

# Radiation Therapy for Hodgkin's Disease and Non-Hodgkin's Lymphoma

## Information for patients and families

This book answers some common questions you may have about:

- how your cancer treatment is planned
- how radiation therapy works
- possible side effects of radiation treatment
- how to care for yourself during treatment

During your care, you will work closely with the health care providers on our team. This book will not replace talking with us, but may make it easier for you.

You may have weekly visits with the radiation oncologist (doctor) and nurse during treatment. Along the way, we will give you support and more information about your cancer and its treatment. Feel free to ask us questions at any time.

The Radiation Oncology Team  
at the Juravinski Cancer Centre

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## How will my cancer be treated?

The treatment for Hodgkin's disease and Non-Hodgkin's Lymphoma is not the same for everyone. Treatment is designed for each person.

Your treatment will be based on:

- your symptoms and overall health
- the results of all your blood tests, x-rays and scans
- the type of lymphoma you have
- the stage of the lymphoma

The "stage" refers to the number of lymph nodes with cancer and whether the cancer has spread to other areas of your body.

Your treatment plan includes radiation therapy. You may have radiation therapy by itself or in combination with chemotherapy (treatment with medications).

The Radiation Oncologist will talk with you about the plans for your treatment. He or she will help you learn about the benefits and side effects of treatment. Reading this booklet can help you learn how to care for yourself during and after treatment.

We encourage you to learn as much as possible. Knowing what to expect can help you feel less anxious and better prepared.

## **What is radiation therapy?**

Radiation therapy uses high-energy x-rays to destroy cancer cells. You cannot see or feel radiation therapy.

The radiation is directed at the part of the body with the cancer. This may be the lymph nodes or it may include other places in the body where the cancer has spread. The radiation works only in the areas where it is directed, it does not travel throughout your body or stay in your body after the treatment is given.

## **How does radiation therapy work?**

Radiation damages material in cells that controls their growth. Because cancer cells divide more rapidly than healthy cells, they are more susceptible to radiation. When cancer cells are damaged by radiation, they cannot repair themselves and eventually die. Then the body eliminates the damaged cells. Some normal, healthy cells are affected by the radiation, but they are usually able to repair themselves and heal.

Radiation therapy is planned carefully to deliver radiation to cancer cells with as little damage as possible to healthy cells.

## **Who are the members of the radiation therapy team?**

A team of health care providers will work together to plan and carry out your radiation therapy. Each person on the team has special knowledge and skills that contribute to your care.

The health care providers on your Radiation Treatment Team include:

- Radiation Oncologist
- Radiation Therapists
- Radiation Oncology Nurses
- Physicists

You and your family are important members of this health care team. We need your help to understand how the cancer and treatment are affecting you and your family. We will give you information and support, and help you take part in your care.

## **How is my radiation therapy planned?**

Before your treatments can begin, your Radiation Treatment Team will plan every aspect of your treatment.

### **Making a mask or body mould**

Depending on where the radiation will be directed, the first step may be making a face mask (shell) or body mould (cradle). These will be used to hold your head or body in the proper position during your treatments. This process usually takes about 1 hour.

If you don't need a mask or mould, your first step will be a simulation appointment.

## CT Simulation

CT simulation helps the Radiation Treatment Team determine the exact areas of your body where treatment will be focused. This appointment usually takes about 1 hour.

You will lie on a bed that moves within the simulator, which is a special x-ray machine. Your mask or mould will be put on, **if needed** to help you stay in the right position. The room may be darkened and special x-rays or CT scans are done to measure and map out the areas of your body that need to be treated. These are called treatment fields.

The treatment fields are marked by putting tiny, permanent tattoos on your skin, each about the size of a small freckle. If you are going to have radiation to your head, the marks will be put on your mask, not on your face. The marks or tattoos are used to precisely line up the radiation treatment fields at each treatment.

The Radiation Oncologist uses information from the simulation to make a radiation plan that is best for you. You may need a second planning visit to check the marks for the treatment fields and the position of the radiation fields.

## How is radiation therapy given?

Radiation therapy is given in a series of daily treatments. You may have treatments Monday through Friday, for several weeks. Your Radiation Oncologist will determine how many treatments you need. Some people need to have a second course of radiation therapy, given to a different area, if the area to be treated is very large.

Radiation treatments are given in a special room. You will lie down on the bed of the radiation machine, which moves over and around you. A team member will help you put on your mask or mould, check your positioning and line up the marks of the treatment fields. During set-up, the team makes sure the treatment will be delivered exactly as planned by the simulation.

It takes only a few minutes to deliver the radiation. You must stay very still, so the radiation is delivered to only the treatment areas. You will not see or feel the radiation. The team members will leave the room during these few minutes. They will be right outside the room watching you on a monitor. If you need something, just ask. They can hear you through an intercom and will interrupt the treatment if you need help.

Receiving radiation does not make you radioactive. You cannot pass radiation on to another person.

Plan on about 1 hour for your first treatment, which includes the set-up. Each of your next treatments should take about 20 minutes.

## How will I feel during radiation therapy?

When healthy cells are damaged by radiation, this can lead to changes called side effects. You may begin to notice side effects 2 to 3 weeks after treatment starts.

The chances of having side effects will depend on:

- the dose of radiation given
- the size and area being treated
- the part of the body being treated

Healthy cells can repair themselves and re-grow. As this happens, side effects usually start to go away. Most side effects get better 4 to 6 weeks after radiation treatments are finished.

You may be able to carry on your usual activities during radiation therapy. If you are working, you may need to change your routine or schedule when you feel tired.

During your treatment, you may have weekly review appointments with the Radiation Oncologist to check for any side effects from radiation treatments. If you notice side effects, please talk with the doctor or nurse. They may recommend comfort measures, medications or other ways to manage side effects.

### **Patient Assessment Office**

If you have concerns or problems related to radiation treatment on a day that you do not have a review appointment, you can see a nurse in the Patient Assessment Office (next to Clinic G). Your radiation therapist may direct or recommend that you go to the Patient Assessment Office.

If your radiation treatment appointment is late in the day (after 4:00 pm), and you wish to see a nurse, you are welcome to arrive early. After you check in, walk over to the treatment area, speak with a therapist who will then direct you to the Patient Assessment Office.



## **What side effects are possible during and after radiation therapy?**

### **Fatigue and tiredness**

The most common side effect of radiation therapy is fatigue. You may feel especially tired during the last 2 weeks of treatment and for 1 to 2 weeks after your radiation is completed.

Listen to your body. You may need to plan more rest and sleep, and find ways to conserve your energy.

Suggestions for conserving energy and relieving fatigue:

- Pace yourself. Plan time to rest between activities so that you don't get overtired.
- Go to bed earlier and try to take naps during the day.
- If you are working, arrange to work fewer hours.
- Ask for help with child care, housework or other tasks.
- Learn relaxation exercises from the Supportive Care Team or at the Wellwood Centre.
- If you can, keep physically active with walking or light exercise.
- Follow "Eating Well With Canada's Food Guide". Drink 1.5 to 2 litres (6 to 8 cups) of water or other liquids each day, unless your doctor has told you to limit fluids.
- Arrange with a family member or friend to drive you to your appointments. If you are unable to find a driver, call the Canadian Cancer Society to arrange a volunteer driver.
- If you are from out of town, ask us about places to stay.

## Changes in your skin

Radiation can cause changes in the skin of the area being treated.

Your skin may:

- look red or tanned
- feel dry, itchy or become sensitive to touch
- flake or peel

The areas where skin surfaces touch are most sensitive and may become uncomfortable. You may notice this under your arms, in the groin area, behind your ears or under your breasts.

Suggestions for skin care:

- Keep your skin clean and dry. Gently wash your skin with a mild soap, such as Dove or baby soap. Pat your skin dry with a soft towel.
- Wear loose, cotton clothing over the treatment area. For example, wear boxer shorts instead of tight underwear.
- Use **ONLY** the creams and lotions that are recommended by your treatment team. You may use a stick or roll-on deodorant (unless your underarm is being treated).
- Protect your skin from damage. Do not rub, scrub or scratch the skin.
- Do not put bandaids or dressings on the treated area unless your treatment team tells you to.
- Do not use perfumes or powder on the treated areas as they may irritate your skin.
- Protect your skin from heat and cold. Do not use ice packs, heating pads or hot water bottles on the treatment area.
- Do not expose the treated skin to the sun as it can burn easily.
- Your radiation doctor may not want you to go swimming while on radiation and for a few weeks after treatment. Discuss with your doctor about swimming and exercise.

## Changes in your mouth

If your neck or upper chest are being treated, the radiation may cause inflammation of the lining of the mouth, throat and food pipe (esophagus). This is called mucositis. This can be uncomfortable and make it hard to eat and drink. You may find relief with pain medication. Pain pills work best when you take them regularly. It is easier to prevent pain than to try and stop existing pain. It also helps to choose soft, bland foods. Mucositis usually heals about 2 to 3 weeks after treatment.

If the salivary glands near your mouth and jaw are treated, your mouth may become dry. You may have less saliva (spit) and it may become thicker. You may feel as if there is a lump in your throat when you swallow. You may notice food does not taste the same, because your taste buds are not as moist as before. Adding fluids to food may help this problem. All these changes are related to a dry mouth and usually get better over the next 2 weeks to 3 months. Some dryness may last for several months.

Suggestions for mouth care:

- Visit your dentist for a check-up before starting treatment. The dentist may make trays so that you can give yourself fluoride treatments to prevent cavities. If fluoride treatments are needed, discuss with your Radiation Oncologist when you should start them.
- Brush your teeth with a soft brush or sponge (toothette) after meals and at bedtime.
- Floss your teeth gently.
- Rinse your mouth as often as every 2 hours. This keeps your mouth moist and reduces acid.
  - Make your own mouth rinse by mixing 5 ml (1 tsp) of baking soda with 1 litre (4 cups) of warm water.
  - Do not use mouthwash from the store as it may contain alcohol, which will dry your mouth even more. You may use Biotene — there is no alcohol in it.

- Using a medication that can numb the throat such as Mucaine or Xylocaine can soothe a sore throat and make eating more comfortable. Ask your doctor for a prescription if needed. Your treatment team may suggest other products if needed.
- Check inside your mouth each day. If you notice white patches or an odour to your breath, call your treatment team. This may be due to an infection that needs treatment. If you have a fever, call your treatment team.

Suggestions for eating when your mouth is sore:

- Moisten foods with cream sauces and gravies to improve the flavour and help with swallowing.
- Avoid foods that can irritate your mouth, such as foods that are very hot or very cold, spicy or salty, rough or dry.
- Avoid drinking alcohol and smoking as they increase dryness of the mouth and make side effects worse.

## **Nausea**

If the area being treated includes your upper abdomen, you may have a queasy, sick feeling called nausea.

Let the treatment team know if you have nausea. The doctor may prescribe a medication to help. If the medication does not help the nausea, talk with your nurse or doctor. Another medication may work better for you.

Relieving nausea is necessary so that you can continue to eat. Eating a healthy diet can help your body heal.

Some things that can help with nausea are:

- Drinking sips of clear fluids.
- Having several small meals and snacks during the day. Eat slowly.
- Choosing foods that settle your stomach, such as cereal or toast.

## **Diarrhea**

If the area being treated includes your lower abdomen, your bowels may be affected. This may cause loose or watery bowel movements called diarrhea.

Let the treatment team know if you have diarrhea. A medication called Imodium<sup>®</sup> (loperamide) usually relieves the diarrhea. You can buy this medication at the pharmacy, without a prescription. If the diarrhea does not get better, the doctor may prescribe a medication called Lomotil<sup>®</sup> (diphenoxylate hydrochloride and atropine sulfate).

Continue to drink plenty of fluids, unless your doctor has told you to limit fluids. Each day try to drink 1.5 to 2 litres (6 to 8 cups) of water or other liquids. Avoid drinks that contain caffeine, such as coffee, tea, colas, energy drinks and other caffeinated drinks.

Relieving diarrhea is necessary so that your body can absorb the nutrients in the foods needed for healing. Electrolytes are substances found in the body such as sodium and potassium. If diarrhea continues, your body loses too much water and electrolytes making you feel tired and sick.

## **Bladder problems**

If your pelvic area is being treated, your bladder may be affected. You may have a burning feeling when you pass urine, or you may have the urge to pass urine often.

Tell your doctor and nurse if you have any problems passing urine.

Your doctor may prescribe a medication to help. It can also help to drink more fluids. Try to drink 1.5 to 2 litres (6 to 8 cups) of water or other liquids. Drinking cranberry juice may be helpful.

These feelings should get better within 4 to 6 weeks after your radiation therapy is completed.

## **Pain**

Radiation treatments are painless. However, if your mouth or throat is being treated you may have pain. Mouth care can help. Follow the instructions on pages 9 and 10. Your treatment team may also recommend taking pain medication.

## **Hair loss**

You will lose your hair only in the area of your body that is being treated. This usually starts 2 to 3 weeks after your first treatment. Hair loss is usually temporary. Your hair should start to grow again 4 to 6 weeks after your radiation therapy is completed.

## **Lung problems**

If your chest is being treated, your lungs may be affected by the radiation. You may develop an inflammation in your lungs, called radiation pneumonitis. This is a rare side effect, but when it happens, it begins 6 to 12 weeks after treatment.

Signs of pneumonitis include:

- shortness of breath
- dry cough
- fever
- chest pain

Call your doctor right away if you notice any of these signs. You will need to have a chest x-ray. The doctor may prescribe a medication to help. The lung inflammation will get better with time.

## **Are there any lasting effects?**

Some long-term side effects from radiation are possible. These are called late effects.

### **Low thyroid function**

The most common late effect of radiation to the neck is low thyroid function, called hypothyroidism. This means that your thyroid gland is not working as it should. This can occur any time after treatment is completed.

During your follow-up visits with your family doctor, you may need blood tests to check how well your thyroid gland is working. If the tests show low thyroid function, your doctor will prescribe thyroid medication.

### **Heart disease**

Radiation side effects to the heart and surrounding blood vessels are very rare. However, patients who have had treatment to the chest have developed coronary heart disease at a younger age than expected.

A healthy lifestyle can help reduce your risk of heart disease. Healthy living includes:

- healthy eating, choosing lower-fat foods more often
- regular physical activity or exercise
- maintaining a healthy weight
- quitting smoking

Talk with your treatment team if you would like help making lifestyle changes.

## **Secondary cancer**

As more people are becoming cancer survivors, we are learning more about the long-term effects of cancer and its treatment.

Although it is very rare, it is possible that radiation could lead to a new cancer, many years after you have finished treatment. This is called a secondary cancer. The chance of developing a secondary cancer depends on a person's age at treatment and the part of the body that received radiation. You can discuss your risk of secondary cancer with your treatment team.

During follow-up care, your health care providers will continue to check for cancer and may recommend certain cancer screening programs. Follow-up care and screening are important for early detection of secondary cancer.

## **When should I get medical help?**

Call the Radiation Treatment Team if you have any of these problems:

- extreme fatigue or a sudden drop in your energy level
- open areas on your skin or the skin reaction becomes worse
- open or painful sores in your mouth
- nausea or vomiting continues and you are unable to eat or drink
- diarrhea continues for more than 2 days
- burning or the urge to pass urine is not relieved by drinking fluids or taking the medication prescribed by your doctor
- pain is not relieved by the recommended medication or it gets worse
- shortness of breath, cough or chest pain
- fever, a temperature of 38°C (100°F) or higher



## **What follow-up care will I need?**

About 6 weeks after your radiation therapy, you will visit the doctor who gave you chemotherapy (your Hematology Oncologist) or the doctor who gave you radiation (your Radiation Oncologist).

You will visit the doctor every 3 to 4 months for the first 2 years. If you stay well, visits are needed less often – every 6 months for the next 3 years.

The doctor will examine you at each visit and you will have blood tests, x-rays or scans as needed to check your health.

If you are well 5 years after treatment, you only need a check-up with the doctor once a year.

**If you have any questions about your care,  
please ask a member of your Radiation  
Treatment Team.**





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PD 5905 – 01/2016  
dpc/pted/LrgBk/HodgkinsDiseaseLymphoma-th.docx  
dt/January 14, 2016