

Information for  
patients & families

# Radiation Treatment to the Skin



Treatment – Radiation

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# Radiation Treatment

## What is radiation treatment?

It is a cancer treatment that uses high energy x-rays to kill cancer cells and shrink tumours. Radiation is used to treat many types of cancer as well as some conditions that are non-cancerous.

## What are the goals of radiation treatment?

The goals of treatment are different for everyone, and can change over time. Possible goals include:

- become cancer-free — to get rid of the cancer from your body
- control cancer growth — to stop the cancer from growing and spreading to other parts of your body
- relieve or reduce symptoms that the cancer may cause such as pain, or shortness of breath

## How does my healthcare team decide what treatment they should recommend for me?

It really depends on the type of skin cancer or skin condition you have, and where it is in your body. Other things we look at include:

- Your overall health
- If you've had radiation treatment before
- Your concerns and wishes

## Who gives me my radiation treatment?

- Your radiation oncologist prescribes your treatment.
- Radiation therapists give you your radiation treatment

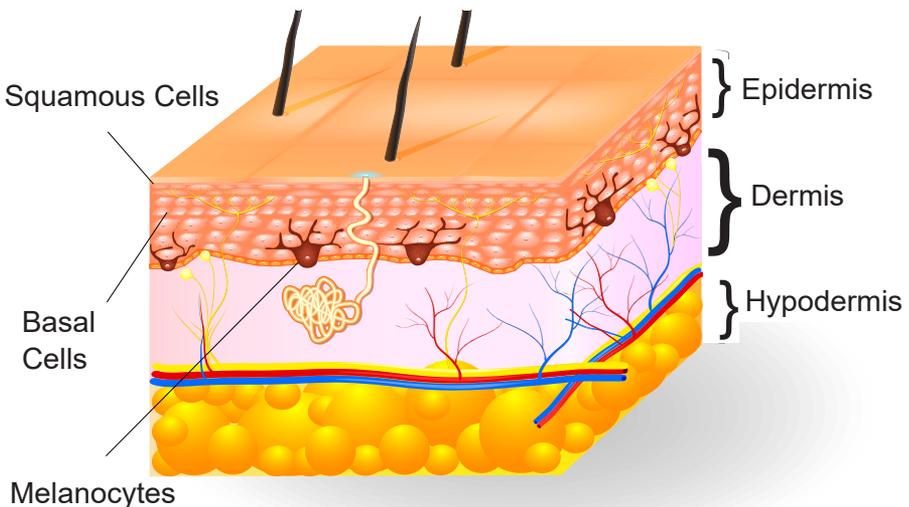
# Skin Cancer

Skin cancer is a disease where cancer cells start growing from the different types of cells of the skin. The skin:

- Helps protect us from heat, sunlight, injury, and infection.
- Has several layers — the 2 main layers are the epidermis (upper layer) and the dermis (middle layer).

Skin cancer begins in the epidermis, which is made up of 3 types of cells:

- **Squamous cells** are thin, flat cells that form the top layer of the epidermis.
- **Basal cells** are round cells and are found under the squamous cells.
- **Melanocytes** make the colour of our skin through the pigment melanin, and darken our skin from the sun. These cells are found at the bottom of the epidermis.



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## Types of Skin Cancer

### **Basal cell carcinoma:**

- Most common type of skin cancer
- Begins in the basal cells
- Looks like a growth or a sore that won't heal
- Rarely spreads to other parts of the body
- Many people have a small surgical procedure to remove the cancer before they get referred to a cancer centre

### **Squamous cell carcinoma:**

- Begins in the squamous cells
- Can spread to other parts of the body if untreated
- Many people have a small surgical procedure to remove the cancer before they get referred to a cancer centre

### **Melanoma:**

- Less common
- Begins in the melanocytes
- More likely to spread to nearby tissues or other parts of the body
- Most people will have surgery to have it removed
- Radiation is recommended **only when the cancer has a risk of coming back**, or if surgery cannot be done

### **Other rare skin cancers include:**

- Mycosis Fungoides
- Kaposi Sarcoma
- Merkel Cell Carcinoma

Skin cancer can develop anywhere on the body, but it is most common in skin exposed to sunlight, like our face, neck, hands, and arms.

## Non-Cancerous Skin Conditions

Some non-cancerous conditions that can be treated with radiation include:

### **Keloids**

- A thick or raised scar that grows bigger and wider than the original cut or injury.

### **Dupuytren's Contracture**

- Thickening of tissue in the palm of the hand that can pull 1 or more fingers into a bent position.
- The bent fingers cannot be straightened completely.

### **Ledderhose's Disease (or plantar fibromatosis)**

- Affects a layer of tissue in the feet. Over time this condition can cause pain with walking.

## How Radiation is Given to the Skin

Radiation treatment can be provided in different ways using different types of machines. It may be either:

- **External Beam** — the radiation is produced by a machine and aimed at the tumour, so the radiation source comes from **outside** of the body.
- **Brachytherapy** — a radioactive source is placed close to the skin in the area needing treatment.

### **Radiation treatment machines for skin include:**

- Orthovoltage (page 7).
- Linear Accelerator (Linac) (page 7–8).

We will use the treatment machine that best suits your type of cancer or skin condition. The decision is based on:

- How deep the radiation needs to go
- What the research recommends

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## Orthovoltage

This is the most common type of treatment machine used to treat skin cancer, and some non-cancerous conditions.

This small machine can be moved around and touches the skin during treatment.



- While you lie down on a bed in a comfortable position, the machine will be put in position to treat your skin.
- The “treatment end” (the applicator) of the machine, will be placed against your skin during treatment.

## Linear Accelerator (Linac)

- Is a large machine that rotates around while you lie down on the treatment bed
- Can create 2 kinds of radiation — high energy x-rays or electrons



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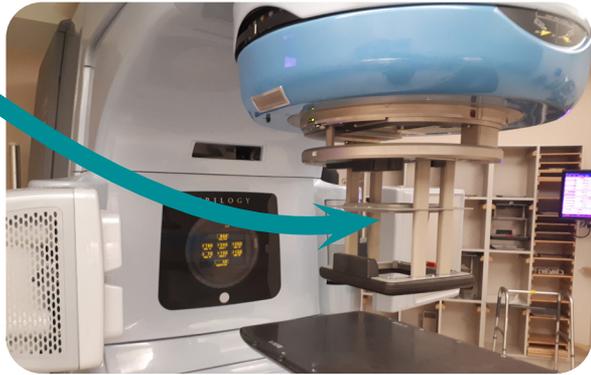
## Electron Treatment

Radiation treatment using electrons is very common. Electrons are used to treat skin conditions that go deep in the body, or are large in size.

To treat with electrons, a special piece of equipment called an **electron applicator** is added to the Linac.

The electron applicator comes close to the skin during treatment.

Electron  
Treatment  
Applicator



## Preparing for Your Treatment

### Deciding the Treatment Area

Your radiation oncologist will decide what area of your skin needs treatment. The treatment area will be larger than the tumour or skin condition and is based on the following:

- The condition being treated
- Where the condition is on your body
- If you had imaging tests like a CT scan or MRI
- If you had surgery for the condition
- If you have already had radiation treatment to the area
- Other factors

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## Clinical Mark Up

A clinical mark-up is the appointment where your radiation oncologist decides the exact area of your body to treat and what shape the area will be. During this appointment:

- You will be placed in a comfortable position
- Your radiation oncologist will draw marks on your skin
- We will make a copy of these marks (template)
- We may make “cut outs” which are used to protect the skin and tissues that do not need radiation
- We’ll take pictures of the markings on your skin and how your body is positioned

## Treatment Calculation

- Your radiation oncologist will prescribe how much radiation you will need, and over how many days.
- The radiation therapists and medical physicists will do calculations and preparation work before your radiation treatment can begin.

Some patients may have a radiation treatment the same day as their clinical mark-up, and some will come back another day to start their treatment.

## Your Treatment Appointment

When you come for your first radiation treatment, you may be nervous and wonder what is going to happen during your treatment. It's important to know that:

- You cannot feel the radiation
- Most treatment appointments take 10 – 15 minutes
- Treatments are given Monday to Friday
- You need to stay still for your radiation treatment



### **Should I take my medications while I get radiation treatment?**

- Take your regular medications as you normally would, unless you were told not to.
- If needed for your treatment, take anti-nausea, anti-anxiety, or pain medications as instructed.



### **What should I bring to my appointments?**

- This booklet
- Photo id, healthcare card
- Any questions you have



### **Can I still have my treatment if I am sick?**

It depends, but usually yes. If you are not feeling well, you may be able to see our nurses to find out what is going on. If you have cold or flu-like symptoms, we will ask you to wear a mask and wash your hands well when you come for treatment so that others do not get sick too.



### **Why do I have to spell my last name and say my birth date before every treatment?**

Safety is our priority. Your name and birth date helps us confirm that you are the person who is supposed to have that radiation treatment.



Tell your radiation therapist  
**before every appointment if  
you are or might be pregnant.**

## What will happen at my treatment appointments?

The radiation therapists will:

- Bring you into the treatment room
- Help place you in your treatment position
- Uncover the area of your body being treated
- Darken the marks that were drawn on your skin

Once in the correct position, the therapists will:

- Move the radiation treatment machine into position.
- If a “cut out” has been made for your treatment, it will be put into position, either on top of your skin, or in the treatment applicator.

When the radiation is “ON”, you will be alone in the treatment room but the therapists have a camera and microphone so they can see and hear you and talk to you if needed.

You will **not feel** the radiation.

People who are being treated with a Linac may have **bolus** placed on the treatment area. There are many types of bolus.

Bolus can help increase the amount of radiation given to the surface of the skin.

# Managing Your Side Effects

## Short-term side effects:

- Develop during treatment or shortly after you finish
- Most take 2 – 3 weeks to develop before you might notice anything
- Most will last a few weeks after treatment before getting better
- Should go away with time

## Long-term side effects:

- Develop months, or years after treatment
- Can be permanent
- Are less common than short-term side effects

## Possible Short Term Side Effects

### Skin Changes:

Radiation treatment can cause some skin changes such as:

- redness
- itching
- dryness or flaking
- moistness or blistering
- peeling
- tenderness or soreness

### How will I know if I have skin irritation?

There are different levels of skin irritation and different signs and symptoms.

Skin Changes	Mild	Moderate	Severe
<b>Signs and Symptoms</b>	<ul style="list-style-type: none"><li>• Your skin becomes a bit darker</li><li>• Warm</li><li>• Itchy</li></ul>	<ul style="list-style-type: none"><li>• Your skin becomes more dark</li><li>• Dry with flaking</li><li>• Itchy</li></ul>	<ul style="list-style-type: none"><li>• Your skin becomes dark</li><li>• Blistering</li><li>• Weeping (fluid from the wound)</li></ul>

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## Caring for Your Skin

Everyone is different. There is no way to know how your skin will react. Your radiation therapists will monitor your skin for any reactions, and will give you instructions as needed.

### How can I prevent or manage my skin irritation?



- Use unscented creams and mild soaps that are gentle on your skin.
- Apply cream after you dry off from a shower, while your skin is still slightly damp — it will help to keep your skin moist and soft.
- Avoid creams, soaps, and other products with alcohol, perfume, lanolin or AHA (Alpha Hydroxy Acids). These can dry or irritate your skin.
- Ask your healthcare team what products **they recommend**.



- Wash the treated area daily.
- Take short showers or baths in warm, not hot, water.
- Don't try to wash away any skin marks. If they fade, **do not touch them up**.
- Pat your skin dry rather than rubbing it dry.
- Use a soft washcloth and towel.



- If your lips are in the treatment area and are dry, ask your doctor what to use to help keep them moist.



- Do not shave in the treatment area.
- Avoid waxing or hair removal creams in the treatment area — they can irritate your skin.



- Keep your nails clean, cut short, and avoid scratching.



- Avoid using tape or bandages in the area being treated.



- Keep your skin covered up in the sun and wind.
- Wear a hat with a wide brim.
- Avoid sunscreen during radiation treatments in the area being treated.



- Protect your skin by not using heating pads, or ice packs in the treated area.



- Eat a healthy diet.



- Check with your radiation oncologist to see if you can use deodorant (if your armpit is in the treatment area).



- Swimming in pools is fine as long as your skin changes are no more than mild (p.12). Rinse well after and apply cream.
- Avoid using a hot tub or sauna during treatment.



- Wear clothes that fit loosely so they do not rub the treated area.
- Use a mild detergent to wash clothes.

## Possible Long-Term Side Effects

Sometimes skin changes happen after radiation is finished and can be permanent. These changes may include:

- Thinning of the skin over the treated area.
- Darkening of the skin.
- Skin that becomes smooth, tight and shiny.
- Tiny blood vessels growing close to the surface of the skin (called telangiectasia)

## Completing Your Treatment

- Follow any directions your healthcare team gives you including how to take care of your skin.
- Let skin markings fade away. Do not scrub them off.
- Continue to do skin care (p. 13) until any side effects are gone (usually 2–6 weeks).
- Use sunscreen — we recommend SPF 50 or higher.
- Cover your skin with items like clothing, scarves, or hats to keep it protected from the sun, wind, or cold.

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The information is to be updated every 3 years, or as new clinical evidence emerges. If there are any concerns or updates with this information, please email [cancerpatienteducation@ahs.ca](mailto:cancerpatienteducation@ahs.ca).



## For your next appointment

- Bring this booklet
- Arrive 15 minutes early
- Bring a list of your medications
- Bring a list of questions

For other Cancer Care Alberta resources,  
visit [cancercarealberta.ca](https://cancercarealberta.ca)



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