



Chemotherapy

WHAT YOU NEED TO KNOW

You or your loved one has been diagnosed with a type of blood cancer. One of the treatments your healthcare team may offer is chemotherapy. What is chemotherapy and how might it affect you?

This fact sheet will help you:

- Get an overview of what chemotherapy is and how it works
- Learn about how chemotherapy is given and the treatment cycles
- Learn about the side effects of chemotherapy
- Prepare questions to ask your healthcare team





What is chemotherapy?

Chemotherapy uses strong drugs (chemicals) to kill or damage fast-growing cells, including cancer cells. It can be hard on your body because it can also harm healthy cells. Your doctor may combine two or more chemotherapy drugs for your treatment.

Chemotherapy:

- Is often combined with radiation therapy and immunotherapy
- May be followed by a stem cell transplant
- Can produce long-term remission or even a cure for many people
- May be used to relieve symptoms, stop cancer from spreading, or to cure it
- Can improve quality of life and length of life (known as palliative chemotherapy)



How does chemotherapy work?

Chemotherapy drugs interfere with the cancer cell's ability to grow and multiply. Different types of drugs work to harm cancer cells in different ways.

Many chemotherapy drugs attack the genetic makeup (DNA or RNA) of a cell. These drugs may include:

- DNA-damaging agents (kill cancer cells)
- Anti-tumour antibiotics (attach to DNA so the cancer cell dies)
- Anti-metabolites (mimic the substance the cancer cell needs, causing the cell to die)
- DNA repair enzyme inhibitors (prevent cancer cells from growing)

Other chemotherapy drugs use:

- High doses of hormones to kill cancer cells
- Antimitotic drugs to damage cancer cells and stop them from multiplying
- Antibodies that attach to cancer cells and interfere with or kill them

A **normal, healthy cell** divides and grows in a controlled way, creating a copy.

A **cancer cell** grows uncontrollably and quickly with no pattern. Cancer cells can take over and copy themselves many times.

How is chemotherapy given?

Chemotherapy drugs may be given:

- In pill, capsule, or liquid form (oral)
- Intravenously (IV) through a tube (catheter or central line) in a vein

Other less common chemotherapy treatments can be applied to the skin or delivered into the cerebrospinal fluid, brain, abdomen, chest, bladder, an artery, or the tumour itself.

Factors that affect chemotherapy

Discuss your options with your healthcare team to make sure you understand the benefits and risks of different chemotherapy treatments.

Your healthcare team includes an oncologist (the primary cancer doctor), who works with a range of professionals such as your family doctor, nurse practitioners, nurses, pharmacist, and social worker to manage your treatment and provide support. Depending on the type of cancer, other specialists like a pathologist, radiologist, or surgeon may also be involved in your care.

Your treatment plan is based on:

- Your age and overall health status
- The type of blood cancer
- The subtype, phase, or stage of the cancer
- Your medical history
- Results from lab tests and physical exam
- Your prognosis (the likely outcome of the disease)
- Symptoms
- Location of the cancer cells and disease progression
- Past cancer treatment and history of previous cancer

The goal of **chemotherapy** is to attack cancer cells to slow the disease or cause it to go into remission, meaning there are no signs of illness.

Chemotherapy drugs developed over the past 40 years offer better treatments and survival rates for people with blood cancers.

Treatment cycles

Chemotherapy treatments are often given in cycles because the drugs may not kill all cancer cells right away. You may undergo four to eight chemotherapy cycles, which is common in cancer treatments.

A treatment cycle includes a rest period after treatment. Rest periods allow normal cells to recover after being damaged by treatment.

Chemotherapy side effects

Normal, healthy cells grow and divide quickly. Examples include cells in the lining of your gastrointestinal (digestive) system, bone marrow, and hair follicles. Chemotherapy damages these normal cells along with the cancer cells.

Chemotherapy side effects depend on:

- The type of drug
- The dose
- How it's given
- Your overall health

Normal cells can usually repair over time. This stops the side effects after treatment is done.

It's important to watch for potential side effects. Speak to your healthcare team about treatment options if you are experiencing side effects. Supportive drugs can protect certain cells or organs to decrease the harmful side effects.





Common side effects

Some common side effects of chemotherapy treatment are:

Impacts on your overall wellbeing

- Chemo brain or brain fog, which impacts concentration, memory, and the ability to multitask
- Fatigue, lack of energy, and sleep disturbances
- Mental health issues that affect emotional and psychological well-being

Dental and oral (mouth) complications

- Changes in taste and smell
- Difficulty swallowing, infection, and pain
- Mouth sores, bleeding, and dryness
- Tooth decay, gum disease, and nerve damage

Appetite, nutrition, and stomach issues

- Diarrhea, constipation, nausea, and vomiting
- Loss of appetite
- Malnutrition

Hair, nails, eyes, and skin

- Dark, cracked, or brittle nails with discolorations
- Dry, red, and itchy skin with skin lesions
- Vision and hearing problems
- Hair loss
- Damage to mucous membranes (soft tissue lining the gastrointestinal tract, mouth, throat, and bladder)

Other side effects

- Blood clots
- Infections
- Headaches
- Pain in the muscles, joints, and gastrointestinal tract
- Injection site problems (pain, redness, swelling, itching, bruising, bleeding, or infection)
- Iron overload and low blood cell counts
- Fertility and sexual health issues
- Negative reaction from a chemotherapy drug, such as an allergic reaction
- Secondary cancers (low risk)
- Nerve damage (peripheral neuropathy)
- Organ and nerve damage
- Reduced heart, kidney, liver, and lung function

Your healthcare team can help you navigate side effects, know what to expect, and provide treatment options.

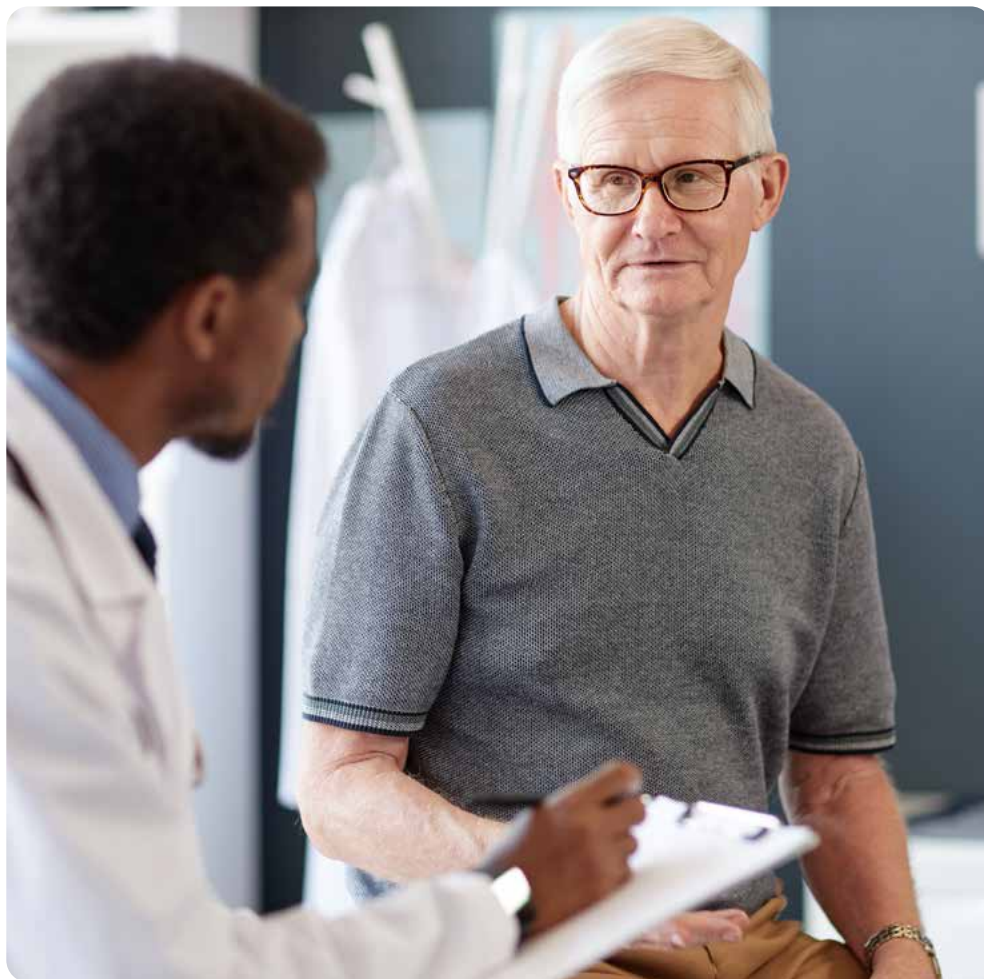


Questions to ask your healthcare team

Making choices about chemotherapy and treatment options can cause anxiety. To make sure you receive the best care, be open and honest with your healthcare team. Chemotherapy may not be right for you. Talk to them about whether it's a good option.

It's important to ask your healthcare team questions such as:

- Why are you recommending chemotherapy?
- What are the benefits and risks?
- How will this treatment work for me?
- How will the treatment be given? How often? For how long? When will it start?
- How will you know if it's working?
- What side effects should I expect during and following treatment?
- If I take chemotherapy at home, what do I need to know about missing a dose, drug storage, and vomiting?
- Is it okay to drink alcohol and eat while on chemotherapy?
- How will this impact my family? What type of support will I need from them?
- Will I need to make changes to my daily routine, work, or exercise habits?
- Do health insurance plans cover this therapy? Is there any other type of financial support available to me during my treatment?
- Will I need other cancer treatments? Will these be given with the chemotherapy or at a different time?
- Are there chemotherapy clinical trials that might be right for me?



Living with a blood cancer can be overwhelming. Seek medical help if you are feeling “down” or “blue” or do not want to do anything – and your mood does not improve over time. These could be signs of depression, an illness that should be treated even when you are undergoing chemotherapy. Treatment for depression has important benefits for people living with cancer.

LLSC gratefully acknowledges Billy Vinette, RN, Ph.D., McGill University for contributing to the content of this publication.



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