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## Chemotherapy Side Effects Diary

# UNDERSTANDING CHEMOTHERAPY

## What is chemotherapy?

Chemotherapy (also called chemo) is a type of cancer treatment that uses drugs to destroy cancer cells. Many types of drugs are used in chemotherapy, all of which destroys cancer cells in different ways. It is a systemic therapy, meaning it affects the entire body.

## What does chemotherapy do to cancer cells?

Chemotherapy is used for a variety of purposes:

- To cure cancer
- To control tumor growth when cure is not possible
- To shrink tumors before surgery or radiation therapy
- To relieve symptoms

## How does chemotherapy work?

Most chemotherapy drugs enter the bloodstream and travel throughout the body to reach cancer cells in the organs and tissues. Chemotherapy works by killing cancer cells that grow and divide quickly. But it can also kill healthy cells that divide quickly, such as those that line your mouth. Damage to healthy cells may cause side effects. However, unlike cancer cells, normal cells can repair the damage and recover. Often, side effects get better or go away after chemotherapy is over.

## How is chemotherapy given?

Chemotherapy may be given in many ways:

**Injection:** The chemo drug is given by injection into muscle in your arm, thigh, or hip, or right under the skin in the fatty part of your arm, leg, or belly.

**Chemoport:** The chemoport is an implanted venous access device, placed completely under the skin. It is used for patients who require frequent or continuous chemotherapy administration.

**Intraperitoneal (IP):** The chemotherapy goes directly into the peritoneal cavity (the area that contains organs such as your intestines, stomach, liver, and ovaries).

**Intravenous (IV):** The chemotherapy goes directly into a vein.

**Oral:** The chemotherapy comes in pills, capsules, or liquids that you swallow.

## How is chemotherapy used?

Sometimes, chemotherapy is used as the only cancer treatment. But more often, you will get chemotherapy along with surgery and radiation therapy. Chemotherapy can:

- Make a tumour smaller before surgery or radiation therapy (neo-adjuvant chemotherapy).
- Destroy cancer cells that may remain after surgery or radiation therapy (adjuvant chemotherapy).
- Help radiation therapy works better (concurrent chemo-radiation).
- Destroy cancer cells that have come back or spread.

## How often will I need to get chemotherapy?

How often you get chemo and how long your treatment lasts depend on the kind of cancer you have, the goals of the treatment, the drugs being used, and how your body responds to them.

Chemotherapy is commonly given in courses (cycles), with rest periods in between. This allows normal cells to recover and your body to regain its strength. If your body needs more time to recover, i.e. for the blood count to return to normal, your next cycle may be delayed. You may get treatments daily, weekly, or monthly.

## How long does the chemotherapy last?

Many people wonder how long the actual drugs stay in their body and how they're removed. Most chemo drugs are broken down by your kidneys and liver and then are removed from your body through your urine or stool. The time it takes your body to get rid of the drugs depends on many things, including the type of chemo you get, other medicines you take, your age, and how well your kidneys and liver work. Your doctor will tell you if you need to take any special precautions because of the drugs you are getting.

## Which health professionals will I see?



**Medical Oncologist / Clinical Oncologist:** A specialist who prescribes and coordinates the course of chemotherapy and advises about side effects.

**Staff Nurse:** Gives the course of treatment and support and assist you through your treatment.

**Pharmacist:** Dispenses medications and gives advice about drugs, dosage, and side effects.

## How do I know treatment is working?

Your doctor will give you physical exams and medical tests (such as blood tests and X-rays). He or she will also ask you how you feel.

You cannot tell if chemotherapy is working based on its side effects. Some people think that severe side effects mean that chemotherapy is working well, or that no side effects mean that chemotherapy is not working. The truth is that side effects have nothing to do with how well chemotherapy is fighting your cancer.

## Can I get dietary supplements or herbs while I get chemotherapy?

Some of these products can change how chemotherapy works. For this reason, it is important to tell your doctor or nurse about all the dietary supplements and herbs that you take before you start chemotherapy.

## MANAGING CHEMOTHERAPY SIDE EFFECTS

Chemotherapy is an effective treatment for many types of cancer, but it can cause side effects. Chemotherapy affects normal cells that grow or divide rapidly, such as those in bone marrow, digestive tract, skin, hair and reproductive organs. When the normal cells are damaged, this causes side effects.

Tell your doctor or nurses if you have any side effects. They will watch you closely and ask if you notice any problems. There are ways to reduce any discomfort you experience; for example, your doctor may prescribe medication to help you feel better.

You can use the chart on page 5 to see which side effects might affect you. The type and severity of your side effects have nothing to do with the success of your treatment. Chemotherapy Side Effects and Ways to Manage Them, starting on page 6, explains each side effect in more detail and includes ways you and your healthcare team can help manage them.

### How long do the side effects last?

Most side effects slowly go away after treatment ends because the healthy cells recover over time. The time it takes to get over some side effects and regain energy varies from person to person. It depends on many factors, including your overall health and the drugs you were given.

### What causes side effects?

Cancer cells tend to grow fast and chemo drugs kill fast-growing cells, but because these drugs travel throughout the body, they can also affect normal, healthy cells that are fast-growing, too. Damage to healthy cells causes side effects.

### What should I know about side effects?

The severity of side effects (how bad they are) varies greatly from person to person. Be sure to talk to your doctor and nurse about which side effects are most common with your chemo, how long they might last, how bad they might be, and when you should call the doctor's office about them. While side effects can be unpleasant, they must be weighed against the need to kill the cancer cells.

# CHEMOTHERAPY

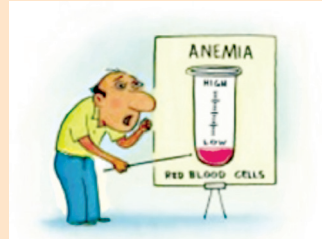
## SIDE EFFECTS AT-A-GLANCE

Below is a list of side effects that chemotherapy may cause. Talk with your doctor or nurse about the side effects on this list. Mark the ones you may get and go to the pages listed to learn more.

Side Effects	Side Effects That May Affect You	Pages to Learn More
Anaemia		6
Fatigue		6
Hair Loss		7
Mouth Ulcers		8
Nausea and Vomiting		8
Appetite Changes		9
Skin and Nail Changes		9
Bleeding		10
Diarrhoea		10
Infection		11
Constipation		12
Reproductive Organ Changes		13
Fluid Retention		14
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## Anaemia

Anaemia is when you have too few red blood cells to carry the oxygen; this can make you feel short of breath, weak, racing heart, pale skin, dizzy, or very tired. Your doctor will check your blood count throughout your chemotherapy. You may need a blood transfusion if your red blood cell count falls too low. Your doctor may also prescribe a medicine to boost (speed up) the growth of red blood cells.



### Ways to manage

- Get plenty of rest.
- Try not to do too much. For example, if you are working office hours then avoid doing housework.
- Stand up slowly. When you get up from lying down, sit for a moment before you stand.
- Let others help you at home.
- Have a healthy and well-balanced diet.

## Fatigue

Fatigue is the most frequently reported side effects of chemotherapy, and can last 3-6 months after your last chemotherapy session. Most people describe fatigue as feeling weak, weary, worn out, heavy, or slow. Resting does not always help.



### Ways to manage

- Try to get more sleep and allow time during the day for rest periods.
- Try not to do too much. or example, if you are working office hours then avoid doing housework.
- Participate in light exercise. Go for a 15 to 30-minute walk.
- Let others help you at home.
- Eat a well-balanced diet and drink plenty of liquids.

## Hair Loss

Not all chemotherapy drugs will make you lose your hair. However, the drugs most frequently used to treat breast cancer are likely to cause hair loss. Unlike the others, it is not treatable. You may start losing hair 2 to 3 weeks after your first chemotherapy begins. Your hair may grow back 3 to 6 months after treatment is over. When the hair grows back it may be more curly, thicker or finer than it was before treatment, and darker or lighter in color.



### Ways to manage

#### Before hair loss:

- Cut your hair short or shave your head. You might feel more in control of hair loss if you first cut your hair or shave your head. This often makes hair loss easier to manage. If you shave your head, use an electric shaver instead of a razor.
- Be gentle when you wash your hair. Use a mild shampoo, such as a baby shampoo. Dry your hair by patting (not rubbing) it with a soft towel.
- Do not use items that can hurt your scalp. These include straightening or curling irons, brush rollers or curlers, electric hair dryers, hair dyes, and products to perm your hair.

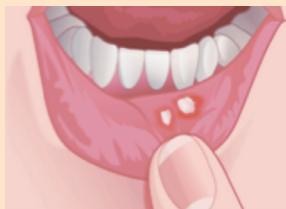
#### After hair loss:

- Protect your scalp. Your scalp may hurt during and after hair loss. Protect it by wearing a hat, turban, or scarf when you are outside. Try to avoid places that are very hot or very cold.
- Sleep on a satin pillow case. Satin creates less friction than cotton when you sleep on it.
- Wear scarf, wig or hat. Do whatever feels comfortable.



## Mouth Ulcers

Chemotherapy drugs can cause sores in the mouth. Mouth sores are not only painful, but they can also become infected by the many germs that normally live in your mouth. Infections can be hard to fight during chemo and can lead to serious problems. It's important to take every possible step to help prevent them.



### Ways to manage

- Check your mouth every day. This way, you can see or feel problems as soon as they start.
- Avoid commercial mouthwashes. They often contain irritants such as alcohol.
- Avoid irritating, acidic foods such as tomatoes, citrus fruit, and citrus fruit juice.
- Use a soft toothbrush to clean your teeth twice a day.
- Try sucking on ice while you're having intravenous chemotherapy to reduce mouth ulcers.

## Nausea and Vomiting

Nausea and vomiting may start during treatment and last a few hours. Sometimes, but less often, severe nausea and vomiting can last for a few days. Nausea is typically managed with prescription medicines taken before and after chemotherapy sessions.

### Ways to manage

- Have bland, easy-to-digest foods and drinks that do not upset your stomach. These include toast and apple juice.
- Try to relax before treatment. You may feel less nauseous if you relax before each radiation therapy treatment.
- Eat small meals and snacks.
- Have foods and drinks that are warm (not hot or cold).
- Drink liquids at least an hour before or after mealtime instead of with your meals.
- Stay away from sweet, fried, or fatty foods.

## **Appetite Changes**

Chemotherapy can cause appetite changes. You may lose your appetite because of nausea, mouth and throat problems that make it painful to eat, or drugs that cause you to lose your taste for food. Appetite loss may last for a day, a few weeks, or even months.

### **Ways to manage**

- Eat small meals and snacks.
- Try new seasonings such as soy sauce to make food taste better to you.
- Choose foods that are high in calories or protein.
- Use plastic forks and spoons. Some types of chemo give you a metal taste in your mouth. Eating with plastic can help decrease the metal taste. Cooking in glass pots and pans can also help.
- Take a short walk before meal to increase appetite.

## **Skin and Nail Changes**

Some types of chemotherapy can damage the fast-growing cells in your skin and nails. It can darken, peel or become dry and itchy. It is also likely to be more sensitive to the sun during and after treatment. Some people find their nails also change and become brittle and dry, develop ridges, or have white lines across them. While these changes may be painful and annoying, most are minor and do not require treatment.

Many of them will get better once you have finished chemotherapy. However, major skin changes need to be treated right away because they can cause lifelong damage.



### **Ways to manage**

- If you develop acne, try to keep your face clean and dry.
- Apply lotions after bathing to help prevent it from becoming dry or cracked.
- Do not use perfume or aftershave lotion. These products often contain alcohol, which can make your skin dry.
- Protect your skin from the sun by wearing high-protection sunscreen, a hat, and protective clothing.
- Stop shaving or waxing until your skin is completely healed.

## Bleeding

Platelets are cells that make your blood clot when you bleed. Chemotherapy can lower the number of platelets because it affects your bone marrow's ability to make them. A low platelet count is called thrombocytopenia. This condition may cause bruises, bleeding from your nose or in your mouth, or a rash of tiny, red dots.

### Ways to manage

#### Do:

- Brush your teeth with a very soft toothbrush.
- Blow your nose gently.
- Be careful when using scissors, knives, or other sharp objects.
- Use an electric shaver instead of a razor to reduce the chance of nicking yourself.

#### Do not:

- Use dental floss or toothpicks.
- Play sports or do other activities during which you could get hurt.

## Diarrhoea

Diarrhoea is frequent bowel movements, which may be soft, formed, loose, or watery. Chemotherapy drugs can cause diarrhoea because it irritates healthy cells that line your large and small intestines. Diarrhoea can be well managed with anti-diarrhoea medications. Simple dietary adjustment may also help to combat these effects.

### Ways to manage

- Try eating small, frequent meals.
- Your body can lose salts such as potassium when you have diarrhoea, and it is important to replace them. Foods that are high in potassium include bananas and mashed potatoes.
- Avoid high-fiber foods such as wholegrain bread. Eat low fiber foods, include bananas, white rice and white toast.
- Stay away from foods or drinks that cause gas, such as cabbage, broccoli, and soymilk.
- Stay away from milk products, spicy foods, caffeine, sweets, alcohol, greasy and fried foods.

## Infection

Some types of chemotherapy make it harder for your bone marrow to produce new white blood cells. There are many types of white blood cells. One type is called neutrophil, which is especially important in fighting infections. Infections can begin in almost any part of your body and most often start in your mouth, skin, lungs urinary tract and rectum. When your neutrophil count is low, it is called neutropenia. It can make you more prone to infections. Your doctor may do blood tests to find out whether you have neutropenia.



If your white blood cell count drops too much, your doctor may hold treatment, give you a lower dose of chemo, or in some cases, give you a growth factor shot that makes your bone marrow produce more white blood cells.

It is important to watch for signs of infection when you have neutropenia. You may find it best to use a digital thermometer.

### Ways to manage

- Wash your hands often with soap and water.
- Clean your rectal area very well but gently after each bowel movement. Ask your doctor or nurse for advice if you have hemorrhoids.
- Stay away from people who are sick. This includes people with cold, flu, measles, or chicken pox.
- Stay away from crowded areas.
- Be careful not to cut or nick yourself. Do not cut or tear your nail cuticles. Use an electric shaver instead of a razor. And be extra careful when using scissors, needles, or knives.
- Use an extra-soft bristle toothbrush that won't hurt your gums, and talk to your doctor before using dental floss.
- Look out for and check your body regularly for signs and symptoms of infection:
  1. A temperature of 100.5°F (38°C)
  2. Chills
  3. Sweating
  4. Loose stools
  5. A burning feeling when you urinate
  6. Persistent or severe vomiting
  7. A bad cough or sore throat
  8. Unusual vaginal discharge or itching
  9. Redness, or swelling around the site of the intravenous chemotherapy device
  10. Abdominal pain

**DON'T DELAY! Contact us right away.** Do not take aspirin or any other drugs that reduce fever without first talking with your doctor.

### **Blood tests during chemotherapy**

We will always ask you to have a blood test before going ahead with each treatment to make sure your blood has recovered after the last chemotherapy. Sometimes it is worth having these blood tests done a day ahead as this will save you from having to wait for the results on the day of treatment. Our doctor or Chemotherapy Nurse will discuss this with you.

## **Constipation**

Constipation is when bowel movements become less frequent and stools are hard, dry, and difficult to pass. Some chemotherapy drugs cause constipation. This can be because the drug affects the nerve supply to the bowel.

Tell your doctor if you haven't had a bowel movement in 2 or more days. You may need to take a laxative or stool softener, but don't use these unless you have checked with your doctor, especially if your white blood cell count or platelet count is low.



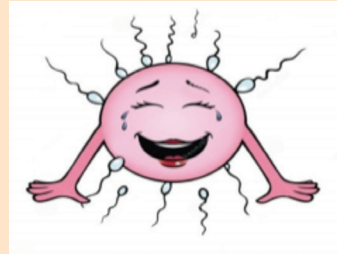
### **Ways to manage**

- Drink at least 8 cups of clear liquid per day to help keep your stool soft. Warm and hot fluids often work well.
- Eat high-fiber foods and drinking lots of fluid can help soften your stools. Good sources of fiber include whole-grain breads and cereals, dried beans and peas, raw vegetables, fresh and dried fruit, nuts, seeds, and popcorn.
- Be active every day. You can be active by walking, riding a bike, or doing yoga.
- Don't use enemas or suppositories.

## Reproductive Organ Changes

Some types of chemotherapy can affect reproductive organs, for both men and women.

In men, chemotherapy may damage sperm cells, which grow and divide quickly. Infertility may occur because chemotherapy can lower the number of sperm, make sperm less able to move, or cause other types of damage. Whether or not you become infertile depends on the type of chemotherapy you get, your age, and whether you have other health problems.



In women, chemotherapy can lower the hormones produced by ovaries. The drop in hormones can lead to early menopause. Early menopause and fewer healthy eggs can cause infertility, either temporary or permanent.

### Ways to manage

**For both men and women**, it is important to be open and honest with your spouse or partner about your feelings, concerns, and how you prefer to be intimate while you are getting radiation therapy.

**For women, here are some issues to discuss with your doctor:**

- **Birth control.** It is very important that you do not get pregnant while getting chemotherapy. These drugs can hurt the fetus, especially in the first 3 months of pregnancy. If you have not yet gone through menopause, talk with your doctor or nurse about birth control and ways to keep from getting pregnant. If you are pregnant, your doctor or nurse will talk with you about other treatment options.
- **Sex life.** If sexual intercourse is painful, you can help by stretching your vagina using a dilator (a device that gently stretches the tissues of the vagina). Ask your doctor or nurse where to find a dilator and how to use it. Or try to use vaginal lubricant (such as K-Y Jelly®).

**For men, here are some issues to discuss with your doctor:**

- **Birth control.** Before you start chemotherapy, let your doctor or nurse know if you might want to father children in the future. He or she may talk with you about ways to preserve your sperm to use in the future or refer you to our fertility specialist. It is very important that your spouse or partner does not get pregnant while you are getting chemotherapy. Chemotherapy can damage your sperm and cause birth defects, so you should use a condom as an extra safeguard.

## Fluid Retention

Fluid retention is a build up of fluid caused by chemotherapy, hormone changes caused by treatment, or your cancer. It can cause your face, hands, feet, or stomach to feel swollen and puffy. Sometimes fluid builds up around your lungs and heart, causing coughing, shortness of breath, or an irregular heartbeat. Fluid can also build up in the lower part of your belly, which can cause bloating.

Weigh yourself at the same time each day, using the same scale. Let your doctor or nurse know if you gain weight quickly.



### Ways to manage

- Avoiding table salt or salty foods.
- Limiting the liquids you drink.
- If you retain a lot of fluid, your doctor may prescribe medicine to get rid of the extra fluid.

## Nerve and Muscle Problems

Certain chemotherapy drugs can cause peripheral neuropathy, a nerve problem that causes tingling, pins and needles, burning sensations, weakness, and/or numbness in your hands and feet. Along with affecting the nerves, certain chemo drugs can affect the muscles and make them weak, tired, or sore. If this happens, tell your doctor or nurse before your next treatment. Your treatment may need to be changed or the problem carefully monitored.

### Ways to manage

- If your fingers become numb, be very careful when handling objects that are sharp, hot, or otherwise dangerous.
- If your sense of balance is affected, move carefully, use handrails on stairs, and use a bath mat in the tub or shower.

OTHER SIDE EFFECTS

Menopausal symptoms	For some women, periods become irregular during chemotherapy but return to normal after treatment. For others, chemotherapy may cause periods to stop completely (menopause).
Mild cognitive impairment	The central nervous system controls emotions, thought patterns, and coordination. Chemotherapy drugs may cause problems with memory, or make it difficult to concentrate or think clearly. This mild cognitive impairment may go away following treatment, or may linger for years. Severe cases can add to anxiety and stress.
Kidney or bladder problems	<p>Some chemotherapy drugs can irritate your bladder or cause short-term or long-term kidney damage. They may also cause your urine to change colour (orange, red, green, or yellow) or take on a strong or medicine-like odour. For a short time, the colour and odour of semen may be changed, too.</p> <p>Drink plenty of fluid to ensure good urine flow and help prevent problems.</p>
Sleep problems	Sleep problems can include difficult falling asleep, waking up in the middle of the night, and being unable to get back to sleep.



**Heart problems**

Some chemotherapy drugs can weaken the heart muscle, resulting in cardiomyopathy, or disturb the heart rhythm, causing arrhythmia.

**Changes in taste and smell**

Some chemotherapy drugs can affect taste buds, changing the brain's perception of how food tastes and causing changes in taste, for example, meat often tastes bitter. It can take months for both the sense of smell and the sense of taste to return to normal after chemotherapy ends.

**Pain**












Some chemotherapy drugs can cause painful side effects, such as aching in the muscles and joints, headaches and stomach pains. Burning, numbness, tingling or shooting pains in the hands and feet may also occur. This may continue for a period of time after treatment ends.

**Allergic reactions**

Allergic reactions are not a common side effect of chemotherapy, but they can happen. Symptoms include difficulty breathing, skin rash or hives, and itching.







CHEMOTHERAPY SIDE EFFECTS DIARY

Please Circle Cycle No. \_\_\_\_\_

Type	None	Mild	Moderate	Severe
Fatigue	None	Experiencing symptoms but maintaining normal activity	Rest for less than half of each day	Rest for more than half of each day
Hair	No change	Minimal loss	Patchy loss	Complete loss
Mouth	Normal	Sore	Ulcers, but eating	Taking liquids only
Nausea	None	Eating almost as normal	Can eat but much less than normal	Not really able to eat
Vomiting	None	1 episode in 24 hours	2-5 episodes in 24 hours	6-10 episodes in 24 hours
Diarrhoea	None	Less than 2 days	More than 2 days	Intolerable
Constipation	None	Bowels opened almost as normal	Bowels opening but much less than normal	Bowels not opened for more than 2 days; feeling bloated
Nerve and weakness	Normal	Tingling/ Numbness	Severe T/N or mild weakness	Intolerable T/N or marked weakness
Pain	<div><div> 0</div><div> 1</div><div> 2</div><div> 3</div><div> 4</div><div> 5</div><div> 6</div><div> 7</div><div> 8</div><div> 9</div><div> 10</div></div>			







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Diarrhoea	None	Less than 2 days	More than 2 days	Intolerable
Constipation	None	Bowels opened almost as normal	Bowels opening but much less than normal	Bowels not opened for more than 2 days; feeling bloated
Nerve and weakness	Normal	Tingling/ Numbness	Severe T/N or mild weakness	Intolerable T/N or marked weakness
Pain	<div><div> 0</div><div>1</div><div> 2</div><div>3</div><div> 4</div><div>5</div><div> 6</div><div>7</div><div> 8</div><div>9</div><div> 10</div></div>			









Please Circle

Cycle No. \_\_\_\_\_

Type	None	Mild	Moderate	Severe
Fatigue	None	Experiencing symptoms but maintaining normal activity	Rest for less than half of each day	Rest for more than half of each day
Hair	No change	Minimal loss	Patchy loss	Complete loss
Mouth	Normal	Sore	Ulcers, but eating	Taking liquids only
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## INFORMATION FOR ACCIDENT AND EMERGENCY STAFFS

This is for you to show the Accident and Emergency staff if you develop an infection while you are on chemotherapy.

To whom it may concern,

This patient has been undergoing chemotherapy at **Cancer and Radiosurgery Centre, Sunway Medical Centre** and has a high risk of developing neutropenia, which is **MEDICAL EMERGENCY**. We advise that an **URGENT SAME DAY** full blood count should be carried out and that the following guidelines be considered:

- 1) the patient is febrile ( $>38^{\circ}\text{C}$  on one occasion or  $>37.5^{\circ}\text{C}$  on two occasions taken half an hour apart) and blood neutrophils  $<1.0 \times 10^9/\text{L}$ , admit to hospital for IV antibiotics.
- 2) if neutrophils  $>1.0 \times 10^9/\text{L}$  and the patient is febrile but well consider oral antibiotics after clinical assessment (NB Paracetamol must not be used to suppress fever as this could result in a dangerous delay in starting antibiotics).

Ensure the patient's consultant is informed within 24 hours.

**Oncologist In Charge:** \_\_\_\_\_

**Chemotherapy Day Care:** \_\_\_\_\_ (office hour)

NOTES