

Total Body Irradiation

Your Guide to Total Body Irradiation ARC Treatment In Alberta



Radiation Treatment



Cancer Control Alberta

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Watch the **Total Body Irradiation Video**

<https://myhealth.alberta.ca/alberta/cancer-radiation-treatment> - scroll to the bottom of the page.

Other Alberta cancer care resources are available at your cancer centre or online -



www.cancercontrolalberta.ca

This booklet is about **total body irradiation arc** treatment. This is a treatment used to treat cancer and several other kinds of health conditions.

There are many different ways to provide total body irradiation, but this booklet is only about arc treatment.

We can **prepare you** for this treatment in Edmonton, Red Deer, Calgary or Lethbridge.

The treatment is given in Calgary where the radiation treatment team works with the bone marrow transplant team at the Foothills Medical Centre. This is a centre of excellence for bone marrow transplant when the bone marrow is provided someone other than the patient.

Patients must stay at the Foothills Medical Centre on Unit 57 during their treatment. Your Radiation Oncologist will talk to you about how long you will need to stay.

Questions about treatment?

Call your Bone Marrow Transplant Coordinator
(Mon to Fri, 8:00 am – 4:30 pm)

Call: _____

A

Radiation Treatment

1) What is radiation treatment?

It is a cancer treatment that:

- Uses radiation to kill cancer cells and shrink tumours.
- Treats many types of cancer as well as some conditions that are non-cancerous.
- Can be used alone or combined with other treatments such as surgery, or chemotherapy.

Radiation treatment is:

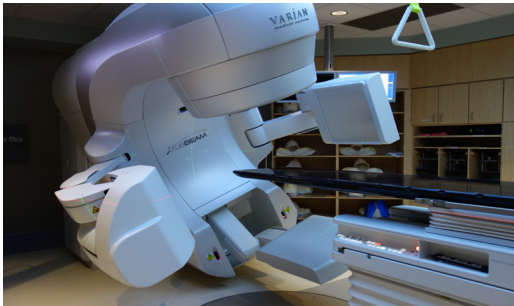
- Prescribed by a Radiation Oncologist
- Planned by a Radiation Therapist and Medical Physicist
- Delivered by a team of Radiation Therapists



2) How is radiation treatment given?

One way radiation treatment is given is by a machine called a **Linear Accelerator**, also called a **Linac**.

Linacs provide **external beam** radiation treatment — the radiation is produced by the Linac and aimed at the tumour, so the radiation source comes from **outside** of the body.



B**Total Body Irradiation (TBI)****1) What is TBI**

Total Body Irradiation (TBI), means that the whole body is given radiation treatment.


There are different goals for treating the whole body with irradiation. The goal may be to:

- destroy remaining cancer cells in the body
- treat the bone marrow
- prepare the body for a bone marrow transplant
- help prevent rejection of a bone marrow transplant
- prevent relapses of leukemic cells in the skin of leukemia patients

How many treatments will I get?

TBI can be given over a number of treatments. Some people will have:

- 1 treatment only
- 2 treatments in 1 day (6 hours apart)
- 2 treatments in 1 day (6 hours apart) and over several days

 Total Body Irradiation is an inpatient procedure. You will stay in the Foothills Medical Centre on **Unit 57** during your treatment.

2) TBI for Cancer

TBI is most often used to treat cancer. This type of radiation treatment is used along with chemotherapy. The most common cancers treated with total body irradiation include:

- Leukemia
- Lymphoma
- Myeloma
-

3) TBI for Non-Cancerous Conditions

Some health conditions are treated by doing a bone marrow transplant.

TBI gets rid of a patient's bone marrow. The patient is given new and healthy bone marrow cells that grow and replace the bone marrow they used to have.

The most common non-cancerous conditions treated with TBI include:

- Sickle Cell Anemia
- Myeloproliferative Syndrome (or disorder)
- Aplastic Anemia

C What to Expect with Arc TBI

1) Consultation

The first step to having treatment is to meet with your Radiation Oncologist. When you meet your Radiation Oncologist, you will talk about:

- Your diagnosis and treatment goals
- How radiation can be used to treat your condition
- What your radiation treatment schedule will look like

Consenting to treatment

Your Radiation Oncologist may recommend radiation treatment as part of your cancer treatment, but **you need to decide** if you want to have radiation treatment.

To help make your decision, you need to know the:

- Goals for treatment
- Risks and benefits to getting the treatment
- Other possible treatment options other than radiation
- Possible outcomes if you **do not** have treatment



Pregnancy and Fertility

If you think you are pregnant talk to your Radiation Oncologist **before** you start your treatments. Radiation treatment to a pregnant woman can affect the unborn baby.

TBI can affect your ability to have children later on — this is for **both men and women**. Talk to your doctor about fertility preservation options **before** you start treatment.

Both men and women should **use some form of birth control** before and during treatments.

Ask your radiation oncologist when it would be safe to try to become pregnant or father a child after treatment.

Tell us if you have any Implanted Electromagnetic Devices:



- Pacemaker
- Cochlear Implants
- Diabetic Pumps
- Implanted Cardioverter Defibrillator

2) CT Simulation

To prepare you for TBI, you will need to have a CT Simulation appointment. This is a planning session that happens before you get your first external beam treatment.

At your CT simulation, the radiation therapists will put you in your treatment position and take a 3D image of the area you need treated. The images are used to develop a treatment plan just for you.



A CT scan will be taken while you lie on your **back**



Measurements will be taken while you lie on your **stomach**

At your CT simulation you will:

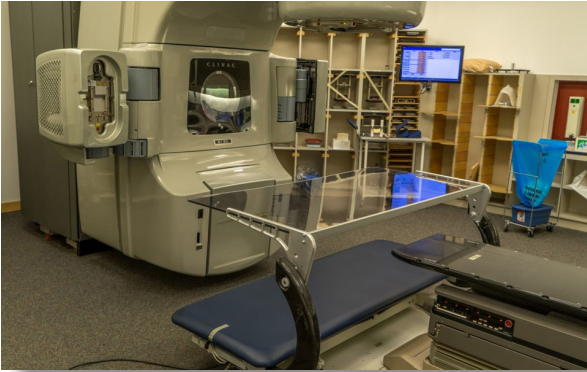
- Change into a hospital gown
- Remove all metal objects (jewellery, underwire bras)
- Have some measurements taken
- Have bean bags placed under your head, shoulders, knees, and ankles for comfort and positioning



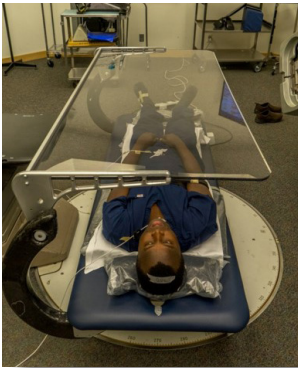
The appointment will take about 45 minutes.

3) TBI Treatment

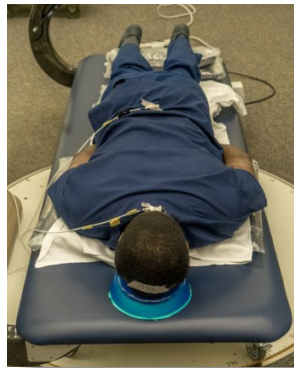
In order to treat your entire body, you will be placed as far from the treatment machine as possible. This means lying close to the floor under the machine.



During your treatment, you will lie on your back, and then on your front.



Lying on your back



Lying on your front

Before each of your treatments you will have:

- Diodes placed on your body — these measure the dose of radiation you are receiving
- Measurements of your body taken
- Marks drawn on your abdomen with a felt marker

During your actual radiation treatment:

- Everyone will leave the room so staff are not exposed to radiation.
- You will always be monitored by video cameras and an intercom (voice) system.
- The treatment machine (Linac) will move over top of you in an arc movement.
- When the first treatment is complete, a radiation therapist will enter the room to help you change into the second position.



The entire treatment will take about 1 hour (60 min).



Did you know you can:

- Bring music to listen to during your treatment.
- Eat a light snack before your treatment.
- Take an Ativan to help keep you calm during treatment. You will need a prescription for this, and must **bring it with you** for your radiation treatment.

Tip!

4) After the Radiation Treatment

- You are not radioactive
- You will be taken to Unit 57

D Managing Your Side Effects

Are there any side effects from radiation treatment?

There are **possible** side effects. Your health care team will talk to you about them, but it does not mean you will have all or even any of them.

Everyone is different. Your treatments are planned just for you, so we can try to limit your side effects as much as possible.

Why do you get side effects from radiation treatment?

The body is made up of billions of cells. Side effects happen when radiation treatment damages the healthy cells in our bodies. Over time, the healthy cells are able to fix themselves which is when the side effects go away.

There are 2 kinds of side effects:

- **Short term** side effects develop while you are on treatment or shortly after. These side effects should go away.
- **Late side** effects develop months, or years after treatment. These side effects are permanent.

1) Short Term Side Effects

The most common short term side effects include:

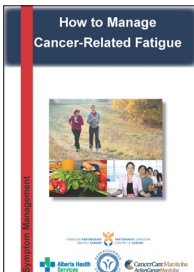
Fatigue

Fatigue is a very common side effect related to treatment and cancer. Fatigue can make you feel:

- worn out, tired or sleepy, no energy
- unable to concentrate or think
- lack of interest in doing anything with friends or family
- no interest in sex or being intimate with your partner
- depressed, disconnected or uninterested in anything



For more information on how to manage cancer-related fatigue, visit <https://myhealth.alberta.ca/Alberta/Pages/cancer-fatigue.aspx>



Get more tips and check out the booklet “How to Manage Cancer-Related Fatigue” — available at your cancer centre.

Temporary Hair Loss

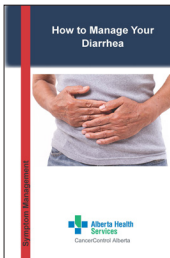
Hair cells are sensitive to radiation. Hair loss from treatment is temporary, and it may take several weeks for your hair to start growing back. When your hair grows back, it may come back different than it was before your treatment.

Diarrhea

Diarrhea is defined as loose or watery stools that happens 4 or more times a day. You may have cramps, pain, or feel bloated.

Diarrhea is serious because you can lose a lot of fluid and nutrients, which can cause you to become dehydrated and tired.

There are things you can do to manage diarrhea. Talk to your health care providers about your diarrhea.

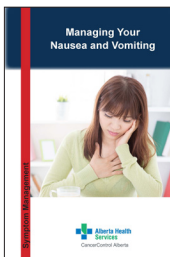


Get more information from the "How to Manage Your Diarrhea" booklet available at your cancer centre.

Nausea and Vomiting

Radiation and chemotherapy treatment can cause nausea and vomiting. There are things you can do to help manage your nausea and vomiting, like having small meals more often.

You will get a prescription for anti-nausea medication to help prevent this side effect.

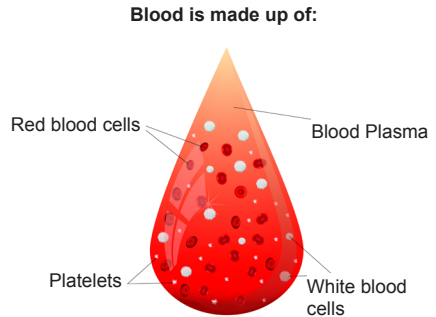


Get more information from the "Managing Your Nausea and Vomiting" booklet available at your cancer centre.

Decreased Blood Counts

Blood is made up of different cells, but the most important are the white blood cells, platelets and red blood cells.

If your blood counts become too low you may need a blood transfusion. This may decrease the side effects you get with low blood counts. Platelets and red blood cells can be transfused but white blood cells cannot.



Inflammation and Swelling of the Parotid Glands

The salivary glands around your jaw bone and in your cheeks are sensitive to radiation and can swell up after radiation treatment. This swelling can be painful and may reduce the amount of saliva in your mouth.

If this happens to you, your doctor can prescribe medicine to help reduce the swelling.

2) Late Side Effects

Your Radiation Oncologist will talk to you about side effects that can develop months to years after treatment. Not everyone will develop long term side effects from treatment.

