



# MFOLFIRINOX Treatment

This handout gives general information about this cancer treatment.

You will learn:

- who to contact for help
- what the treatment is
- how it is given
- what to expect while on treatment



This handout was created by Ontario Health (Cancer Care Ontario) together with patients and their caregivers who have also gone through cancer treatment. It is meant to help support you through your cancer treatment and answer some of your questions.

**This information does not replace the advice of your health care team. Always talk to your health care team about your treatment.**

## Who do I contact if I have questions or need help?

My cancer health care provider is: \_\_\_\_\_

During the day I should contact: \_\_\_\_\_

Evenings, weekends and holidays: \_\_\_\_\_

## What is this treatment?

**mFOLFIRINOX** is the code name of your pancreatic cancer treatment regimen. Most people call this regimen FOLFIRINOX. A regimen is a combination of medications to treat cancer.

This regimen name is made up of one or more letters from the names of the 4 medications in your treatment.

Here are the names of the medications in this regimen:

**FOL** = **FOL**inic acid (also called leucovorin)  
**F** = **F**luorouracil (also called 5-FU)  
**IRIN** = **IRIN**otecan  
**OX** = **OX**aliplatin

Treatment is divided into cycles. Each cycle is **2 weeks** long. Your health care team will tell you how many cycles you need.

Here is a picture of the schedule for FOLFIRINOX treatment:



**During each 2-week** cycle, you will have FOLFIRINOX treatment on day 1 at the hospital. Your nurse will also start an IV of fluorouracil that will continue at home for a total of 46 hours. See below for more information.

Each cycle looks like this:

Day 1	2	3	4	5	6	7
<p><b>Treatment Day:</b> Go to the hospital for FOLFIRINOX treatment. Fluorouracil infusion will continue for 46 hours.</p>	<p>Fluorouracil infusion continues at home.</p>	<p>Fluorouracil infusion continues at home. A nurse will disconnect it.</p>	<p>No FOLFIRINOX Treatment</p>			
8	9	10	11	12	13	14
						



**Remember To:**

- ✓ Tell your health care team about all of the other medications you are taking.
- ✓ Keep taking other medications that have been prescribed for you, unless you have been told not to by your health care team.

You will have a blood test to check for hepatitis B before starting treatment. See the [Hepatitis B and Cancer Medications](#) pamphlet for more information.

**Your health care team may ask you to have a blood test to check for DPD deficiency before starting treatment.**

- DPD deficiency is when you have low or no activity of an enzyme called DPD (dihydropyrimidine dehydrogenase). A deficiency can cause you to have severe side effects from fluorouracil.
- See the [Testing for people taking capecitabine or 5-fluorouracil \(5-FU\) pamphlet](#) for more information.

## How is this treatment given?

The medications in your treatment are given through an IV (injected into a vein) at the hospital on day 1 of your treatment. You will also be given a device to take home that will continue to give you fluorouracil at home. The device looks like a bottle. It slowly gives you fluorouracil over 46 hours.

Your health care team may suggest that you get a **PICC line** or a **Port-a-Cath**.

- These are special IV's used to give medicines and fluids into larger veins.
- A PICC or Port-a-Cath can be safer for some medications that can cause reactions when given through an IV in your hand.
- If you have a PICC or Port-a-Cath you do not need an IV (needle) put into your arm every time you come for treatment.

- ✓ Talk to your healthcare team about the benefits and risks of a **PICC** or a **Port-a-Cath** to see if one of these options is right for you.

**You will have a blood test before each treatment cycle to make sure it is safe for you to get treatment.**

## What other medications are given with this treatment?

### To Prevent Nausea and Vomiting

You will be given medications to help prevent nausea (feeling like throwing up) and vomiting (throwing up) before they start.

- These are called anti-nausea medications and include medications such as ondansetron (Zofran®), granisetron (Kytril®), dexamethasone or others.

### To Treat Diarrhea

The Irinotecan in your treatment regimen can cause diarrhea. Diarrhea is when you have loose bowel movements (watery poo) or you need to have bowel movements (go poo) more often than usual. Diarrhea may start a few days after your treatment.

You will be given a medication called loperamide (Imodium®) to help treat your diarrhea. Take this medication only if you need it.

Keep your loperamide with you all the time. When diarrhea starts, take the loperamide right away.

### If you start to have diarrhea:

- Take **2 tablets (4mg) of loperamide right away.**
- Take **1 tablet (2mg) every 2 hours** after that.
- During the night you may take 2 tablets (4mg) every 4 hours.
- Keep taking loperamide until you have no diarrhea for 12 hours.

## What other important things should I know about this treatment?

### **This treatment causes cold sensitivity.**

One of the medications in your treatment (oxaliplatin) can cause an unusual side effect where different parts of your body may become very **sensitive to cold**. This can cause discomfort from things such as cold food, cold drinks and cool or cold temperatures.

### **How does the cold sensitivity feel?**

#### **You may feel:**

- Numbness or tingling in your fingers and toes. Sometimes it can be painful and feel like burning, which may be severe.
- Tightness in your throat or jaw
- Like it is hard to swallow
- Like it is hard to breathe, or that you have pressure on your chest

Tightness in your throat will usually go away after a few hours. If it lasts longer, or if you have trouble breathing, contact your health care team or get emergency help right away.

### **How can I help prevent sensitivity to cold?**

- Avoid the cold as much as possible.
- If you must go outside in the cold, protect your face and mouth with a scarf or high-neck sweater, wear mittens and warm socks.
- Only eat and drink things that are room temperature or warmer. Do not drink cold drinks or put ice cubes in anything you drink. Do not eat cold foods, such as ice cream.
- Avoid direct exposure to air conditioning, such as in your car.
- Take shallow breaths when you are exposed to cold air (such as from a freezer or when you are outside in winter).
- Wear gloves if you need to touch cold objects, such as items in the freezer.
- Do not use an ice pack on any part of your body.

## DO this while on treatment

- ✓ DO tell your health care team about any other medical conditions that you have such as problems with nerves in hands and feet (numbness or tingling), heart, liver, lung or kidney problems, diabetes, or any allergies.
- ✓ DO check with your health care team before getting any vaccinations, surgery, dental work or other medical procedures.
- ✓ DO protect your skin from the sun. Wear a long-sleeved shirt, long pants and a hat. Apply sunscreen with UVA and UVB protection and an SPF of at least 30. Your skin may be more sensitive to the sun and you could develop a bad sunburn or rash more easily.
- ✓ DO talk to your health care team about your risk of getting other cancers and heart problems with this treatment.
- ✓ DO consider asking someone to drive you to and from the hospital on your treatment days. You may feel drowsy or dizzy after your treatment.

## DO NOT do this while on treatment



- ✗ DO NOT take any other medications, such as vitamins, over the counter (non-prescription) drugs, or natural health products without checking with your health care team.
- ✗ DO NOT start any complementary or alternative therapies, such as acupuncture or homeopathic medications, without checking with your health care team.
- ✗ DO NOT eat or drink grapefruit, starfruit, Seville oranges or their juices (or products that contain these) while on this treatment. They may increase side effects.
- ✗ DO NOT smoke or drink alcohol while on treatment without talking to your health care team first. Smoking and drinking can make side effects worse and make your treatment not work as well.

## Will this treatment interact with other medications or natural health products?

Yes, the medications in this regimen can interact with other medications, vitamins, foods and natural health products. Interactions can make the treatment not work as well or cause severe side effects.

Tell your health care team about all of your:

- prescription and over-the-counter (non-prescription) medications
- natural health products such as vitamins, herbal teas, homeopathic medicines, and other supplements

Check with your health care team before starting or stopping any of them.

If you are taking seizure medications (such as phenytoin), your health care team will monitor your blood levels closely and may change your dose.

If you are taking a blood thinner (such as warfarin), your health care team may need extra blood tests and may change your dose.



### Talk to your health care team **BEFORE** taking or using these :

- Anti-inflammatory medications such as ibuprofen (Advil<sup>®</sup> or Motrin<sup>®</sup>), naproxen (Aleve<sup>®</sup>) or Aspirin<sup>®</sup>.
- Over-the-counter products such as dimenhydrinate (Gravol<sup>®</sup>)
- Natural health products such as St. John's Wort
- Supplements such as vitamin C
- Alcoholic drinks
- Tobacco
- All other drugs, such as marijuana or cannabis (medical or recreational)

## What should I do if I feel unwell, have pain, a headache or a fever?

- ✓ **Always** check your temperature to see if you have a fever **before** taking any medications for fever or pain (such as acetaminophen (Tylenol®) or ibuprofen (Advil®)).
  - Fever can be a sign of infection that may need treatment right away.
  - If you take these medications before you check for fever, they may lower your temperature and you may not know you have an infection.

### How to check for fever:

Keep a digital (electronic) thermometer at home and take your temperature if you feel hot or unwell (for example, chills, headache, mild pain).

- You have a fever if your temperature taken **in your mouth (oral temperature)** is:
    - 38.3°C (100.9°F) or higher at any time
- OR
- 38.0°C (100.4°F) or higher for at least one hour.



### If you do have a fever:

- ✓ **Try to contact your health care team. If you are not able to talk to them for advice, you MUST get emergency medical help right away.**
- ✓ Ask your health care team for the [Fever](#) pamphlet for more information.

If you do not have a fever but have mild symptoms such as headache or mild pain:

- ✓ Ask your health care team about the right medication for you. **Acetaminophen (Tylenol®)** is a safe choice for most people.



**Talk to your health care team before you start taking** ibuprofen (Advil®, Motrin®), naproxen (Aleve®) or ASA (Aspirin®), as they may increase your chance of bleeding or interact with your cancer treatment.



Talk to your health care team if you already take **low dose aspirin** for a medical condition (such as a heart problem). It may still be safe to take.

## How will this treatment affect sex, pregnancy and breast feeding?

**Talk to your health care team about:**

- How this treatment may affect your sexual health.
- How this treatment may affect your ability to have a baby, if this applies to you.

This treatment may harm an unborn baby. Tell your health care team if you or your partner are pregnant, become pregnant during treatment, or are breastfeeding.

- If there is **any** chance of pregnancy happening, you and your partner together must use **2 effective forms of birth control** at the same time while you are on treatment. Talk to your health care team about which birth control options are best for you, and how long you should use them after your last treatment dose.
- Do not breastfeed while on this treatment. Talk to your health care team about how long to wait before you start breastfeeding after your last treatment dose, if this applies to you.

## What are the side effects of this treatment?

The following table lists side effects that you may have when getting FOLFIRINOX treatment. The table is set up to list the most common side effects first and the least common last. It is unlikely that you will have all of the side effects listed and you may have some that are not listed.

Read over the side effect table so that you know what to look for and when to get help. Keep this paper during your treatment so that you can refer to it if you need to.

Very Common Side Effects (50 or more out of 100 people)	
Side effects and what to do	When to contact health care team
<p><b>Neuropathy (Tingling, numb toes or fingers)</b></p> <p>(May be severe)</p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Numbness or tingling of your fingers and toes may happen after starting oxaliplatin.</li> <li>• Sometimes it can be painful and feel like a burning sensation, which may be severe.</li> </ul> <p><b>What to do?</b></p> <ul style="list-style-type: none"> <li>• <b>Talk to your health care team if you have symptoms of neuropathy.</b></li> <li>• Numbness may slowly get better after your treatment ends.</li> <li>• Avoid exposure to cold as it can trigger this side effect.</li> <li>• Do not use ice packs on your body.</li> <li>• Dress warmly and cover all of your skin if you must go outside in cold temperatures.</li> <li>• Wear gloves to touch cold objects.</li> <li>• Avoid breathing deeply when exposed to cold air.</li> </ul> <p>For some people, symptoms of neuropathy may continue long after treatment ends. If you continue to have bothersome symptoms, talk to your health care team for advice.</p>	<p><b>Talk to your health care team, especially if you have trouble doing tasks like doing up buttons, writing, moving, or if you have severe pain or numbness</b></p>
<p><b>Low neutrophils (white blood cells) in the blood (neutropenia)</b></p> <p>When neutrophils are low, you are at risk of getting an infection more easily. Ask your health care team for the <a href="#">Neutropenia (Low white blood cell count)</a> pamphlet for more information.</p>	<p><b>If you have a fever, try to contact your health care team. If you are unable to talk to the</b></p>

<b>Very Common Side Effects (50 or more out of 100 people)</b>	
<b>Side effects and what to do</b>	<b>When to contact health care team</b>
<p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• If you feel hot or unwell (for example if you have chills or a new cough), you <b>must</b> check your temperature to see if you have a fever.</li> <li>• Do not take medications that treat a fever before you take your temperature (for example, Tylenol® (acetaminophen), or Advil® (ibuprofen)).</li> <li>• Do not eat or drink anything hot or cold right before taking your temperature.</li> </ul> <p>You have a fever if your temperature taken in your mouth (oral temperature) is:</p> <ul style="list-style-type: none"> <li>• 38.3°C (100.9°F) or higher at any time OR</li> <li>• 38.0°C (100.4°F) or higher for at least one hour.</li> </ul> <p><b>What to do?</b></p> <p><b>If your health care team has told you that you have low neutrophils:</b></p> <ul style="list-style-type: none"> <li>• Wash your hands often to prevent infection.</li> <li>• Check with your health care team before getting any vaccines, surgeries, medical procedures or visiting your dentist.</li> <li>• Keep a digital thermometer at home so you can easily check for a fever.</li> </ul> <p><b>If you have a fever:</b></p> <p><b>If you have a fever, try to contact your health care team. If you are unable to talk to the team for advice, you must get emergency medical help right away.</b></p>	<p><b>team for advice, you MUST get emergency medical help right away.</b></p>
<p><b>Low platelets in the blood</b></p> <p>When your platelets are low, you are at risk for bleeding and bruising. Ask your health care team for the <a href="#">Low Platelet Count</a> pamphlet for more information.</p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Watch for signs of bleeding: <ul style="list-style-type: none"> <li>◦ bleeding from your gums</li> <li>◦ unusual or heavy nosebleeds</li> <li>◦ bruising easily or more than normal</li> <li>◦ black coloured stools (poo) or blood in your stools (poo)</li> <li>◦ coughing up red or brown coloured mucus</li> <li>◦ dizziness, constant headache or changes in your vision</li> <li>◦ heavy vaginal bleeding</li> <li>◦ red or pink coloured urine (pee)</li> </ul> </li> </ul>	<p><b>Talk to your health care team if you have any signs of bleeding. If you have bleeding that doesn't stop or is severe (very heavy), you MUST get emergency help right away.</b></p>

<b>Very Common Side Effects (50 or more out of 100 people)</b>	
<b>Side effects and what to do</b>	<b>When to contact health care team</b>
<p><b>What to do?</b></p> <p><b>If your health care team has told you that you have low platelets:</b></p> <ul style="list-style-type: none"> <li>• Tell your pharmacist that your platelet count may be low before taking any prescriptions or over-the-counter medication.</li> <li>• Check with your healthcare team before you go to the dentist.</li> <li>• Take care of your mouth and use a soft toothbrush.</li> <li>• Try to prevent cuts and bruises.</li> <li>• Ask your health care team what activities are safe for you.</li> <li>• Your treatment may have to be delayed if you have low platelets. Your health care team may recommend a blood transfusion.</li> </ul> <p><b>If you have signs of bleeding:</b></p> <ul style="list-style-type: none"> <li>• If you have a small bleed, clean the area with soap and water or a saline (saltwater) rinse. Apply pressure for at least 10 minutes.</li> </ul> <p><b>If you have bleeding that does not stop or is severe (very heavy), you must get emergency medical help right away</b></p>	
<p><b>Anemia (low red blood cells)</b></p> <p>(May be severe)</p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• You may feel more tired or weaker than normal.</li> <li>• Pale skin and cold hands and feet.</li> <li>• You may feel short of breath, dizzy or lightheaded.</li> <li>• This may occur in days to weeks after your treatment starts.</li> </ul> <p><b>What to do?</b></p> <p><b>If your health care team has told you that you have anemia (low red blood cells):</b></p> <ul style="list-style-type: none"> <li>• Rest often and eat well.</li> <li>• Light exercise, such as walking may help.</li> <li>• You may need medication or a blood transfusion.</li> <li>• If it is very bad, your doctor may need to make changes to your treatment regimen.</li> </ul>	<p>Talk to your health care team if it does not improve or if it is severe</p>

<b>Very Common Side Effects (50 or more out of 100 people)</b>	
<b>Side effects and what to do</b>	<b>When to contact health care team</b>
<p><b>Nausea and vomiting</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Nausea is feeling like you need to throw up. You may also feel light-headed.</li> <li>• You may feel nausea within hours to days after your treatment.</li> </ul> <p><b>What to do?</b></p> <p><b>To help prevent nausea:</b></p> <ul style="list-style-type: none"> <li>• It is easier to prevent nausea than to treat it once it happens.</li> <li>• If you were given anti-nausea medication(s), take them as prescribed, even if you do not feel like throwing up.</li> <li>• Drink clear liquids and have small meals. Get fresh air and rest.</li> <li>• Do not eat spicy, fried foods or foods with a strong smell.</li> <li>• Limit caffeine (like coffee, tea) and avoid alcohol.</li> </ul> <p><b>If you have nausea or vomiting:</b></p> <ul style="list-style-type: none"> <li>• Take your rescue (as-needed) anti-nausea medication(s) as prescribed.</li> <li>• Ask your health care team for the <a href="#">Nausea &amp; Vomiting</a> pamphlet for more information.</li> <li>• Talk to your health care team if: <ul style="list-style-type: none"> <li>◦ nausea lasts more than 48 hours</li> <li>◦ vomiting lasts more than 24 hours or if it is severe</li> </ul> </li> </ul>	<p><b>Talk to your health care team if nausea lasts more than 48 hours or vomiting lasts more than 24 hours or if it is severe</b></p>
<p><b>Fatigue</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Feeling of tiredness or low energy that lasts a long time and does not go away with rest or sleep.</li> </ul> <p><b>What to do?</b></p> <ul style="list-style-type: none"> <li>• Be active. Aim to get 30 minutes of moderate exercise (you are able to talk comfortably while exercising) on most days.</li> <li>• Check with your health care team before starting any new exercise.</li> </ul>	<p><b>Talk to your health care team if it does not improve or if it is severe</b></p>

<b>Very Common Side Effects (50 or more out of 100 people)</b>	
<b>Side effects and what to do</b>	<b>When to contact health care team</b>
<ul style="list-style-type: none"> <li>• Pace yourself, do not rush. Put off less important activities. Rest when you need to.</li> <li>• Ask family or friends to help you with things like housework, shopping, and child or pet care.</li> <li>• Eat well and drink at least 6 to 8 glasses of water or other liquids every day (unless your health care team has told you to drink more or less).</li> <li>• Avoid driving or using machinery if you are feeling tired.</li> </ul> <p>Ask your health care team for the <a href="#">Fatigue</a> pamphlet for more information.</p>	
<p><b>Hair thinning or loss</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Your hair may become thin or fall out during or after treatment.</li> <li>• In most cases, your hair will grow back after treatment. The texture or colour may change.</li> <li>• In very rare cases, hair loss may be permanent.</li> </ul> <p><b>What to do?</b></p> <ul style="list-style-type: none"> <li>• Use a gentle soft brush.</li> <li>• Do not use hair sprays, bleaches, dyes and perms.</li> </ul>	Talk to your health care team if this bothers you
<p><b>Liver problems</b></p> <p>Your health care team may check your liver function with a blood test. Liver changes do not usually cause any symptoms.</p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Rarely, you may develop yellowish skin or eyes, unusually dark pee or pain on the right side of your belly. This may be severe.</li> </ul> <p><b>What to do?</b></p> <p><b>If you have any symptoms of liver problems, get emergency medical help right away.</b></p>	<b>Get emergency medical help right away</b>
<p><b>Diarrhea and other early side effects of irinotecan that start during treatment or within 24 hours</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Loose, watery, unformed stool (poo)</li> </ul>	<b>Tell your health care team right away if you have any of these symptoms</b>

<b>Very Common Side Effects (50 or more out of 100 people)</b>	
<b>Side effects and what to do</b>	<b>When to contact health care team</b>
<ul style="list-style-type: none"> <li>Some other symptoms you may have include <b>sweating a lot, belly cramps, runny nose, watery eyes, more saliva (spit) in your mouth than usual, redness (flushing) on your face or neck.</b></li> </ul> <p><b>What to do?</b></p> <ul style="list-style-type: none"> <li><b>Let your healthcare team know right away if this happens.</b> Medication(s) may be given to you to control these symptoms.</li> </ul>	
<p><b>Diarrhea that starts more than 24 hours after treatment.</b></p> <ul style="list-style-type: none"> <li>Loose, watery, unformed stool (poo)</li> <li>Diarrhea may be severe in some cases and it might cause dehydration (when your body doesn't have enough water)</li> </ul> <p><b>What to do?</b></p> <p><b>If you have diarrhea:</b></p> <ul style="list-style-type: none"> <li>Take the loperamide (Imodium®) that your health care team prescribed or told you to take.</li> <li>Do not have foods or drinks with artificial sweetener (like chewing gum or 'diet' drinks), coffee and alcohol.</li> <li>Eat many small meals and snacks instead of 2 or 3 large meals.</li> <li>Drink at least 6 to 8 cups of liquids each day, unless your health care team has told you to drink more or less.</li> <li>Talk to your health care team if you can't drink 6 to 8 cups of liquids each day when you have diarrhea. You may need to drink special liquids with salt and sugar, called Oral Rehydration Therapy.</li> <li>Talk to your health care team if your diarrhea does not get better after 24 hours of taking diarrhea medication or if you have diarrhea more than 7 times in one day.</li> </ul> <p>Ask your health care team for the <a href="#">Diarrhea</a> pamphlet for more information.</p>	<p><b>Talk to your health care team if no improvement after 24 hours of taking diarrhea medication or if severe (more than 7 times in one day)</b></p>
<p><b>Low appetite, weight changes</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>Loss of interest in food or not feeling hungry.</li> <li>Weight loss.</li> </ul> <p><b>What to do?</b></p> <ul style="list-style-type: none"> <li>Try to eat your favourite foods.</li> </ul>	<p>Talk to your health care team if it does not improve or if it is severe</p>

Very Common Side Effects (50 or more out of 100 people)	
Side effects and what to do	When to contact health care team
<ul style="list-style-type: none"> <li>• Eat small meals throughout the day.</li> <li>• You may need to take meal supplements to help keep your weight up.</li> <li>• Talk to your health care team if you have no appetite.</li> </ul> <p>Ask your health care team for the <a href="#">Loss of Appetite</a> pamphlet for more information.</p>	

Common Side Effects (25 to 49 out of 100 people)	
Side effects and what to do	When to contact health care team
<p><b>Mouth sores</b></p> <p>(May be severe)</p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Round, painful, white or gray sores inside your mouth that can occur on the tongue, lips, gums, or inside your cheeks.</li> <li>• In more severe cases they may make it hard to swallow, eat or brush your teeth.</li> <li>• They may last for 3 days or longer.</li> </ul> <p><b>What to do?</b></p> <p><b>To help prevent mouth sores:</b></p> <ul style="list-style-type: none"> <li>• Take care of your mouth by gently brushing and flossing regularly.</li> <li>• Rinse your mouth often with a homemade mouthwash.</li> <li>• To make a homemade mouthwash, mix 1 teaspoonful of baking soda and 1 teaspoonful of salt in 4 cups (1L) of water.</li> <li>• Do not use store-bought mouthwashes, especially those with alcohol, because they may irritate your mouth.</li> </ul> <p><b>If you have mouth sores:</b></p> <ul style="list-style-type: none"> <li>• Avoid hot, spicy, acidic, hard or crunchy foods.</li> <li>• Your doctor may prescribe a special mouthwash to relieve mouth sores and prevent infection.</li> <li>• Talk to your health care team as soon as you notice mouth or lip sores or if it hurts to eat, drink or swallow.</li> </ul> <p>Ask your health care team for the <a href="#">Oral Care (Mouth Care)</a> pamphlet for more information.</p>	<p><b>Talk to your health care team as soon as you notice mouth or lip sores or if it hurts to eat, drink or swallow</b></p>

<b>Common Side Effects (25 to 49 out of 100 people)</b>	
<b>Side effects and what to do</b>	<b>When to contact health care team</b>
<p><b>Sensation that you are not breathing properly</b></p> <p>This can be caused by drinking cold fluids or inhaling cold air.</p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Trouble swallowing or talking.</li> <li>• Tightness in your jaw.</li> <li>• Unusual feelings in your tongue.</li> <li>• Feeling like it is hard to breathe or pressure in your chest.</li> </ul> <p><b>What to do?</b></p> <ul style="list-style-type: none"> <li>• Avoid the cold as much as possible.</li> <li>• If you must go outside in the cold, protect your face and mouth with a scarf or high-neck sweater.</li> <li>• Only eat and drink things that are room temperature or warmer. Do not drink cold drinks or put ice cubes in anything you drink. Do not eat cold foods, such as ice cream.</li> <li>• Avoid direct exposure to air conditioning, such as in your car.</li> <li>• Take shallow breaths when you are exposed to cold air (such as from a freezer or when you are outside in winter).</li> <li>• Do not use an ice pack on any part of your body.</li> </ul> <p>Problems with breathing and swallowing can be unpleasant. They should only last a few minutes.</p> <p><b>If they do not go away quickly or if you also feel chest pain, speak with your health care team as soon as possible. If severe, get emergency medical help right away.</b></p>	<p><b>Talk to your health care team if it does not improve. Get emergency medical help right away if it is severe.</b></p>
<p><b>Constipation</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Having bowel movements (going poo) less often than normal.</li> <li>• Small hard stools (poo) that look like pellets.</li> <li>• The need to push hard and strain to have any stool (poo) come out.</li> <li>• Stomach ache or cramps.</li> <li>• A bloated belly, feeling of fullness, or discomfort.</li> <li>• Leaking of watery stools (poo).</li> <li>• Lots of gas or burping.</li> <li>• Nausea or vomiting.</li> </ul>	<p>Talk to your health care team if it does not improve or if it is severe</p>

Common Side Effects (25 to 49 out of 100 people)	
Side effects and what to do	When to contact health care team
<p><b>What to do?</b></p> <p><b>To help prevent constipation:</b></p> <ul style="list-style-type: none"> <li>• Try to eat more fiber rich foods like fruits with skin, leafy greens and whole grains.</li> <li>• Drink at least 6 to 8 cups of liquids each day unless your health care team has told you to drink more or less.</li> <li>• Be active. Exercise can help to keep you regular.</li> <li>• If you take opioid pain medication, ask your health care team if eating more fibre is right for you.</li> </ul> <p><b>To help treat constipation:</b></p> <ul style="list-style-type: none"> <li>• If you have not had a bowel movement in 2 to 3 days you may need to take a laxative (medication to help you poo) to help you have regular bowel movements. Ask your health care team what to do.</li> </ul> <p>Ask your health care team for the <a href="#">Constipation</a> Pamphlet for more information.</p>	
<p><b>Eye problems</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Your eyes may feel dry, irritated, or painful.</li> <li>• They may look red and have a lot of tears.</li> <li>• They may feel sensitive to light and your vision may be blurry.</li> </ul> <p><b>What to do?</b></p> <ul style="list-style-type: none"> <li>• Avoid wearing contact lenses.</li> <li>• Wear sunglasses with UV protection.</li> <li>• Use protective eyewear (goggles or helmet with face mask) when playing sports, mowing the lawn or doing anything that may get particles or fumes in your eyes.</li> <li>• You may try artificial tears (eye drops) or ointment.</li> </ul>	Talk to your health care team as soon as possible

<b>Less Common Side Effects (10 to 24 out of 100 people)</b>	
<b>Side effects and what to do</b>	<b>When to contact health care team</b>
<p><b>Cough and feeling short of breath</b></p> <p>(May be severe)</p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• You may have a cough and feel short of breath.</li> <li>• Symptoms that commonly occur with a cough are: <ul style="list-style-type: none"> <li>◦ wheezing or a whistling breathing</li> <li>◦ runny nose</li> <li>◦ sore throat</li> <li>◦ heartburn</li> <li>◦ weight loss</li> <li>◦ fever and chills</li> </ul> </li> <li>• Rarely this may be severe with chest pain, trouble breathing or coughing up blood.</li> </ul> <p><b>What to do?</b></p> <ul style="list-style-type: none"> <li>• Check your temperature to see if you have a fever. Read the above section "<b>What should I do if I feel unwell, have pain, a headache or a fever?</b>".</li> <li>• If you have a fever, try to talk to your health care team. <b>If you are not able to talk to them for advice, you MUST get emergency medical help right away.</b></li> <li>• <b>If you have a severe cough with chest pain, trouble breathing or you are coughing up blood, get medical help right away.</b></li> </ul>	<p><b>Talk to your health care team. If you are not able to talk to your health care team for advice, and you have a fever or severe symptoms, you MUST get emergency medical help right away.</b></p>
<p><b>Rash; dry, itchy skin</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• You may have cracked, rough, flaking or peeling areas of the skin.</li> <li>• Your skin may look red and feel warm, like a sunburn.</li> <li>• Your skin may itch, burn, sting or feel very tender when touched.</li> <li>• The rash may be seen in areas where you have had radiation before.</li> </ul> <p><b>What to do?</b></p> <p><b>To prevent and treat dry skin:</b></p> <ul style="list-style-type: none"> <li>• Use fragrance-free skin moisturizer.</li> <li>• Protect your skin from the sun and the cold.</li> <li>• Use sunscreen with UVA and UVB protection and a SPF of at least 30.</li> </ul>	<p>Talk to your health care team if it does not improve or if it is severe</p>

<b>Less Common Side Effects (10 to 24 out of 100 people)</b>	
<b>Side effects and what to do</b>	<b>When to contact health care team</b>
<ul style="list-style-type: none"> <li>• Avoid perfumed products and lotions that contain alcohol.</li> <li>• Drink 6 to 8 cups of non-alcoholic, non-caffeinated liquids each day, unless your health care team has told you to drink more or less.</li> </ul> <p><b>Rash may be severe in some rare cases and cause your skin to blister or peel. If this happens, get emergency medical help right away</b></p>	
<p><b>Trouble Sleeping</b></p> <p>Your medications may cause trouble sleeping. It may get better once your body gets used to the medication or when your treatment ends.</p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• You may find it hard to fall asleep or stay asleep.</li> <li>• How well you sleep may change over your treatment. For example, you may have several nights of poor sleep followed by a night of better sleep.</li> <li>• You may wake up too early or not feel well-rested after a night's sleep.</li> <li>• You may feel tired or sleepy during the day.</li> </ul> <p><b>What to do?</b></p> <p>Talk to your health care team if it does not improve or if it is severe.</p>	Talk to your health care team if it does not improve or if it is severe
<p><b>Headache; Mild joint, muscle pain or cramps</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Mild headache</li> <li>• New pain in your muscles or joints, muscle cramps, or feeling achy.</li> </ul> <p><b>What to do?</b></p> <ul style="list-style-type: none"> <li>• Take pain medication (acetaminophen or opioids such as codeine, morphine, hydromorphone, oxycodone) as prescribed.</li> <li>• Read the above section: "<b>What should I do if I feel unwell, have pain, a headache or a fever?</b>" before taking acetaminophen (Tylenol®), ibuprofen (Advil®, Motrin®), naproxen (Aleve®) or Aspirin. These medications may hide an infection that needs treatment or they may increase your risk of bleeding.</li> <li>• Rest often and try light exercise (such as walking) as it may help.</li> </ul> <p>Ask your health care team for the <a href="#">Pain</a> pamphlet for more information.</p>	Talk to your health care team if it does not improve or if it is severe

<b>Less Common Side Effects (10 to 24 out of 100 people)</b>	
<b>Side effects and what to do</b>	<b>When to contact health care team</b>
<p><b>Dizziness</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>You may feel light-headed and like you might faint (pass out).</li> </ul> <p><b>What to do?</b></p> <ul style="list-style-type: none"> <li>Lay down right away so you do not fall.</li> <li>Slowly get up and start moving once you feel better.</li> <li>Do not drive a motor vehicle or use machinery if you feel dizzy.</li> </ul>	<p>Talk to your health care team if it does not improve or if it is severe</p>
<p><b>Mild swelling</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>You may have mild swelling or puffiness in your arms and/or legs. Rarely, this may be severe.</li> </ul> <p><b>What to do?</b></p> <p><b>To help prevent swelling:</b></p> <ul style="list-style-type: none"> <li>Eat a low-salt diet.</li> </ul> <p><b>If you have swelling:</b></p> <ul style="list-style-type: none"> <li>Wear loose-fitting clothing.</li> <li>For swollen legs or feet, keep your feet up when sitting.</li> </ul>	<p>Talk to your health care team if it does not improve or if it is severe</p>
<p><b>Swelling inside your nose</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>You may have a stuffy, sneezy, itchy, runny nose.</li> </ul> <p><b>What to do?</b></p> <ul style="list-style-type: none"> <li>Talk to your health care team if it does not improve or if it is severe.</li> </ul>	<p>Talk to your health care team if it does not improve or if it is severe</p>

<b>Less Common Side Effects (10 to 24 out of 100 people)</b>	
<b>Side effects and what to do</b>	<b>When to contact health care team</b>
<p><b>Rash on your hands and feet (hand-foot syndrome)</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Tingling or swelling of the skin on the palms of your hands and the bottoms of your feet. This can become painful, red and numb.</li> <li>• In worse cases your skin may start to peel and you can get blisters or sores.</li> <li>• This may happen days or weeks after you start treatment.</li> </ul> <p><b>What to do?</b></p> <p><b>To help prevent Hand-foot syndrome:</b></p> <ul style="list-style-type: none"> <li>• Do not do activities that cause rubbing or pressure on your skin, like heavy-duty washing, gripping tools, typing, playing musical instruments, and driving.</li> <li>• Moisturize your hands and feet often, especially in the skin folds.</li> <li>• Wear loose, comfortable footwear and clothes.</li> <li>• Rest and try to keep off your feet.</li> <li>• Do not let your hands and feet get too hot.</li> </ul> <p>Ask your health care team for the <a href="#">Hand-foot syndrome</a> pamphlet for more information.</p>	<p>Talk to your health care team if it does not improve or if it is severe</p>
<p><b>Flushing</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Your face may feel warm and the skin on your neck, upper chest, or face may quickly get red.</li> </ul> <p><b>What to do?</b></p> <p>Talk to your health care team if no improvement or if severe.</p>	<p>Talk to your health care team if it does not improve or if it is severe</p>
<p><b>Heartburn; upset stomach; bloating</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Pain or burning in the middle or top part of your chest. It may get worse when you are lying down or bending over or when you swallow.</li> <li>• A bitter or acidic taste in your mouth.</li> </ul> <p><b>What to do?</b></p> <ul style="list-style-type: none"> <li>• Drink clear liquids and eat small meals.</li> </ul>	<p>Talk to your health care team if it does not improve or if it is severe</p>

<b>Less Common Side Effects (10 to 24 out of 100 people)</b>	
<b>Side effects and what to do</b>	<b>When to contact health care team</b>
<ul style="list-style-type: none"> <li>• Do not eat acidic, fatty or spicy foods.</li> <li>• Limit caffeine (like coffee, tea) and avoid alcohol.</li> <li>• Avoid smoking or being around tobacco.</li> <li>• Sit up or stand after eating. Do not lie down.</li> <li>• Raise the head of your bed six to eight inches. You may need to use extra pillows to do this.</li> </ul>	
<p><b>Taste changes</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Food and drinks may taste different than usual.</li> </ul> <p><b>What to do?</b></p> <ul style="list-style-type: none"> <li>• Eat foods that are easy to chew, such as scrambled eggs, pasta, soups, cooked vegetables.</li> <li>• Taste foods at different temperatures, since the flavour may change.</li> <li>• Try different forms of foods, like fresh, frozen or canned.</li> <li>• Experiment with non-spicy foods, spices and seasonings.</li> </ul>	Talk to your health care team if it does not improve or if it is severe
<p><b>Allergic reaction</b></p> <p><b>What to look for?</b></p> <ul style="list-style-type: none"> <li>• Fever, itchiness, rash, swollen lips, face or tongue, chest and throat tightness.</li> <li>• It may happen during or shortly after your treatment is given to you and may be severe.</li> </ul> <p><b>What to do?</b></p> <ul style="list-style-type: none"> <li>• Tell your nurse right away if you feel any signs of allergic reaction during or just after your treatment.</li> <li>• Talk to your health care team for advice if you have a mild skin reaction.</li> </ul>	<b>Get emergency medical help right away for severe symptoms</b>

**Other rare, but serious side effects are possible with this treatment.**

If you have **any** of the following, talk to your cancer health care team or get emergency medical help right away:

- Pain and swelling or hardening of a vein in your arm or leg
- Sudden confusion, seizure, trouble speaking, or difficulty moving your arms or legs, or weakness on one side of your body
- Irregular heartbeat, fainting (passing out)
- Any severe pain in your belly
- Severe belly pain, severe bloating or feeling of fullness
- Leg weakness that may spread to the upper body, trouble with eye or face movements
- Severe weakness, problems with your balance, or having falls
- Unusual muscle spasms, tremors, irregular or jerky movements
- Severe fatigue, muscle pain
- Any changes in your eye sight
- Redness or rash in areas where you had radiation before
- Signs of kidney problems, such as weight gain that is not normal for you, new pain in your lower back, changes in urination (peeing) such as less urine (pee) than usual or urine (pee) that is red-brown coloured
- Ringing in your ears or changes to your hearing

**Notes**

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**October 2023** Updated " How will this medication affect sex, pregnancy and breastfeeding" section

For more links on how to manage your symptoms go to [www.cancercareontario.ca/symptoms](http://www.cancercareontario.ca/symptoms).

*The information set out in the medication information sheets, regimen information sheets, and symptom management information (for patients) contained in the Drug Formulary (the "Formulary") is intended to be used by health professionals and patients for informational purposes only. The information is not intended to cover all possible uses, directions, precautions, drug interactions or side effects of a certain drug, nor should it be used to indicate that use of a particular drug is safe, appropriate or effective for a given condition.*

*A patient should always consult a healthcare provider if he/she has any questions regarding the information set out in the Formulary. The information in the Formulary is not intended to act as or replace medical advice and should not be relied upon in any such regard. All uses of the Formulary are subject to clinical judgment and actual prescribing patterns may not follow the information provided in the Formulary.*