Chemotherapy Guide

THE UNIVERSITY OF TEXAS
MD Anderson
~~Cancer~~ Center

Making Cancer History®

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PATIENT EDUCATION

Chemotherapy Guide

Table of Contents

Basic Information

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PATIENT EDUCATION

Chemotherapy

Basic Information

Chemotherapy (chemo) is the use of medicines to treat cancer. Chemo may cure or control the spread of or relieve symptoms from cancer. It kills or slows the growth of the primary cancer. It also works in the body against cancer cells that have spread (metastasized) from the primary location of the cancer.

Other medicines used to treat cancer include biotherapy, immunotherapy, targeted therapy or vaccines. Each type works in a different way, so the actions in the body may be different. The side effects may also vary.

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

Cancer Cells

To understand chemotherapy, 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 ways 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. Chemo 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

It is important to understand the 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?
    - Will it control the growth of the tumor? Is it to increase comfort? Will it help the tumor shrink?
- What are the chances that the chemotherapy will work for me?
- 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 lower 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. 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 a vein or directly to the cancerous area
    - 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 (PICC, CVC or port)
    - Into an artery through a catheter inserted into the area that has the tumor
    - Into the peritoneal cavity through a peritoneal catheter
    - Into the bladder through a catheter (intravesicular)
- **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 1 or more days. Then you will stop chemotherapy (rest) for 1 or more days. The time between your first day of chemotherapy and your last rest day is one cycle. A member of your health care team will tell you how long each cycle will take.

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, injection syringe 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 your chemotherapy will be given. 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 nurse can tell you how long your entire treatment appointment should last.

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

Follow Your Treatment Plan

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

- Use a cell phone or watch alarm as a reminder to take your medicines.
- Write your appointments in a day planner or calendar.
- 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 cycles 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 occur. Not everyone is affected the same way. 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 (ovaries or testicles)
- Nervous system (nerves in hands and feet)

Most side effects are short term. They can often be managed with medicines and self-care. Some side effects may be permanent. Discuss any changes with your health care team as soon as you notice them. Many side effects you may experience are addressed in the **Chemotherapy Guide**.

Resources

Copies of the **Chemotherapy Guide** are available in MyChart and 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

For more information, visit:

American Cancer Society
https://bit.ly/ACS_Chemotherapy-lb

National Cancer Institute
https://bit.ly/NCI-Chemo

Targeted Therapy, Immunotherapy and Biotherapy
Basic Information

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

Targeted therapy and immunotherapy can be used alone or with other cancer treatments. Other methods used to treat cancer are chemotherapy, radiation therapy 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. The therapy may do one or more of the following:
- Stop 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 cells of the nutrients needed 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. Side effects may include skin rash, nausea, diarrhea, 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. There are different types of targeted therapies. Your doctor may consider one that works well against your type of cancer. You and your doctor will discuss your treatment options and decide if targeted therapy is the best treatment for you.

How Immunotherapy Works

Immunotherapy is a type of biotherapy that helps your immune system fight cancer like it fights infections and other diseases. Patients most often receive immunotherapy as an injection under the skin, into a muscle or into a vein.

Immunotherapy may cause a variety of side effects. When the immune system actively fights cancer, it can also attack healthy cells in the body. Side effects from activating the immune system can be severe and can occur at any time during and after treatment.

Types of Therapy

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

Angiogenesis inhibitors: These medicines affect the blood vessels that cancer cells need to grow.

Immune checkpoint inhibitors. These medicines block immune checkpoints and allow the body's natural immune cells to respond more strongly to kill the cancer.

Monoclonal antibodies: These medicines attach to specific targets on the outer surface of cancer cells. They can either attack the cancer directly or cause an immune response to destroy cancer cells. They are often injected into a vein, muscle or under your skin.

Adoptive cell transfer: This treatment 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 changed to better find and destroy cancer cells. These "engineered" T cells are grown in the lab and will be given back to you through a vein injection.

Cytokines: These protein molecules are naturally produced by your body. They help control 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: These are vaccines that boost the immune system to work against cancer.

Side Effects

Targeted therapy, immunotherapy and biotherapy may cause side effects including:
- Pain, swelling and soreness
- Flu-like symptoms
- Skin and hair changes
- Redness, itchiness and rash
- 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
- Effects to your heart
- Trouble breathing

Your health care team will tell you which side effects may occur with the therapy you take. Review the specific patient education given to you by your health care team or found in the **Chemotherapy Guide**.

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 tell you to report some side effects right away.

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

- Fever of 101°F (38.3°C) or higher
- Easy bleeding or bruising
- Signs of infection (such as fever, chills, sweats or a stiff neck)
- Weight loss or gain of 10 or more pounds
- Feeling out of breath or trouble breathing
- Soreness in the mouth and throat
- Not able to keep fluids down for more than 4 hours
- Nausea (feeling sick to your stomach) or vomiting that does not get better with medicine
- Diarrhea or constipation
- 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
- Changes to urine or trouble urinating

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. Being treated with 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 talking with your health care team. This includes aspirin and other over-the-counter medicines, vitamins and supplements. 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 problems or birth control. If you need a pain medicine, be sure to discuss this with your health care team. If you use alcohol or illegal drugs, talk about this with your health care team.

You and Your Care

You are the most important person on your care team. During targeted therapy, you have a major role in taking care of yourself. It is very important that you follow medical instructions **exactly as they are given**. For example, medicines should be taken at the correct times and stored in the correct way. Take good care of yourself by eating healthy foods, drinking enough water and resting when needed.

Because you may be on a 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 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 their arm (PICC line) or neck area (central venous catheter) to receive medicine. Some patients may have an implanted port placed which allows direct access to the large vein as well. This is done 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

For more information, visit the American Cancer Society website:
- Targeted therapy: https://bit.ly/ACS-TargetedTherapy
- Immunotherapy: https://bit.ly/ACS_Immunotherapy

Blood Counts

Blood carries oxygen and nutrients to the cells of the body while also carrying away waste. Some blood cells fight against infection, others help with clotting and a third type delivers oxygen. 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 (RBCs) 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 (WBCs) 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.
- Do not be around people who you know are sick.
- Do not do activities where you could get cuts or breaks in the skin.
- Wear gloves while working in the garden or doing housework.
- Bathe or shower every day and practice good mouth care.
- ! Take your temperature as instructed. If you have a fever of 101ºF (38.3ºC) or higher, or if you have a fever of 100.4ºF (38ºC) for more than 1 hour, go to the nearest hospital emergency center. Your care team may give you other fever 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 MD Anderson care team.

- Ask if household members may receive live vaccines.
- Do not be around anyone that has been exposed to measles or chicken pox. If you are exposed to anyone with these diseases, report this to your care team right away.
- Upon request, the care team can provide a letter to a school or workplace to explain all precautions that should be taken to protect you.

Platelets

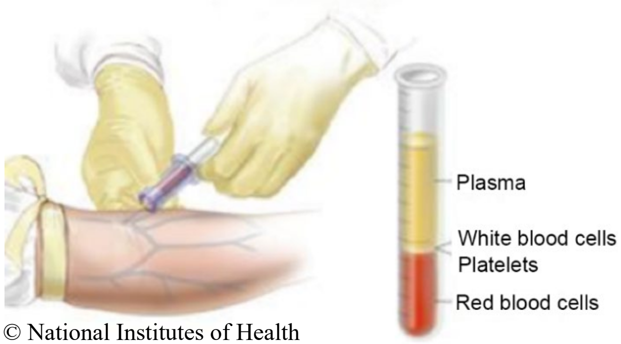
Platelets are important for blood clotting to stop bleeding. If your platelet count is low, you may bruise and bleed more easily. You may also see tiny red dots under your skin. When your platelet count is low:

- Do not do any vigorous activity, such as contact sports.
- Blow your nose gently.
- Tell your 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 in a complete blood count include:

- **Hemoglobin** (in red blood cells)
  - Adult male: 14-18 g/dL
  - Adult female: 12-16 g/dL
- **White blood cells**: 4-11 k/uL
  - Neutrophils: 42-66% (per 100 cells counted)
  - Absolute neutrophil count (ANC): 1.70-7.30 k/uL
- **Platelets**: 140-440 k/uL



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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 the **nadir**. Recovery depends on treatment and your general health. Infections and some medicines can delay the recovery of blood counts. Before returning to normal activities of daily living such as returning to work, gardening or having sex, discuss the risks with your care team.

Blood Transfusions

When blood counts are low, you may receive whole blood with all the types of cells through an intravenous transfusion. Or you may receive only the cells that are low. Refer to the patient education sheet **Transfusion of Blood Components** on MyChart 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 any of these symptoms **right away** if you notice them during your transfusion:
- Chills
- Hives
- Itching
- Breathing problems

Platelet Transfusions

You may need several platelet transfusions when your platelet levels fall. Refer to the patient education sheet **Transfusion of Blood Components** on MyChart 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 $25 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.

Call the MD Anderson Blood Bank at 713-792-7777 or visit www.MDAnderson.org/BloodBank for information on locations, hours of operation or if you have questions about donating.

Resource

For more information, visit the American Cancer Society at www.Cancer.org and search for **blood transfusions** or **blood transfusion side effects**.

Hand Washing

Preventing infection is very important to your health. It is especially important in the hospital. People who are sick are more likely to get an infection. **The most important way to prevent the spread of infection is through hand washing and using hand sanitizer.**

How to Wash Your Hands


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To remove dirt and germs, follow these steps every time you wash your hands.

1. Wet your hands and use enough soap for a good lather (about the size of a nickel or quarter).
2. Rub your hands together for 20 seconds. Make sure to scrub all surfaces. This includes between your fingers and under your fingernails. **The amount of time you wash is important.** To make sure you wash for enough time, imagine singing the “Happy Birthday” song 2 times.
3. Rinse your hands well with water.
4. Use a towel to turn off the water in order to keep your hands clean.

Hand Sanitizer


©iStock; Nazdravie

Alcohol-based hand sanitizer kills germs on your hands. Use it when your hands are not visibly dirty.

1. Choose a sanitizer with at least 60% alcohol content.
2. Apply enough sanitizer to cover your hands.
3. Rub your hands together **for 20 seconds or until the product is dry**.
4. If your hands dry in less than 20 seconds, it means the amount of sanitizer was not enough. Get more sanitizer and repeat the process.

When to Clean Your Hands

Remember to clean your hands:

- When your hands are dirty.
- Before and after contact with another patient, family member or care team member.
- Before eating and drinking.
- After handling dirty items.
- After blowing your nose, sneezing or coughing.
- After going to the restroom.
- After touching any hospital surfaces such as doorknobs, bed rails, phones or remote controls.
- After being in a public place.
- After taking off your face mask.

Patients with Increased Risk for Infection

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

Other Ways to Protect Against Infections

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

Extra Precautions

Some activities may increase your risk of getting an infection. Ask your care team if you should take extra precautions such as wearing a face mask or avoiding these activities. These include:

- Being outside your hospital room or outside your home.
- Being in crowded public areas.
- Being in construction areas, including any area where parts of buildings or streets are being repaired, torn down or constructed.

Ask your care team if it is OK to:

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

More Information

If you have questions concerning how to prevent infections, ask your care team.

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Over-the-Counter (OTC) Medicines

Talk with your doctor or pharmacist before taking **any over-the-counter (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. They need 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.

Know the Ingredients

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

Read the labels of OTC products to know what ingredients are in them. Look for the following ingredients:

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

Do not take medicines that contain the ingredients listed above to relieve pain or for a fever unless your health care team says it is OK to do so.

These are some OTC medicines that your health care team may recommend you take to manage side effects of cancer treatment. The medicines in the chart are listed by generic name with the brand name in parentheses. You may use either the brand or generic version.

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

If you have…	**You may consider using…**
Constipation	Sennosides (Senokot®), docusate (Colace®), polyethylene glycol (MiraLAX®)
Cough	Guaifenesin (Robitussin®), dextromethorphan (Delsym®)
Diarrhea	Loperamide (Imodium®)
Indigestion or stomach gas	Famotidine (Pepcid®), ranitidine (Zantac®), simethicone (Gas-X®)
Mouth sores	Baking soda rinse (1/2 teaspoon baking soda in 8 ounces of warm water)
Nasal congestion or dryness	Saline nasal spray (Simply Saline® Nasal Mist, Ocean® Nasal)
Rash	Hydrocortisone cream 1%, diphenhydramine tablets, liquid, cream or gel (Benadryl®)
Sinus allergies or itching	Diphenhydramine (Benadryl®), cetirizine (Zyrtec®), loratadine (Claritin®), fexofenadine (Allegra®)
Sinus congestion	Pseudoephedrine or phenylephrine (Sudafed®)*, oxymetazoline nasal spray (Afrin®)

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

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PATIENT EDUCATION

Chemotherapy in the Hospital

What to Expect

Before You Come to the Hospital

Before or while you are admitted for treatment, you may get a central venous catheter (CVC, PICC or port). This line is used to give medicines, fluids or blood products. This line lessens the need for many needle sticks into your vein. 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 will 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

Your health care team will take care of you. As part of that care, they may order more tests such as blood tests or imaging to help design the best treatment for you. Your health care team will discuss your treatment plan with you while you are in the hospital.

Your 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 work counselor
- Case manager navigator
- Physical therapist
- Occupational therapist

The doctors take turns caring for patients in the hospital. Because of this, 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 will order medicines to help you feel better. Not all patients have side effects. Tell your health care team if you have any problems. Let your team know if you have:

- Constipation
- Diarrhea
- Nausea (upset stomach) or vomiting
- Problems sleeping
- Pain
- Mouth sores
- Heartburn
- Acid reflux
- Fever or chills
- Rash
- Injection or infusion site reactions

Daily Routine

During your hospital stay, your vital signs will be checked often. Vital signs are your pulse, breathing rate, temperature and blood pressure.

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

Your inpatient doctor may ask other specialists to meet with you. For example, they 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 your team.

Discharge From the Hospital

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

- Check to make sure you or your caregiver have been taught how to care for your CVC or port at home, 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 any medicines or supplies you will need after discharge.
- 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. They 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 diarrhea
- 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. Wash your hands often, especially after you use the bathroom and before you prepare and eat food.

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PATIENT EDUCATION

Ambulatory Treatment Center (ATC)
Welcome Letter

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

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

Multiple Locations

MD Anderson has multiple ATC infusion centers at our campuses across the Houston area.

Texas Medical Center, Main Building Floor 2, Elevator B Monday-Sunday 7 a.m. to 11 p.m. 713-792-2310	**Texas Medical Center, Mays Clinic** Floor 8, Elevator T Monday-Friday 7 a.m. to 10:30 p.m. 713-745-1000	**Texas Medical Center, Main Building** Floor 10, Elevator C Monday-Friday 7 a.m. to 8:30 p.m. 713-792-4732	**Life Science Plaza** 2130 W. Holcombe Blvd, Floor 6 Monday-Friday 8 a.m. to 5:30 p.m. 832-750-3686
MD Anderson League City* Floor 4 Monday-Friday 8 a.m. to 5 p.m. 713-563-0670	**MD Anderson in Sugar Land*** Floor 2 Monday-Friday 7 a.m. to 7 p.m. 281-566-1900	**MD Anderson West Houston*** Floor 4 Monday-Friday 8 a.m. to 5 p.m. 713-563-9600	**MD Anderson The Woodlands*** Floor 3 Monday-Friday 7 a.m. to 5 p.m. 713-563-0050

*These locations have free parking.

Laboratory services are available at all locations. Many labs ordered by your health care team can be done the day before treatment. This excludes a type and crossmatch for same day blood transfusions. Check with your health care team if you are not sure.

Directions

You can take a shuttle to the Life Science Plaza (LSP) from any building at the Texas Medical Center Campus. Call 713-792-2338 to request a shuttle.

Download the MD Anderson Directions mobile app to get directions to any MD Anderson location and nearest parking. Scan the QR code for the app.

Scheduling Appointments

Patient service coordinators (PSCs) schedule appointments based on treatment type, length and availability. Your infusion may be scheduled at any location. Talk with your doctor about which location is best for your treatment needs. If you need to change your appointment time or location, call the ATC. If you need to change your appointment date, contact your home center.

Pediatric ATC

If you are under the age of 40 years old, you may be scheduled in the Pediatric Ambulatory Treatment Center (PATC). The PATC hours are Monday through Friday from 7 a.m. to 7 p.m. If you have any questions or concerns about being scheduled in the PATC, call 713-792-6613.

Visitor Information

For the safety of all patients and visitors, only 1 visitor is allowed in the ATC treatment area with a patient. This visitor must be 13 years old or older.

Your Appointment

Check-In Process

1. Arrive **15 minutes** before your scheduled time to complete the check-in process.
2. A PSC will complete the check-in process when you arrive.
3. You will receive a patient ID wristband and will be asked to verify the information.
4. 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, including:
   - Treatment orders are signed.
   - Lab results have been reviewed and are within parameters.
5. A nursing assistant will record your weight, take your vital signs of temperature, heart rate and blood pressure, and bring you to a treatment room.

What to Wear

- Wear comfortable, loose-fitting clothes.
- Wear well-fitting shoes with non-skid soles, no backless shoes or flip-flops.
- Bring a sweater, jacket or extra layer of clothing.

What to Bring

- All medicines you routinely take at home, such as for blood pressure or pain
- Equipment such as colostomy bags, portable oxygen, tube feeding
- Snacks

Reasons for Delay

The ATC staff work to avoid treatment delays. However, delays can happen due to:

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

Discharge

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

If you feel ill or have symptoms, call your care team **before** you come to the Acute Cancer Care Center. They can help determine next steps. You may be given an appointment in the **Urgent Symptom Clinic (USC)**. You must have a referral to be seen in the USC. Walk-ins are not accepted. If it is after business hours, call askMDAnderson at 713-792-2121.

Chemotherapy Notes

Side Effects

Chemobrain

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

These changes may come from other causes such as 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 to feel normal again. Others may not regain full cognitive function.

Coping Tips

- Manage depression and anxiety. Easing stress and elevating mood can ease symptoms.
- Get enough sleep and good 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” by always using the same place for important items such as keys.
- Minimize distractions.

If you have symptoms of chemobrain, ask for a referral to Neuropsychology or call 713-792-0708 to self-refer. They can measure 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.

Resource

Visit the National Cancer Institute website:
https://bit.ly/NCI-Memory

Revised 01/2025, Patient Education

THE UNIVERSITY OF TEXAS
MD Anderson ~~Cancer~~ Center

PATIENT EDUCATION

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, some chemotherapy (chemo) medicines, and some anti-nausea medicines can 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.

Your care team may instruct you to take a stool softener and laxative when you take medicines that can cause constipation. Stool softeners hold water in the gastrointestinal (GI) tract to keep stool soft. Laxatives stimulate movement through the GI tract.

Ask your care team if your medicines may cause constipation.

Decreased Activity

Many people feel tired and are less active during chemo treatment. Less activity and movement slow 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 care team for tips to improve your appetite and how to manage nausea and vomiting.

Treatment

Take medicines to help promote bowel movements and soften stool.

- Docusate with sennosides (Senokot-S®) is a medicine that contains both a laxative and a stool softener. You can safely take up to 8 Senokot-S pills per day. To start, take 1 pill (docusate 50 mg and sennosides 8.6 mg) 2 times a day (1 pill in the morning and 1 at bedtime) or as directed by your medical 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.

- Polyethylene glycol (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 1 capful (17 grams) of Miralax powder in 8 ounces of water or other liquid and drink it every day. You may take Miralax once a day in addition to taking Senokot-S if needed. If this does not help bring on a bowel movement, contact your care team.

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

Nutrition and Constipation

Try these nutrition tips to 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. Try:
  - High-fiber cereals
  - Fresh vegetables (wash first)
  - Fresh fruits with skins (wash first)
  - Prunes or prune juice
  - Whole grains like quinoa, oatmeal, brown rice or 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 psyllium (Metamucil®) or methylcellulose (Citrucel®). This type of fiber helps soften stool. Mix 1 to 2 teaspoons (5.8 to 11.6 grams) of the fiber in 8 ounces or more of water. Mix well and drink it **right away**. Taking fiber without drinking enough fluid can make constipation worse. **Do not** take medicinal fiber if you have been told to limit fiber.

Do not substitute fiber pills for powdered fiber or wafers. Fiber pills can make constipation worse.

Self-Care Tips

- Keep track of your bowel movements.
- Treat constipation **right away** when symptoms first appear. **Do not wait** to take a laxative.
- **Do not** ignore the urge to have a bowel movement. Holding stool can cause 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 care team:
- 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 visit 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.

American Cancer Society
https://bit.ly/Constipation-ACS

Diarrhea

Diarrhea is the passing of loose, watery stools or bowel movements. It 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

Radiation

Radiation treatment to the abdomen affects the lining of your colon. This may cause diarrhea. Treat this by taking loperamide (Imodium®) available over-the-counter. You can also get atropine/diphenoxylate (Lomotil®) by prescription. These medicines slow the movement of stool through the intestine.

Surgery

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

Chemotherapy

Certain types of chemotherapy (chemo) drugs cause diarrhea. Ask your care team how to control diarrhea. You may be told to take loperamide. **Do not** take loperamide if you are being checked for *C. difficile* or other bacteria. When taking loperamide, **do not** take more than 4 pills (8 mg) per day, unless directed by your care team. Read the package label and follow directions. Take over-the-counter medicine for diarrhea **only** if your care team says it is OK.

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

Medicines

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

- Antacids that contain magnesium
- Methyldopa (Aldomet®)
- Theophylline
- Misoprostol (Cytotec®)
- Laxatives
- Non-steroidal medicines
- Metoclopramide (Reglan®)
- Medicines with artificial sweeteners (sorbitol or xylitol)

Food Allergies

Eating foods that you are allergic to may cause diarrhea. You should stop eating foods that cause diarrhea. Discuss your food allergies with your 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 an over-the-counter lactase enzyme product (Lactaid®). You may also try lactose-free 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 *Lactobacillus acidophilus* (L. acidophilus) or live cultures each day. **Do not** eat yogurt that can cause your gastrointestinal (GI) system to become more active (such as those containing bifidus regularis).
- Take L. acidophilus in pill form if approved by your care team. You can buy it in drug stores or health food stores.
- Drink buttermilk.

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. An 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 **Bowel Management Using Medicinal Bulk Medicinal Bulk-Forming Fiber** or view the document in MyChart.

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

Treatment

Tips to Help Slow Stools
- Take loperamide or diphenoxylate/atropine at the time your care team suggests.
- Take medicinal fiber, such as psyllium (Metamucil®) or methylcellulose (Citrucel®) mixed with the minimum amount of fluid. 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 loperamide or diphenoxylate/atropine.

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 during diarrhea. Eat salted crackers, pretzels or broth to replace sodium. Include high potassium foods such as orange juice, boiled potatoes (no skin) and bananas as tolerated. Oral rehydration solutions are available over the counter, and 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 and skins.
- Add foods from the BRAT diet to your normal diet. These include **b**ananas, white **r**ice, **a**pplesauce and dry **t**oast.
- 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, especially after surgery.
- Milk and other dairy products that contain lactose **may** make diarrhea worse. You may need to limit or avoid these foods until diarrhea stops. You may better tolerate cultured milk products such as yogurt, buttermilk and hard cheeses. You may drink lactose-free milk or take Lactaid instead of limiting milk and other dairy products.
- Limit the use of sugar-free gums and candies that contain sorbitol or xylitol.

If you would like a visit 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.

Self-Care Tips

- After bowel movements, clean your anal area with mild soap. Rinse well with warm water. Pat the skin dry. Or, you may 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 4 or more loose bowel movements a day and this does not get better in 1 day or any diarrhea that does not get better in 2 days.

- You have blood in your stool (bright red or dark tarry stool) or blood around your anal area.
- You have mucus in your stool or have light-colored or pale stool.
- 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 urinate for 12 hours or more.
- You are unable to drink liquids for 24 hours or longer.
- You have a puffy or swollen belly.
- You have constipation for several days followed by diarrhea, which could be caused by an impaction.
- You have a fever of 101°F (38.3°C) or higher, chills or sweating. If you have any of these symptoms, talk with your care team before you take any medicine to lower the fever.

Energy Conservation Tips

Reducing (conserving) how much energy you use during regular daily activity helps you feel less tired. How you perform an activity, walk and move your body, as well as the layout of your work area or home, can affect your energy use. Use these tips to conserve energy and decrease your fatigue.

Planning and Organizing

- Switch between tasks that take lots of energy with those that take less.
- Plan activities daily as well as weekly to better alternate tasks.
- Delegate as much as possible. This helps you get tasks done. It also allows others who want to help feel useful.
- Combine chores or errands.
- Arrange your household so that most activities can be done on the same level of the house. Organize ahead of time so you do not rush.

Pacing

- Balance activities so you have a pattern of 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 1 day. Overdoing it may make you so tired that you need more than 1 day to recover.
- Try to avoid bursts of activity. This can drain energy.
- Pace activities on good days as well as bad days.
- Develop a routine to prevent overdoing it.

Positioning

- Sit down to do activities whenever possible.
- Use assistive devices to help you maintain good posture while walking or moving about. Try using a walker, scooter, cane, handrails, crutches and grab bars. These items can save energy.
- Avoid heavy lifting such as lifting children, groceries and laundry.
- Use carts or wagons to move things between rooms or from place to place.
- Wear a fanny pack, carpenter's belt, jacket or sweater with pockets to carry things.

Prioritizing

- Focus on things you enjoy doing.
- Be realistic with yourself about how much you can do. Make a list of all your activities for the day, then number them according to priority. Complete high priority activities first.

When You Are 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 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 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 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**
  - Loose-fitting clothes are easier to get on and off.
  - To save energy, sit on a chair when putting on your socks and shoes. Bring your foot to the opposite knee to make it easier.
  - Wear slip-on shoes or shoes that have Velcro® or elastic shoelaces.
  - Use a long-handled shoehorn or sock aid if you cannot reach your feet when putting on your socks and shoes.
  - 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.
  - Fasten bra in front and turn it to back.
  - Place chairs throughout the home to allow rest stops.
- **Bathing and Grooming**
  - Use organizers to keep items within reach.
  - Use a chair in the shower or tub.
  - Wash your hair in a shower rather than over a sink.
  - Use liquid soap or soap on a rope.
  - Use a long-handled sponge or brush to reach your back and feet.
  - Use a terrycloth robe instead of towels to dry off.
  - Use long-handled brushes or combs to avoid holding arms overhead.
  - Use an elevated toilet seat.
- **Other Ways to Save Energy**
  - Install and use ramps.
  - Use a lift chair.
  - Use cruise control when driving.

Advanced Activities

- **Housework**
  - Spread tasks out over the week or month.
  - Use long-handled dusters, mops and dustpans.
  - Use an automatic washer and dryer.

  - Use a lightweight iron.
  - Use a robotic vacuum.
  - Hire help.
- **Shopping**
  - Make a list.
  - Organize list by store aisle.
  - Request store assistance.
  - Have groceries delivered, if possible.
  - Shop at less busy times.
  - Use grocery services to order online and pick up at the store, or have them delivered.
- **Cooking**
  - Gather all ingredients before starting.
  - Use mixes or pre-packaged foods.
  - Use cookware you can serve from.
  - Use small, lightweight appliances.
  - Use labor-saving devices like a food processor for chopping.
  - Buy utensils that fit comfortably in the 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.
  - Take advantage of day care programs.
  - Teach children to make a game of household chores.
- **Workplace**
  - Plan your work around your best times of the day.
  - Organize work centers so equipment is within easy reach.
  - Make shortcuts.
  - Take rest breaks.
  - Work half days, if possible.
  - Ask your employer if you can work from home.
- **Leisure**
  - Plan activities that allow you to sit or lie down.
  - Plan social activities for when you have the most energy.

Fatigue

Fatigue can mean feeling tired physically, mentally or emotionally. Cancer-related fatigue can be overwhelming. Your caregivers can also have symptoms of fatigue.

Causes

Fatigue may have many causes including:

- The cancer itself
- Treatment
- Ongoing pain
- Symptoms from low blood counts
- Side effects from medicines
- Other medical conditions like hypothyroidism or heart problems
- Stress from other things like family or work problems
- Depression that lasts for more than 2 weeks
- A lack of support from family and friends
- Not getting enough sleep and rest
- Having a poor diet
- Not drinking enough fluids
- Not getting enough exercise
- Doing too much with regular activities and routines

Symptoms

Some signs and symptoms of fatigue are:

- A weak feeling over the entire body
- Having problems concentrating
- Waking up feeling tired after sleeping
- A lack of energy or low energy
- A lack of motivation to be physically active
- Increased irritability, nervousness, anxiety or impatience
- Having no relief from fatigue, even after 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 add to your fatigue.
- Stay well hydrated by drinking plenty of fluids.

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

When to Call Your Doctor

First try the suggested tips. 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 being unable 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, daily routine or quality of life.

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

Hair, Skin and Nails

Potential Changes With Chemotherapy

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

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 area. It may involve mild thinning or complete hair loss. Hair loss does not normally happen right away. It can start from 2 to 4 weeks 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 breaks or cuts in your skin. Use sunscreen or sun block, a hat, scarf or wig to protect your scalp from the sun and weather. To help manage hair loss due to chemotherapy, scalp cooling may be an option for you. Ask your care team about scalp cooling or view the **Scalp Cooling: Overview** patient education document in MyChart.

Other tips:
- Use mild shampoos and soft hairbrushes.
- Do not overheat your hair with blow dryers, irons or hot rollers. If you must use these, try the lowest heat setting.
- Pat hair dry.
- Consider a shorter hairstyle. Shorter hair often appears thicker and fuller.
- Talk with your health care team if you are interested in getting a custom wig. It may be covered by your health insurance policy.

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®.
  - Do not use 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 get sunburned more easily. The sun may also cause a skin rash.
  - Avoid long 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 a long-sleeved shirt, hat, sunglasses and 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 gentle, fragrance-free 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. Try these tips for healthy nails:
- Gently trim or file nails. **Do not** cut nails too close to the nail bed.
- **Do not** use nail-strengthening products. They may irritate your skin or nails.
- **Do not** get professional manicures or pedicures unless your health care team says it is OK.
- Talk with your health care team about artificial nails. They may cause fungal infections. They may also mask nail changes caused by cancer treatment.
- Use unscented lotions and creams to keep your nails and cuticles healthy.
- Wear gloves while working around the house or yard.
- Tell your health care team about redness, pain or other changes around your cuticles. If you have these symptoms, ask for copy of the **Paronychia Skin Infection** patient education document or view it in MyChart.

Resource

Visit the American Cancer Society:
https://bit.ly/ACS_ChemoSideEffects

Loss of Appetite

Patients often lose their appetite before, during and after treatments. Eating less can lead to muscle and weight loss, which can affect your overall energy level and your ability to tolerate treatment. It is important to nourish your body well to reduce weight loss and maintain your strength. Tell your doctor, nurse or registered dietitian if you lose weight without trying.

Causes

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

Self-Care Tips

- Try to eat 4 to 6 small meals throughout the day instead of 3 regular size meals. Include high-calorie and high-protein foods and beverages with each meal.
- Eat at scheduled times instead of waiting to feel hungry. Set an alarm to remind you to eat every 2 to 3 hours.
- Limit fried and greasy foods. They can slow digestion which may limit you from eating later.
- Drink most of your fluids in between meals and sip as needed with meals to prevent fullness. Choose fluids that also provide calories like milk, juices, shakes or smoothies.
- Keep your kitchen stocked with foods that are easy to prepare, such as single-serve entrees and ready-to-eat foods. Helpful snacks include peanut butter crackers, cheese and crackers, high-calorie protein shakes, yogurts and frozen meals, and similar items.
- Eat your largest meal at the time of day when you are most hungry. Eat high-protein foods first when you are most hungry.
- Take snacks and protein shakes with you while away from home to avoid skipping meals.
- Try to make eating enjoyable. Eat your favorite foods in a pleasant, relaxed atmosphere.
- Avoid strong food odors that may increase feelings of appetite loss and nausea.
- Make a list of your favorite foods to share with your friends and family so they can prepare and deliver them to you.
- Stimulate your appetite by watching cooking shows or browsing recipes.
- Light exercise, such as walking, before a meal may increase your appetite.
- Try to have regular bowel movements. Constipation may cause you to eat less.
- Drink nutritional supplements to increase calorie and protein intake. Your clinic dietitian can provide suggestions.
- Ask your doctor if medicine to increase your appetite is an option for you.

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

Revised 11/2024, Patient Education

Mouth and Throat Soreness Relief

Cancer treatment may cause soreness in your mouth and throat. This is called oral mucositis. Your mouth may be red and sore with open ulcers. Tell your doctor or nurse if you have sores in your mouth. Report any bleeding or white patches on your tongue.

Causes

Oral mucositis can be caused by:

- Chemotherapy
- Radiation to head, neck or salivary gland
- Total body radiation
- Chemotherapy with radiation
- Stem cell transplant
- Poor oral hygiene or mouth care

Treatments

Your care team may prescribe medicines or rinses to prevent or provide relief of mouth sores. These may include:

- **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 2 tablespoons of the rinse 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 your mouth 2 to 4 times a day, up to every 2 hours. **Do not** use this rinse 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 2 tablespoons of this rinse 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 your mouth 2 to 4 times a day, up to every 2 hours. **Do not** use this rinse more than 6 times a day.

- **Mucosa coating agents**
  - This is a thick, colored liquid. You will need a prescription for it. Prescriptions may be for Magic Mouthwash or Xyloxylin. Your health care team decides which is best for you. These medicines may or may not be covered by your health insurance.
  - Follow the directions on the prescription. You can swish to coat the inside of your mouth. Swallowing it soothes your throat too, but only swallow if told to do so by your health care team. If you are nauseated and not able to swallow it, you can spit it out.
  - **Do not** drink anything for 15 minutes after you rinse your mouth with this medicine.

- **Topical anesthetics**
  - Come as thick liquids, gels or sprays.
  - You need a prescription. Follow directions for use.

Diet

Eating may be difficult when you have mouth and throat soreness. You may need to be aware of food texture and temperature. Eat what is most comfortable for you.

- **Do not** eat very hot or cold foods. Drink fluids and eat foods that are at room temperature.
- 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.
- Use liquid nutrition supplements such as Boost®, Ensure® or Carnation Breakfast Essentials®. They can 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. **Do not** use mouthwashes that have alcohol.
- 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 American Cancer Society website for information on mouth care:
https://bit.ly/-ACS-MouthCare

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 mouth problems. Check your mouth every day for:

- Sores in your mouth or throat (ulcers)
- Infection
- Pain and swollen 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 at least 1 month 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 such as periodontal disease or gingivitis
- Loose teeth
- Ongoing irritation from dentures

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Use a soft toothbrush and toothpaste with fluoride. **Do not** use toothpaste with tartar control or whitening agents. Brush your teeth after each meal and at bedtime. Even if you are not eating, brush your teeth to remove the coating of 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 Plate

Be careful when you put in and take out your dentures or partial plate. If they do not fit well in your mouth, **do not** wear them. Wearing them may injure your mouth tissue and delay your chemo treatment. At bedtime, soak them in a store-bought denture soak. Rinse them well with water before you put them back in your mouth. Remove your dentures or partial plate 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 health care team will talk with you about your blood counts and tell you when you should not wear your dentures or partial plate.

Preventing Dry Mouth and Lips

- Rinse your mouth with water or a 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 or popsicles unless told otherwise by your doctor.
- Chew sugar-free gum.
- Use a saliva substitute if needed.
- Use lip balm as needed. **Do not** use petroleum jelly products like Vaseline™.

Food Considerations

Soft foods with fewer spices are often easier to tolerate when your mouth is sore. Avoid very hot or very cold foods. 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, try:

- 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. Try not to eat:

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

Resource

For more information, visit the National Institutes of Health:
https://bit.ly/-ACS-MouthCare

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PATIENT EDUCATION

Nausea

Tips to Control

Some chemotherapy (chemo) medicines may cause nausea or vomiting. Nausea is the feeling that you are going to throw up. Vomiting is throwing up the contents of your stomach. Nausea is more common than vomiting.

Nausea that happens within 24 hours of receiving chemo is referred to as “acute” nausea. 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. They may 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. Some can be given before chemo to prevent symptoms. 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.** A custom plan can be designed for you by your health care team. It is normal to take 2 or more medicines to prevent or relieve symptoms.

Prevention

- Ask your health care team which antiemetic will be prescribed to prevent and control nausea and vomiting. Learn about and follow the instructions on when and how to take them.
- Take your nausea medicine as directed at the first sign of symptoms and as needed. **Do not** wait until nausea gets worse before taking medicines.
- Try eating small meals throughout the day rather than eating large meals or skipping meals.
- **Do not** eat heavy, high fat or greasy meals right before chemotherapy.
- Avoid strong or unpleasant smells and the sight of foods that can cause nausea or vomiting.
- Drink enough liquids so that your urine is light colored. Sip on liquids throughout the day. **Do not** drink 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 up for at least 30 to 60 minutes after eating.
- Ask for help from family and friends with grocery shopping when possible.

Treatment

- Take your antiemetic(s) as directed.
- Contact your health care team if the symptoms are not controlled with the prescribed medicine or if they prevent you from eating or drinking for more than a day.
- Apply a cool wet cloth to your forehead or neck.
- **Do not** force yourself to eat when you are nauseated. Wait until you feel better before you try to eat.
- Dry foods such as crackers or toast may be better tolerated. Eat dry foods when you first wake up, before you start moving around.
- Move slowly.
- Open a window or use a fan to circulate fresh air.
- Try tart or sour flavored foods, hard candies or liquids.
- Sip room temperature carbonated drinks such as cola or ginger ale throughout the day.
- Eat ice chips made from water, Gatorade®, juices or ginger ale.
- Drink enough liquids so that your urine is light colored.
- Pay attention to which foods trigger or soothe nausea. Do not eat your favorite foods when nauseated. Doing so may cause you to no longer enjoy them later if 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 such as acupuncture, complementary therapies or ginger.

When to Call Your Doctor

Tell your health care team if you:
- Have severe nausea or vomiting
- Are unable to keep food, water or medicine in your stomach for 24 hours or longer
- Do not pee for 12 hours or more
- Feel weak, dizzy or confused

Resource

Watch the video **How to Perform Acupressure to Relieve Nausea** by scanning the QR code.

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PATIENT EDUCATION

Pain, Nerves and Muscles
Potential Changes With Chemotherapy

It is common for cancer patients to feel pain. Pain may be caused by cancer or cancer treatments. Pain can be managed to provide a level of comfort to do day-to-day activities. It is important 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 cancer treatment.

Most cancer pain can be managed 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

You may have pain for many reasons. 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. You may have headaches, muscle strains and other aches and pains before your cancer treatment. If you are taking medicine for cancer treatment or pain, talk with your health care team about what you can take for these everyday aches and pains.

Other conditions such as arthritis can also cause pain. Pain from other conditions can be treated along with cancer pain. Tell 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. There are also ways to lessen pain without medicine. Ask your health care team about how other therapies or treatments might help you.

! It is important to treat pain early. Waiting until it becomes very bad may need more medicine and make it harder to treat. **Check with your health care team before you take any over-the-counter pain relievers.** They may interfere with or worsen side effects from cancer treatment.

Nerves and Muscles

It is common for patients on chemotherapy to have nerve- and muscle-related side effects. Nerve and muscle pain can be due to cancer or cancer treatments that can irritate nerves and muscles.

Some chemotherapy can cause a condition known as peripheral neuropathy. You may have tingling, burning or numbness in your hands or feet. **Tell your health care team right away if you start to notice these symptoms.** They can find 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. You may also shake or tremble. There may be changes to your vision or hearing. Some 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.

Before you start any new treatment, tell your health care team if you have any nerve or muscle symptoms. Also tell them of any new symptoms that develop at any time during treatment.

To manage nerve or muscle-related side effects:

- Change positions slowly if you are lightheaded or dizzy to prevent falls.
- 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 in too much pain to complete a task.

Resources

For more information, ask for a copy of the following patient education documents or view them in your MyChart account.

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

Visit the American Cancer Society website:
https://bit.ly/ACS_CancerPain

Scalp Cooling

Overview

Scalp cooling is treatment to reduce hair loss caused by some chemotherapy (chemo) medicines in some cancer types.

Why does chemotherapy make hair fall out?

Chemotherapy targets cells that divide fast. Hair cells are the second fastest dividing cells in the body. Many chemo medicines, including taxanes, cause hair loss by damaging hair follicles (the root of the hair). This is known as chemotherapy-induced alopecia. Hair loss can begin about 2 weeks after the start of chemo.

How does scalp cooling work?

Scalp cooling limits damage to hair follicles by lowering the temperature of the scalp. The cooling reduces blood flow to the hair follicles. This may prevent or lessen hair loss. The scalp must stay cool before, during and after each chemo session in order to be effective. For more information, visit coldcap.com.

How long does scalp cooling take?

Patients need to wear the cooling cap for:

- Thirty (30) minutes before chemotherapy begins
- The entire time of chemotherapy
- Up to 90 minutes after chemotherapy is completed

The cooling cap attaches to the cooling system. If you need to use the restroom during your treatment, you can disconnect from the cooling machine for up to 8 minutes. To get the full benefits of hair preservation, it is important to use scalp cooling each time you have chemotherapy.

Will scalp cooling work for me?

There is no guarantee that scalp cooling will prevent all patients from losing any or all of their hair. The success rate of scalp cooling varies from patient to patient and can be affected by many things, including:

- Chemotherapy regimen and dose
- Length of time for chemo session
- Metabolism of the chemo
- Hair type and condition
- Your age and general health

You may have some hair loss and overall hair thinning while using scalp cooling. The normal shedding cycle of your hair continues. Many patients report hair growth during their chemo treatment while using scalp cooling. This is because new hair growth is also protected from chemotherapy medicines.

Who should not use scalp cooling?

Scalp cooling **is not** a good choice if you:

- Have a certain type of cancer such as skin, lung or central nervous system
- Will receive (or have received) radiation treatment to your skull
- Have a history or concern of scalp metastases
- Will receive radiation treatments to the skull
- Have severe liver or renal disease
- Are cold sensitive, have cold agglutinin disease or post-traumatic cold dystrophy
- Have a blood cancer (such as leukemia, lymphomas)

What can I expect when using a cooling cap?

The scalp cooling cap is made of flexible silicone which molds to your head for a close fit. After the cap is on, a neoprene cover is put over the cap for extra insulation. The neoprene cover also absorbs any moisture and makes sure the cap remains in good contact with your scalp. Coolant passes through built-in tubing in the cap to cool down your scalp. Temperature sensors make sure that your scalp is kept at an even, constant temperature.

The ability to tolerate the cold feeling from scalp cooling varies from person to person. It is helpful to dress in layers, even in warm weather. You may have an intense feeling of discomfort or pain from the cold in the first 10 to 15 minutes of treatment. This may go away as you get used to the cold. Taking deep breaths can help you remain calm.

If you have trouble with the cold, ask your health care team about options for relief.

Short-Term Side Effects

There are temporary side effects that can occur during scalp cooling. Most patients report being able to cope with the side effects, which may include:

- Chills
- Dizziness
- Headache
- Nausea
- Paresthesia (tingling, pricking, numbness or burning sensation of skin)
- Pruritus (severe itching)
- Sinus pain
- Skin tissue disorders
- Skin ulceration

Potential Long-Term Side Effects

The long-term side effects of scalp cooling are still being studied. Because the scalp does not receive chemo during scalp cooling treatment, it may be possible for any existing cancer cells in the scalp to grow at a later date (metastasize).

Scalp metastasis is rare. The rate has not been shown to be higher in patients receiving scalp cooling. If you have any concerns, talk with your health care team.

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PATIENT EDUCATION

Sleep

Tips for a Good Night's Rest

Sleep disorders may occur in people with cancer caused by treatment, physical illness, pain, hospitalization and emotional stress. In fact, 80% of patients with cancer complain of poor sleep, and are less likely to tolerate cancer therapies. Try these tips 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 electronic screens such a TV, computer, phone or tablet at least 1 hour before bedtime. Listen to quiet music or take a warm bath to relax before bed.
- If you are worried, anxious or thoughts keep you awake, try writing them down. Make a list of things to do so you will not worry about forgetting anything. This may 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 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 for sleep as if you are at home.

- Bring familiar items from home to make yourself more comfortable.
- Try 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.

Tips for a Good Night's Rest During Your Hospital Stay Video

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.

Chemotherapy Notes

Cancer Medicine Safety at Home

You are receiving medicines to treat your cancer. You will take these medicines at home either by mouth or as an injection. There are things you can do to protect yourself and your loved ones from the effects of cancer medicines. It takes time for your body to get rid of these medicines.

Follow these safety instructions **during treatment** and for **48 hours after** you complete your treatment. If you are getting continuous cancer therapy without any breaks, talk with your health care team about the risks involved to you and your loved ones if exposed to the medicine or waste from your body.

The precautions are needed for medicines with the highest risk of harm due to accidental exposure. Talk with your health care team about any risks linked to your type of cancer medicine and if any changes need to be made to these instructions.

Taking Cancer Medicine by Mouth

You will take medicine by mouth as a pill, capsule or liquid to treat your cancer. This is called oral chemotherapy.

Supplies

Caregivers should wear disposable gloves if they handle cancer medicines or if they touch or clean any items soiled by your urine, stool or vomit. You do not need to wear gloves. Both you and your caregivers should wash your hands with soap and water for 20 seconds after handling cancer medicine, body waste or removing gloves.

Supplies needed include:
- Clean disposable gloves (for caregivers)
  - If allergic to latex, use latex-free gloves
- Leak-proof plastic bags or disposable containers with lids

Storage

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

Handling Chemotherapy Medicine

- **Do not** crush, break or chew pills or capsules. Swallow whole unless told otherwise.
- Only adults should handle cancer medicines.
- Pregnant people and children should never handle cancer medicines or body waste.
- Wash your hands well with soap and water for 20 seconds before and after you touch any cancer medicine.
- Caregivers should wear disposable gloves when handling any type of cancer medicine.
  - Never use torn gloves or gloves with small holes in them.
  - Remove the used gloves and place them in a leak-proof bag.
  - Wash hands with soap and water for 20 seconds after the gloves are removed.

Disposal of Medicine (Take-Back Programs)

MD Anderson is an authorized location for medicine collection. There are 2 locations with green disposal bins where you can drop off unused medicine. This includes controlled substances such as hydrocodone, morphine or tramadol:

- Floor 2 Pharmacy: Main Building, Floor 2, near Elevator C
- Specialty Pharmacy: Mays Clinic, Floor 2, near The Tree Sculpture
- If you are on a clinical trial, **do not** use these bins. Return all clinical trial medicines to your research nurse or clinical study coordinator.
- To get rid of cancer medicine at home, 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/

Handling Body Waste

Safety guidelines are important for you and your caregivers when you take cancer medicine by mouth or injection. Follow safe handling guidelines **during** your cancer therapy 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 to make sure all waste has been emptied. You may need to flush 2 times if you have a low-flow toilet.
- Try not to splash urine. If the toilet or toilet seat becomes soiled with urine, stool or vomit, clean the surfaces well with bleach wipes before other people use the toilet.
- Empty body waste containers into the toilet. Pour them close to the water to prevent splashing. Clean body waste containers after each use with soap and water. Rinse well.
- Wash your hands well with soap and water for 20 seconds after you use the toilet.
- 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 a sealable, leak-proof plastic bag for disposal.
- Clean ostomy bags once a day and empty as needed.
- Caregivers should wear disposable gloves when they handle or clean any type of your body waste including urine, stool or vomit.
  - Never use torn gloves or gloves with small holes in them.

  - Remove the used gloves and place them in a leak-proof bag.
  - Wash hands with soap and water for 20 seconds after the gloves are removed.

Handling Laundry

Wash your clothes or bed linens as usual unless they become soiled with cancer medicine 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 and wash as soon as possible.
- Carry the soiled laundry away from your body. Wash your hands with soap and water for 20 seconds after touching soiled laundry.
- Use detergent and hot or warm water to wash soiled laundry.
- Caregivers should wear disposable gloves when handling laundry soiled by body waste.
  - Never use torn gloves or gloves with small holes in them.
  - Remove the used gloves and place them in a leak-proof bag.
  - Wash hands with soap and water for 20 seconds after gloves are removed.

Handling Trash

- Use a leak-proof plastic bag or disposable container with a lid for soiled trash.
- Seal the bag and place it inside a larger leak-proof bag. This is called double bagging.
  - Seal the larger bag with ties or rubber bands when full. For containers, seal with tape.
  - Label the bag “not for recycle” and place in household trash.
- Keep trash away from children and pets.

Sexual Activity

- If you are sexually active and of childbearing age, use effective forms of birth control during treatment. Your health care team can help you decide what kind is best for you.
- Most patients can continue sexual activity during cancer therapy, but special precautions are sometimes needed. Small amounts of cancer medicine 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 during sex.
- Hugging and kissing are safe and do not need special precautions.

Resources

American Cancer Society:
https://bit.ly/ACS-ChemoSafety
https://bit.ly/ACS_OralChemo
https://bit.ly/ACS-ChemoInjections

Food Safety Basics

Food safety is **very important** to prevent infection. This is especially true while your immune system is low due to your treatment and medicines you take after treatment (such as steroids).

Fruits and Vegetables

- It is safe to eat raw (uncooked) fruits and vegetables if they are washed very well before cutting or eating.
- Choose fruits and vegetables that can be washed well. Scrub rough surfaces of fruits and vegetables with a vegetable brush and wash thoroughly under running water before peeling and cutting.
- Leafy vegetables, including bagged and prewashed, must be washed again under warm running water.

Dining Out

- Choose restaurants that you are familiar with. Avoid food trucks, buffets, street vendors and open salad bars at restaurants.
- Use individually packaged condiments such as ketchup, mustard and dressings.
- Ask restaurants for individual salsas and dips, or bring your own packaged items from home.
- **Do not** eat raw fruits or vegetables when dining out.
- Avoid food prepared by others at a potluck or picnic. It is safest to bring your own food that you prepared.

Shopping

- Use hand sanitizer to sanitize shopping cart handles and your hands before shopping.
- Keep raw meat packages separated from other foods in the shopping cart.
- **Do not** purchase foods from shared bins in grocery stores or from street vendors that you cannot wash or cook. Examples are nuts, candies, dried fruits and snacks.
- Avoid ready-to-eat meals and snacks that do not require cooking (such as chicken salad in an open cooler at the grocery store).
- Choose commercially packaged and pasteurized cheese without mold (such as American, Swiss, Parmesan, mozzarella, cheddar or Monterey jack).
- Pre-plated meals that need to be cooked may be eaten after cooking them to the proper temperature. See the chart on page 2 for cooking temperatures.

Preparing Foods

- Before preparing, cooking or eating food, wash your hands with soap and warm water for 20 seconds.

- Clean counter tops by washing with hot soapy water. Rinse well with clean water. If raw meat, poultry or fish touch the counter, sanitize the counter with disposable wipes that contain bleach. You may also use or a solution containing chlorine bleach (1 part bleach to 10 parts water).
- Use separate cutting boards for fruits, vegetables and raw meats. Clean well after each use. Avoid using porous cutting boards, such as wood, for raw meat and fish.
- Thaw meat and poultry in the refrigerator, not at room temperature. Cover thawing meats. Store them on a bottom shelf and separate them from other foods.
- Use a clean knife every time you cut a different food. Use different spoons for stirring and tasting. Use clean utensils to serve food.
- Keep the microwave clean as food debris can grow bacteria.
- Wipe canned food lids before opening to remove dust and debris.

Temperatures for Food Storage, Refrigerator and Freezer

- Avoid foods that contain raw unpasteurized eggs or fish. These include sushi, Caesar salad dressing, raw cookie dough/cake batter, Hollandaise sauce, homemade eggnog and homemade ice cream.
- Cook foods to at least the minimum internal temperature shown in the chart below. This ensures that food is safe to eat. Use a food thermometer to be sure the center of the food reaches the minimum internal temperature. If the food is in a sauce or gravy, stir before checking the temperature.

Food	Minimum Internal Temperature
Beef, pork, veal, and lamb (steaks, chops, and roasts)	145°F (62.8°C) and allow to rest for at least 3 minutes
Ground meats (other than poultry)	160°F (71.1°C)
All poultry (breasts, whole bird, thigh, legs, wings, ground poultry, giblets, stuffing)	165°F (73.9°C)
Eggs	160°F (71.1°C)
Fish and shellfish	145°F (62.8°C)
Leftovers	165°F (73.9°C)
Casseroles	165°F (73.9°C)

- Maintain safe temperatures in your refrigerator and freezer. Check the temperature of the refrigerator and freezer every 6 months. Follow these guidelines:
  Refrigerators: 40°F (4.4°C) or below **Freezers**: 0°F (-17.8°C) or below

Food Storage

- Refrigerate food right away after shopping and cooking. Cover foods that are stored on refrigerator shelves.
- Store foods in containers away from insects, rodents and pets.

- Store cooked foods in shallow containers to help foods cool quickly.
- **Do not** store raw meat, poultry or fish in direct contact with cooked foods. Always place cooked foods above raw foods to prevent contamination.
- **Do not** stack hot foods in the refrigerator. This can delay the cooling of food to the proper temperature.
- Check the expiration date of foods and beverages before eating or drinking. Discard items that look or smell rotten, slimy or moldy.

Suggested Storage Times for Refrigerated Foods

Food	Storage Time
Raw fish, seafood, chicken, turkey, ground meats	1 to 2 days
Raw steaks, chops, and roast	3 to 5 days
Fully cooked leftovers	3 to 4 days
Prepackaged lunch meats	3 to 5 days after opening package
Cow's milk	5 days
Raw eggs in shell	3 to 5 weeks
Raw fruits and vegetables	7 days

Additional Information

- If your doctor approves that you can drink water from a private well, heat the water to a rolling boil for at least 1 minute before drinking to kill any bacteria. Test well water each year for other contaminants.
- If you have questions or would like to schedule an appointment with a dietitian, send a message through your MyChart account or call Clinical Nutrition at 713-563-5167.
- MD Anderson Room Service is compliant with all food safety guidelines discussed in this document.

Resources

USDA Food Safety and Inspection Service

- Safe Minimum Internal Temperature Chart
  https://www.FSIS.USDA.gov/Food-Safety/Safe-Food-Handling-and-Preparation/Food-Safety-Basics/Safe-Temperature-Chart
- Refrigeration and Food Safety
  https://www.FSIS.USDA.gov/Food-Safety/Safe-Food-Handling-and-Preparation/Food-Safety-Basics/Refrigeration

FoodSafety.gov

https://www.FoodSafety.gov/

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PATIENT EDUCATION

Chemotherapy Notes

Reviewed 12/2024, Patient Education

Sexuality & Fertility

Sexuality and Chemotherapy

Most patients can have sex during chemotherapy (chemo) treatment. However, there is a greater risk for infection if your white blood cell and platelet counts are low. If your counts are low or may become low, talk with your health care team to see if it is safe to have sex at that time.

Changes in Sexuality

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

Men

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

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

Women

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

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

Many factors affect a patient'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 doctor about the long-term effects of your treatment plan.

Changes in Fertility

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

Always practice safe sex. Most birth control protects against pregnancy but only condoms protect you from infection. Latex condoms and 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 has oil (such as baby oil or petroleum jelly). Oil weakens the condom.

For More Information

MD Anderson has healthcare professionals 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.

Fertility Preservation Options

! Before starting cancer treatment, people who may want to have a child in the future should consider ways to preserve their fertility. Talk with your doctor about your options.

Options for Men

For men, fertility means being able to produce healthy sperm 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 cancer treatment received.

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 may 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 (how sperm moves). 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, ask for a copy of **Fertility Options for Men Diagnosed with Cancer: Sperm Banking** or view the document in MyChart.

Options for Women

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

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. After 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. Many health insurance plans do not cover the cost. However, there are financial assistance programs that may help lower the costs for cancer patients.

For more information on fertility preservation, ask for a copy of **Fertility Options for Women Diagnosed with Cancer** or view the document in MyChart.

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
    - Heroes for Children

Chemotherapy Notes

Resources

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. Reach out to MD Anderson's Social Work for support at 713-792-6195. Following is a listing of some available programs.

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. Find support from other patients and caregivers at myCancerConnection.

Think about joining a support group. A support group is a safe place to share experiences and connect with people who are facing the same challenges. Members share stories, concerns and helpful tips with each other. Patients can participate in video support groups from their homes. MDAnderson.org/SupportGroups

Talk with Children

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

Advance Care Planning

Receiving chemotherapy can give you time to think. You may wonder about the type of care you do or do not want, or who you would like to make health care decisions for you if you are 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. MDAnderson.org/AdvanceCarePlanning

Financial Concerns

The financial impact of cancer can be stressful. A social work counselor can help you find resources to help manage challenges with care.

Caregiver Needs

Providing care can be rewarding and satisfying. It can also be hard and tiring. Accept offers for help and do not be afraid to ask for help. Have a list of needs ready, such as:

- Running errands
- Making meals
- Doing light housework
- Taking a loved one to an appointment
- Caring for children after school

Resources for Support

Social Work

713-792-6195

MDAnderson.org/Socialwork

Social work counselors help patients and caregivers cope with the effects and changes that result from a cancer diagnosis. They provide counseling at no cost, in person or over the phone, to help reduce stress, pain and anxiety.

Integrative Medicine Center

713-794-4700

MDAnderson.org/IntegrativeMedCenter

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

myCancerConnection

713-792-2553, toll free 800-345-6324

MDAnderson.org/myCancerConnection

myCancerConnection is a cancer support community that offers free, one-on-one support to patients, caregivers and survivors. The program offers Cancer Connection, which are comfortable spaces for patients and caregivers to visit with cancer survivors and caregiver volunteers. Free drinks and snacks are available in the Cancer Connections.

Supportive Care Center

713-792-6072

MDAnderson.org/SupportiveCare

The Supportive Care Center focuses on improving the quality of life for patients and caregivers. Patients need a referral for the services offered, which include addressing physical and psychological symptoms from cancer or cancer treatment.

Pharmacy Patient Resources (PPR) for Prescriptions

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

MD Anderson has 2 outpatient retail pharmacies and a specialty pharmacy. The 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
  Automated refill line: 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
  Automated refill line: 713-745-7180
  Retail pharmacy hours: Weekdays, 8 a.m. to 7 p.m.
  PPR hours: Weekdays, 8 a.m. to 7 p.m.

- **Specialty Pharmacy:** Mays Clinic, Floor 2, near The Tree Sculpture, ACB2.1930
  Phone: 833-703-6209
  Retail pharmacy hours: Weekdays, 8 a.m. to 6 p.m.
  PPR hours: Weekdays, 8 a.m. to 7 p.m. A prescription medicine disposal bin is located here.

Bring your insurance card, tax return and social security statement if you would like to meet with a PPR for medicine assistance.

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 provided correctly.

If your medicines are filled at one of the pharmacies listed above, an MD Anderson pharmacy resource specialist will call your insurance company for prior authorization. Sometimes the resource specialist needs to fill out a form and fax it to the insurance company. This process may take a few days.

If your medicines are filled at an outside pharmacy, your insurance company will reach out to the doctor who prescribed the medicine and that doctor's team to work on the prior authorization.

When insurance approves, you will get your medicine. If the cost of the medicine has a high copay or is more than you can pay, you have options:

- Ask the MD Anderson pharmacy resource specialist about patient assistance programs and foundations that help cancer patients.
- Ask your doctor to change that medicine for one that is less expensive and covered by your insurance.

If your medicine is not approved, you can:

- Appeal the decision. Your doctor may write a letter or talk with your insurance company for approval.
- Ask your doctor for a different medicine that your insurance will pay for.
- Ask the MD Anderson pharmacy resource specialist about patient assistance programs and foundations that help cancer patients.
- Pay for the medicine with your own money, known as out of pocket.

Insurance Appeals

You may fill out the forms for an appeal if your insurance company denies your medicine. An appeal is a request for your insurance company to change their decision and agree to pay for your medicine. Appeals may take several days or longer.

Patient Assistance Program

Patient assistance programs give free or discounted medicines to patients who cannot afford to pay for them. Drug companies sponsor these programs. Patients who do not have any insurance, have reached their insurance maximums or were denied coverage 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. A drug company may stop its patient assistance program for a specific drug at any time.

The patient assistance program starts when you are denied a prescription with your current insurance or the medicine has a high copay. Your health care team can refer you to an MD Anderson pharmacy resource specialist for help or you can ask for a referral. The resource specialist helps you complete an application(s), gets doctor signatures and collects paperwork. They also help you submit the application to the drug company. The decision process may take up to 7 to 10 days. Someone, either from your insurance company or PPR will call you when a decision has been made.

Patient assistance programs are available for the following high-cost medicines:

- Oral chemotherapy
- Anticancer agents
- Growth factors
- Blood thinners
- Antibiotic, antifungal and antiviral agents

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** or view the document in MyChart.
- Go to www.NeedyMeds.org

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PATIENT EDUCATION

Cancer Support Organizations

The organizations listed are suggested recommendations and meant for information purposes only. This is not a complete list of organizations outside of MD Anderson that provide services to cancer patients and their families.

American Cancer Society
800-227-2345
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
www.CanCare.org
Cancer support network made up of cancer survivors and family members of cancer survivors.

CancerCare
800-813-4673
www.CancerCare.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
www.Caregiver.com
Online newsletters and discussions for caregivers. Produces *Today's Caregiver* magazine.

Centers for Disease Control and Prevention (CDC)
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
www.HospiceFoundation.org
Provides information on terminal illness, death and the process of grief and bereavement.

LIVESTRONG Fertility Program
855-844-7777
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
www.Cancer.gov/
The National Institutes for Health (NIH) provides information for all cancer types.

National Coalition for Cancer Survivorship
877-622-7937
www.CancerAdvocacy.org/
Answers questions and directs callers to local groups and individuals. Offers information on legal issues and discrimination.

988 Suicide & Crisis Lifeline
988
988Lifeline.org/
The Lifeline provides 24 hours a day, 7 days a week free and confidential support for people in distress, as well as prevention and crisis resources for you or your loved ones.

Patient Advocate Foundation
800-532-5274
www.PatientAdvocate.org
Helps to connect patients and their insurer, employer or creditors. Helps resolve insurance, job retention or debt crisis matters.

United Ostomy Associations of America
800-826-0826
www.Ostomy.org
Dedicated to complete rehabilitation of all "ostomates."

United Way Help Line Houston
UnitedWayHouston.org
211
Volunteers provide 24-hour telephone referral to appropriate agencies or services.

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. They have been developed by librarians and health educators at MD Anderson.

Find the online recommended resources at MDAndersonTLC.Libguides.com

Chemotherapy Notes

A video which supports this Chemotherapy Guide is available for you to view. You can watch the full length video or individual segments by scanning the QR codes below with your smartphone or tablet.

Full Video

Introduction

Fatigue

Nausea, Vomiting,
Diarrhea and Constipation

Nutrition and
Mouth Care

Other
Side Effects

Coping & Support
Services

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Making Cancer History®

Chemotherapy Guide

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