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## OVERVIEW

Dr. Manish Kumar is an esteemed cancer specialist in Bangalore, recognized for his expertise in medical and hematological oncology. With over 24 years of experience, he offers personalized care tailored to each patient's unique needs when treating different types of cancers, ensuring the best possible outcomes. Dr. Manish Kumar also provides [specialized second opinion](#) for cancer

# OUR PROCESS

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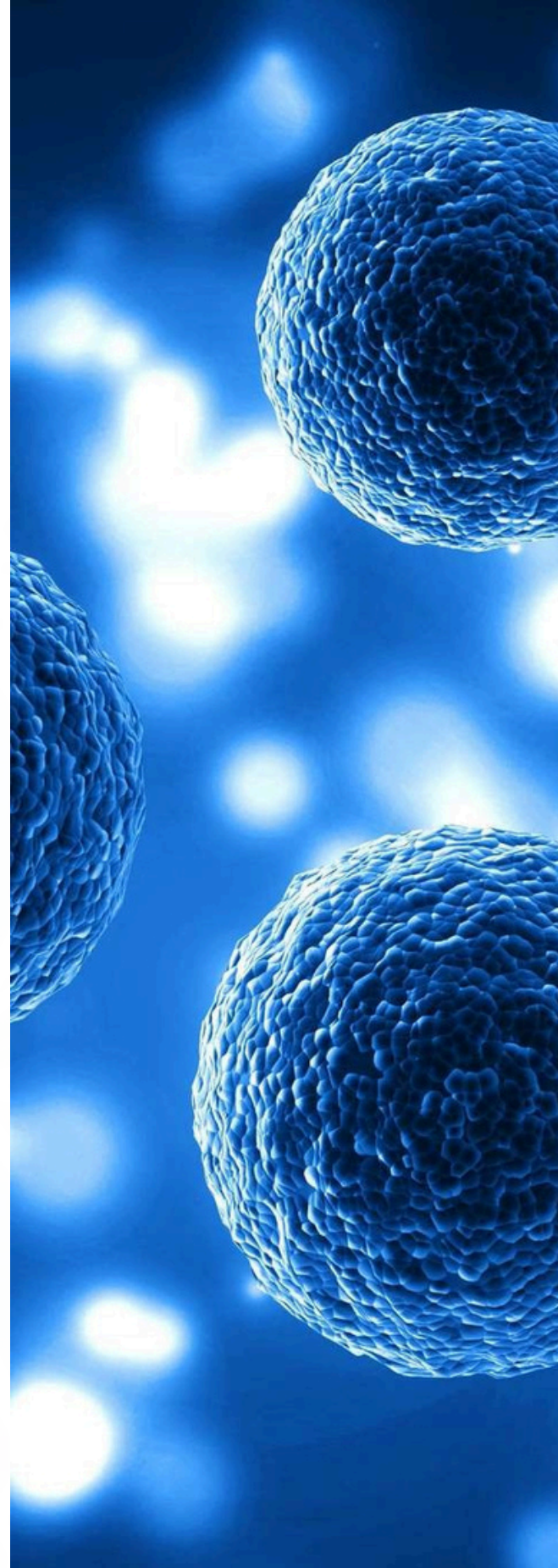
## Cancer Cells :

·To understand cancer therapy, it is helpful to understand cancer cells. Cells are the body's basic unit of life. Normal body cells grow and divide in a controlled way. Each cell has a certain job in the body and dies after a natural length of time. The body cleans up these dead cells on an ongoing basis. Cancer cells are abnormal cells that no longer work correctly and have following features-

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

## Chemotherapy :

·Chemotherapy (chemo) is the use of medicines to treat cancer. Chemo may cure or control the spread of or relieve symptoms from cancer. It kills or slows the growth of the primary cancer. It also works in the body against cancer cells that have spread (metastasized) from the primary location of the cancer. Other medicines used to treat cancer include immunotherapy, targeted therapy or vaccines. Each type works in a different way, so the actions in the body may be different. The side effects may also vary. You may have chemotherapy alone or it may be given before or after other treatments. Other treatments may include surgery or radiation. You may also receive multiple medicines. Combining medicines and therapies often improves the success of treatment.





# DID YOU KNOW?

**Chemotherapy can react with other substances.**

Talk with your oncology team before taking:

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





## HOW CHEMOTHERAPY WORKS

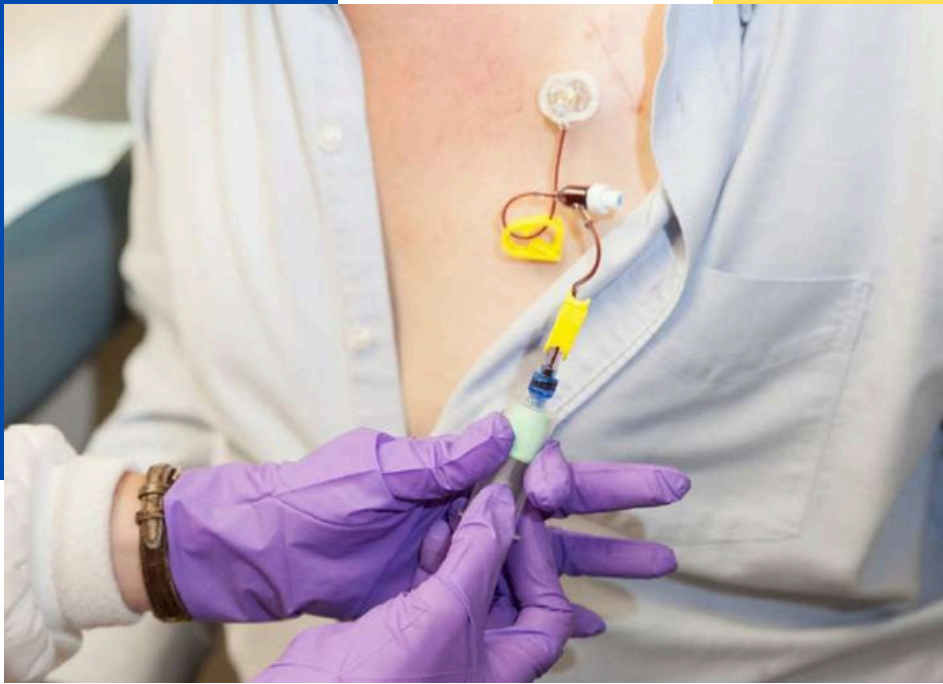
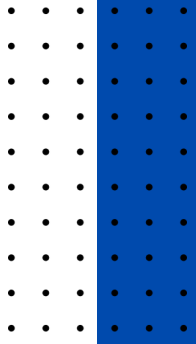


Chemotherapy attacks all rapidly growing cells in the body. The goal is to kill or stop cancer cells from growing. Chemotherapy may affect cancer cells by:

- Breaking down parts of the cell
- Stopping the cells from growing using up nutrients needed by the cancer cells
- Limiting blood vessel growth to the tumor







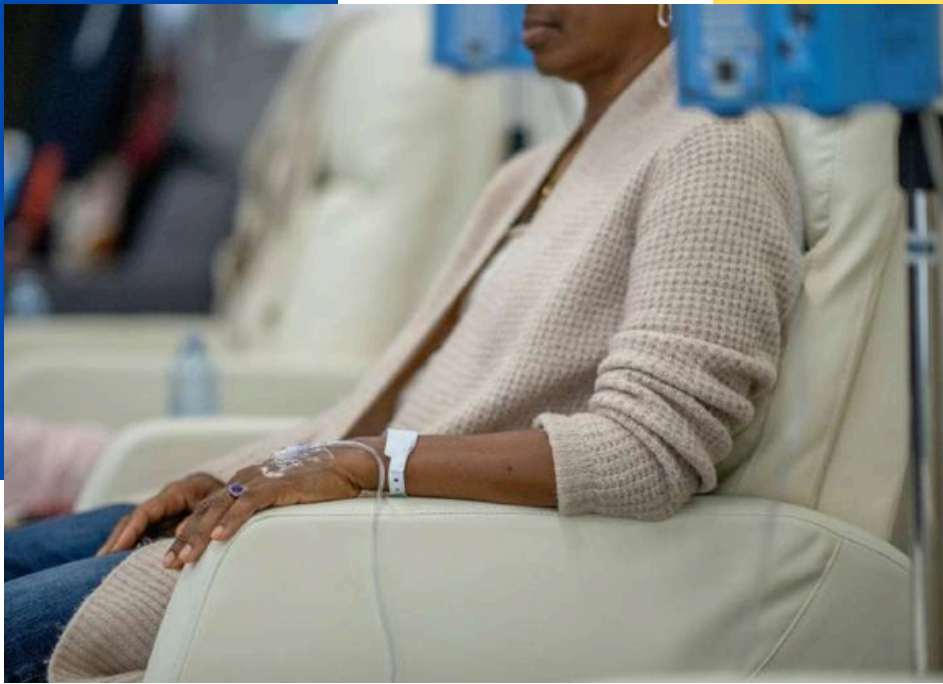
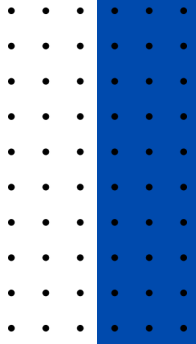
## ADMINISTRATION



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

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





## **CHEMOTHERAPY IS GIVEN IN CYCLES.**

- Your first day of chemotherapy is day 1 of the treatment cycle. You will receive chemotherapy for one or more days. Then you will stop chemotherapy (rest) for 1 or more days. The time between your first day of chemotherapy and your last rest day is one cycle. A member of your health care team will tell you how long each cycle will take. The amount of time needed for treatment is different for each person.





# **SIDE EFFECTS OF CHEMOTHERAPY**

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

Digestive tract (mouth, esophagus, stomach and intestines)

- Bone marrow (where blood cells are made)
- Skin and hair
- Sex organs (ovaries or testicles)
- Nervous system (nerves in the hands and feet) side effects are short term.

They can often be managed with medicines and self-care. Some side effects may permanent. Discuss any changes with your oncology team when you first begin to notice them.

## **TARGETED THERAPY & IMMUNOTHERAPY**

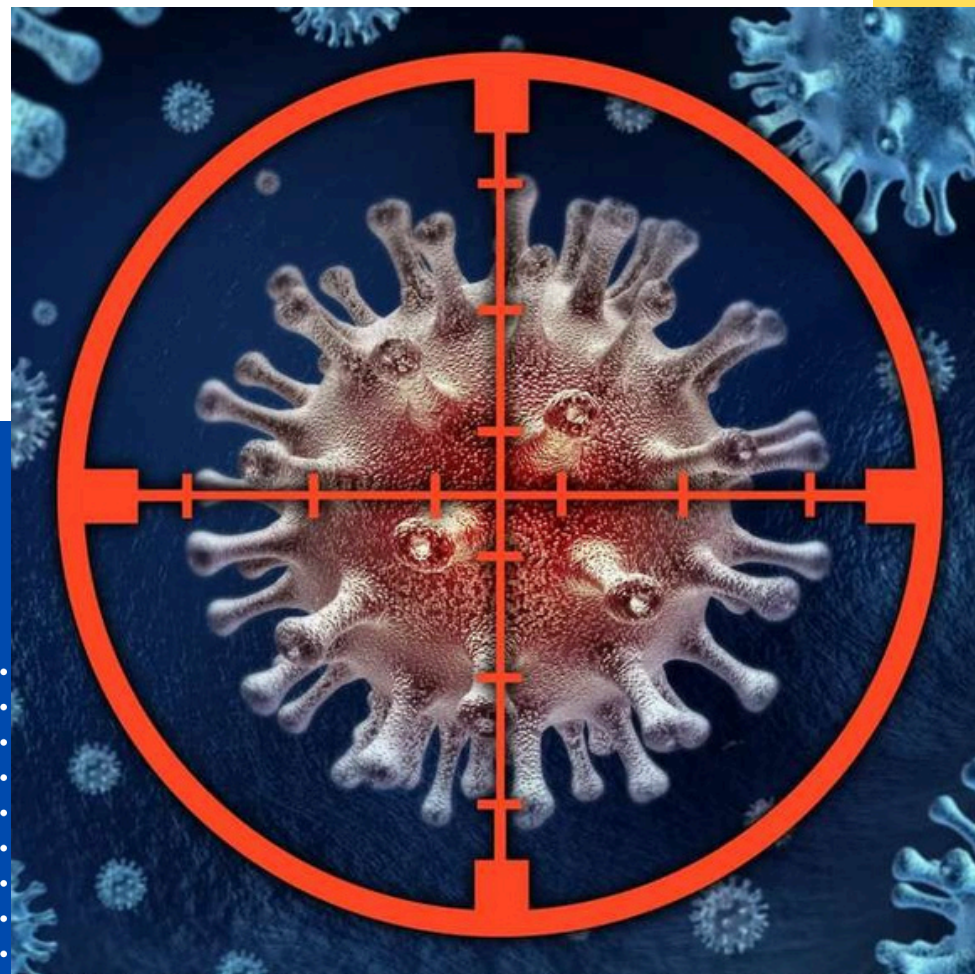
Targeted therapy is a type of cancer treatment that uses specified medicines to attack cancer cells. Some types of targeted therapy kill cancer cells directly by affecting how the cells grow and survive. Other targeted therapies help the body's immune system (its natural defence) attack and fight cancer. Targeted therapy can be used alone or with other cancer treatments. Other methods used to treat cancer are chemotherapy, immunotherapy, radiotherapy and surgery.



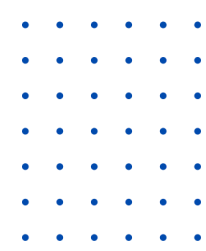
# HOW TARGETED THERAPY WORKS

Targeted therapy does not attack all rapidly growing cells. Targeted therapy is specific because it works on certain actions within cancer cells. Targeted therapy may be less harmful to normal cells compared to other types of treatment.

Patients who receive targeted therapy may still have side effects which are different for each type of targeted therapy. Side effects may include skin rash, nausea, diarrhoea, fatigue or mouth sores. Patients receive targeted therapies in the same ways as traditional chemotherapy – in pill form or by an injection under the skin, into a muscle or into a vein. There are different types of targeted therapies. Your doctor may choose one that works well against your cancer. Your doctor will discuss your treatment options with you and help decide if targeted therapy is the best treatment for your cancer







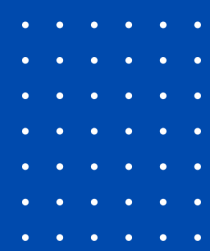
# WHEN TO CALL THE EMERGENCY HELPLINE OR GO TO MEET YOUR ONCOLOGIST

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

## **WATCH FOR THE FOLLOWING SYMPTOMS AND REPORT THEM AS INSTRUCTED.**

- Fever of 101°F (38.3°C) or higher
- Easy bleeding or bruising
- Signs of infection (such as fever, chills, sweats or a stiff neck)
- Weight loss or gain of 10 or more pounds
- Feeling out of breath
- Soreness in the mouth and throat
- Diarrhoea
- Pain in the area where you received your shot
- Feeling very tired
- Feeling dizzy or lightheaded
- Chest pain
- Changes in heartbeat
- Feeling confused or depressed





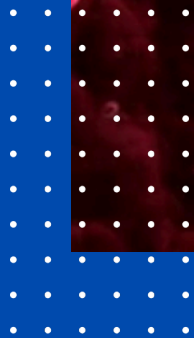
**B**ecause many targeted therapies are new, all side effects may not be known. If you notice any unusual or unexpected side effects, discuss these changes with your health care team. You may be asked to keep a chart or diary of your side effects. You can expect regular follow-up visits with the health care team to check your progress. They may also ask you to keep track of any medicines you take and the times you take them. You might not develop any of these side effects. You may have very few or none at all. Even if the side effects do not occur, this does not mean the therapy is not working. Being treated with targeted therapy does not mean you have to limit your normal life. Many people find that they are able to work and do their day-to-day activities with very few changes.

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



# BLOOD COUNTS

Blood carries oxygen and nutrients to the cells of the body while also carrying away waste. Some blood cells fight against infection, others help with clotting, and a third type delivers oxygen. When you get a blood test, each of these blood cell types is measured. Blood cells are produced mainly in the bone marrow. Chemotherapy, some cancers and radiation can suppress the bone marrow. This may lower the number of blood cells.





# TYPES OF BLOOD CELLS



## Red blood cells

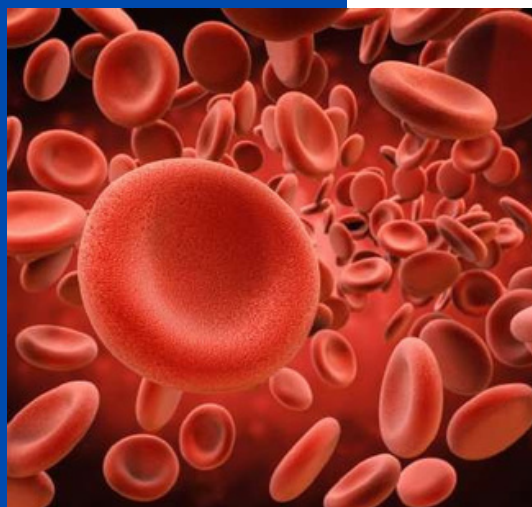
Red blood cells (RBCs) carry oxygen to all parts of the body. They contain haemoglobin which holds the oxygen. A person who does not have enough RBCs is anaemic. An anaemic person is often pale and may feel tired or become short of breath. Anaemia may be treated by a blood transfusion.



## White blood cells

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

- Wash your hands often with soap and water.
- Avoid people who you know are sick.
- Avoid getting cuts or breaks in the skin.
- Wear gloves while working in the garden or doing housework.
- Bathe or shower every day and practice good mouth care.
- Take your temperature as instructed. If you have a fever of 101°F (38.3°C) or higher, go to the nearest hospital emergency centre.
- Do not take aspirin or any other pain reliever such as ibuprofen, naproxen or acetaminophen unless your doctor says

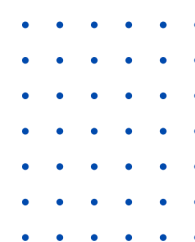


## Platelets

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

- Avoid vigorous activity, such as contact sports.
- Blow your nose gently.
- If you have bleeding, apply pressure until bleeding stops (usually 5 to 10 minutes). If you are still bleeding after 10 minutes, apply ice and pressure and go to the nearest hospital emergency centre.
- Go to the nearest hospital emergency centre if you cough up blood or have bleeding that does not stop.





# YOUR BLOOD COUNTS ARE CHECKED REGULARLY DURING **CHEMOTHERAPY**

## NORMAL VALUES

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

When blood counts are low, you may receive replacement through intravenous transfusion. You may receive whole blood with all the types of cells or you may receive only the cells that are low.



## KNOW YOUR SYMPTOMS AND THEIR PREVENTION AND HOMECARE

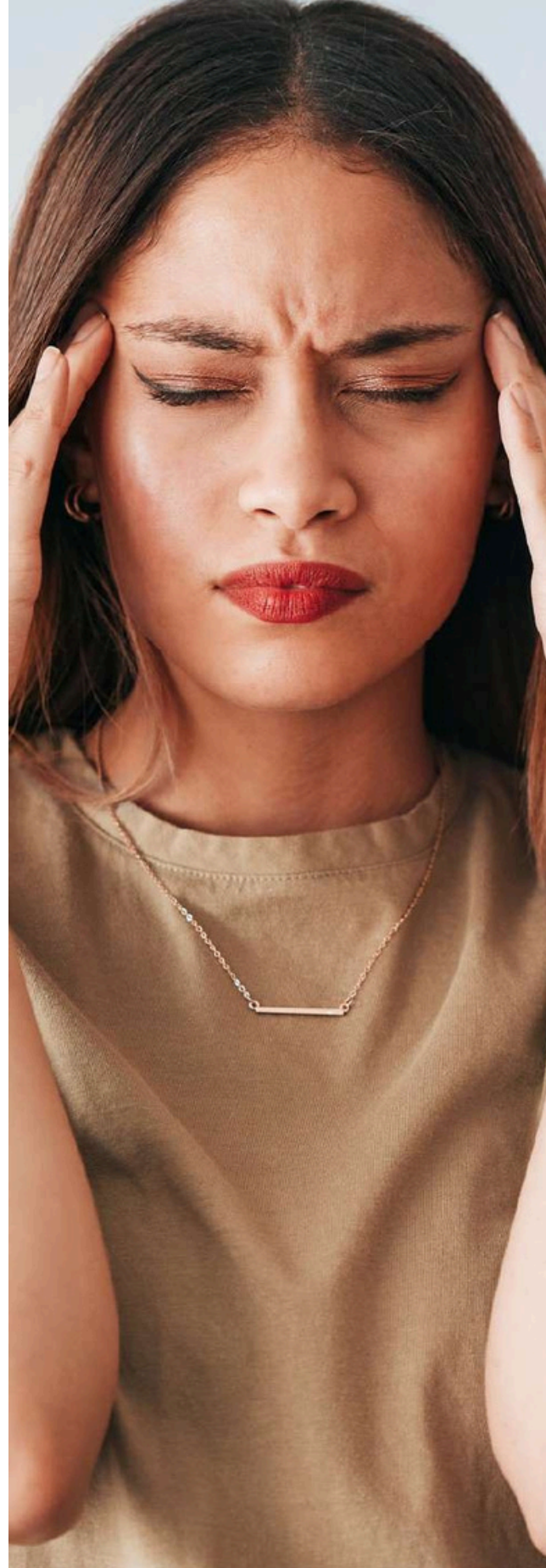
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### Fatigue:

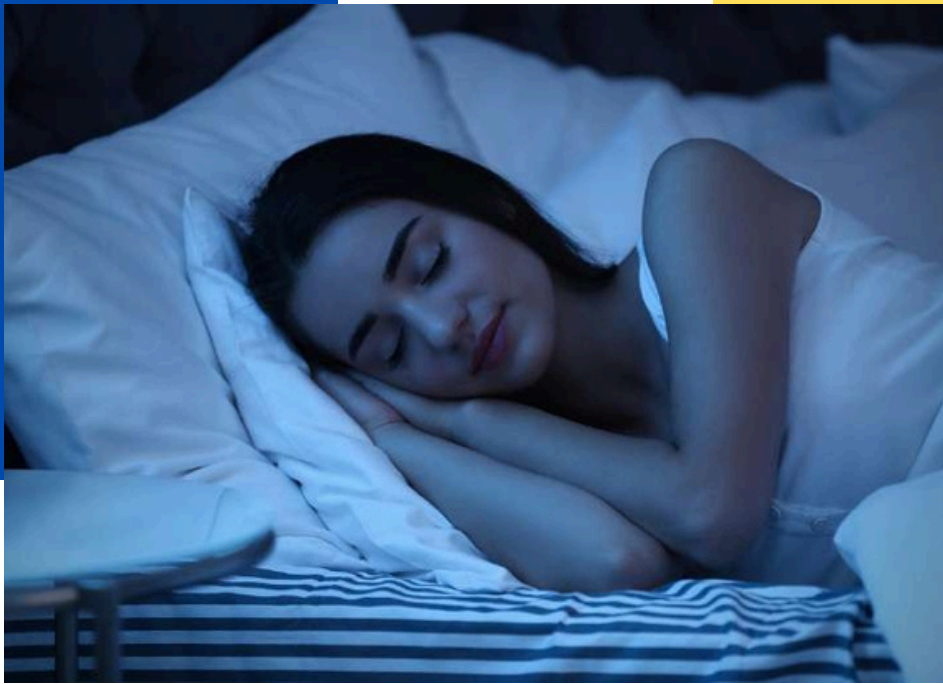
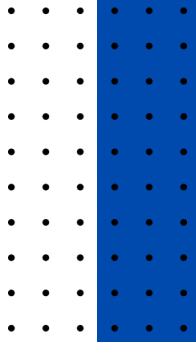
Fatigue can mean feeling tired physically, mentally and/or emotionally. Cancer or cancer treatments can cause fatigue. Cancer-related fatigue can be overwhelming. Your caregiver(s) can also become fatigued.

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

- Prioritize your activities. Complete the most important tasks when you have the most energy.
- Delegate activities to others when you can.
- Place things that you use often within easy reach to save energy.
- Treat any medical problems that may contribute to your fatigue.
- Stay well hydrated. Eat a balanced diet. Include plenty of protein such as fish, lean meat/poultry, low-fat dairy, eggs/egg whites and legumes.
- Exercise by taking short walks or doing other physical activity. Before you start any exercise program, discuss it with your care team.
- Manage stress with exercise, relaxation, visual imagery, meditation, talking with others or counselling.
- Balance rest with activities.
- Do not stay in bed. Limit naps/rest periods to 30 minutes at a time.







# SLEEP

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

## **During the Day**

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

## **Before Bedtime**

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

## **At Bedtime**

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





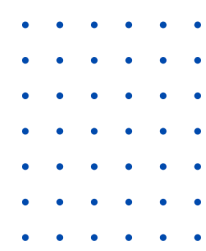
# LOSS OF APPETITE

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

## Causes:

- **Cancer and side effects from cancer treatments.**
- **Medical conditions, such as fever, pneumonia or shortness of breath**
- **Pain**
- **Sadness, depression or anxiety**





## SELF-CARE TIPS

- Try to eat 6 to 8 small meals throughout the day instead of 3 regular size meals. Include high-calorie and high-protein foods and beverages with each meal. Choose beverages that also provide calories (milk, juices, shakes, smoothies) high-calorie-
- protein shakes and yogurts.
- Eat at scheduled times instead of waiting to feel hungry. Set an alarm to remind you to eat every 2 to 3 hours.
- Limit fried and greasy foods. They can slow digestion which may limit you from eating later.
- Drink most of your fluids in between meals and sip as needed with meals to prevent fullness.
- Eat your largest meal at the time of day when you are most hungry.
- Avoid strong food odours that may increase feelings of appetite loss and nausea.
- Make a list of your favourite foods to share with your friends and family so they can prepare and deliver them to you. Stimulate your appetite by watching cooking shows or browsing recipes.
- Light exercise, such as walking, before a meal may stimulate your appetite.





# NAUSEA

Some chemotherapy (chemo) medicines may cause nausea or vomiting. Nausea is the feeling that you are going to throw up. Vomiting is throwing up the contents of your stomach. Nausea is more common than vomiting. Nausea that happens within 24 hours of receiving chemo is referred to as “acute” nausea. You may have nausea for a few days after chemo is completed. This is referred to as “delayed” nausea. After repeated chemo, some people worry that they will have nausea. They may begin to feel it even before the treatment starts. This is called anticipatory nausea.

Not all chemotherapy causes nausea and vomiting.

## ANTIEMETICS

Antiemetics are medicines that help control nausea and vomiting. Some can be given before chemo to prevent nausea and vomiting. Antiemetics may be given by mouth, IV or by other routes.

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

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



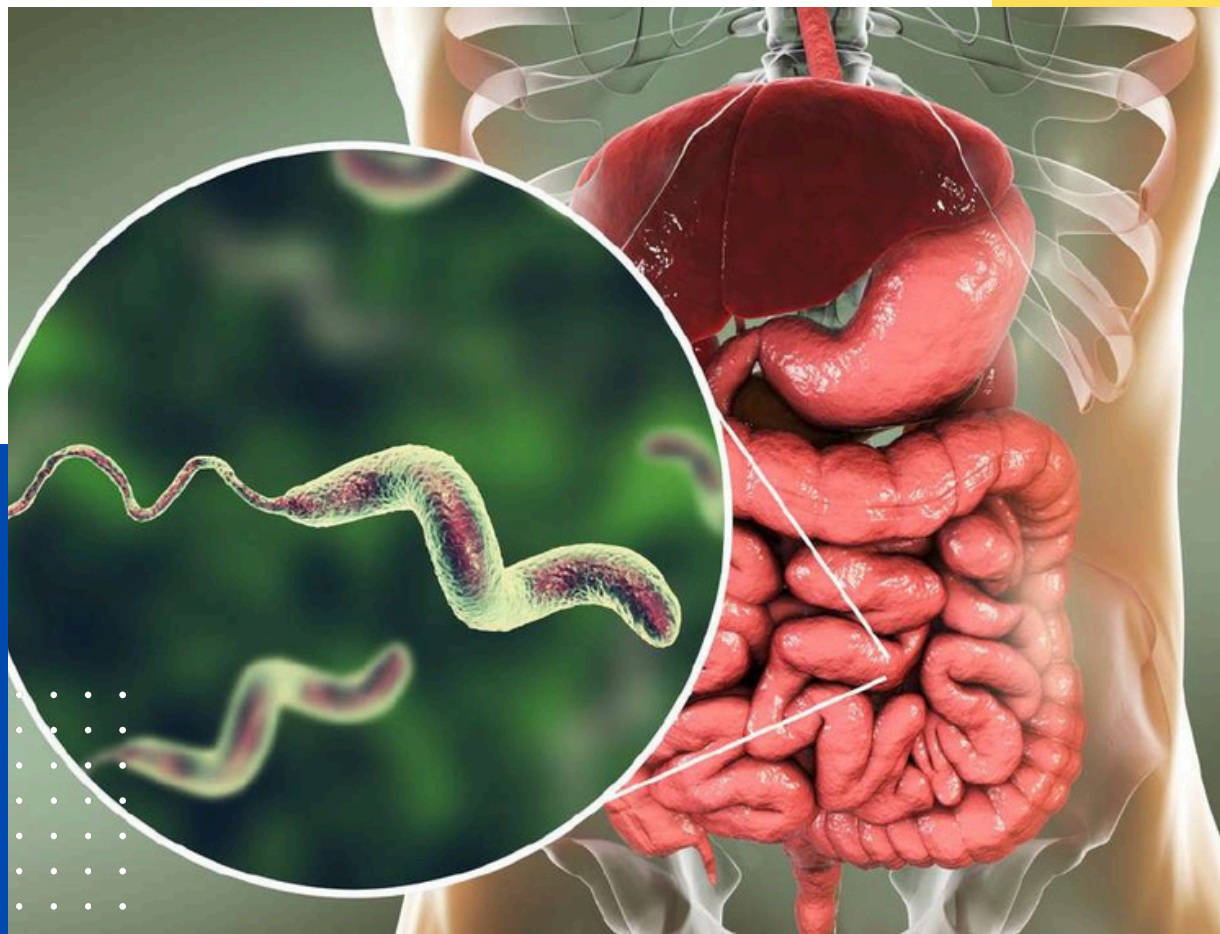
# PREVENTION

- Take your nausea medicine as directed at the first sign of symptoms and as needed. Do not wait until nausea gets worse before taking medicines.
- Eating small meals throughout the day may be better tolerated than large meals or skipping meals.
- Do not eat heavy, high fat or greasy meals right before chemotherapy.
- Avoid strong smells or unpleasant odours and the sight of foods that can cause nausea or vomiting.
- Drink enough liquids so that your urine is light coloured. Sip on liquids throughout the day. Do not drink large amounts at one time.
- Practice good mouth care.
- Wear comfortable, loose-fitting clothing.
- Avoid exercising right after eating.
- Sit or recline with your head up for at least 30 to 60 minutes after eating.
- Apply a cool wet cloth to your forehead or neck.
- Use distraction such as music, puzzles, games, TV or reading.



# DIARRHOEA

diarrhoea is the passing of loose, watery stools or bowel movements. It can be caused by many things. It is important to treat the cause of diarrhoea. This handout explains some of the causes of diarrhoea and how to treat it.





# CAUSES AND TREATMENT

## RADIATION

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

Not all chemotherapy causes nausea and vomiting.

## SURGERY

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

## CHEMOTHERAPY

Certain types of chemotherapy (chemo) drugs cause diarrhoea. You may be told to take Imodium. Do not take Imodium if you are also having pain abdomen along with loose motions. When taking Imodium, do not take more than 4 pills (8 mg) per day, unless directed by your medical team. Take over-the-counter medicine for diarrhoea only if your medical team says it is OK.



## **MEDICINES**

Some medicines can cause diarrhoea. Ask your medical team before taking these.

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

## **LACTOSE INTOLERANCE**

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

## **INFECTIONS AND PARASITES**

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



# ANTIBIOTIC THERAPY

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

- Eat 2 servings of yogurt that contain *Lactobacillus acidophilus* (*L. acidophilus*). Do not eat yogurt that can cause your gastrointestinal (GI) system to become more active (such as those containing *bifidus regularis*).
- Drink buttermilk.



# OTHER CAUSES

- Alcohol and caffeine
- Tube feeding formula that is given too quickly
- Gastroenteritis (inflammation of the stomach)
- Diverticulitis (inflammation of areas in the intestine)
- Irritable bowel syndrome
- Adding medicinal fiber too fast to your diet may cause more diarrhea, cramping and bloating.





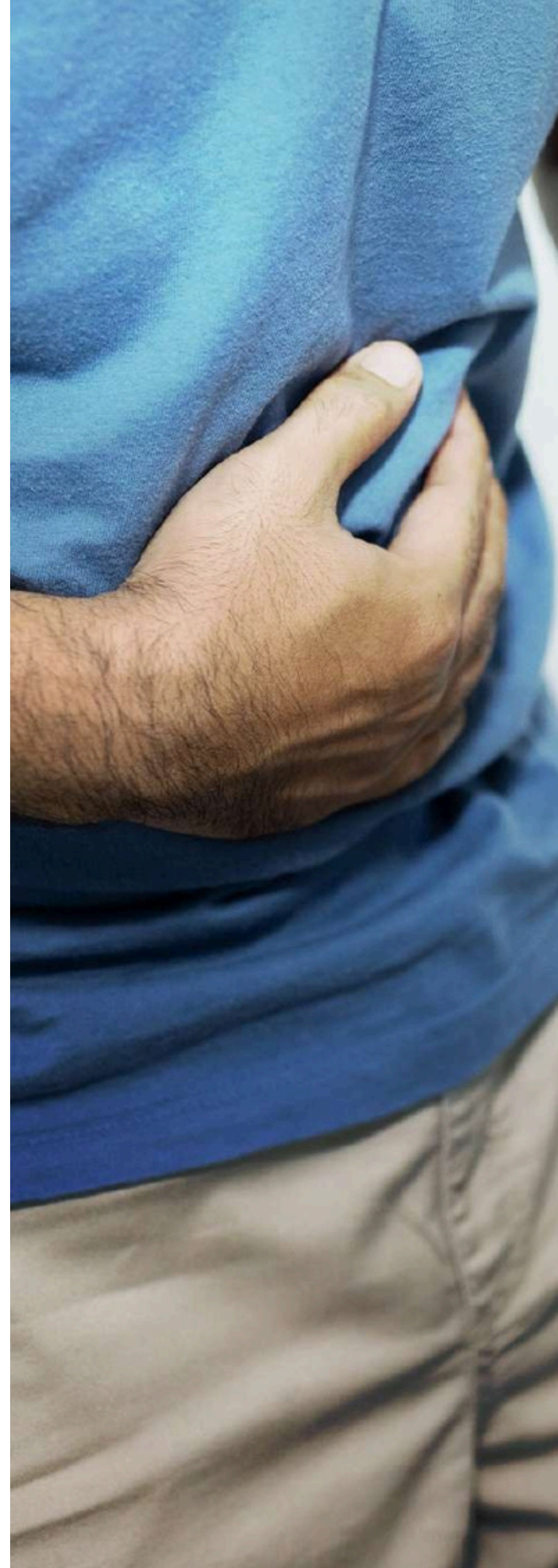
# CONSTIPATION

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



## **NUTRITION AND DIARRHOEA**

Regardless of the cause of diarrhoea, follow these guidelines: Drink 8 to 10 cups (64 to 80 ounces) of fluids every day. Diarrhoea can make you dehydrated if you do not drink enough. If your urine is dark, you are not drinking enough. Sodium and potassium are lost during diarrhoea. Include high potassium foods such as orange juice, potatoes (no skin) and bananas as tolerated. Low-carbohydrate electrolyte drinks also help replace electrolytes. Eat small, frequent meals every 2 to 3 hours. Limit high-fiber foods such as peas and beans, seeds, whole grains, and high-fiber fruits and vegetables or those with thick peels and skins. Limit high-fat foods such as fried foods, rich desserts (pies, cakes, cookies), and foods with large amounts of butter, oil or cream. Drinking hot fluids (including soups) may make diarrhoea worse. Allow hot fluids to cool to room temperature. Avoid alcohol, caffeine and spicy foods which cause food to move more quickly through the intestine, especially after surgery. Milk and other dairy products that contain lactose may make diarrhoea worse. You may need to limit or avoid these foods until diarrhoea stops. You may better tolerate cultured milk products such as yogurt, buttermilk and hard cheeses. Limit the use of sugar-free gums and candies that contain sorbitol or xylitol.



# CAUSES

## MEDICINES

Pain medicines, some chemotherapy (chemo) medicines, and some anti-nausea medicines can often cause constipation. They slow the normal movement of stool in the colon. Because stool stays in the colon longer, more water is removed from the stool. This can cause hard, dry stools and painful bowel movements. You should take a stool softener and/or laxative while taking medicines that can cause constipation. Stool softeners hold water in the gastrointestinal (GI) tract to keep stool soft. Laxatives stimulate movement through the GI tract.

## DECREASED ACTIVITY

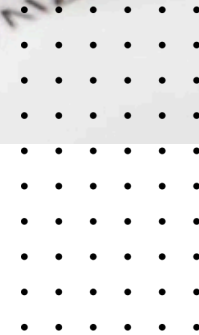
Many people feel tired and are less active during chemo treatment. Less activity and movement slow down the GI tract. Physical activity such as walking, can help stimulate the bowels and bring on a bowel movement. Be as active as you can.

## DECREASED APPETITE AND FLUID INTAKE

Chemo can cause nausea, vomiting and lack of appetite. You may not be able to eat and drink as much as you normally do. A decrease in appetite and fluid intake can cause constipation.







## TREATMENT

Take medicines to help promote bowel movements and soften stool.

You can take Tab Dulcolax 1 or 2 Tab at bedtime or as directed by your medical team.

Syr Lactulose or Cremaffin 20 ml/30 ml at bedtime or as directed by treating team can help

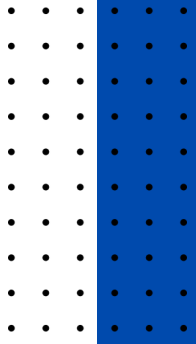
Take Isabgol husk 1 teaspoon mixed in a cup of water at night

Drink warm or hot fluids (including soups), This stimulates the GI tract. Drinking warm prune juice before a meal and a hot beverage after your meal can help bring on a bowel movement.

Do not use enemas and suppositories if your platelet or white blood cell counts are low or if you take blood thinners.





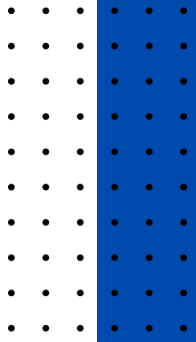


## **MOUTH CARE FOR CHEMOTHERAPY PATIENTS**

Chemotherapy (chemo) treatment may affect your mouth. Use this information to help manage your mouth care. You can see or feel most of these problems. Check your mouth every day for:

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





## MOUTH CARE

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

- Bleeding gums when brushing
- Broken teeth or fillings
- Sensitive teeth
- Gum disease (periodontal disease or gingivitis)
- Loose teeth
- Persistent irritation from dentures
- Use a soft toothbrush and toothpaste with fluoride. Do not use toothpaste with tartar or whitening control. Brush your teeth after each meal and at bedtime. Even if you are not eating, brush your teeth to remove the film coating and bacteria.
- After you brush your teeth, rinse your mouth with a baking soda solution.



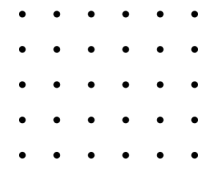
## **DENTURES OR PARTIALS**

- Be careful when you put in and take out dentures or partial dentures. If your dentures/partial dentures do not fit well, do not wear them. Wearing them may injure your mouth tissues and delay your treatment. At bedtime, soak dentures in a store-bought denture soak. Rinse them well with water before you put them back in your mouth. Remove your dentures on the days you receive chemo.
- Dentures may increase nausea and vomiting with chemo. Do not wear dentures if your blood counts are low. Your oncology team will talk with you about your blood counts and tell you when you should leave your dentures or partial plates out.

## **PREVENTING DRY MOUTH AND LIPS**

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





## FOOD CONSIDERATIONS

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

For example:

- Scrambled eggs
- Finely ground meats with gravy
- Oatmeal or other cooked cereals
- Nutrition drinks
- Milkshakes
- Puddings
- Do not eat foods that may irritate your mouth.

For example:

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







# CAUSES

Oral mucositis can be caused by:

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

Your health care team may prescribe medicines such as sucralfate or rinses to prevent mouth sores.



# TREATMENTS

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

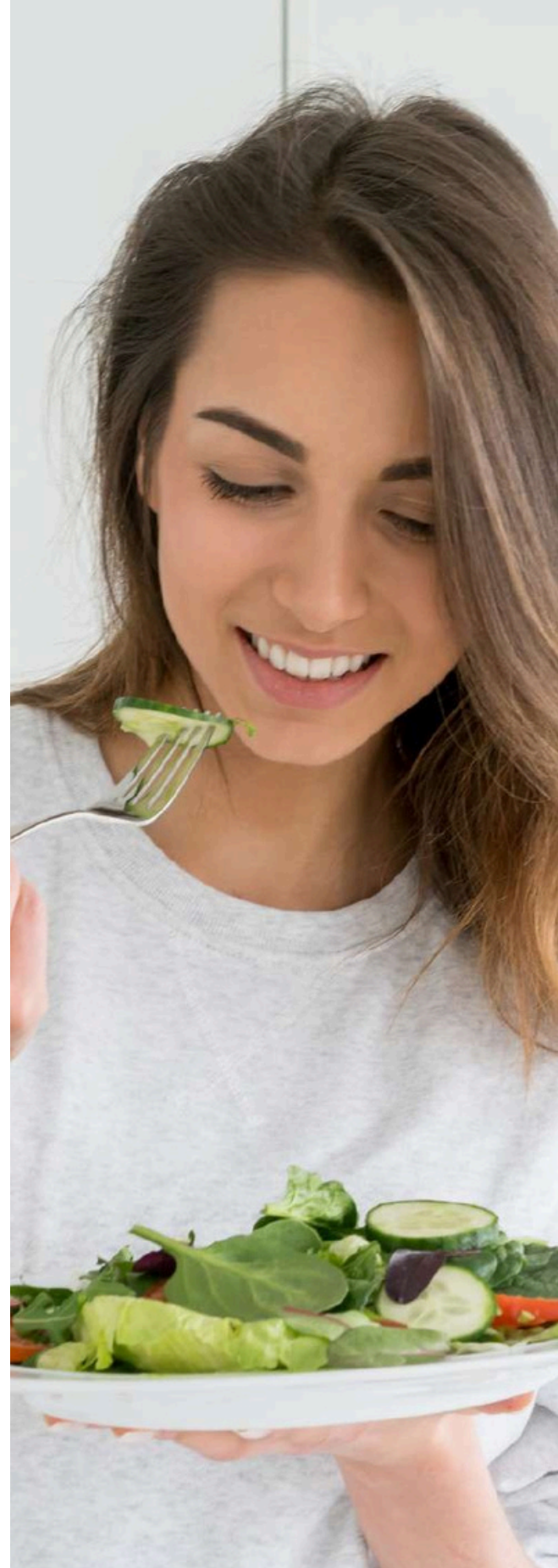
## **Baking soda rinse:**

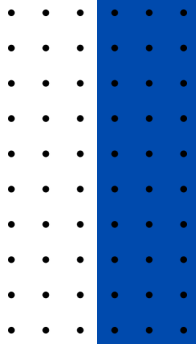
- Each day, make your own baking soda solution. Mix 1/2 teaspoon of baking soda with 8 ounces of warm water.
- Swish 2 tablespoons in your mouth for 30 seconds and then spit it out.
- You may also gargle with the rinse for several seconds. Then spit it out.
- Rinse at least 2 to 4 times a day, up to every 2 hours while you are awake.
- Do not rinse with the baking soda more than 6 times a day.
- Salt and baking soda rinse:
- In 8 ounces of warm water, add 1/8 teaspoon of salt and 1/4 teaspoon of baking soda. Stir until dissolved.
- Swish 2 tablespoons in your mouth for 30 seconds and then spit it out.
- You may also gargle with the rinse for several seconds. Then spit it out.
- Rinse at least 2 to 4 times a day, up to every 2 hours while you are awake.
- Do not rinse with the baking soda and salt more than 6 times a day.
- Mucosa coating agents:
- – This is a thick, colored liquid. You will need a prescription for it known as Magic Mouth paint or Xylocaine viscus. Your health care team decides which is best for you. .
- – Swish to coat the inside of your mouth. Swallowing it soothes the throat too. If you are nauseated and not able to swallow it, you may spit it out.
- Do not drink anything for 15 minutes after you rinse.



# DIET

- Eating may be difficult. You may need to pay attention to food texture and temperature. Eat what is most comfortable for you.
- Choose soft, moist foods that are easy to swallow. Avoid rough-textured, acidic, tart and spicy foods that may cause irritation.
- Cut foods into small bites to reduce chewing.
- If spoons or forks cause pain, drink blended meals from a cup. Puree or liquefy foods with a blender or food processor.
- Drink liquids through a straw to help push the food past painful areas in your mouth.
- Do not eat very hot or cold foods. Drink fluids and eat foods that are at room temperature.
- Use liquid nutrition supplements. These help you get enough calories and protein.
- Limit caffeine.
- Drink plenty of fluids to prevent dehydration and a dry mouth.
- Practice good mouth care every day. Do not use mouthwashes that have alcohol.
- Keep your lips and mouth moist: drink often, suck on ice chips (if not taking oxaliplatin) and enjoy sugar-free popsicles. Use lip balm, as needed.





## **HAIR, SKIN AND NAILS POTENTIAL CHANGES WITH CHEMOTHERAPY**

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





# HAIR LOSS OR THINNING

Hair loss (known as alopecia) can occur on any part of the body. This includes the head, face, arms, legs, underarms or pubic areas. It may involve mild thinning or complete hair loss. Hair loss does not normally happen right away. It can start from 2 to 4 weeks after chemo begins. Hair loss is usually temporary. Hair can grow back a different colour or texture after chemo is done. It can also return to its original appearance. If you have hair loss, keep your scalp clean and moisturized to prevent skin breaks. Use sunscreen, sun block, a hat, scarf or wig to protect your scalp from the sun. To help manage hair loss due to chemotherapy, scalp cooling may be an option for you. Ask your health care team about scalp cooling.

## Other tips:

- Use mild shampoos and soft hairbrushes.
- Do not overheat your hair with blow dryers, irons, and hot rollers. If you must use them, use the lowest heat setting.
- Pat hair dry.
- Consider a shorter hairstyle. Shorter hair styles often appear thicker and fuller.
- You can use a custom wig.



# SKIN CHANGES

## Dry skin

- Bathe or shower in lukewarm water. Avoid long, hot showers and bubble baths.
- Use mild soaps without perfume or fragrance. Consider a moisturizing body wash.
- Pat yourself dry instead of rubbing
- Keep your skin moisturized.
- Avoid perfume, cologne or aftershave lotion. These products often contain alcohol which dries and irritates skin.
- Drink enough fluids so that your urine is light colored or clear. This means your body has enough fluid.

## Sensitivity to sunlight

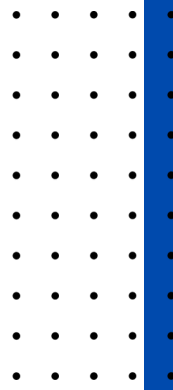
- You may get sunburned more easily. The sun may also cause a skin rash.
- Avoid prolonged exposure to sunlight.
- Use a PABA-free sunscreen (SPF 30 or greater) and lip balm, no matter your skin tone.
- You may need to avoid direct sunlight completely.
- Wear sun protective clothing such as long-sleeved cotton shirts, hats, sunglasses and/or pants when outside.

## Skin rash or itching

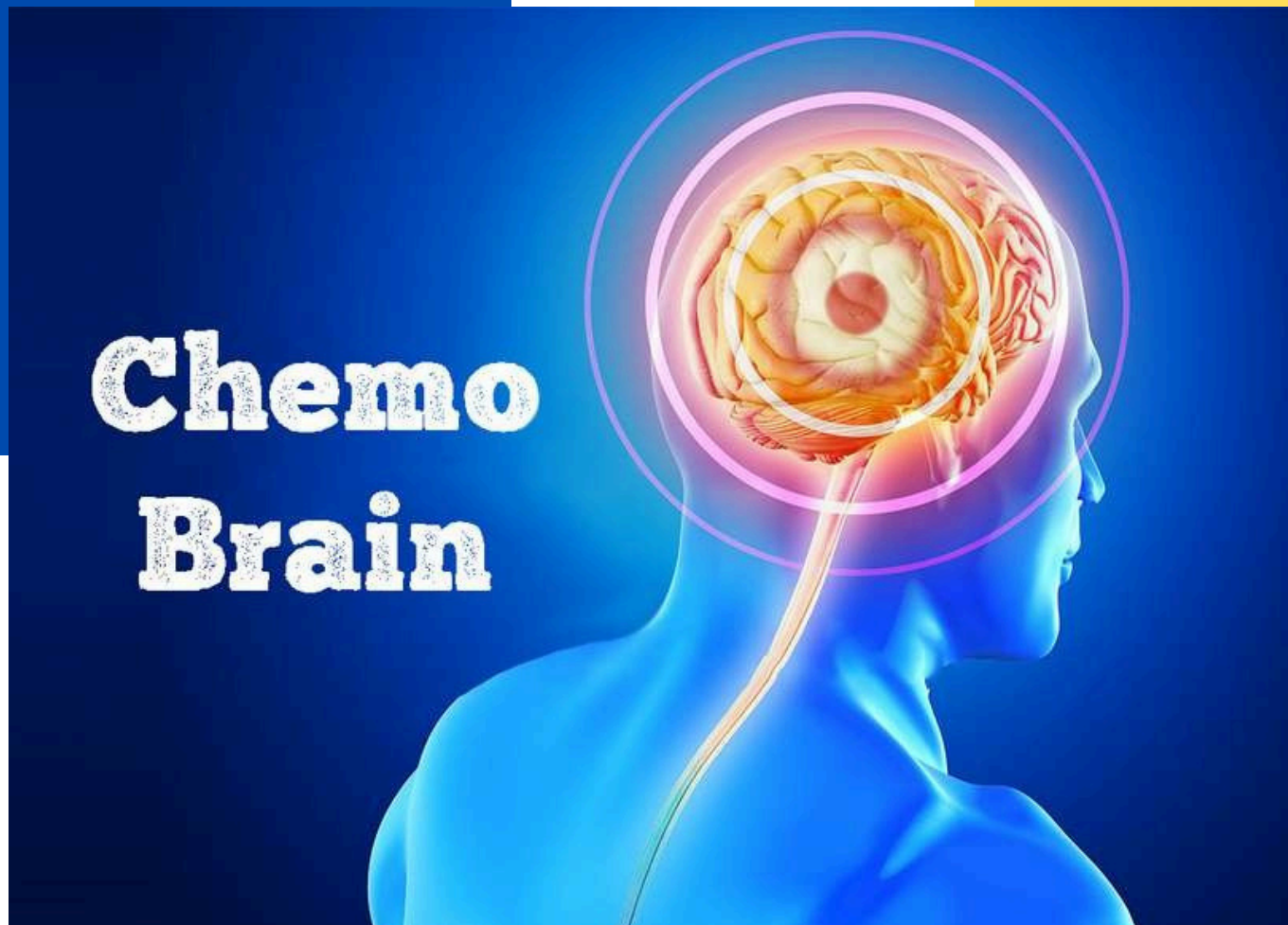
Report any rash, blisters, itching, redness or peeling to your doctor or nurse right away. – Ask for medicines to relieve itching.

Wear loose fitting clothing.



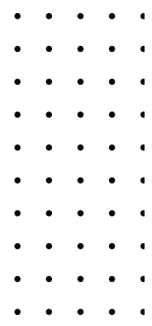


# Chemo Brain



## **CHEMOBRAIN**

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

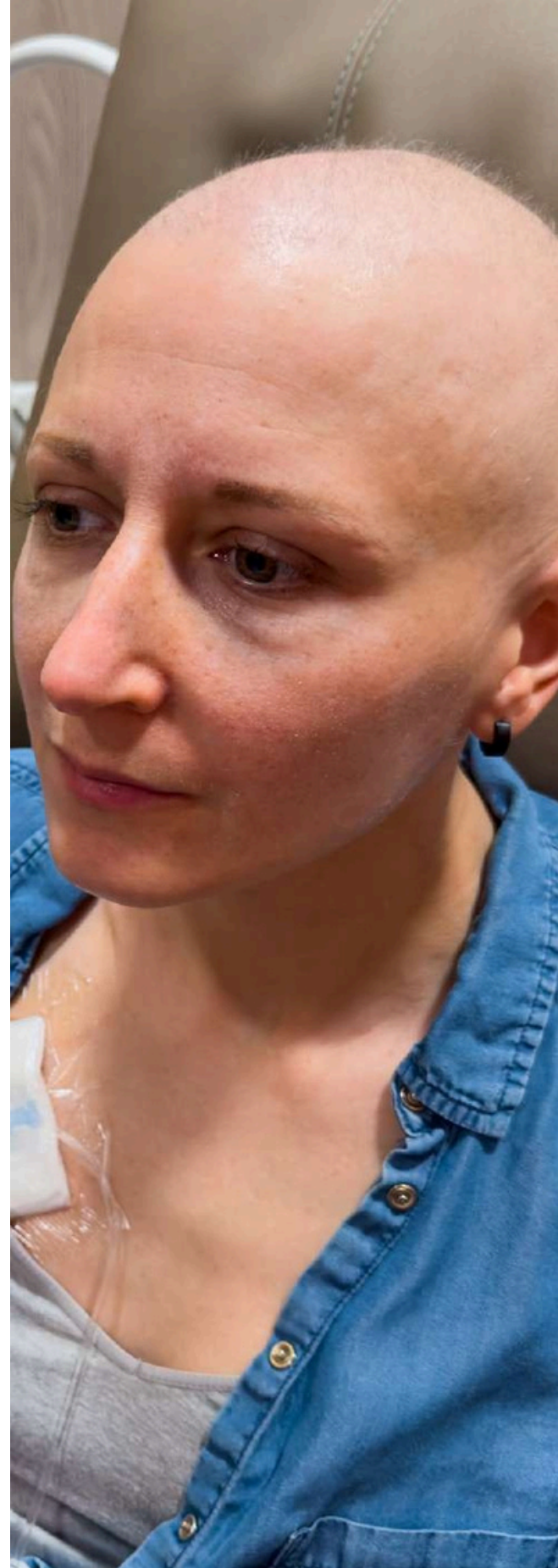




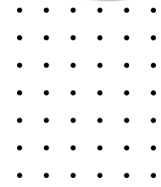
# SYMPTOMS

Chemobrain may include any of the following:

- Problems with memory
  - Slower recall of names, words or numbers
  - Misplacing objects
  - Confusing dates and appointments
  - Trouble concentrating
  - Having trouble doing more than one thing at a time
  - Feeling mentally slower than usual
- These changes may result from other causes. Examples include low blood counts, other medicines, anxiety or depression. Symptoms often fade after chemo ends. However, each patient is different. It may take a year or more after treatment for some patients to feel normal again. Others do not regain full cognitive function.







## COPING TIPS

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

If you have symptoms of Chemobrain, ask for a referral to Neuropsychology.





# CHEMOTHERAPY SAFETY

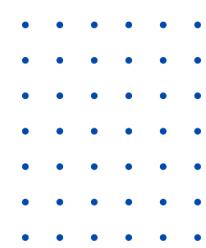
## For Patients Receiving Chemotherapy and Caregivers

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

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



# HANDLING BODY WASTE



- Follow safe handling guidelines during your chemo treatment and 48 hours after your last dose. This includes touching toilets, bedside commodes, bedpans, vomit pans, urinals, ostomy bags or other body waste containers. Use the toilet as usual. When you are done, close the toilet lid and flush (2 times if a low-flow toilet) to ensure all waste has been emptied. Try not to splash urine. If the toilet or toilet seat becomes soiled with urine, stool or vomit, clean the surfaces with bleach wipes well before other people use the toilet. Wash your hands well with soap and water after you use the toilet. Keep toilets and restrooms clean. Change and wash all soiled clothes or bed linens right away. Wash your skin with soap and water. If you use diapers or bladder control products, use the disposable type. Place soiled items inside 2 sealable, leak-proof plastic bags for disposal. This is called “double-bagging.” Empty body waste containers into the toilet. Pour them close to the water to prevent splashing. Clean body waste containers after each use with soap and water. Rinse well. Clean ostomy bags once a day and empty as needed. Caregivers should wear disposable gloves when they handle or clean any type of bodily waste from the patient.

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- Never use torn gloves or gloves with small holes in them.
- Remove the used gloves and place them in the leak proof bags.
- Wash your hands after you remove the gloves.





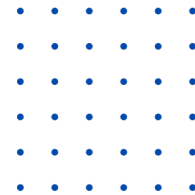
# HANDLING LAUNDRY

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

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

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

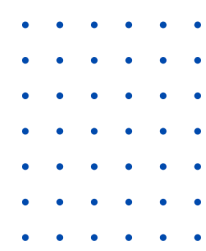
These precautions are for patients who take chemo with the highest risk of harm due to accidental exposure. Talk with your health care team about any risks linked to your type of chemo and any possible changes that may be made to these instructions.

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

## **Supplies needed include:**

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





## STORAGE

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

## HANDLING CHEMOTHERAPY PILLS

- Do not crush, break or chew the pills. Swallow them whole unless otherwise instructed.
- Only adults should handle chemo pills.
- Pregnant women and children should not handle chemo or body waste at any time.
- Wash your hands well with soap and water before and after handling chemo pills.
- Caregivers should wear disposable gloves when handling any type of chemo medicine.





## **FOOD SAFETY BASICS**

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



## FRUITS AND VEGETABLES

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

## Dining Out

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







## **SEXUALITY AND CHEMOTHERAPY**

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

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





## **CHANGES IN SEXUALITY**

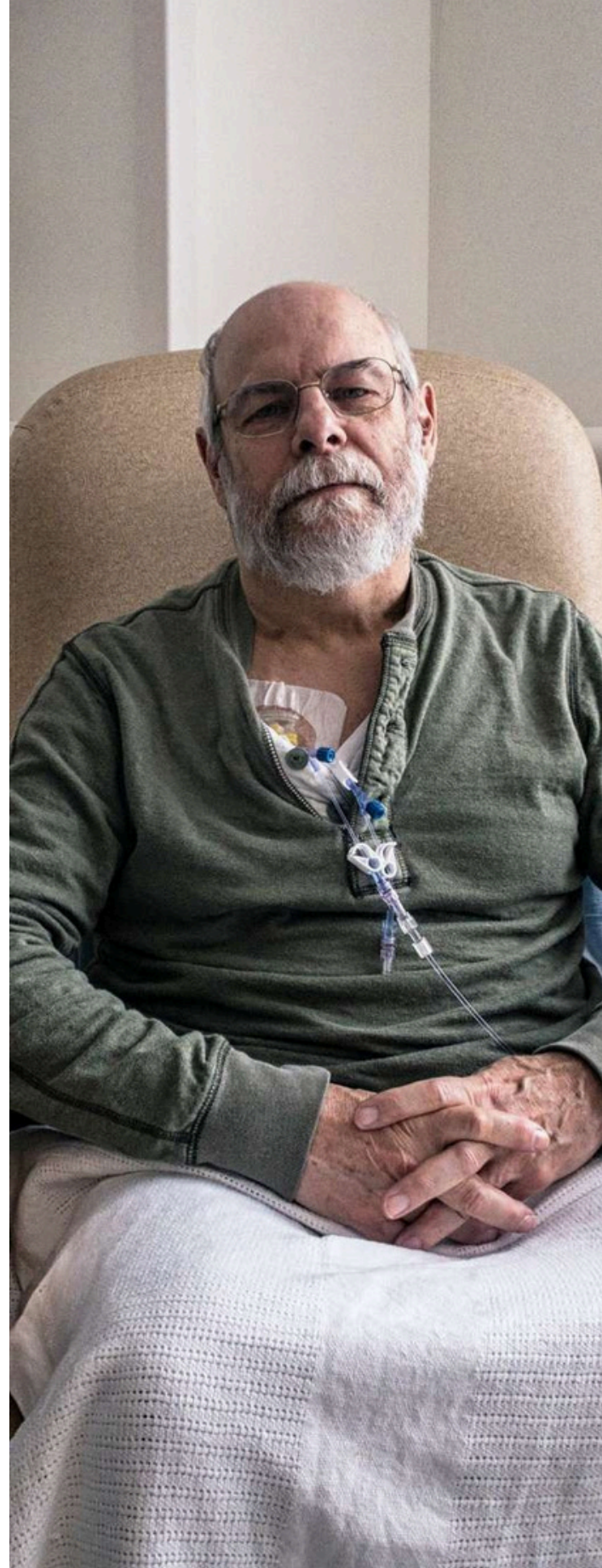
During chemo, some patients feel less interested in sexual intimacy. For some, fatigue makes sex difficult. Chemo may, but does not always, affect hormone levels. These changes may affect sexual organs and functioning.





# MALES

During treatment, you may have trouble getting or maintaining an erection. This usually returns to normal after treatment. Chemo may reduce your sperm cell count. This can affect your ability to father children. It does not affect the ability to have sexual intercourse. A low sperm count may be temporary or permanent. It depends on the dose of chemo, the type of medicines and your age. Ask your doctor about the long-term effects of your treatment plan.





# FEMALES

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

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

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









## MEN

For men, fertility means being able to produce healthy sperm cells that can make a woman pregnant. Cancer treatment may affect sperm cells and increase the chance of infertility. Some men may not be affected at all. Others may only be affected during treatment. Some men may be affected permanently. This depends on the type and amount of treatment given. Sperm banking is an option for men who may want to have a child in the future. Banking sperm includes freezing a semen sample. The sample can later be thawed and used to make a woman pregnant. Most health insurance plans do not pay for sperm banking. Some sperm banks have payment plans for patients with cancer.

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





# WOMEN

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

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

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

