryers, irons, and hot rollers. If you must use them, use the lowest heat setting.
- Pat hair dry.
- Consider a shorter hairstyle. Shorter hair styles often appear thicker and fuller.
- If you decide to use a wig, get one before you lose a lot of hair. You can more closely match your original style and color prior to your hair loss.

Skin Changes

- Dry skin
 - Bathe or shower in lukewarm water. Avoid long, hot showers and bubble baths.
 - Use mild soaps without perfume or fragrance. Consider a moisturizing body wash.
 - Pat yourself dry instead of rubbing
 - Keep your skin moisturized. Use hypoallergenic creams without fragrance after you bathe or shower. Examples include Eucerin[®], CeraVe[®], Vanicream[®] or Aquaphor[®].

- Avoid perfume, cologne or aftershave lotion. These products often contain alcohol which dries and irritates skin.
- Drink enough fluids so that your urine is light colored or clear. This means your body has enough fluid.
- Sensitivity to sunlight
 - You may sunburn more easily. The sun may also cause a skin rash.
 - Avoid prolonged exposure to sunlight. Do **not** use sunlamps or tanning beds.
 - Use a PABA-free sunscreen (SPF 30 or greater) and lip balm, no matter your skin tone. You may need to avoid direct sunlight completely.
 - Wear sun protective clothing such as long-sleeved cotton shirts, hats, sunglasses and/or pants when outside.
- Skin rash or itching
 - Report any rash, blisters, itching, redness or peeling to your doctor or nurse **right away**.
 - Ask for medicines to relieve itching.
 - Bathe or shower with body washes such as Dove[®] or Oil of Olay[®].
 - Wear loose fitting clothing.
- Acne
 - Talk with your doctor about over-the-counter or prescription medicines that may help.

Nail Changes

Changes in fingernails or toenails may occur from chemo. Your nails may darken or develop white streaks or ridges. They may become brittle, dry and cracked. Nails may lift up from the nail bed. These changes are temporary and will take time to grow out. Protect your hands and feet if these changes occur. If you do not, the chance of infection and nail loss increases.

- Gently trim or file nails. **Do not** cut nails too close to the nail bed.
- **Do not** get professional manicures or pedicures unless your health care team says it is OK.
- Use lotions and creams to keep your nails and cuticles healthy.
- Wear gloves while working around the house or yard.
- **Do not** use nail-strengthening products. They may irritate your skin or nails.
- Talk with your health care team about artificial nails. They may cause fungal infections. They may also mask nail changes caused by cancer treatment.
- Report redness, pain or other changes that occur around your cuticles.

Resources

Visit the American Cancer Society:

<http://www.cancer.org/treatment/treatmentsandsideeffects/treatmenttypes/chemotherapy/understandingchemotherapyaguideforpatientsandfamilies/understanding-chemotherapy-common-side-effects-hair-loss>

Chemobrain

Patients may have changes in thinking skills from cancer or chemotherapy (chemo). Changes may range from mild to severe. Sometimes these changes are called “chemobrain.”

Symptoms

Chemobrain may include any of the following:

- Slower recall of names, words or numbers
- Trouble concentrating
- Problems with memory
- Confusing dates and appointments
- Misplacing objects
- Having trouble doing more than one thing at a time
- Feeling mentally slower than usual

These changes may result from other causes. Examples include low blood counts, other medicines, anxiety or depression. Symptoms often fade after chemo ends. However, each patient is different. It may take a year or more after treatment for some patients to feel normal again. Others do not regain full cognitive function.

Coping Tips

- Get adequate rest and nutrition.
- Manage fatigue.
- Stay physically and mentally active.
- Practice relaxation.
- Use memory aids on your smartphone, day planner or calendar.
- Create a daily task list.
- Set audible alerts such as the alarm on your smartphone or watch for reminders.
- Use a “memory station”: always place important items, such as keys, in the same place.
- Minimize distractions.
- Manage depression and anxiety. Easing stress and elevating mood can ease symptoms.

If you have symptoms of chemobrain, ask for a referral to the Section of Neuropsychology. Call 713-792-0708.

They can assess your strengths and weaknesses. This can lead to treatments to help, such as tools and memory aids. In some cases, certain medicines may be helpful.

Resources

Ask to see the video **Q&A: Understanding Cognitive Testing in Cancer Care**. It describes the purpose of the evaluation. It shows what to expect during an assessment.

http://www.youtube.com/watch?v=l_t8GbxSMss or at
<http://www3.mdanderson.org/streams/FullVideoPlayer.cfm?xml=cfg%2FNeuropsychA-QA>

Visit the National Cancer Institute website:

<http://www.cancer.gov/cancertopics/coping/physicaleffects/chemo-side-effects>

Pain, Nerves and Muscles Potential Changes with Chemotherapy

It is common for patients to feel pain. Pain may be caused by the tumor or cancer treatments. Pain can be managed to provide a level of comfort in order to do daily activities. We want you to understand cancer- and treatment-related pain and how to control it.

Why Pain Should Be Treated

Pain can affect you in many ways. It can keep you from being active, sleeping well, enjoying time with family and friends and eating. Pain can make you feel afraid or depressed. Pain may also prevent you from participating in your care and can slow your recovery from treatment.

Most cancer pain is manageable with treatment. When you have less pain, you may be more active and interested in doing things you enjoy. Tell your doctor or nurse **right away** if you are feeling any pain. Getting help for your pain early can make pain treatment more effective.

Causes

There are many causes of pain in cancer patients. Most cancer pain occurs when a tumor presses on bone, nerves or body organs. Cancer treatment or surgical procedures can also cause pain.

You may also have pain that has nothing to do with your illness or treatment. Like everyone, you can get headaches, muscle strains and other aches and pains. If you are taking medicine for cancer treatment or pain, talk with your health care team about what you can take for these every day aches and pains.

Other conditions such as arthritis, can also cause pain. Pain from other conditions can be treated along with cancer pain. Talk with your health care team about your medical history. They will discuss how each condition can be treated and what may work best for you.

Treatment

Cancer pain is most often treated with medicine. Radiation, surgery and other treatments can be used along with pain medicine to help relieve pain. Ask your health care team about how other therapies might help you.

There are ways to decrease pain without medicine as well. Ask your health care team about non-drug treatments, including relaxation techniques, biofeedback, prayer, distraction and imagery.

It is important to treat pain early. Waiting until it is very bad requires more medicine, making it harder to treat. Check with your doctor, nurse or pharmacist before taking over-the-counter pain relievers.

Nerves and Muscles

It is common for patients on chemotherapy to experience nerve and muscle-related side effects. Nerve and muscle pain can be caused by the cancer or cancer treatments irritating nerves and/or muscles. Some chemotherapy (such as paclitaxel) can cause a condition known as peripheral neuropathy. Patients may experience tingling, burning or numbness in the hands and/or feet. Peripheral neuropathy tends to get worse gradually over time. Tell your health care team when you start to notice these symptoms so they can identify ways to manage this side effect.

Other nerve-related symptoms may include dizziness, lightheadedness, loss of balance and clumsiness. You may have trouble picking up objects or walking. Some patients shake or tremble. There may be changes in vision or hearing. In addition, certain chemotherapy medicines can lead to weak, tired or sore muscles.

In most cases, these symptoms are temporary and get better with time. Sometimes they persist after chemotherapy. Nerve and muscle symptoms that do not go away may mean serious problems that need medical attention.

Tell your health care team if you have any nerve or muscle symptoms.

To manage nerve or muscle-related side effects:

- Change positions slowly if you are light headed or dizzy.
- Do the following for numbness or tingling in the hands or feet:
 - Wear shoes or slippers when walking.
 - Test bath water temperature with your elbow.
 - Hold hot mugs by the handle, not the cup.
 - Use caution with sharp objects.
- Use handrails when going up or down stairs for balance or muscle strength problems.
- Ask for help if you are too weak or are in too much pain to complete a task.

Resources

For more information, ask for a copy of the following patient education sheets:

- **Pain Management**
- **Pain Rating Scales**
- **Pain Management Log**
- **Peripheral Neuropathy**

Visit the American Cancer Society website:

<http://www.cancer.org/treatment/treatmentsandsideeffects/physicalsideeffects/chemotherapyeffects/peripheralneuropathy/index>

Calendar for Chemotherapy Patients

Month: _____

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

For additional copies, please ask your health care provider for “Calendar for Chemotherapy Patients” or print from Educational Documents in MyChart.

Chemotherapy Safety For Patients Receiving Chemotherapy and Caregivers

You are receiving chemotherapy (chemo) to treat your cancer. There are things you can do to protect you and your loved ones from the effects of chemotherapy. It takes time for your body to get rid of the chemo medicines. Follow these instructions to handle chemo during treatment and for **48 hours** after you complete your treatment. If you are getting continuous chemo without any breaks, talk with your health care team about the risks involved to you and your loved ones if exposed to the chemo or waste from your body. If you follow these precautions, the people you live with and the environment are safer from the chemo medicine(s).

You should take care to not contaminate others within the home or the environment.

Caregivers should take care to not contaminate themselves with the chemotherapy or the body waste from the patient receiving chemo.

These precautions are for patients who take chemotherapy with the highest risk of harm due to accidental exposure. Talk with your health care team about the risk linked to your chemo and any possible changes that may be made to these precautions.

Handling Body Waste during Chemotherapy Treatment and 48 Hours after the Last Dose

Safe handling guidelines are used any time anyone might touch body waste, such as urine, stool or vomit. This includes touching toilets, bedside commodes, bedpans, vomit pans, urinals, ostomy bags or other body waste containers.

- Use the toilet as usual. When you are done, close the toilet lid and flush (2 times if a low-flow toilet) to ensure all waste has been emptied.
- Try to not splash urine. If the toilet or toilet seat becomes soiled with urine, stool or vomit, clean the surfaces before other people use the toilet.
- Wash your hands well with soap and water after you use the toilet.
- Keep toilets and restrooms clean.
- Change and wash all soiled clothes or bed linens right away.
- Wash your skin with soap and water.
- If you use diapers or bladder control products, use the disposable kind. Place soiled items inside 2 sealable, leak-proof plastic bags for disposal. This is called “double-bagging.”
- Empty body waste containers into the toilet. Pour close to the water not to splash. Clean body waste containers after each use with soap and water. Rinse well.
- Clean ostomy bags one time a day and empty as needed.
- Caregivers should wear disposable gloves when handling or cleaning any type of bodily waste from the patient. Never use torn gloves or gloves with small holes in them.

- Remove the used gloves and place them in the leak proof bags.
- Wash your hands after you remove the gloves.

Handling Laundry

Wash your clothes or bed linens as usual unless they become soiled with chemo or body waste. Wash soiled laundry **separately** from other laundry items. Follow these instructions:

- Wash soiled laundry right away. If it cannot be washed right away, put it in a plastic bag. Wash it as soon as possible.
- Carry any soiled laundry away from your body. Wash your hands.
- Use detergent and hot or warm water.
- Caregivers should wear disposable gloves when handling laundry soiled by body waste from the patient. Never use torn gloves or gloves with small holes in them.
 - Remove the used gloves and place them in the leak proof bags.
 - Wash your hands after you remove the gloves.

Handling Trash

- Use the leak-proof plastic bag or container with lid for soiled trash.
- Seal the bag and place it inside a larger leak-proof bag. Seal bags with ties or rubber bands when full. Seal containers with tape. Place in household trash.
- Label the bag “not for recycle.”
- Keep trash away from children and pets.

Sexual Activity

- If you are sexually active and of childbearing age, use birth control during treatment. Your health care team can help you decide what kind is best for you.
- Most patients are able to continue sexual activity during chemo, but special precautions are sometimes needed. Small amounts of chemo may be present in vaginal fluid and semen for up to 48 hours after you finish treatment. Ask your health care team if you or your partner should use a condom.
- Activities such as hugging and kissing are safe and do not require special precautions.

Resource

From the American Cancer Society:

<http://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/chemotherapy.html>

Safe Handling of Chemotherapy at Home

Taking Chemotherapy by Mouth

You are receiving chemotherapy (chemo) as a pill to treat your cancer. You will take it at home. Follow these instructions to handle chemo during treatment and for **48 hours** after you take your last pill. If you follow these precautions, the people you live with and your surroundings are safer from the medicine.

These precautions are for patients who take chemo with the highest risk of harm due to accidental exposure. Talk with your health care team about any risks linked to your type of chemo and any possible changes that may be made to these instructions.

Supplies

Caregivers should wear disposable gloves if they handle chemo or if they handle or clean any items soiled by your bodily waste. You, the patient, do not need to wear gloves in such situations. Both you and your caregivers should wash your hands with soap and water after handling chemo, bodily waste or removing gloves.

- Latex powder-free gloves for caregivers
 - If allergic to latex, use latex-free (nitrile) gloves
- Leak-proof plastic bags or disposable container with lid

Storage

- Keep chemo pills in a safe place, out of the reach of children and pets.
- Leave the chemo in the provided packaging until it is ready to be taken.
- Label all containers.
- Follow your health care team's instructions on how to store the pills.
- If refrigeration is needed, store the chemo pills in a separate, leak-proof container. Place the container away from food. **Do not** put the medicine in or near the freezer.
- **Do not** store these pills in the bathroom (too much moisture). **Do not** store in areas with temperatures that are very hot or very cold.

Handling Chemotherapy Pills

- Do not crush, break or chew the pills. Swallow them whole.
- Only adults should handle chemo pills.
- Pregnant women and children should not handle chemo or body waste at any time.
- Wash your hands well with soap and water before and after handling chemo pills.
- Caregivers should wear disposable gloves when handling any type of chemo medicine.
 - Never use torn gloves or gloves with small holes in them.

- Remove the used gloves and place them in the leak proof bags.

Handling Body Waste

- Follow safe handling guidelines during your chemo treatment and 48 hours after your last dose. This includes touching toilets, bedside commodes, bedpans, vomit pans, urinals, ostomy bags or other body waste containers.
- Use the toilet as usual. When you are done, close the toilet lid and flush (2 times if a low-flow toilet) to ensure all waste has been emptied.
- Try to avoid splashing urine. If the toilet or toilet seat becomes soiled with urine, stool or vomit, clean the surfaces well before other people use the toilet.
- Wash your hands well with soap and water after you use the toilet.
- Keep toilets and restrooms clean.
- Change and wash all soiled clothes or bed linens right away. Wash your skin with soap and water. If you use diapers or bladder control products, use the disposable type. Place soiled items inside 2 sealable, leak-proof plastic bags for disposal. This is called “double-bagging.”
- Empty body waste containers into the toilet. Pour close to the water to prevent splashing. Clean body waste containers after each use with soap and water. Rinse well.
- Clean ostomy bags once a day and empty as needed.
- Caregivers should wear disposable gloves when they handle or clean any type of bodily waste from the patient.
 - Never use torn gloves or gloves with small holes in them.
 - Remove the used gloves and place them in the leak proof bags.
 - Wash your hands after you remove the gloves.

Handling Laundry

Wash your clothes or bed linens as usual unless they become soiled with chemo or body waste. Wash soiled laundry **separately** from other laundry items. Follow these instructions:

- Wash soiled laundry right away. If it cannot be washed right away, put it in a plastic bag. Wash it as soon as possible.
- Carry the soiled laundry away from your body. Wash your hands.
- Use detergent and hot or warm water.
- Caregivers should wear disposable gloves when handling laundry soiled by bodily waste from the patient.
 - Never use torn gloves or gloves with small holes in them.
 - Remove the used gloves and place them in the leak proof bags.
 - Wash your hands after you remove the gloves.

Handling Trash

- Use a leak-proof plastic bag or container with a lid for soiled trash.
- Seal the bag and place it inside a larger leak-proof bag. Seal bags with ties or rubber bands when full. Seal containers with tape. Place in household trash.

- Label the bag “not for recycle.”
- Keep trash away from children and pets.

Sexual Activity

- If you are sexually active and of childbearing age use birth control during treatment. Your health care team can help you decide what kind is best for you.
- Most patients are able to continue sexual activity during chemo, but special precautions are sometimes needed. Traces of chemo may be present in vaginal fluid and semen for up to 48 hours after you finish treatment. Ask your health care team if you or your partner should use a condom or take other precautions.

Disposal of the Pills (Take Back Programs)

- MD Anderson is an authorized collection location. There are 2 locations, with green disposal bins, where you can drop off medicine (this includes controlled substances such as hydrocodone, morphine, tramadol, etc.):
 - Floor 2 Pharmacy: Main Building, Floor 2, near Elevator C
 - Mays Clinic Pharmacy: Mays Clinic, Floor 2, near The Tree Sculpture
- If you are on a clinical trial, **do not use** these bins. Return all medicines to your research nurse or clinical study coordinator.
- To dispose of oral chemotherapy, call your local city or county government’s household trash and recycling service. Ask if a drug take-back program is offered in your community.
- Some counties have hazardous waste collection days. On these days, prescription medicines are accepted at a central location for proper disposal.
- Information for local take back programs can be found at <https://takebackday.dea.gov/>

Resources

From the American Cancer Society:

<http://www.cancer.org/treatment/treatmentsandsideeffects/treatmenttypes/chemotherapy/oral-chemotherapy>

Food Safety Tips

Chemotherapy increases your risk of infection. As a result, you must use proper food handling methods. Follow the guidelines below.

Shopping

- Use hand sanitizer to sanitize shopping cart handles and your hands before shopping and especially before handling produce.
- Place raw meat and poultry packages in plastic bags before putting them in the shopping cart with other foods.
- Choose fruits and vegetables that can be washed well.
- Choose hard cheeses. Avoid soft cheese or cheeses with live cultures (blue veined).
- Avoid raw honey.
- **Do not** purchase foods from shared bins in grocery stores or from street vendors.
- Buy and use only pasteurized milk, cheeses, yogurts and juices.
- Avoid pre-cooked and pre-packaged refrigerated meals. It is difficult to assure that safe storage and handling procedures have been maintained.

Storing Food

- Refrigerate food right away after shopping and cooking.
- Store foods in containers away from insects, rodents and pets.
- Maintain safe temperatures in your refrigerator and freezer. Check this about every 6 months:
 - Refrigerator: 40°F or below
 - Freezer: 0°F or below
- Cover foods on refrigerator shelves.
- **Do not** store raw meat, poultry or fish in direct contact with cooked foods. Always place cooked foods above raw foods in the refrigerator to prevent contamination.
- Store cooked foods in shallow storage containers. This helps the food cool quickly.
- **Do not** stack hot foods in the refrigerator. This can delay the cooling of food to proper temperature.
- Suggested storage times for refrigerated foods:
 - Raw fish and seafood: 1 to 2 days
 - Raw chicken, turkey, ground hamburger and other ground meats: 1 to 2 days
 - Raw steaks, chops and roasts: 3 to 5 days
 - Fully cooked leftovers: 3 to 4 days
 - Luncheon meats: 3 to 5 days
 - Milk: 5 days



Image courtesy of Food and Drug Administration

- Raw fruits and vegetables: 7 days
- Raw eggs in shell: 7 to 14 days
- Raw eggs out of shell: 2 to 4 days

Check the expiration dates of foods. Discard food that looks or smells rotten, slimy or moldy.

Preparing Food

- Before preparing, cooking or eating food, wash your hands with warm, soapy water for 20 seconds.
- Clean counter tops by washing with hot soapy water. Rinse well with clean water. If counter tops come into contact with raw meat, poultry or fish, sanitize with a solution containing chlorine bleach (1 part bleach to 10 parts water). Clean the counter tops after cutting the meat.
- Use one cutting board for raw vegetables and fruits and another cutting board for raw meats. Clean each board well after use. Avoid using porous cutting boards, such as wooden ones, for cutting meats and fish.
- Wash all fruits and vegetables well before cutting. Rinse them clean under running tap water. If you need to remove visible dirt, use a vegetable brush designed for this purpose.
- Thaw meat and poultry in the refrigerator, not at room temperature. Cover thawing meats and place them on the bottom shelf away from other foods.
- Use clean utensils and knives. Use a clean knife **every time** you cut a different food. Use a different spoon for tasting food, not the one used for stirring. Also use a different utensil to serve food.
- Wipe canned food lids before opening.
- Keep the microwave clean, as food debris can grow bacteria.



Image courtesy of Food and Drug Administration

Meal Times

- Eat fully cooked meats, poultry, fish and eggs. Meat should be cooked to at least 160°F and poultry to at least 180°F. Use a food thermometer to measure the food's internal temperature.
- Avoid eating prepared foods that contain raw unpasteurized eggs or fish. Examples are Caesar salad dressing, sushi, raw cookie dough and cake batter, hollandaise sauce and homemade eggnog or ice cream.
- Avoid open salad bars and self-serve buffets at restaurants.
- If drinking water from a private well is approved by your doctor, test the water every year. The health department or local water department can tell you how to test it.

Resources

- National Institutes of Health: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2603155/>
- Foodsafety.gov: <https://www.foodsafety.gov/>

Sexuality and Chemotherapy

Most patients are able to have sexual activity during chemotherapy (chemo). However there is a greater risk for infection. If your blood counts (white blood cells and/or platelets) are low or may become low, talk to your health care team about whether it is safe to have sex.

Some treatments may lower a man's sperm count. However, this may not make him infertile. Treatments may also cause a woman's periods to stop. However, women can still get pregnant prior to return of periods. Pregnancy may still be possible. Some treatments may cause birth defects. Discuss your risks of pregnancy with your doctor. Talk to your health care team about the best method of birth control for you.

Practice safe sex if you or your partner have sex with more than one person. Latex condoms and/or dental dams help prevent infections from body fluids. If you use a lubricant with latex condoms, choose one that is water-based. Do not use a lubricant that contains oil (such as baby oil or petroleum jelly). Oil weakens the condom.

Changes in Sexuality

During chemo, some men and women feel less interested in sexual intimacy. For some, fatigue makes sex difficult. Chemo may, but does not always, affect hormone levels. These changes may affect sexual organs and functioning.

Men

During treatment, men may have trouble getting or maintaining an erection. This usually returns to normal after treatment.

Chemo may reduce a man's sperm cell count. This can affect his ability to father children. It does not affect the ability to have sexual intercourse. A low sperm count may be temporary or permanent. It depends on the dose of chemo, the type of medicines and the man's age. Ask your doctor about the long-term effects of your treatment plan.

Women

Chemo may affect the function of the ovaries. Menstrual periods may become irregular. They may stop completely. Changes can be temporary or permanent. Sometimes chemo may cause a woman to enter menopause. Common symptoms include hot flashes and vaginal dryness or itching. Vaginal dryness can be relieved by using vaginal moisturizers. Use them regularly. Vaginal lubricants can make sexual activity more comfortable. You can buy these over-the-counter without a prescription.

Chemo causes vaginal mucositis in some women. This is a painful irritation of the lining of the vagina. If you develop vaginal pain, tell your doctor.

Many factors affect a woman's ability to have children after treatment. These include the type and dose of chemo received. Age at the time of treatment is another factor. Ask your health care team about the long-term effects of your treatment plan.

For more information or help

MD Anderson has providers who specialize in sexual health services. For more information or questions about sexual health services, ask for a referral to:

Gynecologic Oncology and Reproductive Medicine
713-745-6986

Resource

For more information on sexuality and cancer, ask for a copy of:

- Vaginal Dryness

Fertility Preservation Options for Men and Women



Before starting cancer treatment, men and women who may want to have a child in the future should consider fertility preservation options. Talk with your doctor.

Men

For men, fertility means being able to produce healthy sperm cells that can make a woman pregnant. Cancer treatment may affect sperm cells and increase the chance of infertility. Some men may not be affected at all. Others may only be affected during treatment. Some men may be affected permanently. This depends on the type and amount of treatment given.

Sperm banking is an option for men who may want to have a child in the future. Banking sperm includes freezing a semen sample. The sample can later be thawed and used to make a woman pregnant. Most health insurance plans do not pay for sperm banking. Some sperm banks have payment plans for patients with cancer. There are also financial assistance programs that can lower the cost of banking and storage.

The sperm sample is collected at an infertility clinic or sperm bank. To get the sample, a man must ejaculate through masturbation. The clinic will test the semen for sperm count and motility. Then the sample is divided into small amounts and frozen. Frozen samples may be stored for a long time. Men who are unable to provide a semen sample or those who have low sperm counts may be able to have sperm collected through an outpatient surgical procedure.

For more information on sperm banking, please ask for a copy of the patient information sheet, *Fertility Options for Men Diagnosed with Cancer: Sperm Banking*.

Women

For women, fertility means being able to become pregnant and carry a pregnancy successfully to a live birth. Cancer therapy may damage a woman's ovaries, which produce eggs. The amount of damage depends on the type and amount of treatment given.

Women who want to have a child in the future have options of freezing eggs, embryos (fertilized eggs) or tissue from the ovaries before cancer treatment. The frozen tissue can later be used to conceive a child. Frozen embryos and eggs can be stored for a long time.

The most successful way to preserve fertility is to freeze embryos or eggs. To do this, a woman takes hormones to stimulate the ovaries to grow several eggs at once. Then the eggs are removed in a minor, outpatient surgery. Once the eggs have been removed, they can be frozen right away

or fertilized in the lab with sperm. Eggs that are fertilized and form embryos are frozen and stored for future use in a process called in vitro fertilization (IVF).

IVF and other methods of fertility preservation may be expensive. Most health insurance plans do not cover the cost. However, there are financial assistance programs that can help lower the costs for cancer patients.

For more information on fertility preservation, ask for a copy of the patient information sheet **Fertility Options for Women Diagnosed with Cancer**.

Resources

MD Anderson Cancer Center, Oncofertility Clinic

713-792-6810

Services for men and women:

- Fertility assessment
- Fertility education and counseling
- Fertility preservation methods
- Financial assistance program
 - LIVESTRONG Fertility
- Options for parenthood

Baylor College of Medicine Medical Center, Scott Department of Urology

713-798-4001

Services for men include:

- Semen analysis
- Sperm Banking
- Financial assistance program
 - LIVESTRONG Fertility
 - Hero's for Children

Coping and Assistance During Chemotherapy

Cancer can cause a lot of changes in the lives of patients and their loved ones. It is important for you to know that you are not alone. There are resources at MD Anderson that can help.

Talk about Your Feelings

Talking about your feelings can help decrease stress. Sometimes it is easier to talk with someone outside of your friends or family. Social work counselors offer counseling to patients and caregivers at no cost.

Think about joining a support group. A support group is a safe place to share experiences and connect with other people who are facing the same challenges. Members share stories, concerns and helpful tips with each other.

Visit www.mdanderson.org/supportgroups or call 713-792-6195.

Talk with Children

Do you ever wonder how to talk with your children and teens about cancer? The KIWI program (Kids Inquire, We Inform), offered by Social Work, provides information, support and resources.

Visit www.mdanderson.org/KIWI or call 713-792-6195.

Advance Care Planning

Receiving chemotherapy can give you time to think. You may wonder about what types of care you do or do not want or who would make health care decisions for you if you were unable to make them for yourself. These things are important to think about and document. Social work counselors can help guide you through this process.

Visit www.mdanderson.org/advancecareplanning or call 713-792-6195.

Financial Concerns

The financial impact of cancer can be stressful. Social work counselors can tell you about resources that offer help with housing, transportation and parking.

Visit www.mdanderson.org/socialwork or call 713-792-6195.

Caregiver Needs

Providing care can be rewarding and satisfying. It can also be difficult and tiring. Accept offers for help and do not be afraid to ask for help. Have a list of needs ready so you know what things you might need help with the most. Items may include:

- Run errands
- Make meals
- Do light housework
- Take a loved one to an appointment
- Care for children after school

Services available to caregivers:

- Support groups: 713-792-6195
- Counseling: 713-792-6195
- Support from other caregivers through myCancerConnection. Call toll free 800-345-6324

Relaxation Resources

Social Work: 713-792-6195

Social work counselors provide counseling at no cost. This helps with stress reduction, pain management and anxiety.

Main Building, Floor 2, near Elevator D, Room B2.4650

Integrative Medicine Center: 713-794-4700

The Integrative Medicine Center works with your oncology team. Services include: diet counseling, massage and acupuncture. Group classes, such as yoga, tai chi and meditation, are available at no charge.

Mays Clinic, Floor 2, near The Tree Sculpture

Patient Relaxation Area: 713-792-1080

The Patient Relaxation Area is a place where patients and families can rest, read and recharge. Enjoy this quiet space with recliners, warm blankets, books and magazines. Computers, a fax machine and a printer are available for limited use. This is a convenient place to rest between clinic appointments or during hospital stays. Volunteers provide directions and institutional resources.

Main Building, Floor 2, near Elevator D, B2.4314.

Pharmacy Patient Resources

Pharmacy Patient Resources (PPR) provides tools and guidance to patients. Specifically, patients who do not have enough insurance, have met their insurance limits or whose insurance will not pay for their medicines. They help with prior authorizations for prescriptions that are filled at MD Anderson pharmacies and the patient assistance programs.

MD Anderson has 3 outpatient retail pharmacies to serve you. PPR staff are available at each of the MD Anderson pharmacies.

- **Floor 2 Pharmacy:** Main Building, Floor 2, near Elevator C, R2.2315
Phone: 713-792-6125
Retail Pharmacy Hours:
 - Weekdays: 8 a.m. to 8 p.m.
 - Saturdays: 8 a.m. to 6 p.m.
 - Sundays: 8 a.m. to 5 p.m.Holidays: Call the pharmacy directly for hours
PPR Hours: Weekdays, 8 a.m. to 7 p.m.
 - A prescription medicine disposal bin is located here.
- **Floor 10 Pharmacy:** Main Building, Floor 10, near Elevator B, R10.1888
Phone: 713-745-7180
Retail Pharmacy Hours: Weekdays, 8 a.m. to 7 p.m.
PPR Hours: Weekdays, 8 a.m. to 7 p.m.
- **Mays Clinic Pharmacy:** Mays Clinic, Floor 2, near The Tree Sculpture, ACB2.1930
Phone: 713-563-8222
Retail Pharmacy Hours: Weekdays, 8 a.m. to 6 p.m.
PPR Hours: Weekdays, 8 a.m. to 4 p.m. You may go to either the Floor 2 or Floor 10 pharmacy for help after 4 p.m.
 - A prescription medicine disposal bin is located here.



Bring your insurance card, tax return and social security statement.

Prior Authorizations

Certain medicines and services must be approved by your insurance company before you can get them. This is called prior authorization. Prior authorizations make sure medicines and services are given correctly.

A pharmacy resource specialist calls your insurance company for prior authorization. Sometimes the resource specialist needs to fill out a form and fax it to the insurance company. This may take up to 3 days.

If you are approved, you will get your medicine.

If you are not approved, you have other choices:

1. You can appeal. Your doctor may write a letter or talk with your insurance company for approval.
2. Ask the resource specialist about patient assistance programs.
3. Pay for the medicine.
4. Ask your doctor if your insurance will pay for a different medicine.

Insurance Appeals

You may fill out the forms for an appeal if your insurance company denied your medicine. An appeal is a request for your insurance company to change their decision mind and agree to pay for your medicine. Appeals may take 3 to 5 days.

Patient Assistance Program

Patient assistance programs give free or discounted medicines to patients who cannot afford to pay for them. These programs are sponsored by drug companies. Patients who do not have any insurance, have reached their insurance maximums or were denied coverage for medicines may qualify for help. Each drug company makes its own guidelines. Eligibility rules may differ. For example, companies may have different medical or income requirements.

The patient assistant program starts when you are denied a prescription with your current insurance. You are referred to a pharmacy resource specialist for help. The resource specialist helps you complete an application(s), get doctor signatures and collect paperwork. He or she also helps you submit the application to the drug company. The decision process may take up to 7 to 10 days. Someone will call you once a decision has been made.

A drug company may stop its patient assistance program for a specific drug at any time.

Patient Assistance Program is available for the following high dollar drug classes:

- Oral chemotherapy/Anticancer agents
- Growth factors
- Blood thinners
- Antibiotic/Antifungal/Antiviral

Additional Resources

For more information:

- Call the pharmacy patient resources helpline at 713-563-4965
- Ask for a copy of **Prescription Medicine Safe Storage and Disposal**
- Pick up a **Pharmacy Patient Resources Brochure** at an MD Anderson pharmacy
- Go to www.needymeds.org

Outside Organizational Resources

American Cancer Society

800-227-2345

<http://www.cancer.org>

Not-for-profit organization that supports cancer research and offers educational programs, support groups and free booklets.

CanCare of Houston, Inc.

713-461-0028 or 888-461-0028

<http://www.cancare.org>

Cancer support network made up of cancer survivors and family members of cancer survivors.

CancerCare

800-813-4673

<http://www.cancer.org>

This non-profit agency provides free emotional support, information and practical help. This agency also offers online teleconferences, referrals to support services and other services.

Caregiver.Com

<http://www.caregiver.com>

info@caregiver.com

Online newsletters and discussions for caregivers. Produces *Today's Caregiver* magazine.

Centers for Disease Control and Prevention (CDC)

<http://www.cdc.gov/cancer/>

National agency that works with other groups supporting efforts to prevent and control cancer.

Hospice Foundation of America

800-854-3402

<http://www.hospicefoundation.org>

Provides information on terminal illness, death and the process of grief and bereavement.

LIVESTRONG Fertility Program

855-220-7777

www.livestrong.org/what-we-do/program/fertility

Non-profit organization provides reproductive information, support and hope to cancer patients and survivors whose medical treatments present the risk of infertility.

National Cancer Institute (NCI)

800-422-6237

<http://www.cancer.gov/>

Part of the National Institutes for Health, NCI provides information for all cancer types.

National Coalition for Cancer Survivorship

877-622-7937

<http://www.canceradvocacy.org/>

Answers questions and directs callers to local groups and individuals. Offers information on legal issues and discrimination.

National Suicide Prevention Lifeline

800-273-8255

<https://suicidepreventionlifeline.org/>

The Lifeline provides 24/7, free and confidential support for people in distress, prevention and crisis resources for you or your loved ones.

Patient Advocate Foundation

800-532-5274

<http://www.patientadvocate.org>

Serves as a liaison between patients and their insurer, employer and/or creditors. Helps resolve insurance, job retention and/or debt crisis matters.

United Ostomy Associations of America

800-826-0826

<http://www.ostomy.org>

Dedicated to complete rehabilitation of all "ostomates."

United Way Help Line Houston

<https://unitedwayhouston.org>

Dial 2-1-1

Volunteers provide 24-hour telephone referral to appropriate agencies/services.

Visiting Nurse Association of America

888-866-8773

<http://www.vnaa.org>

Provides information on all aspects of home health care.

Specific Cancer Types

Most cancer types have a specific organization with resources.

The Learning Center's Recommended Resources are guides to information on cancers and cancer-related topics which have been developed by librarians and health educators at The University of Texas MD Anderson Cancer Center. Find the online recommended resources at <http://mdandersontlc.libguides.com>.

