

# A PATIENT'S GUIDE TO CHEMOTHERAPY



CROSS CANCER INSTITUTE



**Alberta Cancer  
Board**

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# ***INTRODUCTION***

This booklet will help you and your family and friends understand basic information about chemotherapy. Read the entire booklet or use it as a reference to answer specific questions. Record specific questions and direct them to your doctor, nurse, pharmacist or dietitian.

A video tape and extra readings are available in the Cancer Information Center. Ask your nurse if you are interested in the video or extra readings.



## **WHAT IS CHEMOTHERAPY?**

Chemotherapy involves the use of drugs to destroy or control the growth of cancer cells and is often used together with surgery, radiotherapy or immunotherapy.

The human body is composed of cells, many of which reproduce, constantly replacing cells that die. Cells normally grow in a controlled and orderly fashion. Cancer cells grow in a disorderly and uncontrolled way. Many of the symptoms of cancer arise because collections of cancer cells interfere with the normal organ or tissue in which they accumulate. Chemotherapy may be used:

- to cure your cancer
- to control your cancer
- to relieve or reduce symptoms

Ask your clinic nurse if you should wear a Medic Alert bracelet/necklace while receiving chemotherapy. Your nurse and/or pharmacist can tell you how to obtain one.



## ***HOW DOES CHEMOTHERAPY WORK?***

There are many different types of chemotherapy drugs which act in different ways. Chemotherapy drugs can be used together or alone. Chemotherapy may also be combined with radiotherapy. The form and length of the treatment and the time intervals between treatments are determined by:

- the type of cancer to be treated
- the different combinations of chemotherapy drugs used

### ***Chemotherapy can:***

- interfere with abnormal cell reproduction
- destroy abnormal cells
- interfere with normal cell growth

Chemotherapy affects rapidly dividing cells which can include both normal and cancer cells. Normal cells usually recover between cycles of chemotherapy. Cancer cells however are unable to recover between cycles.

Your doctor and nurses will carefully discuss treatment with you. Your progress will be monitored closely during your course of treatment through physical examination, blood testing, and perhaps x-rays and scans. Your family physician will be kept informed, by mail, of your treatment and progress and may be involved with carrying out regular blood tests and giving you some of the medications.

## **HOW IS CHEMOTHERAPY GIVEN?**

Administration of chemotherapy depends on the kind of drug prescribed for you. Most chemotherapy is given by one of the following routes:

- **Intravenous-** Medication is injected directly into a vein from a syringe over a few minutes. Medication can also be mixed with fluid in an intravenous bag and allowed to drip slowly. This drip procedure may take several hours or several days, depending on the drugs you receive.
- **Oral-** Medication is taken by mouth in the form of pills or liquid.
- **Injections-** Medication is injected under the skin or into a muscle (this is rarely used for chemotherapy administration).

Sometimes chemotherapy is given into a vein using an intravenous “pump” which regulates the solution flow. The pump may alarm for various reasons and if it does your nurse will respond. Some patients require a portable infusion pump for chemotherapy given intravenously at home.

## **WHERE IS CHEMOTHERAPY GIVEN?**

Most chemotherapy is given to patients in the Outpatient Department at the Cross Cancer Institute, at an Associate Cancer Clinic or at a Community Cancer Center. Certain treatment plans may require that you be admitted to the hospital for the chemotherapy.

## **IS CHEMOTHERAPY PAINFUL?**

There is usually no pain associated with chemotherapy other than a needle prick. Occasionally irritation or discoloration of the vein may develop from some medications. While receiving the medication, inform your nurse **immediately** if you feel burning or see swelling or redness in the area around the needle site.

*Once at home, if you notice pain, redness or swelling in the arm where the medication was given, please call the Telephone Triage Nurse (phone number is listed on page 19).*

## **CAN I TAKE OTHER MEDICATION WHEN ON CHEMOTHERAPY?**

Some chemotherapy drugs do not mix well with other medications. It is important that you tell your doctor of any other pills, injections, or medicines you are taking, including vitamins, herbal remedies and/or alternative cancer therapies. Please inform your nurse or pharmacist of any changes in your medications.

## **CAN I DRINK ALCOHOL?**

Some drugs may require that you limit the amount of alcohol consumed or avoid it altogether. Ask your clinic nurse, doctor, or pharmacist.

## **ARE THERE ANY SIDE EFFECTS TO CHEMOTHERAPY?**

Everyone is an individual and may react differently to chemotherapy. Some patients experience side effects while some experience no side effects.

Chemotherapy drugs affect both normal and abnormal cells. Normal cells that may be affected include those found in the:

- bone marrow
- mouth
- stomach
- intestines
- peripheral nerves
- reproductive system
- hair follicles

The toxic effects of the drugs usually last a short time and these cells will usually return to normal. Your nurse will explain what side effects you can expect from the drugs you will receive. Written information will be provided.

## ***BONE MARROW SUPPRESSION***

Your bone marrow is responsible for producing the cells in your blood. Since bone marrow cells are sensitive to the effects of chemotherapy, the manufacturing of the cells is lowered. The cells that are of most concern are white blood cells, platelets, and red blood cells. Blood samples will be taken 1 or 2 days prior to each chemotherapy treatment (or more often if necessary) to check your blood counts.

### ***White blood cells fight infection:***

Neutrophils are one type of white blood cells. They surround and destroy bacteria in your body. If your white blood cell count is low (especially your neutrophils), you will not be able to fight infection as easily. If your neutrophil count is too low, your chemotherapy may have to be delayed. You can expect your neutrophil count to be at its lowest 7 to 14 days after chemotherapy.

***You should avoid contact with people with colds, flu or other infections when your white count is low.***

***Important: please notify the Telephone Triage Nurse (phone numbers listed on page 19), if you have any of the following signs of infection:***

- elevated temperature (38°C/100.4°F or higher)
- areas of redness or tenderness
- chills, shakes (rigors)
- sore throat
- mouth sores
- productive cough
- itching or burning in the genital area
- pain or burning when you urinate
- a frequent urge to urinate

***You must have a thermometer:*** You will need to monitor your temperature as directed by your clinic nurse. An elevated temperature may signal infection. Sometimes infections are severe and life-threatening. Treatment may require hospitalization in order to receive intravenous antibiotics. If you do not know how to use a thermometer, ask your pharmacist.

***Red blood cells carry oxygen:***

If your red blood cell count is low, you may:

- feel more tired than usual
- become short of breath with activity
- look pale
- feel cold
- feel dizzy
- become irritable

***Platelets help to clot blood:***

If your platelet count is low, you may notice:

- bruises on your body or small purple spots called petechiae
- your nose and gums may bleed more easily
- blood in urine or stool

If you notice any of these symptoms, phone the Telephone Triage Nurse. All drug effects on bone marrow are temporary and, if necessary, red blood cell or platelet transfusions can be given.

If your platelet count is low:

- use a soft toothbrush, sponge stick or waterpic on low setting to brush your teeth; avoid flossing
- blow your nose gently (applying pressure to your nostrils will usually stop a nose bleed)
- do not take A.S.A. (Aspirin®), products containing A.S.A. or other non-steroidal anti-inflammatory drugs (e.g. naproxen, ibuprofen) if you have low platelets.

***Please check with a pharmacist before starting any new medication.***

# **NAUSEA AND VOMITING**

Nausea is not a side effect of every chemotherapy drug. Some drugs cause a greater reaction than others. If your chemotherapy causes nausea and vomiting, you will be given medication to help prevent this before, and in some cases, after your chemotherapy. You will also be given a prescription to be filled at your pharmacy.

***Do not wait for nausea and vomiting to occur; take the medication for nausea regularly, as prescribed, to prevent nausea and vomiting.***

If this medication does not help, please inform your doctor so that the dose can be adjusted to suit you better. ***Nausea does not usually last longer than 24 hours following your treatment. If it does, please contact the Telephone Triage Nurse or Nursing Shift Supervisor.***

Some suggestions to help decrease nausea include:

- apply ice cold wash cloths to your neck
- eat frequent small meals (6-8 times a day), rather than eating three meals a day
- eat only when you feel you can
- avoid a heavy meal immediately before or after your treatment
- eat cool foods without a strong aroma such as: gelatin desserts, custards, dry cereals, crackers, toast or plain cookies
- drink fluids first, then eat light, non-greasy, low fat foods that are not spiced or fried
- eat slowly, chewing food well
- avoid lying down for at least two hours after eating

- relax in an upright position to ease digestion after eating
- drink 8-10 cups of fluid to prevent dehydration (try diluted juices, popsicles ®, fruit drinks, weak tea and gingerale)

For further suggestions speak with your clinic nurse.

*Some medication given to reduce nausea may cause drowsiness and may require that you have someone drive you home from the hospital.*

## **LOSS OF APPETITE (ANOREXIA)**

If you feel nauseated you may not feel like eating. Some suggestions to help increase your appetite include:

- take your medication for nausea one hour before eating
- eat small meals often (about 6-8 times a day)
- rinse your mouth and gums well before eating
- eat regularly, even if it's only a few bites
- try cereals and cream soups (throughout the day)
- keep a variety of nutritious snack foods on hand such as cheese, crackers, muffins, nuts and puddings
- take advantage of timesaving appliances like blenders or microwaves
- use ready-to-eat, easily prepared food, freezing meals ahead of time whenever possible
- a glass of wine or beer can be used to improve your appetite

The altered taste and heightened sense of smell that many patients on chemotherapy experience may aggravate anorexia. This is temporary and will completely resolve once chemotherapy is stopped.

It is important to have a diet high in protein and calories. If you are worried about your food intake or about your weight, please ask your nurse for nutritional information. If needed, your nurse may refer you to a clinical dietitian.

## ***MOUTH PROBLEMS***

### ***Dental Work:***

Before starting your chemotherapy, discuss any dental work that needs to be done with your nurse or doctor. You may require some blood work prior to the dental procedure as well as antibiotics.

### ***Sore Mouth:***

Some drugs affect the lining of your mouth causing your mouth to become sore. **Do not use commercial mouthwashes.** They often contain alcohol and can irritate your mouth even more.

Rinse your mouth every 2-4 hours with club soda (Canada Dry®), or a mixture of soda bicarbonate (baking soda) and water. Mix three tablespoons (45ml) of soda bicarbonate with 4 cups (1 litre) of water and keep this mixture in the fridge. **Unused mixture should be discarded each day.** Use as often as you find necessary.

Chemotherapy may cause mouth ulcers. Mouth ulcers may also be due to infection from a virus or fungus. Treatment is available for some of these infections. A prescription mouthwash

will help relieve the discomfort while your mouth heals. Again, call the Telephone Triage Nurse if you notice mouth ulcers. The following suggestions may be helpful:

- use your finger wrapped in a soft wash cloth or a sponge stick if a toothbrush hurts your mouth
- use a waterpic for maintaining good mouth hygiene
- try eating blended, smooth and creamy foods such as eggs, soup, casseroles, ice cream or pudding
- avoid hot, acidic, rough or spicy foods during this time
- room temperature foods are less irritating.

For further suggestions about your diet, speak to your clinic nurse at your next appointment.

### ***Dry Mouth:***

If your mouth is very dry:

- sip juices and other fluids throughout the day
- try sugar free candies, gum, ice chips

## **DIARRHEA**

Diarrhea is another possible reaction to chemotherapy. If it occurs:

- drink fluids slowly - 250ml (1cup) over 1 hour
- drink diluted fruit juices and non-carbonated fruit drinks to decrease bowel activity
- eat small meals throughout the day
- eat non-irritating foods such as chicken, fish, eggs, white bread, canned vegetables, bananas, applesauce or low fibre cereals
- avoid fatty and fried foods, rich sauces, caffeine,

- alcohol, smoking and chocolate
- avoid extremely hot or cold foods
- keep activity to a minimum after meals
- speak with your clinic nurse for detailed dietary suggestions
- stop dairy products if you develop diarrhea

***Call the Telephone Triage Nurse if diarrhea persists for more than 24 hours.*** If your rectal area is sore, Vaseline or K-Y Jelly® may help. Consult your doctor or radiation therapist before applying anything if you are receiving radiation to this area.

## **CONSTIPATION**

Some medications can cause constipation. Almost everyone who takes pain relieving medications of the opioid class (e.g. codeine, Tylenol #3®, Percocet®, Percodan®, morphine, Dilaudid®) will experience constipation. Zofran (Ondansetron), an anti-nauseant can also cause constipation. If constipation occurs:

- use the laxatives and stool softeners recommended by your doctor or nurse
- add high-fibre foods (whole grain cereals, bran breads, fruits and vegetables, dried beans, peas and even popcorn) to help prevent constipation
- drink plenty of liquids in combination with the above high-fibre foods
- tea, hot lemon, water and juices such as prune juice may also help
- routine exercise such as walking will help considerably

***If constipation persists, phone the Telephone Triage Nurse.***

# **FATIGUE**

Fatigue is a common symptom related to chemotherapy and cancer. The following are examples of some things that increase fatigue.

- changes in the nutritional status of your body
- cancer cells competing with the body for nutrients
- infections, fevers, and stress
- changes in your daily schedule or interrupted sleep schedule

## **Suggestions to help with fatigue:**

- plan a regular bedtime and wake up time
- pace yourself and take adequate rest periods
- delegate responsibility
- plan a regular exercise program
- schedule high priority activities during peak energy periods

Even after treatment is completed, fatigue can continue for several months. Please ask your nurse for a booklet on how to manage your energy. The Fatigue Management Co-ordinator may be consulted (780 432-8223).

## **REPRODUCTIVE SYSTEM CHANGES**

Chemotherapy may cause changes in your reproductive system.

**PREGNANCY MUST BE AVOIDED WHILE ON TREATMENT.** *Discuss birth control methods with your family physician.*

Women who are menstruating may have irregular periods, stop menstruating, and may experience hot flashes. These changes may be permanent or temporary. After treatment you may remain fertile and can still become pregnant although some patients, particularly those nearing menopause, may not.

In men, chemotherapy often decreases the number of sperm cells produced. Although sterility is common during therapy, sexual function is generally not changed. In some men, the sterility may be permanent. You may want to consider sperm banking before beginning treatment. Please discuss this with your doctor or nurse.

Some men and women experience a loss of sexual desire due to stress and/or the chemical body changes caused by chemotherapy. This is a time for holding, supporting and hugs. If you have questions or concerns, contact your nurse or the department of Psychosocial and Spiritual Resources.

## HAIR LOSS

Hair loss affects many people undergoing cancer treatment and can be one of the most difficult side effects to deal with emotionally. Depending on the chemotherapy drugs given, there may be total loss of hair, thinning of hair or no loss at all. This may occur 1 to 2 weeks after your first treatment. Sometimes all body hair is lost, including eyebrows and eyelashes.



Hair loss is almost always temporary. Some people notice hair growing back between treatments. When hair grows back it may be a different texture or color than before chemotherapy.

- Avoid having a perm or colouring your hair if you are taking a drug that may cause hair loss, as this weakens the hair
- Style your hair shorter or shave your head if you have long hair
- Consider visiting a wig shop before hair loss occurs
- Prepare small children (if you have them), before cutting your hair or shaving your head
- For further information on hair loss, ask your clinic nurse or volunteers in the Cancer Information Centre. Volunteer Services provides hair and wig services as well as head coverings. For further information call 432-8334.

If hair loss does occur, you may find that your scalp is tender. Body heat is lost quickly through your scalp. Consider wearing a head covering day and night: scarves, baseball caps, turbans.

## **SKIN - MUSCLE - NERVE CHANGES**

Depending on the type of chemotherapy drug used you may observe the following:

### ***Skin:***

- sun sensitivity (use a sunscreen)
- occasional rashes
- dry, flaky skin (apply lotion or oil daily)  
**DO NOT** apply lotion to the area being treated with radiation
- ridges in your nails (these will disappear as nails grow)

### ***Muscle:***

- muscle weakness (reversible when treatment stops)

### ***Nerve:***

- tingling sensation (pins & needles) or numbness in your hands and feet (may take many months to recover or may be a permanent problem)

If you experience any of these symptoms, please discuss them with your doctor on your next visit.

***These sensations will gradually improve after your drugs are stopped, but it may take several months for you to recover fully.***

## **LIVING WITH CHEMOTHERAPY**

Please phone the Telephone Triage Nurse (phone number listed on page 19) about any symptoms that concern you including any of the following:

- fever of 38°C/100.4°F or higher
- chills, shaking (rigors)

- mouth sores and/or pain when swallowing
- severe constipation or diarrhea
- abnormal bleeding
- bruising that appears for no reason or small purple or red spots (petechiae)
- unrelieved shortness of breath or inability to get breath
- marked pain or soreness at the injection site
- any new rashes or lumps (lesions)
- any unusual pain, especially strong or new pain

The Telephone Triage Nurse may tell you how to treat the symptoms during the phone call, may instruct you to come to the Cross Cancer Institute, to go to your family physician or a local emergency department. Please note that it is important to keep in touch with your family doctor during your treatment.

## ***TELEPHONE TRIAGE NURSE / SHIFT SUPERVISOR PHONE NUMBERS***

Monday – Friday, 8:30 to 4:00pm

**(780) 432-8919**

Long Distance Toll Free

**1-877-707-4848**

After Clinic Hours

**(780) 432-8771**

ask to speak with the nursing shift supervisor

You will be given an Alberta Cancer Board I.D. card. Carry this card with you, especially when you are at the Cross Cancer Institute. Put this number by the phone and refer to it when you call. This is required by the nurse in order to locate your information.

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