

Chemotherapy

Lung cancer treatment



1st edition



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The inclusive singular pronoun “they” is used throughout this document for the purpose of inclusivity and simplicity.

This content does not replace the recommendations, diagnoses or treatments made by your health care professional.

Document translated from the original French document *La chimiothérapie : traitement pour le cancer du poumon, 4e édition*.

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Introduction

You have lung cancer. Your doctor recommends that you undergo chemotherapy. This guide will help you and your loved ones to better understand the treatment.

You will find information about:

- Chemotherapy treatments
- Side effects
- Guidelines to follow at home
- Dietary guidelines to follow during treatment



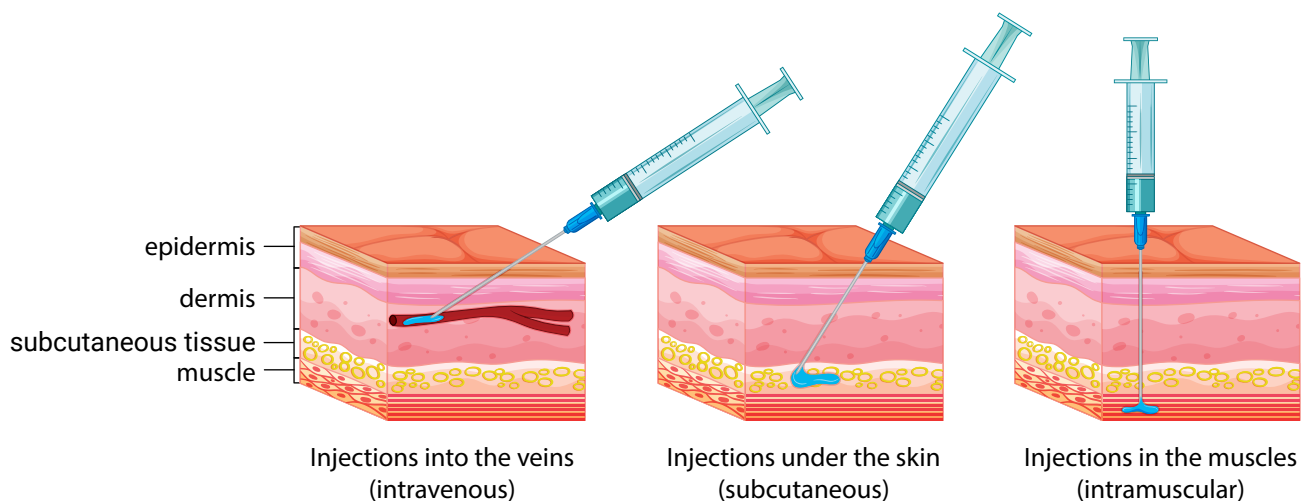
Treatment

What is chemotherapy?

The term “chemotherapy” comes from the words “chemo” and “therapy.” It refers to a type of drug used to treat cancer. There are different kinds of chemotherapy.

Chemotherapy can be administered in four ways:

- Oral pills
- Injections into the veins (intravenous)
- Injections under the skin (subcutaneous)
- Injections in the muscles (intramuscular)



Chemotherapy targets cancer cells. It can damage or destroy these cells. The goal is to stop or slow down the cancer’s growth, or to stop cancer cells from spreading elsewhere in the body. Chemotherapy can also temporarily damage the body’s healthy cells, for example hair and body hair, mucosa of the mouth and digestive system, and bone marrow.

Each person reacts differently to chemotherapy. While its side effects are well known, it’s impossible to predict exactly how you will react to this treatment.

Chemotherapy can be used alone or combined with radiation therapy, immunotherapy or surgery.

Treatment

Before starting chemotherapy, you will meet with a nurse, a doctor and a pharmacist (your treatment team). Based on your personal needs, you may also meet with a nutritionist or other professionals.



Important

Inform your family doctor of the status of your illness. Ask your pneumologist to send them any necessary information.

How long does chemotherapy treatment last?

The duration and frequency of chemotherapy treatment varies by:

- Type of cancer
- Type of chemotherapy administered
- Response to treatment
- Side effects

Chemotherapy treatment is split into several sessions. These sessions can be:

- Daily
- Weekly
- Monthly

Chemotherapy is often administered in several cycles at regular intervals. A cycle is one or more chemotherapy sessions combined with a rest period of a couple of days. For example, a cycle could be one chemotherapy session over the course of three days followed by a 10-day rest period.

Treatment

What are the side effects?

Chemotherapy can cause side effects. Each person reacts in different ways. For some people, the side effects are only slightly inconvenient or even nonexistent. Others may experience significant side effects. The severity of the side effects is not a sign of whether the chemotherapy is effective or not.

Side effects usually occur 24 to 48 hours after the chemotherapy treatment is administered. However, they can sometimes show up after several days.

Inform your treatment team if you experience one or several side effects during your chemotherapy, so they can help you manage them.

Nausea and vomiting

Chemotherapy can trigger nausea and vomiting. Your pharmacist will prescribe medication (antiemetics) to prevent nausea and vomiting. This medication must be taken regularly. Follow the pharmacist's instructions.

The pharmacist will give you a second prescription for medication to take as needed if you continue to experience nausea. Your treatment team will notify you when you can take this medication.

Here are some suggestions to help prevent nausea:

- Eat a meal before each chemotherapy session.
- Eat small meals or snacks several times a day.
- If eating makes you nauseous, take your anti-nausea medication 45 minutes before meals or snacks.
- Avoid lying down in the two hours following meals or snacks.
- Avoid spicy, acidic, fatty, ultra-sugary or very fragrant foods.

It's important to manage your nausea to avoid vomiting. Vomiting can prevent you from eating, drinking and taking your medication as usual. The nurse navigator can also refer you to a nutritionist to modify your diet during treatment, if necessary.

Treatment

Diarrhea

Chemotherapy and certain drugs used during chemotherapy can increase the frequency of bowel movements and cause liquid stool (diarrhea). When this occurs, it's important to drink lots of liquids (e.g. water, broth, low-salt consommé, rehydration solution), unless indicated otherwise. This will replenish the liquids lost during bowel movements. If you take laxatives or stool softeners (e.g. Lax-a-day), you'll need to stop taking them.

Here are some tips if you have diarrhea:

- Prioritize boiled or steamed vegetables in your diet.
- Avoid fresh fruits and raw vegetables.
- Avoid dairy products, except yogurt.
- Avoid foods that may irritate your bowels (e.g. coffee, alcohol, soft drinks).

Constipation

Chemotherapy can also cause constipation, meaning solid stool or less frequent bowel movements. Your pharmacist will prescribe a laxative at the start of your treatment for this issue. You can use it as necessary, according to the dose prescribed.

Here are some suggestions to help prevent or ease constipation:

- Drink lots of water (2 to 3 litres every 24 hours), unless otherwise indicated.
- Eat fibre-rich foods, like whole grains, fruits, vegetables, nuts and legumes.
- Add wheat bran to your food as a “natural laxative.”
- Drink prune juice.
- Go for a walk after meals. Exercise stimulates bowel movement.

If you have not had a bowel movement in over three days, consult your treatment team.



Treatment

Changes in food preferences and loss of appetite

Chemotherapy can temporarily damage your taste buds. These are the cells on your tongue that allow you to taste your food. When taste buds are damaged, foods can taste different (e.g. metallic, bitter or lack of taste). It's possible that some foods will disgust you or that you will lose your appetite.

Here are some suggestions to better taste your food and to make mealtimes easier:

- Eat several small meals or snacks.
- Choose foods and beverages high in calories and protein: milk, yogurt, cheese, milk dessert, nuts, peanut butter, supplements (e.g. Boost, Ensure), etc.
- Marinate meat and fish.
- Eat cold or room temperature foods.
- Rinse out your mouth with water before and after eating.
- Use plastic utensils and glass dishes.

Your nutritionist can give you simple recipes and help you get enough nutrition from your food, as necessary.



Treatment

Oral problems

Chemotherapy treatments can cause problems with your oral health, for example:

- Dry mouth
- Ulcers
- Sore mouth or throat

To prevent these symptoms, rinse out your mouth (gargle) with a water-based baking soda and salt solution.

Avoid alcohol-based commercial mouthwashes, as they can cause irritation. Brush your teeth twice a day with a soft-bristle brush or clean your dentures after each meal.

If you have dry mouth, you can use a moisturizing spray (e.g. Biotène), chew sugar-free gum or have sugar-free candy.

Mouthwash recipe

Ingredients

- ¼ teaspoon salt (1.25 ml)
- ¼ teaspoon baking soda (1.25 ml)
- 1 cup water (250 ml)

Directions

Rinse your mouth with one tablespoon (15 ml) of this solution for 30 to 60 seconds and spit. Use this mouthwash four to six times per day, as needed. Avoid eating or drinking for 30 minutes after use.

Remake the recipe every day to avoid bacteria growth.



Hair loss

Some types of chemotherapy cause complete or partial hair loss (alopecia).

For more information, check out the French leaflet "*La perte des cheveux pendant un traitement contre le cancer*" (see [Useful resources](#)).

Treatment

Skin sensitivity issues

Chemotherapy can make your skin more sensitive. Your skin may become drier or develop brown spots during your treatment. To limit problems with skin sensitivity:

- Avoid direct exposure to the sun.
- Wear a hat and clothes that cover your arms and legs.
- Use sunscreen with a solar protection factor (SPF) of 30 or above.
- Wash with a mild soap and use unscented lotion every day.

Notify your treatment team of any changes to your skin, like redness, itching, swelling or pain.

Eye issues

Chemotherapy can cause:

- Tearful or runny eyes (lacrimation)
- Eye irritation or redness
- Changes in your vision

Notify your treatment team if you experience any of these symptoms.

Here are some suggestions to decrease lacrimation and eye irritation:

- Use hydrating artificial tears without preservatives.
- Place warm compresses on your eyes for a few minutes several times a day.
- Avoid cigarette smoke, dust and very dry air.



Treatment

Tingling or numbness

Chemotherapy can cause nervous system issues (neuropathy). The primary symptom is a tingling sensation or numbness in your hands and feet. This sensation can occur on just one side or on both sides of the body at the same time. Some people may also have difficulty holding objects.

The tingling and numbness usually decrease at the end of the chemotherapy treatment. However, these sensations may continue for six months to a year after the end of your treatment. There is also a chance that they become permanent issues. If this is the case, there are treatments to reduce any discomfort.

Notify your treatment team if you experience any of these symptoms.

Fatigue

You may feel fatigue during your chemotherapy treatment. It can be caused by several things, such as your cancer, stress, anxiety, insomnia, your treatment or a decrease in red blood cells (anemia).

Symptoms of fatigue are:

- Feelings of exhaustion, weakness or heaviness
- Trouble concentrating
- Memory loss

Generally, fatigue goes away gradually once your treatment is finished.

Contact your treatment team if you're feeling abnormally fatigued.

Decrease in blood cells

Chemotherapy can reduce the count of cells in your blood.

- A decrease in white blood cells can make you more susceptible to infections.
- A decrease in red blood cells can cause fatigue or shortness of breath.
- A decrease in platelets increases the risk of bleeding.

Blood tests are done before each chemotherapy treatment to confirm that you have enough blood cells. If your blood cell count is too low, your treatment may be rescheduled or modified.

Treatments to increase certain blood cells are available, if necessary.

Follow-up care and management

How do I take care of myself during my chemotherapy treatment?

You may have less energy during chemotherapy. Prioritize carefully and respect your limits. Don't hesitate to ask your loved ones for help.

Energy and sleep

To maintain your energy levels and get better sleep:

- Do regular physical exercise if possible (30 minutes, 4 to 5 times per week).
- Eat a variety of healthy foods, especially:
 - Protein-rich foods (e.g. cooked meat, poultry and fish, nuts, cheese, eggs).
 - Iron-rich foods (e.g. cooked meat, poultry and fish, iron-enriched baby cereal).
- Use relaxation techniques such as meditation, yoga, visualization or deep breathing.
- Unwind for at least an hour before going to bed.
- Don't nap for more than one hour. Take your naps before 3 p.m.
- Avoid caffeinated beverages in the afternoon and limit alcohol consumption in the evening.

Liquid intake

Some drugs require you to drink much more than normal (unless indicated otherwise by your doctor). Your treatment team will advise you, if this applies to you.

Drinking a lot means drinking 2 to 3 litres of liquid per day (8 to 12 glasses). You can choose between water, juice, milk, soup, etc.



Follow-up care and management

How can I avoid injuring myself?

Chemotherapy can make you more susceptible to bleeding. Be careful when using sharp objects or when you do activities and sports that can cause severe injury.

To reduce the risk of bleeding:

- Use a soft-bristled toothbrush.
- Use an electric razor to shave, not a blade.
- File your nails instead of clipping them.
- Wear gloves when gardening.
- Avoid walking around barefoot.

How can I protect myself from infections?

Chemotherapy weakens your immune system. So, it's important to have good habits to protect yourself from infection-causing germs.

- Brush your teeth after every meal and use dental floss.
- Wash your hands often.
- Avoid crowds.
- Avoid coming into contact with people who have the flu, a cold or gastroenteritis.
- Ask your treatment team about vaccination against the flu and pneumococcus.

If you have pets, ask a loved one to clean your animal's litter, aquarium or cage. If you have to do it yourself, wear gloves and wash your hands thoroughly afterwards.



Don't forget!

Washing your hands is essential! Don't hesitate to keep hand sanitizer with you and use it regularly when you go out.

Follow-up care and management

Do I need to take any precautions during sexual intercourse?

Use a condom during sexual intercourse for 4 days following your chemotherapy treatment. Sperm and vaginal secretions can contain drug residue that can be dangerous for your partner.

For more information or any questions you have about sex during treatment, don't hesitate to ask your treatment team.

Can I use alternative medicine or other natural health products?

Always ask your treatment team before taking any over-the-counter medications or natural health products (e.g. vitamins, medicinal plants) These products may not be suitable for you. They may interact with your other medications.

You should also inform your treatment team of any alternative medicine treatments you are receiving (e.g. acupuncture, massage therapy, osteopathy). These treatments need to take place at the right time during your treatment cycle to avoid the risk of infection or bleeding.



Follow-up care and management



What symptoms should I watch out for?

Talk to your pharmacist or nurse navigator during the cancer clinic's opening hours if you experience any of the following symptoms. Outside of opening hours, go to the nearest hospital's **emergency department**.

Gastrointestinal symptoms

- Change in texture or colour of your stool
- Constipation lasting 3 or more days
- Diarrhea for 24 hours or more, or if you also have significant stomach pain
- Persistent vomiting for 24 hours or more
- Blood in your urine, stool or vomit

Respiratory symptoms

- Significant increase in breathlessness
- Repeatedly spitting up large amounts of blood or blood clots

Cutaneous (skin) symptoms

- Pain, burning, swelling or redness at your chemotherapy injection site
- Swelling in the neck or face
- Rapid onset swelling, pain, redness and heat in the legs
- Ulcers, redness in the mouth preventing liquid intake, including medicines, for 24 hours or more
- Unusual bleeding or bruising (ecchymosis)

Other symptoms

- Fever of 38,0 °C (100,4 °F) or higher
- Chills
- Symptoms of infection:
 - Burning sensation when urinating
 - Sore throat
 - Cough with coloured phlegm
 - Wounds excreting green or yellow discharge

Follow-up care and management

What information should I share with my treatment team?



Alcohol, cannabis and other drugs

Inform your doctor and pharmacist if you consume:

- Alcohol
- Cannabis, over-the-counter or prescription
- Other drugs



Dentist and medical interventions

Notify your treatment team of all treatment or intervention (dental, varicose veins or others) you will undergo during your chemotherapy.



Driving

Certain medications can cause drowsiness. Ask your treatment team if you are able to drive with your medications. If you feel less alert than normal, do not drive.



Medication

Always take the prescribed dose at the proper time and following your treatment team's instructions.

Notify your treatment team if:

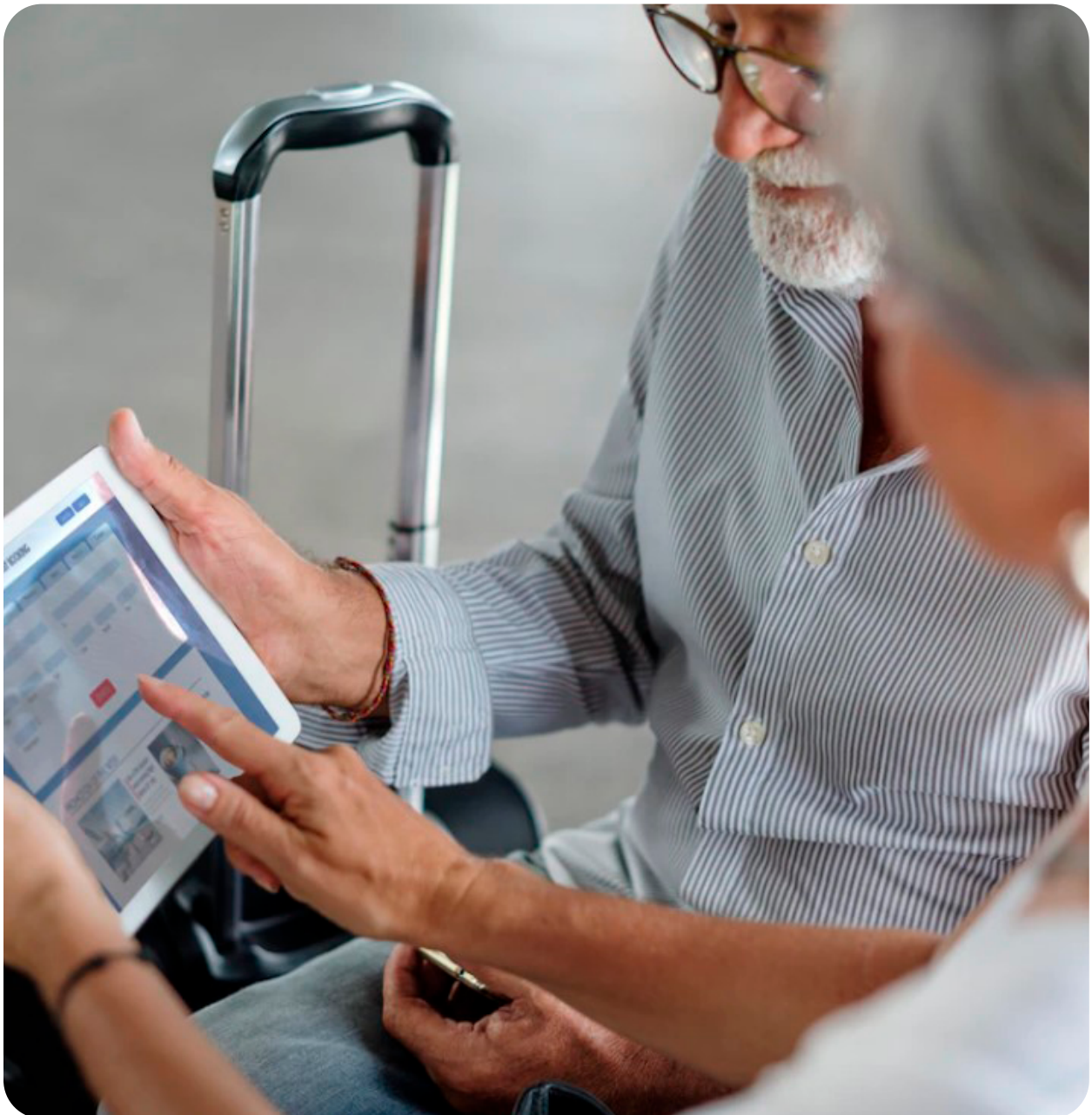
- You forgot a dose.
- You vomited up a dose.
- Someone else took your medication.
- You are not able to take your medication, regardless of the reason why.

Follow-up care and management

What do I need to do if I want to go on vacation or travel?

If you want to travel during your treatment, check with your insurance first. Then, ask your treatment team about the best time for you to be away.

Your treatment team plans your chemotherapy sessions several weeks in advance. Notify them as soon as possible if you need to make any changes to your treatment schedule.



At-home guidelines

Chemotherapy consists of dangerous drugs that make bodily fluids toxic. Bodily fluids include blood, urine, fecal matter, vomit, sperm, vaginal secretions, etc. All objects that come into contact with your bodily fluids can be contaminated by these drugs.

Your loved ones may come in indirect contact with chemotherapy during your treatment. Repeated contact without protection can have long-term consequences on their health.

You and your loved ones should:

- Handle chemotherapy pills safely and carefully.
- Take additional precautions during the **4 days** following a session.

How do I safely handle chemotherapy pills?

Store your chemotherapy pills in their original container. Don't put them in a pill organizer. Keep these containers out of reach of children and animals. Wash your hands with soap and water after handling your pills.

Your loved ones must wear latex or nitrile gloves when they touch your chemotherapy pills. These gloves should be used once and thrown away. Your loved ones must wash their hands after taking off their gloves. Latex and nitrile gloves can be bought at pharmacies.



Important

Pregnant or breastfeeding women should never touch chemotherapy pills, even with gloves.



At-home guidelines

How do I wash soiled clothing and bedding?

For **4 days** after a chemotherapy session, you should pay special attention to any bedding, linens and clothes that have been in contact with your bodily fluids.

- Wear latex or nitrile gloves when you handle clothing or bedding soiled with your bodily fluids.
- Wash soiled clothing and bedding separately, as soon as possible.
- If you can't wash the soiled clothes and bedding quickly, place everything in a sealed plastic bag until you can wash them separately.
- If the clothing or bedding is very soiled, wash it twice.
- Wash your hands with soap and water after taking off your gloves.

Clothing and bedding that has not been in contact with your bodily fluids can be washed with your regular laundry.

How do I maintain the bathroom?

There is a very high risk of contamination in the bathroom. For **4 days** following a chemotherapy session:

- If possible, use a separate toilet than the other members of your family.
- After using the toilet, close the lid and flush twice.
- If you are a man, urinate in a seated position.
- If you have animals, keep the toilet lid closed.
- If you use incontinence underwear, disposable underwear or disposable sanitary napkins, double-bag them in a normal garbage bag and throw them away with your household waste.

During this **4 day** period, you will need to clean the toilet bowl and the floor around the toilet every day. Wear latex or nitrile gloves when cleaning the bathroom and use disposable paper towels as much as possible. If you use cleaning rags, do not use them on other surfaces. Use your normal household cleaning products.

Food poisoning

How do I prevent food poisoning?

During your chemotherapy treatment, you are more susceptible to food poisoning. Food poisoning refers to multiple symptoms (nausea, vomiting, cramps, diarrhea, fever, headaches), which can occur after ingesting bacteria, viruses or parasites. **From the start of your chemotherapy until 1 month after your last session**, you will need to avoid certain foods to reduce the risk of food poisoning.

	Avoid	Prioritize
Meat Poultry Fish and seafood	<ul style="list-style-type: none"> • Raw or rare meat, poultry and fish • Meat, poultry and fish defrosted on the counter • Cold cuts from the butcher's counter • Homemade preserves 	<ul style="list-style-type: none"> • Well-done meat, poultry and fish • Meat, poultry and fish defrosted in the refrigerator • Pre-wrapped cold cuts • Cured meats (e.g. salami and pepperoni)
Eggs	<ul style="list-style-type: none"> • Foods containing raw or undercooked eggs (e.g. homemade mayonnaise, eggnog, meringue) 	<ul style="list-style-type: none"> • Fully cooked eggs • Pasteurized liquid eggs • Store-bought mayonnaise
Cheese	<ul style="list-style-type: none"> • Non-pasteurized milk cheese • Cheese from the cheese counter 	<ul style="list-style-type: none"> • Pasteurized milk cheese • Pre-wrapped cheese
Fruits and vegetables	<ul style="list-style-type: none"> • Homemade preserves • Raw sprouts and bean sprouts 	<ul style="list-style-type: none"> • Washed fruits and vegetables (including pre-washed) • Store-bought preserves • Cooked bean sprouts
Others	<ul style="list-style-type: none"> • Non-pasteurized honey and juice • Buffet and shared meals like potlucks (which tend to be kept at room-temperature for long periods of time) 	<ul style="list-style-type: none"> • Pasteurized honey and juice

Food poisoning

Here are some suggestions to reduce the risk of food poisoning:

- Wash your hands before cooking and before eating.
- Use new table linens and dishes every day.
- Don't reuse plates, utensils or cutting boards that were in contact with raw foods (meat, poultry, fish).
- Cook defrosted foods within 24 hours.
- Check the expiration (best before) date on your food. If you're not sure, it's better to throw it out.

If these suggestions seem like they will negatively impact your food intake, make an appointment with the clinic's nutritionist.



Help and resources

Who do I contact for help or questions?

Your nurse navigator is the person to go to for any questions you have about your cancer treatment, in this case chemotherapy. You can prepare for your visits to the clinic by writing down your questions and concerns.

Nurse navigator: _____

Contact the lung cancer clinic:

418 656-4615

Monday to Friday, 8 a.m. to 4:30 p.m.



Help and resources



Useful resources

The Institute has produced other educational documents. You can find them on our website at bibliotheque-patients.iucpq.qc.ca



Here are some other documents that may also interest you:

- [Sex, intimacy and cancer](#)
- [Immunothérapie pour votre cancer du poumon](#) (in French only)
- [Tabagisme et traitements contre le cancer](#) (in French only)
- [La perte des cheveux pendant un traitement contre le cancer : causes et conseils](#) (in French only)

Enter the name of the document you would like to consult in the search bar.

CHUM

chumontreal.qc.ca/en/fiches-sante

Enter "Preventing food poisoning" in the search bar to access the document.

Health Canada

canada.ca/en/health-canada.html

Enter "Food safety for vulnerable populations" in the search bar in the upper right-hand corner.

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