

Managing the Side Effects of Chemotherapy



For patients, families and caregivers

Read this booklet to learn:

- what chemotherapy is
- how to prepare for your treatment
- what side effects you may expect
- what problems to look out for
- when to get medical help right away



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What is chemotherapy?

Chemotherapy uses medicine to treat cancer. Many different kinds of medicines are used to cure or control the growth and spread of cancer cells. The kind of chemotherapy you get depends on:

- the kind of cancer you have and how far along your cancer is
- if you have had other cancer treatment before
- your health

Chemotherapy is different from other ways to treat cancer like immunotherapy and hormonal therapy. Although you may be taking the medicines the same way, they work differently on your body and need different ways to manage its side effects. Your doctor or nurse will let you know if you are having chemotherapy, hormonal therapy or immunotherapy alone, or in combination.

This pamphlet talks about chemotherapy only.

Chemotherapy may be given by:

- mouth (pills, capsules)
- needle into a vein (intravenous or "IV")
- needle into muscle or soft tissue (injection)
- needle into a body cavity, like the abdomen (belly)
- applying directly onto your skin (topical), or eyes

Most chemotherapy are given in cycles. Each cycle is made up of treatment days and resting days. The resting days allow for your body to recover from the effects of chemotherapy. A new cycle starts once you have completed the resting days.

Besides chemotherapy, you may also need surgery, radiation, or both. Surgery or radiation may take place before your chemotherapy, after your chemotherapy, before and after your chemotherapy, or during your chemotherapy. Your doctor or nurse will explain the treatment plan before chemotherapy starts. Make sure that you understand the treatment plan and have your questions answered by your health care team **before starting your treatment.**

How does chemotherapy work?

Chemotherapy works best against fast-growing cells, like cancer cells. It prevents or stops the cancer cells' ability to multiple and grow, resulting in cell death.

Chemotherapy can also damage healthy cells and cause side effects. Fast-growing cells like blood cells, hair cells, skin cells, cells that make up the gastrointestinal tract (mouth, throat, stomach, intestines) and cells of the reproductive system are at risk. Damage to these normal cells is the reason for many of the side effects people experience. Luckily, these cells can be repaired or replaced by other healthy cells.

How can I prepare for getting chemotherapy?

Before the treatment day

- Check your appointment schedule or Patient Portal to see if you need a blood test done before your treatment. Ask your doctor or nurse to see if your blood tests can be done at a lab closer to home (such as LifeLab).
- To make sure we have enough time to get your blood test results back and to prepare the medicines, have your blood test done:
 - 1 to 2 days before your treatment day if the test is done at the hospital.
 - At least 2 days before your treatment day if the test is done by a lab closer to home.

IMPORTANT:

Your nurse will let you know if your blood tests must be done on the **same day** as your chemotherapy treatment — at least 2 hours before your chemotherapy appointment. This is to make sure there is enough time to get your test results back. Once your blood results are back, it will take another 2 hours for the pharmacy to prepare your chemotherapy.

Your doctor or nurse will review your blood test results to make sure it is safe for you to have treatment. If your test results fall outside the normal range, you may be asked to have another blood test done before the start of your treatment. Your chemotherapy treatment schedule may be delayed to allow enough time for your body to recover.

- Drink 6 to 8 glass of fluids (for example, water, juices) and try to have a good night's sleep.
- Ask your doctor or nurse about how long your chemotherapy treatment will be so you can plan your day. Most patients find it less stressful if they do not have any other appointments on the same day as their chemotherapy. An exception may be if you are having radiation and chemotherapy at the same time. If you do need to have another appointment, make sure to leave enough time (at least 2 hours) in between appointments.
- Keep a journal of your symptoms and questions. Writing things down will help you remember what to ask your doctor, nurse or pharmacist.

On treatment day, you should bring:

- Your government issued Health Card (such as OHIP).
- Top 3 questions or concerns you have and a list of symptoms you experienced.
- A list of all your medicines, including any over-the-counter medicine, vitamins, and herbal or naturopathic medicines that you are taking (be sure to include how much you take of each).
- Medicines that you must take regularly (such as pain medicines, or medicine for high blood pressure).

- Light snack or food. Juice, biscuits and fresh ice water are available on the unit).
- Entertainment (such as a portable mobile device, laptop and books). Free Wifi is available throughout the hospital. No password is required to access the UHN guest internet.
- Check with the nurse about the unit visiting rule. Most outpatient clinics allow only **one** visitor due to space. Don't bring children under 12 years to the treatment areas because of safety concerns.

What side effects may I expect?

Before you start chemotherapy, a doctor, a nurse or pharmacist will tell you about the medicines you will get and the side effects you **may** have.

Not everyone experience chemotherapy side effects the same way. The side effects you may get will depend on the type and dose of chemotherapy you get. Most of the side effects are temporary and usually get better before your next treatment.

Keep a diary to help you write down any side effects you experienced during and after your chemotherapy treatment. Write down about:

- type of symptoms you experienced
- when the symptoms happened
- how often the symptoms occurred and how long does it usually stay
- how bad does the symptom make you feel

Let your health care team know about any side effects you have during the chemotherapy. This allows us to manage your side effects early and prevent complications.

Here are some of the possible side effects.

Infection

Some chemotherapy can reduce the number of neutrophils in your body. Neutrophils are a type of white blood cells (WBC) to help your body fight an infection. When your neutrophil count is low (called **neutropenia**), you are at risk for developing an infection and you can get sick very quickly.

Your neutrophil count is usually lowest at 7 to 10 days after your last chemotherapy treatment. It takes about 1 to 2 weeks for the count to recover. It is important to have a blood test done before starting your chemotherapy to make sure your neutrophil count has fully recovered. Your health care team will tell you the best time to have your blood test.

What can I do to prevent an infection?

- ✓ Wash your hands when you notice they are dirty, or use hand sanitizer often.
- ✓ Avoid anyone who have cold, flu, or other illness you can catch. This including a person who just had a vaccine containing live virus (such as chicken pox or polio vaccine).
- ✓ Check with your doctor before getting any vaccines when you are on chemotherapy. Your doctor will let you know the best time to get any vaccines you need.
- ✓ Keep your mouth clean. Brush your teeth after each meal and at bedtime. Let your dentist know that you are on chemotherapy before undergoing any dental procedure.
- ✓ Eat a healthy diet. Drink at least six 8-ounce glasses of fluids if you can. Reduce the amount of caffeinated drinks like coffee, tea, and energy drinks.
- ✓ Use an electric shaver instead of a razor blade when shaving. Razor blades may nick your skin. Open skin allows germs to get into the body and cause infection.

- ✓ Follow the Food Safety Guide on food preparation, cooking and storage:
 - Wash fruits and vegetables well to remove germs and pesticides.
 - Avoid eating raw or undercooked food as they may have bacteria that can cause infection.
 - Refrigerate all leftover foods. Reheat the food until steaming hot before eating.
 - Use separate cutting boards: one for produce and one for raw meat, poultry, fish or seafood. Clean the boards with warm soapy water.

For more information about food safety, you can go to Health Canada website (www.healthcanada.ca), and search for Food Safety.

- ✓ Avoid sharing drinking glasses or eating utensils (like forks, knives or spoons) with anyone, including family members.
- ✓ Maintain good skin care:
 - Wash and clean any cuts or scrapes right away with warm water and soap. Cover the area with a clean bandage if needed. Change the bandage daily until the wound heals. Let your doctor or nurse know if the wound look infected (redness, swelling, warmth to touch, oozing pus).
 - Use mild, moisturizing soap and lotion frequently to reduce skin dryness and irritation.
 - Avoid shower or washing with very hot water as it dries your skin. Pat your skin dry after shower or bathing.
 - After each bowel movement (poo), clean your bottom well and gently. Ask your doctor or nurse for advice if your bottom is sore, itchy or painful.
- ✓ Your doctor may prescribe medicine to help your body make more white blood cells (such as, Lapelga, Grastophil, Neupogen, Neulasta).
- ✓ Ask your doctor or nurse if you can use an enema or a rectal suppository for constipation. An enema is fluid put into the opening of the rectum (bum). A rectal suppository is pill-like medicine that is put into the opening of the rectum (bum). An enema or rectal suppository may cause an accidental skin tear around the anal opening that can lead to an infection.

- ✓ If you have an IV catheter (for example, PICC, port-a-cath, Hickman), watch for signs of infection like redness, soreness, swelling or drainage around the catheter area.
- ✓ Women should not douche (a rinse for the vagina). Douching removes good bacteria in the vagina, and allow harmful bacteria to overgrowth. This may cause you to develop yeast infection or other more serious infection.
- ✓ Be careful around animals. Clean any scratches right away with antiseptic solution or soap and water. Avoid handling animal poo. If you have to, wear gloves and wash your hands well right away.

You may have an infection if you have one or more of these symptoms

- Fever (temperature higher than 38 °Celsius or 100.4 °Fahrenheit)
- Chills or shakes
- Shortness of breath or trouble breathing
- New cough or a cough that doesn't go away, with or without chest congestion
- Earache
- Very bad pain in your throat, or having open sores or white patches in your mouth
- Burning or pain when you urinate (peeing), or needing to urinate often
- Redness, rash, swelling, pain or tenderness around a wound, tubes or anywhere in your skin
- Feel burning or pain while urinating (peeing) or see blood in your urine
- Nausea and vomiting (throwing up) with a fever
- Diarrhea (loose or watery poo) that doesn't go away, with or without stomach pain
- Feel dizzy, drowsy, trouble staying awake



When to get help?

Call your doctor or nurse right away if you have a fever, shortness of breath, or other signs of infection. A fever may be the first and only sign of infection. Even if you feel quite well, you can still get sick quickly.

If you are unable to reach anyone, go to the nearest emergency department. Be sure to tell the emergency department nurse and doctor that you are on chemotherapy.

Do **NOT** take medicines containing acetaminophen (for example, Tylenol, Nyquil, Sudafet, Vicks, Midol, Alka-Seltzer Plus, Dristan) until you speak with your doctor or nurse first. These medicines can “hide” your fever.

Bleeding

Some chemotherapy can reduce the number of platelets your body made. Platelets are a type of blood cell that help blood to clot and stop bleeding.

If your platelet count is too low, chemotherapy may be harmful to you and your doctor may need to delay your chemotherapy treatment.

How do I know if I have low platelets?

The only way to know if you have low platelet is by having a blood test. You may have low platelets if you have any of these symptoms:

- Easy bruising, tiny red or purple dots on your skin (called petechiae)
- Sudden onset of bleeding (for example, from the gums or nose) that takes longer to stop
- Vaginal bleeding that is different from a normal period and lasts longer

What can I do to prevent bruising and bleeding when my platelet count is low?

- ✓ Avoid activities or sports that might result in an injury.
- ✓ Safe proof your house to prevent falls (such as use a non-slip mat, wear a rubber soled shoes, and have a night light near stairway and bathroom). You can read more about falls prevention in the "How to prevent falls" pamphlet.
- ✓ Blow your nose gently. Blowing your nose too hard can cause a nosebleed.
- ✓ Gently brush your teeth with soft toothbrush. Stop flossing when your gums start to bleed.
- ✓ Use an electric shaver instead of a razor to avoid cuts.
- ✓ Talk with your doctor or pharmacist first before taking medicines that affect your platelet and make you bleed more easily. For example, Aspirin, Advil, Aleve, vitamins, or herbal supplements.
- ✓ Take measures to prevent constipation (trouble having a poo). Constipation can cause skin tear and rectal bleeding.
- ✓ Avoid using tampons, rectal suppositories or enemas for constipation, or rectal thermometer. Inserting these items into the rectum or vagina can cause skin tear that can lead to bleeding and possible infection.
- ✓ Check with your doctor before you have any surgery or dental treatment.
- ✓ Apply gentle pressure to areas used for injections or blood draw until the bleeding stops.



When to get help?

If you have a very low platelet count, you may need a platelet transfusion. You may need a transfusion even if you feel quite well. **Go to the nearest emergency department if you have any of the following:**

- Dizziness, with or without blurred vision, confusion, feeling less alert, loss of consciousness
- Looking pale, feeling clammy (cold sweats) and weak
- Blood in the stool (black stool), urine, sputum, and vomit (looks like coffee grounds)
- Heavy bleeding or bleeding that cannot be stopped, with or without fever (38 °Celsius or 100.4 °Fahrenheit).
- Headaches:
 - That get worse
 - That are new
 - Behind your eyes
 - In the back of your head

Remember to let the Emergency doctor and nurse know that you are on chemotherapy.

Anemia

Chemotherapy can reduce the number of red blood cells in your body (called anemia). A blood test can confirm if you have anemia.

Red blood cells carry oxygen to the tissues in your body. When your red blood cell count is low there is not enough oxygen for your body to work properly. Your skin, gums, lips and under your nails may look pale or bluish in colour.

And you may feel:

- weak and faint
- easily tired
- easily short of breath
- your heart is beating very fast

What can I do to improve my red blood cell count?

Anemia can have many causes. Your doctor will talk to you about what treatment is right for your anemia. Your treatment may include:

- Eat iron-rich foods, such as dark green and leafy vegetable (like kale, spinach), sweet potatoes, prunes and raisins, dried apricots and peaches, beans, meat and fish, enriched bread, cereal and pasta. The hospital dietitian can help you choose the right foods.
- Taking medicines like an iron supplement, vitamin B12, folic acid, or Eprex (medicine used to help make more red blood cells). Talk to your pharmacist about how to take these medicines so your body can absorb them better and reduce side effects.
- Getting a blood transfusion if your red blood count is very low. Your doctor will discuss this option further with you.



When to get help?

Tell your doctor or go to the nearest emergency department if you have any of these symptoms:

- Chest pain
- Fast heart beat
- Feeling very dizzy or lightheaded
- Having trouble breathing

Remember to let the emergency doctor and nurse know that you are on chemotherapy.

Fatigue

The fatigue you feel during chemotherapy is different from every day fatigue. You may feel very tired, worn-out, or lack energy. The tiredness often does not go away with rest or sleep. It may last for weeks or months after your chemotherapy treatment is over. The feeling of fatigue can affect your mood and your ability to care for yourself.

- Fatigue can have many causes, such as:
 - Cancer treatment (chemotherapy, radiation, or surgery) and/or medicines
 - Anemia (low red blood cell count) – see page 12
 - Pain
 - Infection
 - Lack of sleep or sleeping too much
 - Too much or lack of physical activity
 - Emotional stress like worrying, grieving, or depression
 - Poor appetite (not wanting to eat), and not eating healthy foods

What can I do to manage my fatigue?

- ✓ Eat a balanced diet that includes foods with high protein, iron and vitamins.
- ✓ Rest often and take short naps when you feel tired. Do not nap for more than 1 hour. Long naps may make it hard to fall asleep at night.
- ✓ Keep a regular sleep routine. Take steps to reduce things that may distract you (such as avoid screen time before bedtime). For more tips, read UHN “Helpful hints for better sleep” pamphlet.
- ✓ Learn to pace yourself. Do important activities when you have the most energy.
- ✓ Do light exercise throughout the week.
- ✓ Ask family and friends for help with activities that make you most tired.
- ✓ Do a relaxation activity that you enjoy, like yoga, meditation, reading, prayer.



When to get help?

Tell your doctor or nurse if you:

- Feel tired all the time and you are not able to do things
- Have trouble waking up or staying awake
- Feel confused and cannot think clearly
- Trouble with staying focused
- Have trouble sleeping
- Feel depressed and isolated from friends or family

Mouth and throat changes

Chemotherapy can damage the inner lining that covers your mouth and throat. As a result, you may temporarily experience one or more of the following:

- Taste changes (for example, metallic taste)
- Dryness in your mouth and/or throat
- Pain in your mouth and/or throat
- Trouble chewing, swallowing or talking
- Swelling of the mouth or gums
- Bleeding
- Thick saliva
- White patches that coat the mouth or tongue

These problems can affect how much you want to or are able to eat. It can also cause you to lose too much weight and impact your body's ability to recover and fight infection.

What can I do to take care of my mouth?

- ✓ Check with your doctor before having any dental work done. There are certain times during your chemotherapy treatment when dental work is not recommended due to higher risk for infection or bleeding.
- ✓ Brush your teeth at least 2 times a day using a soft toothbrush. You can still floss regularly, but stop flossing if your gum starts to bleed.
- ✓ For dry mouth or lips:
 - Apply lip balm to your lips.
 - Don't smoke cigarettes, commercial tobacco-products, shisha or hookah (water pipes), or use alcohol-based mouthwashes. They can make mouth sores and dryness worse.
 - Rinse your mouth often, especially before and after meals. This can help to remove any bad tastes and keep your mouth clean. Prepare your own mouth rinse every day by mixing 1 cup of warm water with ½ teaspoon of salt or baking soda. Swish the rinse in your mouth for at least 30 seconds and spit out.
 - Suck on sugarless hard candy or chew on sugarless gum to start saliva production. Your doctor can also order a medicine that help with dry mouth.
 - Drink more fluids (for example, water, Jell-O, unsweetened juices, clear broth)
- ✓ Eat with plastic utensil (knife, spoon or fork) to help reduce a metallic taste.

- If you have a dry mouth or mouth sores, choose food with a smooth texture and thickened fluids. For example, trying eating food such as:
 - applesauce
 - cooked carrots
 - porridge
 - pasta
 - eggs
 - mashed potatoes
 - soft cheese
 - soups
 - pudding
 - yogurt
 - milkshake
 - smoothies

✓ If you find it hard to eat or drink:

- Choose food and drinks that are high in calories. Having high calorie foods and drinks will help give your body energy. Energy is important to help you stay strong and get better faster during treatment.
- Eat and drink small amounts often throughout the day. This helps prevent you from feeling overwhelmed by the amount of food you have to eat.
- Avoid food that have strong smells.
- Talk to a dietitian to help you with food selection

✓ If you have sore throat or open sores in your mouth, avoid:

- spicy foods, like hot sauce, chili, curry
- food or drink that high in acid (for example, lemonade, oranges, grapefruit, vinegar)
- cigarettes, cigars, shisha or hookah (water pipe), chewing tobacco
- coarse textured food, like chips and nachos
- food or drinks with high sugar content as it increases risk of infection
- wearing denture, except during mealtimes



When to get help?

Tell your doctor or nurse if you:

- Have trouble eating or drinking.
- Have painful mouth sores or white patchy areas in your mouth.
- Have lost weight in the last 1 to 2 weeks without trying. Weight loss can reduce your body's ability to recover from the effects of chemotherapy, and to fight an infection.
- Have trouble sleeping due to pain in your mouth or throat.
- Feel very tired or sad.

Nausea and vomiting

Depending on the type of chemotherapy you received, you may have nausea (feeling sick to the stomach), vomiting (the actual throwing up), or both.

Nausea and vomiting can also be caused by:

- Cancer treatment (chemotherapy, radiation to the stomach area)
- The cancer itself
- Medicines, such as pain medicine, antibiotics (medicine used to fight infection)
- Infection
- Constipation
- Anxiety, worrying

Your doctor may prescribe medicine to help prevent nausea and vomiting (called **anti-nausea medicine**). Some anti-nausea medicine must be taken at a scheduled time. Some should only be taken when you feel sick in your stomach or after you vomit. Check with your nurse or pharmacist on how to take the anti-nausea medicine correctly before the start of your chemotherapy treatment.

What can I do to prevent or manage my nausea and vomiting?

- ✓ Eat a light meal or snack before your chemotherapy treatment.
- ✓ Eat small amount of food often and slowly. Avoid drinking too much fluid (for example, water, juice) immediately before and during meals.
- ✓ Limit foods that are spicy, very sweet, creamy or have a strong smell.
- ✓ Do what worked before for you to prevent nausea.
- ✓ If you tend to be anxious and feel nausea before your chemotherapy treatment, try to focus your attention on television, music, reading, or by chatting with someone. Your doctor can also prescribe medicine to help you relax and have less nausea.
- ✓ Tell your doctor or nurse if you cannot take your anti-nausea pills or if you continue to have nausea and vomiting even after taking the pills as prescribed. Your doctor can prescribe a different type of anti-nausea medicine.
- ✓ Take the anti-nausea medicine as ordered by your doctor.
 - If you have nausea and vomiting at a certain time take your anti-nausea medicine at least 30 minutes before that time. For example, if you often have nausea or vomit before meals, take you anti-nausea pill at least 30 minutes before your meal.
 - If you vomit within 1 hour of taking your anti-nausea pill, you can take another pill.



When to get help?

Call your doctor or nurse, or go to the nearest emergency department if you:

- Throwing up that lasts more than 12 hours even after taking anti-nausea medicine as prescribed
- Feel any of these symptoms, which may mean you are dehydrated:
 - dizzy or lightheaded
 - very dry mouth
 - very thirsty
 - less amount of urine (pee)
 - rapid heart rate
- Have blood in the vomit. This can look like “coffee grounds” in your vomit
- Are unable to eat or drink for more than 24 hours even after taking anti-nausea medicine as prescribed

Remember to tell the emergency doctor and nurse that you are on chemotherapy.

Constipation

Constipation means that you are having less bowel movements (going poo) than normal. You may be constipated if you have one or more of the following:

- ✓ No bowel movements for 2 days or more from your normal bowel pattern. A “normal” bowel routine is what was normal for you before starting treatment.

- ✓ Small amount of leaking stool (poo)
- ✓ Small, dry hard stools (poo), which often can be difficult to pass
- ✓ Stomach ache or cramps, bloated belly, a feeling of fullness or discomfort
- ✓ Passing lots of gas or belching (burping)
- ✓ The need to strain (bearing down) when having bowel movement (poo)
- ✓ Nausea or vomiting

What causes constipation?

There are many reasons why you get constipated, or example:

- Chemotherapy
- Pain medicine
- Anti-nausea medicines
- Being less active
- Loss of appetite and not eating well
- Not drinking enough fluids

What can I do to prevent or manage constipation?

- Drink at least 8 glasses of water or other fluids like fruit juices, warm coffee or tea during the day only so it won't affect your sleep.
- Eat food high in fibre, like raw vegetables, fruits with skin, whole grain products, popcorns, dried fruits and prunes. **Remember to drink more fluids when you eat high-fibre food.**
- Talk to your doctor about which laxative is best for you. Some laxatives (like Metamucil or Benefiber) may make the constipation worse if you don't drink enough fluid.
- Try to stay active every day. Exercise like walking, yoga or running may help with constipation.
- Tell your doctor or nurse if you have not had bowel movement for 2 days from your usual bowel movement routine. They can suggest a laxative that is appropriate for you, such as:

- A **laxative** like senokot (Senna), lactulose, bisacodyl. You should take a laxative if you do not have a bowel movement (go poo) for 2 days from your usual bowel movement routine.

Let your doctor or nurse know if your problem constipation or hard stool continues even after you took the medicine.

Diarrhea

You may have diarrhea if you have bowel movement more often than your usual bowel movement routine. The stool (poo) may be loose, watery or very soft stool (poo). Stomach cramps and bloating may also occur at the same time as diarrhea.

Diarrhea can be caused by many things including:

- chemotherapy
- radiation to the stomach area
- infection
- medicine, like antibiotics (medicine to treat infection)

What can I do to manage the diarrhea?

Ask your doctor or pharmacy if you should stop taking medicines that cause or worsen your diarrhea.

Talk to your doctor or pharmacist if you should take an over-the-counter anti-diarrhea medicine, like Imodium. Before you start taking an anti-diarrhea medicine, ask your doctor or nurse to see if a sample of your stool (poo) is needed. A stool sample is often needed to make sure you do not have an infection.

Here are things that you should do when having diarrhea:

- ✓ Limit or avoid foods that may make your diarrhea worse like:
 - greasy, spicy and very sweet food
 - alcohol
 - caffeinated drinks (for example, coffee, tea, energy drinks, pop)
 - high fibre foods (for example, raw vegetables or fruits, broccoli, whole grain products, popcorns, dried fruits and prunes)
 - sugarless gum or candies
 - dairy products (for example, milk, yogurt, cheese, sour cream)
- ✓ Drink 8 to 12 glasses of fluids each day to help replace any fluids you lost. Eat 5 to 6 meals throughout the day for easy digestion.

Here are some of the recommended foods and drinks that you can take when you have diarrhea:

Clear liquids	Foods
<ul style="list-style-type: none">• Clear broth• Sport drinks• Juice (for example, cranberry)• Pop (for example, ginger ale)• Decaffeinated coffee or tea	<ul style="list-style-type: none">• Applesauce• Banana• White rice• Gelatin• Vegetables and fruits without skin or seeds• Meats (for example, chicken, turkey, fish)• Refined cereal• Boiled potatoes without skin

- ✓ Keep the skin around your rectum (bum) or ostomy (opening in your stomach to drain stool or urine) clean with warm water, and pat dry. Ask your nurse or pharmacist about creams that can help to reduce skin irritation around the area.



When to get help?

Diarrhea that is not treated can turn into a medical emergency. Tell your doctor or nurse, or go to the nearest emergency department, if you have:

- Diarrhea (more than 4 to 6 watery or loose stool) for more than a day
- Severe stomach or rectal (bum) pain, sores or bleeding
- Fever (temperature of 38 °Celsius or 100 °Fahrenheit) or higher
- Dizziness, excess thirst (feeling thirsty all the times), dry mouth, and fainted

Hair loss (alopecia)

Chemotherapy may cause your hair to thin or fall out. This can happen within a few days or a few weeks after you start chemotherapy. You may also lose hair on other parts of your body like your eyebrows and eyelashes, arms, legs and underarms.

Your hair will start to grow back when your chemotherapy is done. The texture or colour of your new hair may be a little different than before chemotherapy treatment.

How can I care for my hair and scalp?

- ✓ Keep your scalp and hair clean by using mild shampoo and conditioner. If you are not able to wash your hair, a dry shampoo or baby powder will keep it cleaner looking
- ✓ Avoid treatments that are more likely to cause your hair to break, for example:
 - heated rollers or curling irons
 - frequent blow-drying
 - perms or colour treatments

- ✓ Try a short haircut. A short haircut can hide the effect of thinning hair and may help you adjust to hair loss.
- ✓ Use a gel or mousse that has no alcohol. It may give your hair more fullness.
- ✓ Your hair helps prevent heat loss from your body. Wear a soft cap if you need to keep your head warm.
- ✓ Your scalp is more prone to sunburn when it is uncovered. Keep your head covered or use sunscreen with at least SPF 15 to avoid a sunburn.

For Wigs and Head Coverings

- Some of the cost of your wig may be covered by private insurance. Speak to your insurance company.
- Try to order a wig before the hair loss so the wig stylist can better match your hair. Visit the Wig Salon on the 3rd floor of Princess Margaret Hospital where you will find lots of options and staff who are trained to help patients with cancer. Call 416-946-6596 for more information.
- If you do not want to wear a wig, try wearing scarves, hats, or turbans.
- Contact the “Look Good Feel Better” toll-free number 1-800-914-5665 or go to the “Look Good Feel Better” website: www.lgfb.ca

Skin and nail changes

Some chemotherapy and radiation may cause skin, scalp, and nail changes, like:

- redness
- acne-like rash
- peeling
- dryness
- itchiness
- the veins become more visible and darker
- increase sensitivity to sun

Here are some changes you may have to your nails:

- brittleness (easily broken)
- cracking
- yellowing
- splitting
- dark line under the nail

What can I do for skin and nail care?

- ✓ Bathe or shower in warm water instead of hot water. Hot water dries out your skin.
- ✓ Gently pat your skin dry instead of rubbing it.
- ✓ Use a moisturizer that has no alcohol or oil in it to soften your skin. Creams are better than lotion in relieving dry skin. Try keeping the cream in the fridge because the cooling effect helps to soothe dry skin.
- ✓ Do not squeeze or scratch pimples or acne. Ask your doctor or nurse before using any over-the-counter acne medicine. Some rashes may look like acne, but are not acne. Using the wrong product can make the rash worse.
- ✓ Do not use tanning beds.
- ✓ Apply sunscreen lotion (SPF 30 or higher, and PABA free) often. Wear a wide-brimmed hat and long sleeve clothing to protect your skin from the sun.
- ✓ Check your nails, skin and feet daily for any cuts, rash, discoloration.
- ✓ Cut your nail short. Use cuticle cream or remover instead of tearing or cutting the cuticles of your nail to prevent an infection.
- ✓ Avoid using artificial nail product (for example, gel) as it can damage your nails more.

- ✓ Avoid wearing tight shoes
- ✓ Take safety measures to protect your skin and nails:
 - wear rubber soled shoes
 - wear cotton gloves
 - avoid extreme water temperature – too hot or too cold
- ✓ Contact the “Look Good Feel Better” toll-free number 1-800-914-5665, or go to the “Look Good Feel Better” website: www.lgfb.ca



When to get help?

Tell your doctor or nurse if:

- the rash looks infected (increase redness, pus-filled acne, and is spreading to your chest, back, arms, neck and face), or cause a lot of discomfort or itching.
- the nails look infected (like redness and swelling around the nail bed, bleeding or pus discharge, white coloured nail that may be caused by fungal infection, pain).
- feeling depressed or distress because of the way you look

Changes to the nervous system

The nervous system includes the brain and all the nerves in your body. Some types of chemotherapy can cause changes to your nervous system. It is important to let your health care team know as soon as possible if you have one or more of these symptoms:

- tingling, numbness, sharp jabbing (pin prick) pain or burning sensation on your hands or feet
- tightness sensation, like you're wearing an invisible tight long stocking on your arms and legs
- very sensitive to normal touch
- dropping stuff
- unsteady on your feet while standing or walking (losing balance), not knowing where your feet are
- decrease sensation or ability to feel or to pick up an object (like buttoning your shirt, zipping up your pant or skirt)
- difficulty sleeping because of feet and leg pain.
- difficulty remembering or confused
- shaking or trembling
- muscle weakness, cramping or spasms
- unusual sweating
- loss of bladder or bowel control

Treating the problems sooner can help prevent the condition from becoming worse or long lasting. In some situations, it may be necessary to delay your treatment for a short time until the symptoms have resolved.

What can I do to cope living with these conditions?

- ✓ Let your health care team know right away about your symptoms. This is especially important if you are receiving chemotherapy. Your doctor may need to adjust your chemotherapy treatment until your symptom has resolve. Depending on the cancer treatment you got, some symptoms will get better over time while others may last for the rest of your life.
- ✓ Prevent falls by:
 - Wearing footwear with rubber soles
 - Place non-slip mats or rugs in the kitchen, bathroom and bedroom
 - Organize cords or wires to prevent tripping over them
 - Use handrails in the tub or shower stall, and stairs
 - Use cane or other mobility device to steady yourself when walking
- ✓ As your ability to feel is changed, it is important for you to:
 - Be careful not to cut yourself when handling sharp objects like knives and scissors
 - Be careful not to burn yourself when preparing and cooking food, or when handling a pot or cup filled with hot water
 - Make sure the water temperature is not too hot while washing dishes or bathing
- ✓ Talk to your doctor if:
 - your pain or numbness and tingling is bothersome and affecting your ability to sleep or do every day activities
 - you feel depressed, easily irritable or are having mood swings



When to get help right away

Go to the nearest emergency department if you have:

- Trouble breathing
- Irregular heart beat
- Sudden onset of confusion
- Thinking of harming yourself

Sexual changes

Chemotherapy can have temporary or permanent effects on a person's sexuality, both physically and emotionally. The changes you may have will depend on:

- your age
- the type of chemotherapy you are getting
- previous cancer treatment you had (for example, hormone therapy, radiation to the pelvis area, surgical removal of the sex-organ like ovaries or testicles)
- previous issues with sexual function (for example, infertility, low sex drive)
- presence of other illnesses (for example, diabetes, hypertension)
- side effects from medicines (such as blood pressure medicine, anti-anxiety or anti-depressant medicine, pain medicine)

Many people don't feel comfortable talking or asking questions about sex. However, it is important to share your worries and feelings with your doctor or nurse so they can help you. If they cannot help you, ask them to recommend someone who can.



What are some of the changes I may have to my sex life?

Ask your doctor or nurse **before the start of your treatment** about the type of sexual and reproductive changes that you may likely experience.

Common physical changes that may affect your sexual health:

For bodies with internal reproductive organs	For bodies with external reproductive organs
<ul style="list-style-type: none"> • Vaginal and vulvar dryness, tightness, itching, and burning • Decrease or loss of sensation in their vagina • Irregular or no periods (menstruation) • Early menopause (for example, hot flashes, night sweat, sleep changes, weight gain, vaginal dryness, mood changes) • Inability to reach orgasm • Pain while having sex • Increase risk of bladder or yeast infections 	<ul style="list-style-type: none"> • Inability to get or maintain an erection • Inability to reach orgasm • Change in orgasm pattern (duration, intensity, dry ejaculation) • Pain in the penis or testicles during sex • Hot flashes, night sweats, difficulty sleeping (if patient is on hormonal therapy) • Leaking of urine during orgasm

It is normal for you to feel a range of emotions while undergoing chemotherapy. However, these emotions can affect your desire (wanting) for sex and being intimate with your partner. It can also change the way you view and feel about yourself. Some of the emotions you may feel include:

- **Self-consciousness**

Cancer treatment, including chemotherapy, can cause many physical changes (such as scars, skin changes, weight changes, hair loss, removal of the sex organs). These changes may make you feel unattractive, shame, feeling less of like yourself, and afraid of being rejected by others.

- **Feeling of loss**

You may grieve over the loss of body parts and ability to enjoy sex and intimacy with your partner. This feeling can be overwhelming, and you may need a professional counsellor to help you get over the feeling of loss.

- **Anger and guilt**

If you used to be a primary provider for your family, you may feel angry or guilty for having to rely on others for help.

- **Fear (being worried)**

There are many things that may worry you, such as:

- worry about potentially losing your job and income
- worry that treatment may fail
- worry of being rejected by your partner and friends

It is difficult to think about sex and intimacy when you are constantly worrying. Talk to a qualified counsellor or psychologist to help manage your anxiety and fears.

- **Depression**

You may have depression if you are constantly feeling sad, irritated, having trouble sleeping, loss of appetite or eating too much, not able to enjoy activities that you previously enjoyed, and lose interest in sex. Tell your doctor or nurse if you think you may be depressed.

- **Feeling tired all the time**

Your fatigue (tiredness) may be caused by many reasons (for example, the treatment, the disease itself, lack of sleep, stress and poor diet). Being constantly tired will make you not want to have sex. Talk to your doctor or nurse about your fatigue, so they can help you with your fatigue.

What can I do to deal with these changes?

Vaginal dryness

- Talk to your pharmacist about a vaginal moisturizer (for example, Replens, K-Y Liquibeads). Apply the vaginal moisturizer 2 to 4 times a week to keep your vagina moist.
- Avoid soap, bubble bath and creams that can irritate your vulva and vagina.
- Talk to your doctor if you continue having problem with vaginal dryness and painful intercourse. Your doctor can prescribe hormone-based gel, cream or vaginal suppository to help reduce these symptoms.

Early menopause or hot flashes

- Wear layer of clothes that can be easily removed. Wear sleeveless shirt or other light clothing materials (for example, cotton).
- Avoid food that can trigger a hot flash (like, caffeine, alcohol, spicy foods).
- Exercise regularly.
- Wear cotton underwear. Cotton releases sweat and moisture to reduce the chance of infection.
- Use fans or air conditioning.
- Talk to your doctor before taking herbal medicines. Some herbal medicines mimic the natural estrogen in the body. Although they can help reduce hot flashes, they may be harmful.

Painful penetrative sex

- Use water-based vaginal lubricant (like K-Y Jelly, Astroglide) before and during penetrative sex. Avoid petroleum-based lubricants (for example, Vaseline) as it can damage condoms and increase the risk of infections, such as yeast infection.
- If you are taking pain medicine, take it 1 hour before having any sexual activity for it to have an effect.

- Try different positions that allow you to control the depth of penetration.
- Let your doctor or nurse know if you are having pain during penetrative sex. There are number of things they can recommend for you and your partner to try.
- Let your partner know if any positions or touches are painful. Make sure that you are fully aroused before attempting any penetration.

Loss of sexual interest and intimacy

- Talk to your partner openly and honestly about your feelings and concerns. Allow your partner to do the same.
- Find new ways to enjoy being with each other (for example, hugging and cuddling more, give each other massage, have a “date night” or other activities that you both enjoy).
- Talk to your doctor about your problems. Your doctor can check if there are physical causes, other than your cancer, that may cause your lack of sexual interest.
- Plan ahead and choose time that you are least tired or in pain.
- Consider talking to a professional (for example, a counsellor, a sex therapist, or a psychiatrist) if you have serious concerns about your sex life.

Inability to maintain or get erection (also called impotence)

- Talk openly with your partner about your problem and fears.
- Explore different ways of satisfying your partner and yourself without the need of penetration (for example, cuddling, oral sex, mutual masturbation, and using sex toys).
- Ask your doctor about medicine that can help with erection, or the use of assistive device, like the vacuum pump device.
- Consult with a specialist (for example, urologist) or sex therapist.

What other things should I be concerned about?

Ask your doctor when is it safe for you to have penetrative sex when you are on chemotherapy. Avoid anal sex and use a lot of lubricant before and during sexual activity to prevent skin tear. Skin tear can cause infection and bleeding, especially if your blood counts are low.

Some chemotherapy drugs can damage sperm and eggs or harm a developing baby (for example, birth defect). If this is the case, your doctor will ask you and your partner to use double contraception (for example, condom and birth control) to prevent pregnancy.

It is possible for traces of chemotherapy to be present in semen or vagina secretions for several days after chemotherapy treatment. Because of this, your doctor may advise you to use effective birth control such as an internal or external condom for up to 7 days after chemotherapy if there is any chance of getting pregnant.

Fertility issues

Some chemotherapy may also cause infertility. Infertility means not being able to become pregnant or not being able to make someone pregnant.

Infertility from chemotherapy may be long-lasting or short-term. This is depending on your age, type of chemotherapy you received, and your overall health.

Ways to preserve your fertility

Let your doctor know if having a child is important for you and your partner **before starting a treatment**. Your doctor can discuss your risk of infertility and if it is possible to preserve your egg or sperm for future use.

There are a number of possible way to preserve (keep) your fertility. These include:

- Egg freezing. This is a process where eggs are collected before chemotherapy treatment starts. The eggs are kept frozen until the patient has finished all of their cancer treatment. The eggs can be used to have a baby in the future.
- Sperm banking. This is a process where sperm is collected before chemotherapy treatment starts. The sperm are kept frozen, until the patient has completed all of their cancer treatment. The sperm can be used to have a baby in the future.

These options need careful planning and cost money. It is best to explore your options before the start of your chemotherapy treatment.

Resources about sexuality and fertility

Adolescent and Young Adult (AYA) Oncology Program at Princess Margaret

- This program identifies the unique needs of young people (39 and under) with cancer, including fertility and sexual health. The AYA team provides personalized care plans and supportive counseling that help to optimize the experience of young adults along their cancer journey.
- AYA website:
https://www.uhn.ca/PrincessMargaret/Clinics/Adolescent_Young_Adult_Oncology

For more information about sperm banking, go to:
www.repromed.ca/cancer_patients_storage.html

Fertile Hope

Website: www.fertilehope.org

- This is a non-profit organization dedicated to providing reproductive information and support for cancer patients and survivors dealing with infertility issues.

Fertile Future

Website: <http://fertilefuture.ca>

Mount Sinai Fertility

Website: www.mountsinaifertility.com

Important Contact Information

My oncologist (cancer doctor) Name

Contact information:

My Clinic Nurse Name

Contact information

My Chemo Medicines

Important: This document does not include a full list of brands or products. The University Health Network does not recommend one brand over another and is not responsible for any products listed. Please contact each company directly to find out more about their products.

The development of patient education resources is supported by the Princess Margaret Cancer Foundation.



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