



WHAT TO EXPECT

# Chemotherapy





**What is chemotherapy?**

Scan this code using your smart phone to watch a short video on chemotherapy.

## Introduction

It is normal to have questions, concerns, and mixed feelings about receiving chemotherapy. Knowing your treatment plan may lessen your anxiety and help to ease some of your concerns. Having the right information can also help you prepare for chemotherapy and may prevent or decrease some of its side effects. This booklet is meant to reinforce and add to the information given to you by the members of your care team.

Your care team may include doctors, nurses, social workers, pharmacists, psychologists, dietitians, financial specialists, laboratory personnel, family, and friends. You are the most important member of your care team, and we invite you to be an active partner in your treatment. We will work together to care for you and to give you the information you need.

Please read this booklet and share it with your support system. Your questions and concerns are important, so please discuss them with your care team. Write your questions in the *Notes* section in the back of this booklet and refer to them when you meet with your doctor or nurse. Tell them about any vitamins, over-the-counter medicines, food supplements, and/or other alternative or complementary therapies you are using to maintain health and/or treat your illness.

Some parts of this booklet may be more important to you than others. Your nurse can help you find the sections that best apply to your treatment.

**If you have any questions or concerns, please tell your doctor, nurse, or another member of your care team.**

## Care Team Contact Information

Doctor:	Phone:
Nurse:	Phone:
Other:	Phone:
Other:	Phone:
Other:	Phone:



# Table of Contents

Introduction .....	1	<b>Possible Side Effects of Chemotherapy .....</b>	<b>7</b>
Care Team Contact Information .....	1	Bone Marrow Depression.....	7
Treatment Diary .....	2	Infection.....	8
<b>Chemotherapy Frequently Asked Questions (FAQs) .....</b>	<b>4</b>	Bleeding.....	10
What is chemotherapy? .....	4	Anemia.....	11
How does chemotherapy work?.....	4	Effects on the Digestive System .....	11
How is chemotherapy given?.....	4	Tiredness and Weakness .....	14
Who gives chemotherapy? .....	4	Effects on Hair and Skin .....	15
Where will I receive chemotherapy?.....	4	Sexuality and Reproduction .....	16
How long will I receive chemotherapy? .....	5	Other Side Effects.....	17
How long will each chemotherapy treatment last? .....	5	<b>Managing Chemotherapy at Home .....</b>	<b>17</b>
Can I miss a dose of chemotherapy?.....	5	Storing Medicines.....	17
Does chemotherapy cause side effects? .....	5	Medicine Taken by Mouth .....	17
<b>Day-to-Day Living .....</b>	<b>5</b>	Medicine by Injection.....	17
Eating .....	5	Removal of Chemotherapy Materials .....	17
Activity.....	6	Drug Spills.....	17
Alcohol Use .....	6	Creams and Pastes.....	18
Sexuality .....	6	<b>Safe Handling of Chemotherapy Waste Materials .....</b>	<b>19</b>
Sleeping and Relaxing .....	6	<b>Thoughts and Feelings.....</b>	<b>20</b>
Tips for Family and Friends.....	7	<b>Be Involved in Your Care .....</b>	<b>21</b>
		<b>Notes.....</b>	<b>21</b>

# Chemotherapy

## Frequently Asked Questions (FAQs)

### What is chemotherapy?

Chemotherapy is the use of drugs to treat an illness or disease. Many people associate chemotherapy with the treatment of cancer.

Many drugs are used to treat cancer. Not all cancers are treated with the same drugs or in the same way. Research has helped determine the most effective drugs for different kinds of cancers. You may receive 1 drug or a combination of drugs. You may receive chemotherapy in addition to other treatments, such as surgery, radiation therapy, or biological therapy.

### How does chemotherapy work?

Our bodies are made up of billions of cells, each with a special function. Some cells make up organs in the body, such as the heart, lungs, and kidneys. Other cells perform specific functions, such as fighting an infection or carrying oxygen to your tissues. In a healthy body, these normal cells work together. Sometimes normal cells change into abnormal, or cancer cells. Cancer cells do not work properly to help the body. They grow out of control and harm or crowd normal cells. Cancer cells can also break away and travel to other parts of the body. When cancer cells move to other parts of the body, they are called metastatic cancer cells. Chemotherapy can be given to make a tumor smaller before surgery or radiation, destroy cancer cells that may stay after surgery or radiation, help other treatments work better, or kill cancer cells that have returned or spread to other parts of your body.

Chemotherapy destroys cells. It works best against fast-growing cells. Since cancer cells often grow faster than normal cells, chemotherapy can be effective. When chemotherapy drugs go into the bloodstream, the blood carries the drugs to cancer cells throughout the body.

### How is chemotherapy given?

Chemotherapy can be given in many ways, including:

- By mouth (orally)
- By injection (shot) into muscle or soft tissue
- By injection into a vein or artery
- By injection into a body space, such as the abdomen or space around the lungs
- By application directly onto the skin
- By injection into the space around your brain and spinal cord

Your doctor or nurse can explain how you will receive your chemotherapy.

### Who gives chemotherapy?

Your doctor, usually a cancer specialist (oncologist or hematologist), will determine your treatment plan. An oncology nurse or your doctor will give you chemotherapy.

### Where will I receive chemotherapy?

You may receive chemotherapy in a hospital, ambulatory care center, doctor's office, or at home. Where you receive chemotherapy depends on your treatment plan. Your doctor and nurse will explain where you will receive your chemotherapy treatments.

## How long will I receive chemotherapy?

The length of your chemotherapy treatment plan will depend on what kind of cancer you have and how it responds to the chemotherapy. In most cases, your doctor can give you a general idea of the planned length of treatment. This time period could change during treatment.

## How long will each chemotherapy treatment last?

The length of each treatment depends on the drugs used and the type of treatment. The time also depends on whether you need blood drawn or other tests done before your treatment. Your nurse can tell you how long your treatment sessions are expected to last.

## Can I miss a dose of chemotherapy?

You should not skip treatments. Sometimes your doctor will need to adjust your treatment schedule. If changes happen, your doctor or nurse will discuss them with you and tell you when your next treatment will be.

## Does chemotherapy cause side effects?

Chemotherapy drugs affect both normal cells and cancer cells. Although chemotherapy targets fast-growing cancer cells, it can also damage or destroy normal cells. This effect on normal cells can cause side effects; however, most normal cells can repair or replace themselves over time.

Not all chemotherapy drugs cause side effects, and side effects vary depending on the treatment used and the person receiving it. People receiving similar treatment can experience different side effects.

## Day-to-Day Living

It is important that you know how chemotherapy may affect your day-to-day activities and what side effects your treatment might cause. This section includes what you need to know about certain lifestyle changes you may experience while receiving chemotherapy treatment.

### Eating

- It is important that you eat well during chemotherapy. Your body works best with the treatment when you follow a nutritious diet. Good eating may also decrease certain side effects.
- A healthy, balanced diet helps keep you well nourished. Your doctor, nurse, and dietitian can help you develop a healthy diet plan. Many recipe booklets are also available. Your doctor or nurse will tell you about any foods you should avoid.
- It is very important to drink a lot of fluids, especially after certain chemotherapy treatments. If your doctor has limited your total fluid intake because of another condition, ask them or your nurse how much and which fluids are best for you. Water, juice, soups, ice pops, coffee, tea, milk, and gelatin are examples of fluids.
- If your fluids are not limited, try to drink at least 6 (8-ounce) glasses of fluids a day. It may be easier to sip fluids often throughout the day than to drink full glasses at one time. It is very important to drink extra fluids if you cannot eat solid foods. In this case, try drinking milk, nutritional supplements (such as Ensure<sup>®</sup>, Resource<sup>®</sup>, and Boost<sup>®</sup>), instant breakfast drinks, and fruit juices.

## Activity

Always check with your doctor before starting an exercise plan. Your treatment and its side effects may affect your work or recreational activities. Some people notice very little change, while others experience significant temporary or permanent changes. Many people can continue their jobs with little or no change during chemotherapy. If you need to, try to adjust your work schedule or adapt your job to your treatment. Everyone's experience with chemotherapy is different.

- Your roles at home may change. You and your family may need to be flexible as each member takes on different responsibilities. These changes can be difficult and stressful. Families often find professional support or counseling helpful. Let your doctor or nurse know how you and your family are coping.
- Exercise and recreation can be helpful during your treatment. Exercise reduces stress and can improve your emotional and mental state. If you feel tired, do gentle muscle stretches or movements. When you feel stronger, you can slowly increase your physical activity. Walk, swim, golf, or bike – do whatever you enjoy.
- Remember to pace yourself so that you do not become too tired.

## Alcohol Use

Alcohol may irritate the gastrointestinal (digestive) tract, cause dehydration, and decrease your ability to care for yourself. In addition, alcohol use may affect liver function or interfere with your cancer treatment. You should not drink alcohol unless approved by your doctor.

## Sexuality

Changes in your body and emotions may be related to your cancer treatment and can affect your sexuality. You may see yourself differently or act differently sexually. You may have concerns about how your sexual partner may react to you. These feelings are common among people receiving cancer treatment. Your sexuality is an important part of you. Feel free to talk with a health care professional about your questions and concerns. If that professional cannot help you, they can refer you to someone who can.

## Sleeping and Relaxing

You may experience increased tiredness and/or problems sleeping and relaxing because of your treatment and from the stress of having cancer. Your body needs sleep to repair itself and to be in the best condition to work with your treatment. These suggestions may help:

- Go to bed and wake up at regular times. Do not take long daytime naps if it affects your nighttime sleep.
- Establish a bedtime/naptime routine (read, listen to quiet music, or take a bath) that will calm you.
- Avoid caffeine (found in coffee, tea, soda, and chocolate) after 5 p.m.
- Tell your doctor or nurse when you cannot sleep.

Relaxation is an important way to rest your mind and body. Learning to relax can help you sleep better. It can improve your mental outlook and help you cope with cancer and treatment. Try the following to help you relax:

- Take a warm bath or shower or have a massage. Check with your doctor to see if a massage is safe for you.
- Listen to calming music or sounds of the ocean, forest, or other sounds of nature.
- Imagine yourself in a peaceful place, such as a vacation spot, or relive a favorite childhood memory.
- Try progressive muscle relaxation. Slowly tense and relax all your muscles from head to toe.
- Try different methods until you find what works best for you. Health care professionals can teach you muscle relaxation, mental imagery techniques, and can suggest relaxing tapes.



With any activity - at work, at home, or at play - set priorities. Do what is most important to you when you have the most energy. Focus on what you still can do rather than what you cannot do. This attitude may encourage you and help you adapt your lifestyle as needed.

## Tips for Family and Friends

Remember that chemotherapy brings changes to your loved one's life. These changes may directly affect you. Here are some helpful tips:

- Avoid complaining about food. Instead, offer small portions of favorite foods and help with food preparation.
- Allow for them to rest and relax.
- When they feel well, join them in exercise or recreation.
- Do not be afraid to touch your loved one. Your actions say a lot.
- Do enjoyable activities together. Encourage activities that take thoughts away from cancer and chemotherapy.

## Possible Side Effects of Chemotherapy

### Bone Marrow Depression

Bone marrow is the soft core of tissue in your large bones. Your bone marrow normally makes 3 types of blood cells:

- **Red blood cells (RBCs)** - carry oxygen throughout your body
- **White blood cells (WBCs or leukocytes)** - fight infection and are part of your immune system
- **Platelets** - help your blood to clot and stop bleeding

Many chemotherapy drugs decrease the bone marrow's ability to make blood cells. When your body does not make enough new blood cells, your blood counts (the number of cells in your blood) become lower than usual. This drop in your blood counts is called bone marrow depression.

You will have blood drawn to measure your red blood cell, white blood cell, and platelet counts. You may have blood tests taken before receiving chemotherapy or at other times during treatment.

Depending on which drugs are used in your chemotherapy, you may experience bone marrow depression between your chemotherapy treatments. When your blood cell counts are low, you may feel more tired than usual, and you may be at risk of infection and/or bleeding.

How long the bone marrow depression lasts also depends on which drugs are used. For example, some drugs cause blood cell counts to decrease 7 to 14 days after they are given and can stay low for 1 to 2 weeks. Your doctor or nurse can tell you when to expect your blood counts to change. Blood counts usually return to normal before the next treatment. There are some drugs available that your doctor may prescribe to help maintain or restore blood counts. These drugs are not for all patients. Be sure to discuss your questions and concerns with your doctor.

Bone marrow depression usually cannot be prevented, but you can take action to prevent or lessen problems caused by low blood cell counts. These problems may include infection, bleeding, and tiredness.

## Infection

When your white blood cell counts decrease, your chance of getting an infection increases. To avoid infection, take the following steps:

- Wash your hands often and well, especially before eating or brushing your teeth. Always wash your hands after using the bathroom. Washing your hands is the best way to prevent infections.



- Avoid close contact with people who have a cold, the flu, cold sores, or other infections. In most cases, you can still go shopping, to movies or sporting events, and to other public places.
- Please remind those caring for you to wash their hands. This includes family, friends, doctors, nurses, and other members of your care team.
- Please remind those caring for you to use sanitizing wipes or other cleaning products to clean surfaces that are often touched or used.
- Follow your doctor's advice for when to get a flu shot. You should stay away from babies, children, or adults who have received live vaccinations within 6 to 8 weeks. Live vaccinations include chicken pox, measles, mumps, rubella, and smallpox. You are at high risk for getting the virus if exposed to even a small amount of live vaccine.
- Less common vaccinations needed for foreign travel should be discussed with your doctor. In many cases, scheduled vaccines can be done at a later date. If this is not possible, we will help you make other plans to avoid exposure.
- Clean your mouth after every meal and at bedtime. Brush your teeth with a soft bristle toothbrush. Look for sores or white

- patches in your mouth or on your lips, and tell your doctor or nurse if you find any changes.
- Wear dentures that fit properly. Dentures that fit poorly may irritate your mouth.
  - Women should avoid douching, which may irritate the skin and genital area.
  - Do not use enemas unless the doctor says you can.
  - After each bowel movement, clean the rectal area gently but thoroughly. Women should always wipe from front to back. If irritation occurs, or if hemorrhoids are a problem, ask your care team for advice.
  - Do not clean birdcages, cat litter boxes, or fish tanks. Ask your care team if you should limit close contact with pets or other animals.
  - Ask your doctor or nurse if you need to avoid gardening when your blood counts are low. Wear gloves while working in the garden or doing the dishes.
  - Eat foods high in protein and vitamin C. If you are losing weight, increase your calorie intake.
  - Cook all foods well, especially meat, fish, and eggs.
  - Avoid eating raw or undercooked fish, meat, chicken, seafood, and eggs.
  - Do not eat expired or moldy foods.
  - Avoid cutting or burning yourself.
  - Use oven mitts when handling hot pots and pans.
  - Always wear shoes.
  - Moisturize your skin with skin creams such as Lanolin.
  - Soften cuticles with hand lotion instead of cutting them. Keep your fingernails and toenails clean.

- Do not squeeze or scratch pimples or blemishes.
- Use an electric shaver instead of a razor.
- If you cut or scrape your skin, wash the area with soap and water. Cover the area with a clean bandage if needed, and change the bandage daily until the area heals. Tell your doctor or nurse if redness develops.

Depending on your type of treatment, your blood counts may decrease at a different rate than other cancer patients. If your blood counts are expected to decrease more quickly or more slowly, you will receive more instructions about diet, medicines, and activity.

### Detecting and Managing Infection

Many infections that develop in people who have low white blood cell counts are caused by bacteria normally found on or in their bodies. If not treated, some infections can become very serious. The earlier an infection is found and treated, the less likely it will turn into a serious problem.

A fever is often the first and only sign of infection. It may occur with or without chills. Take your temperature as advised by your doctor or nurse and whenever you do not feel well. Your doctor or nurse should tell you what fever to report. Always call right away if your temperature reaches 100.4 F (38 C) or higher (or as instructed by your doctor). **If you have a fever or chills, call your doctor or nurse right away, even if it is in the middle of the night.**

Do not take acetaminophen (such as Tylenol®), aspirin, ibuprofen, or any other over-the-counter medicines without your doctor's advice. These medicines can hide important signs of infection.

Keep yourself warm and drink plenty of fluids. Take your temperature if you experience a change in any medical conditions or if you have any of these symptoms of infection:

- Fever (temperature above normal; especially if 100.4 F (38 C) or higher)
- Chills
- Shortness of breath or difficulty breathing
- Chest pain or tightness
- Stiff neck or pain in the neck when moving
- Ear pain, headache, or sinus pain
- Sore throat or other cold symptoms lasting more than 48 hours
- A new cough or change in an old cough
- Unusual weakness, tiredness, or dizziness
- Tenderness, ulcers, or white patches in your mouth
- Nausea and vomiting lasting more than 12 hours
- Diarrhea
- Rectal tenderness or discharge
- Vaginal tenderness or discharge
- Difficulty urinating
- Abdominal pain
- Any new or unusual pain
- Red, swollen, or tender areas of skin (pus may not form if your white blood cell count is low)
- A lower than normal temperature that lasts longer than 1 hour

## Bleeding

When your platelet count is low, you may notice that you bruise more easily than usual. You can also develop small red dots called “petechiae” under your skin that may look like a rash. Petechiae are a possible side effect of chemotherapy, and you should tell your doctor or nurse if they occur.

When your platelet count is low, it is very important that you prevent minor cuts and injuries. Look at your surroundings and take away anything that blocks your way or that you could trip over, such as throw rugs. You should also take the following precautions:

- Use non-skid slippers and shoes.
- Avoid contact sports and other activities that might result in injury.
- Wear heavy gloves when digging in the garden or working near plants with thorns.
- Be very careful when using knives or tools.
- Be very careful not to burn yourself, especially when ironing or cooking. Use a pad or gloves to handle hot pots and pans.
- Use a soft toothbrush. Check with your nurse or doctor before using dental floss.
- If you must blow your nose, blow 1 nostril at a time very gently, keeping your mouth open.
- Use an electric shaver instead of a razor.
- Do not take aspirin or products that contain aspirin unless your doctor says you can. Your pharmacist can tell you which products have aspirin.
- After needles are used to take blood samples or to give medicine, press a piece of gauze or cotton firmly over the injection site for at least 5 minutes.
- Use lotions and lip balms to prevent dry, chapped skin and lips.

## Detecting and Managing Bleeding

Your nurse or doctor can tell you when your platelet count will be low. During this time, contact your doctor if you notice any of the following signs and symptoms of bleeding:

- Red spots under the skin (petechiae)
- Bleeding gums
- Easy bruising

- Headaches
- Vision changes
- Uncontrolled nosebleeds
- Bright red blood in urine or stool
- Dark, tar-like stool
- Abdominal pain or swelling
- Unusual bleeding anywhere else in your body

If you cut yourself, press a clean bandage, gauze, or cloth directly on the area until the bleeding stops. If you have a nosebleed, apply pressure to your nose and place an ice pack on the back of your neck until the bleeding stops. Call your doctor if the bleeding lasts for more than 30 minutes.

## Anemia

When your red blood cell count is low, your body tissues may not get enough oxygen to work well. This condition is called anemia, and its major symptom is extreme tiredness.

Other signs of anemia include:

- Dizziness
- Shortness of breath
- Headaches
- Ringing in the ears
- Chest pain
- Fast heartbeats (palpitations)

Report these symptoms to your nurse or doctor. In managing anemia, the goal is to save energy. Ways to save energy are discussed in the tiredness and weakness section of this booklet.

## Effects on the Digestive System

As chemotherapy destroys the cancer cells, it also may affect other cells and tissues in your body. The tissues in your digestive tract, which includes the mouth, esophagus,

stomach, and small and large intestines, may be affected. During and after chemotherapy, you may notice mouth sores, a sore throat, a change in your appetite, different tastes or smells, or a feeling of nausea. You may also have some vomiting, diarrhea, or constipation. What you experience will depend on the type and amount of chemotherapy you receive. Your doctors and nurses will do their best to limit these effects. They will try to make you as comfortable as possible during and after treatments. Most of these side effects will slowly disappear after you are done with your chemotherapy. It is important to tell your care team if you have symptoms that are not going away.

It is important to know how to deal with these side effects and still be able to eat. Try to eat well while you are receiving chemotherapy. Food helps maintain your strength and helps your body cope with the chemotherapy.

## Loss of Appetite

Many people with cancer may experience decreased appetite, feel less hungry, or eat less. You may experience other symptoms such as feeling full after a few bites of food. There are many possible reasons for a decreased appetite, your care team will help if you are feeling this way. Feeling full after eating small amounts and losing interest in food are common. Weight loss often is thought to be normal among people with cancer, but it does not need to happen. Eating more foods that appeal to you and getting the most out of what you eat is important. Here are some ideas that other people experiencing loss of appetite and weight loss have tried and found helpful:

- **Keep high-calorie, high-protein snacks available. Snacks like cheese, peanut butter, hard-boiled eggs, and yogurt have plenty of calories and protein.**

- Schedule meals and snacks throughout the day. It is best to eat within 1 hour of waking up and then every 2 to 3 hours.
- Take advantage of times you feel hungry and eat more (even if it is the middle of the night).
- Snacks are important and are easy to take with you when traveling or when you have longer office visits and appointments.
- Keep a list of favorite recipes and ask family and friends to prepare something with you.
- Avoid fried foods, heavy gravies, and rich sauces.
- Between meals, drink nutritious liquids, such as juices, milkshakes, instant breakfast drinks, and hot chocolate, rather than water, coffee, or tea.
- Take a short walk before meals. Exercising may increase your appetite.
- Add a few tablespoons of oil, vegetable spread, butter, mayonnaise, or whipped cream to your vegetables, potatoes, sandwiches, desserts, or other foods. Each extra tablespoon adds 50 to 140 calories.
- Make mealtime a treat - set a nice table and eat with family or friends.

### Weight Gain

Some people may experience an increased appetite and weight gain while they receive chemotherapy. Some drugs, like steroids or other hormones, produce this change. Do not try to lose weight during treatment but do try to keep your weight the same.

If you notice a gradual increase in your weight and a larger-than-normal appetite, these ideas may help you stabilize your weight:

- Snack on fresh fruit and vegetables.
- Increase fiber rich foods in your diet such

as fresh fruits, raw vegetables, whole grain breads, legumes, and dried beans.

- Use low-fat or skim milk and low-fat dairy products.
- Cut down on margarine and butter.
- Avoid fried foods or foods with heavy cream or cheese sauces.
- Include some activity, such as walking, in your daily schedule.
- Have a glass of water before meals.
- To help avoid a second helping, serve yourself a portion of food and put leftovers away before you eat.

Although gradual weight gain may be expected, call your doctor if your weight increases unexpectedly or if you notice swelling.

### Changes in Taste and Smell

People who receive certain chemotherapy drugs sometimes notice a bitter, metallic taste in their mouths. Foods that once tasted good may taste different or have no taste at all. Some people say that smells become much stronger, even overpowering. The smell of food may decrease your appetite. The following ideas may help food taste better and improve your appetite:

- Try plastic flatware and paper cups and plates to decrease metallic or bitter taste.
- Marinade red meats, poultry, and fish in a mixture of olive oil, soy sauce, fruit juice, and herbs/spices before cooking. Use wine sparingly. Red wine vinegar and other vinegars can enhance the flavors of proteins, decrease bitter aftertaste, and produce wonderful flavors.
- Instead of red meat, eat more chicken, turkey, eggs, fish, tofu, custards, milkshakes, and cheese dishes.
- Eat more foods that are at room temperature or that are cold, like

- sandwiches, salads, and cheese. Cold decreases strange or bothersome smells.
- Try using different spices and seasonings to improve the taste of food. Try basil, tarragon, mint, or rosemary.
  - Suck on hard candies, drink more liquids, or eat fruits between meals to remove unpleasant tastes from your mouth.
  - Take good care of your mouth. Ask your nurse about mouth care.
  - If you take nutritional supplements, try mixing them with fresh or frozen fruits (avocados are a good choice) or vegetables to improve their taste. Drink them with a straw if the smell bothers you.
  - If food odors are bothersome to you, let someone else cook for you. Stay out of the kitchen while foods are being cooked.
  - Choose other drinks if the strong smells of coffee and tea bother you.

### **Sore Mouth and Throat**

During chemotherapy, your mouth or throat may feel raw and become sore or very dry. You may notice red areas, white patches, or sores in your mouth or throat. These suggestions may help decrease the pain and help you continue to eat well:

- Eat soft foods. Casseroles, soups, and soufflés are easy to swallow. Make foods easier to swallow by adding gravies or sauces or by using extra mayonnaise, syrups, or cream.
- Avoid spicy, heavily seasoned, or citrus foods. These foods may irritate your mouth or throat.
- Try more foods that are cold or at room temperature. They may feel better on a sore mouth or throat.
- If your mouth is dry, chew sugar-free gum or suck on hard candy or ice chips.

- Tell your doctor or nurse about white patches in your mouth.
- Tell your doctor or nurse about sore areas in your mouth and ask about a pain reliever.
- Good mouth care is important during your cancer treatment and recovery. Taking care of your gums, teeth, and oral cavity begins with talking with your nurse or dietitian. They can educate you on daily brushing, rinsing regularly with baking soda or salt water mixture, and flossing when it is safe to do so.
- Avoid alcohol, cigarettes, vaping, pipe smoking, and chewing tobacco.

### **Nausea and Vomiting**

Some chemotherapy drugs can cause nausea or an upset stomach. You may feel uneasiness in your stomach or in the back of your throat, which can be followed by vomiting. You may also feel weak. There are many ways you and your doctor or nurse can lessen or control these symptoms. Your doctor may prescribe medicine for your nausea, and you should tell your doctor or nurse about the things you do to decrease your nausea. Take note of any patterns you notice about your nausea. It is helpful if you can answer these questions for your doctor or nurse:

- When did the nausea and/or vomiting start?
- What made it worse?
- What made it better?
- How long did it last?

Some people have found the following suggestions to be helpful in decreasing nausea and vomiting:

- Eat small, frequent meals instead of 3 large meals a day.

- Eat and drink bland items such as toast, crackers, applesauce, and ginger ale.
- Choose foods and drinks that are at room temperature.
- Sip liquids throughout the day instead of drinking large amounts at one time.
- Before your treatment, eat foods that are easy to digest. Some people are more comfortable when they do not eat a big meal before treatment. Try eating something small.
- If cooking smells cause nausea, have someone cook for you, arrange for Meals on Wheels, or buy prepared frozen meals.
- Breathe through your mouth and try to slow down your breathing if you begin to feel nauseous.
- Avoid acidic, spicy, or sweet foods that do not appeal to you.
- Avoid alcoholic beverages.
- Avoid unpleasant odors.

## Diarrhea

Some chemotherapy drugs may cause diarrhea. Diarrhea can also result from other factors related to the treatment, such as stress, nutritional supplements, or abdominal radiation therapy. People have found these suggestions helpful in reducing diarrhea:

- Drink 6 to 8 cups of water and other fluids each day unless your doctor or nurse tells you not to. Other fluids can be clear liquids. Avoid drinks with caffeine.
- Add a small amount of nutmeg to foods to slow down the movement of your digestive system.
- If you have severe diarrhea, switch to a liquid diet including beverages such as Gatorade®, ginger ale, warm broth, fruit juices, orange juice, and lemon-lime drinks. Consider drinking 1 cup of liquid after each bowel movement. Avoid milk products or

use non-dairy products, such as Lactaid®, rice, almond, oat, or cashew milk.

- Eat foods that are high in potassium. Diarrhea causes the body to lose potassium. Foods high in potassium include avocados, bananas, and potatoes
- Avoid foods that can irritate your digestive tract or lead to cramping. These include high-fiber foods such as raw vegetables and raw fruits (except bananas and ripe melons), whole grain breads, and high-fiber cereals.
- Avoid dried fruits, cabbage family vegetables, dried cooked beans, and spices such as garlic, curry, pepper, and chili powder.
- Avoid extremely cold or hot foods. They can increase diarrhea.
- Report any increase in volume or frequency of stool (more than 3 times per day).
- Eat small meals often throughout the day. Select foods that are high in pectin such as bananas, boiled white rice, cream of wheat, cooked farina, and white boiled potatoes (or potatoes that are baked without the skin), white bread, or cooked pasta.
- For protein, select lean cuts of meat and poultry or fish that is baked or roasted.
- Use yogurt, cottage cheese, ricotta cheese, or eggs as an alternate protein source.
- Only eat cooked vegetables.
- Avoid nuts and seeds.

## Constipation

Some chemotherapy drugs can cause constipation. Other drugs, such as antidepressants, muscle relaxants, and narcotics, also can cause constipation. These suggestions may help prevent or relieve constipation:

- Eat high-fiber foods. Fiber causes food to pass through your digestive tract faster and helps regulate your bowels. High-fiber foods include bran, fresh or dried fruit, fruit juices, and raw vegetables.
- Drink extra fluids when eating high-fiber foods.
- Try fiber supplements (such as Metamucil®).
- Drink hot beverages.
- Establish a regular schedule for meals.
- Try activities, such as walking, to promote a bowel movement.
- Go to the bathroom as soon as you feel the urge to have a bowel movement.
- Ask your doctor or nurse about the use of laxatives or stool softeners.
- Do what is most important to you when you have energy. Do not use your energy for unimportant activities.
- Let others help, especially with routine household tasks.
- Develop a consistent sleep pattern.
- Drink 6 to 8 cups of fluid a day to help rid your body of waste products, unless your doctor or nurse tells you not to.
- Ask your doctor if you should take iron pills, vitamins, or supplements.

### To Family and Friends

- Offer encouragement without pushing or pampering. Try to maintain a balance.
- When your loved one feels well, encourage normal activities.
- When your loved one is tired, remind them that tiredness is usually temporary and may be caused by the treatment. Allow time for rest and relaxation.
- Offer help, especially with routine household tasks.
- If help is available from community or religious groups, encourage them to use these resources.

## Tiredness and Weakness

You may feel more tired than usual during chemotherapy. Tiredness can have many possible causes including cancer treatment, loss of appetite, lack of exercise, and the cancer itself. The tiredness experienced by a person with cancer is different from tiredness of everyday life. Cancer treatment-related tiredness can appear suddenly. It can be overwhelming. It may not always be relieved by rest. It can last after treatment is completed. Cancer treatment-related tiredness can affect many parts of a person's life. It may affect an individual's mood or emotions. It may also affect a person's ability to do usual activities. Tiredness can make it hard to concentrate. These suggestions may help you feel less tired:

- Eat a balanced diet that includes foods with protein, iron, and vitamins. If you are losing weight, eat foods high in calories.
- Maintain your normal lifestyle as much as possible but learn to pace your activities.
- Rest when you feel tired.

## Effects on Hair and Skin

### Hair Loss (Alopecia)

Not all chemotherapy results in hair loss. Chemotherapy can cause a different amount of hair loss in different people. Hair loss may happen suddenly or gradually. If you lose hair, you may lose it from your head, face, armpits, pubic area, chest, and/or legs.

It is normal to feel upset about losing hair. Hair loss is a side effect that can be very noticeable; however, your hair will grow back after you complete your chemotherapy. When it grows back, it may be a slightly different color or texture.

If hair loss is a possibility for you, you may find these suggestions helpful:

- Wash with a mild shampoo every few days.
- Pat your hair or scalp dry – do not rub.
- Do not perm or color your hair.
- Limit your use of hair spray, electric curlers, blow dryers, and curling irons.
- Continue to treat your hair gently as it grows back.
- Consider getting a shorter haircut early in your treatment to make the hair loss less noticeable. It may help to discuss your chemotherapy treatment schedule with your hair stylist.
- Consider using turbans, scarves, and hats to hide hair loss.
- If you plan to use a wig or toupee, buy it early in your treatment. It is easier to match your hair color and style before hair loss begins. Your health insurance may cover the cost of a wig. Ask your doctor or nurse for a prescription for a “scalp prosthesis.” Wig costs may be tax-deductible as medical expenses. In some areas, the American Cancer Society provides help with getting a wig.

## Skin Protection

Some chemotherapy drugs can affect your skin, nails, and hair. Some can make your skin more likely to sunburn. Some can cause your nails to turn brittle and cause painful, red cuticles. These suggestions may help to protect your skin:

- Avoid direct sunlight between 10 a.m. and 4 p.m.
- Apply sunscreen routinely to exposed skin whenever you are outdoors for more than 10 minutes. A PABA-free sunscreen with a minimum sun protection factor (SPF) of 30 should be used.

- Do not use tanning booths or sun lamps.
- Wear a hat and lightweight clothing to protect your skin when you are outdoors.

Some chemotherapy drugs may cause skin rashes or darkening of your skin or nails. Tell your doctor or nurse if you notice any changes.

Some chemotherapy drugs may damage your skin and other tissues if the drug leaks out of your vein during drug administration. If you receive your chemotherapy through a vein, it is important to tell your nurse right away if you feel any discomfort when the drug is being injected.

## Sexuality and Reproduction

Radiation, surgery, or the drugs used during cancer treatment may affect sexual and reproductive function. Although many drugs do not affect your sexual ability or desire for sex, stress related to your illness and treatment may make you feel more tired than usual.

When your blood counts are low, you are at a greater risk for infection and/or bleeding problems. Your doctor may advise against certain sexual activities (vaginal and anal intercourse, oral sex) at these times.

## Women

Women receiving chemotherapy may notice changes in their menstrual cycle. Your period may stop during treatment, you may have irregular or less frequent periods, or you may have a heavier or lighter menstrual flow than usual. Despite these changes, you still can become pregnant.

Because a woman’s cancer treatment may pose risks to her unborn child, birth control is strongly recommended during treatment. Some types of birth control should not be used with certain cancers, talk to your doctor or nurse before you start treatment about

methods you may want to use. The use of condoms is also recommended for 3 or 7 days after chemotherapy to protect your partner from exposure to chemotherapy in your body fluids. The number of days that you should follow precautions depends upon the drug(s) you received. Your nurse will give you specific instructions. If you are pregnant, or think you may be pregnant, tell your doctor right away.

Some women may notice less vaginal lubrication during treatment. Lubricants can help if dryness occurs. Women near menopausal age may experience hot flashes or early menopause. Tell your doctor if you notice these changes.

Temporary or permanent infertility (inability to become pregnant) can result from chemotherapy. This change depends on many things, such as the drugs used, the amount of each drug, the length of your treatment, and your age. Ask your doctor if your chemotherapy is expected to affect your fertility.

## Men

It is unlikely that the treatment will affect your ability to have an erection and sexual intercourse. Temporary or permanent infertility (inability to make a woman pregnant) can result from chemotherapy. During treatment, you may experience a decrease in sperm count and sperm mobility. These changes depend on many things, such as the drug used, the amount of each drug, the length of your treatment, and your age. Before your treatment begins, ask your doctor whether your chemotherapy is expected to affect your fertility. You may want to consider sperm banking (having sperm stored for artificial insemination at a future date) before starting treatment.

A man's cancer treatment may pose risks to a child conceived during or some time after

his treatment. This is another reason you may want to talk to your doctor about sperm banking before you begin treatment. Also, talk with your doctor or nurse about birth control methods you may want to use. The use of condoms is recommended for 3 or 7 days after chemotherapy to protect your partner from exposure to chemotherapy drug(s) in your body fluids. The number of days that you should follow precautions depends upon the drug(s) you received. Your nurse will give you specific instructions.

## Men and Women

You may want to ask these questions before you begin treatment:

- What changes in sexual or reproductive function will I experience during treatment?
- What forms of birth control are recommended for me?
- What are the risks of temporary or permanent infertility with my treatment?
- Are there any restrictions on sexual activity during treatment?

## Other Side Effects

Some chemotherapy drugs may cause less common side effects not discussed in this booklet. Your doctor and nurse will help prepare you for all specific side effects of your treatment and will explain how to manage them.

## What about the future?

Some effects of treatment may be long-term or permanent. Discuss the possibility of long-term effects with your doctor. Continue to see your doctor regularly after you complete chemotherapy. Tell your doctor if you notice any unusual signs or symptoms at any time after treatment.



## Managing Chemotherapy at Home

If you are receiving chemotherapy at home, you must take precautions to avoid unnecessary exposure to you and your family from the drug.

### Storing Medicines

Keep all medicines in a safe place away from children and pets. Follow the instructions on the medicine label for storage. If medicines need to be refrigerated, do not put them on the shelf closest to the freezer. It is best to put them in a zipper-seal plastic bag in the crisper bin. Do not keep the medicines in your bathroom because the high humidity can cause changes in the drugs.

### Medicine Taken by Mouth

Wash your hands after touching your pills. Caretakers should not touch the pills with bare hands and should wear latex gloves. If you are taking the medicine more than 1 day, take it at approximately the same time each day. If you do not take all of your pills, return them to the doctor's office on your next visit.

### Medicine by Injection

Prepare the medicine while wearing latex gloves to avoid skin irritation if you have sensitive skin. If you are replacing a cassette/cartridge in a pump, throw away the old

cassette and tubing and alcohol wipes into the plastic container marked "chemotherapy waste." Needles and syringes must also be placed in the plastic chemotherapy sharps container. Alcohol wipes, dressings, and other medical supplies that come in contact with chemotherapy should be thrown away in a plastic bag.

### Removal of Chemotherapy Materials

The infusion company that supplied your injectable chemotherapy will give you containers or bags for materials that came in contact with your chemotherapy. Call the company when they are full.

### Drug Spills

To clean up spills, wear 2 pairs of latex gloves and eyeglasses or other inexpensive protective eye wear. Absorb the spill with absorbent paper towels. Wash the area 3 times with soap and water and throw away all materials in the plastic chemotherapy waste container.

If any of the drug is spilled on bed linens or clothing, wash the soiled items as soon as possible. If you cannot wash them right away, place them in a plastic bag. When you take the items out of the bag to wash them, throw the bag in the chemotherapy waste container. The soiled items should be washed separately from your other laundry. You do not need to change your type of laundry powder or your usual way of washing. The soiled items should be washed twice before using them again. They may be washed with other things for the second washing.

If any of the drug splashes in someone's eye, flush the eye with water for 15 minutes. Call the doctor who prescribed the drug right away. If possible, have someone call the doctor while the eye is being flushed. Tell the doctor what has happened and ask for more instructions.

## Creams and Pastes

This type of medicine is applied directly on the skin. Do not handle the chemotherapy cream or paste with your bare hands. Wear latex gloves and wash your hands with soap and water after you remove the gloves.

Throw away any chemotherapy waste in the plastic chemotherapy container. If you do not have a container, place the waste in a zipper-seal plastic bag and take it to your doctor's office when you return for your visit.

## Safe Handling of Chemotherapy Waste Materials

The chemotherapy drug usually remains in the body for either 3 or 7 days after treatment, depending upon the drug you received. Your nurse will tell you how long you should follow these precautions. It is removed from the body through urine, stool, vomit, semen, and vaginal secretions during this time. It is necessary to take precautions whether you receive the medicine in the clinic or hospital or take it at home.

### Skin

If urine, stool, or vomit comes in contact with your hands or other body parts, wash the area right away with soap and water. If caretakers have contact with your body wastes, they should wear latex gloves.

### Toilet

After using the toilet, close the lid and flush right away. If you have young children or pets in the home that may have contact with the toilet, flush twice.

### Bedpan, Urinal, or Emesis (Vomit) Basin

The caretaker should wear latex gloves when handling the container. After each use, empty

and rinse the container well with water. At least once a day, put on latex gloves and wash the item with soap and water. Throw away the gloves after each use, and then wash your hands with soap and water.

### Diapers

If you need diapers, wear disposable ones and/or use disposable bed pads. Caretakers should wear latex gloves when changing diapers or pads. For sanitary reasons and containment of odor, it is recommended that you "double bag" the waste by placing the soiled diapers or pads in a tied plastic bag or zipper-seal plastic bag, and then place that bag in a tied plastic trash bag. Throw the bag in the trash.

### Linens and Clothing

Wash linens that are soiled with urine, stool, or vomit as soon as possible. If you cannot wash them right away, place them in a plastic bag and throw the bag in the trash after the linens are washed. These linens should be washed separately from your other ones, but it is not necessary to change your type of laundry powder or usual way of washing. Soiled linens should be washed a second time. They may be washed with other linens for the second washing. Unsoiled linens can be washed in the usual manner.

### Ostomy Care

Caretakers should wear latex gloves when emptying or changing the appliance. For sanitary reasons, soiled supplies are thrown away by "double-bagging." Place the waste into a plastic tied bag or zipper-seal plastic bag, and then put that bag into another plastic bag and throw it in the trash.

### Pregnant Women

Pregnant women helping patients should avoid coming into contact with the patients'

urine, stool, vomit, or semen during treatment and for the first 3 or 7 days after each chemotherapy treatment.

## Thoughts and Feelings

Everyone's experiences with cancer and chemotherapy treatment are different. What is normal for you may be very different from what is normal for someone else. No one can tell you how you should feel or think. Only you know what is right for you.



It is common to feel emotional ups and downs. Sometimes you may feel angry, afraid, or depressed. At other times you may feel hopeful, peaceful, or confident. People with cancer often have sudden mood changes – crying one minute and laughing the next. Whatever you feel now or later is ok. Allow yourself to have these mood swings.

Expressing your thoughts and feelings can help you recognize and cope with them. Private emotional expression – crying alone, praying, screaming into a pillow, laughing aloud in the shower, sitting alone quietly, writing in a journal – may be helpful. Some people find that talking with others helps them cope with their emotions. Once you express and understand your feelings, you may be able to accept them. Accepting your feelings helps improve your emotional well-being.

Sometimes it is difficult to handle your thoughts and feelings. These ideas may help you:

- Talk with someone you trust – a friend, family member, health care professional, or spiritual counselor. Let them know when you feel like talking and when you just want someone to be with you.
- Keep a journal or diary to help you sort through your thoughts and feelings.
- Consider joining a support group. Different types of groups are available. Many people benefit from sharing with others in similar situations. Ask your nurse or social worker about local support groups or call the UPMC Hillman Cancer Center's Cancer Information and Referral Service at **412-647-2811** for more information.
- Try creative activities such as drawing, making crafts, or playing a musical instrument. These activities may help you express feelings without talking.
- Try to keep things in perspective. Allow yourself to feel sad or angry when you need to, but also focus on the people and things that make you forget about cancer.
- Try different ways to keep an emotional balance. Stay open to different methods of coping. You may need to change your approach at different times.
- Consider professional counseling for yourself and your family. A competent and caring professional can guide you through change and stress.

### To Family and Friends

Do not judge your loved one's feelings. Accept how they feel and be able to listen. Be hopeful and encouraging but let them have negative emotions. Expressing negative, as well as positive, feelings helps them reach a healthy balance. Consider talking with a professional to help sort out your emotions.





**UPMC**  
LIFE CHANGING MEDICINE

**UPMC**

200 Lothrop St.  
Pittsburgh, PA 15213

**UPMCHillman.com**

UPMC policy prohibits discrimination or harassment on the basis of race, color, religion, ancestry, national origin, age, sex, genetics, sexual orientation, gender identity, marital status, familial status, disability, veteran status, or any other legally protected group status. Further, UPMC will continue to support and promote equal employment opportunity, human dignity, and racial, ethnic, and cultural diversity. This policy applies to admissions, employment, and access to and treatment in UPMC programs and activities. This commitment is made by UPMC in accordance with federal, state, and/or local laws and regulations.