

Information for
patients & families

Total Body Irradiation

Arc Treatment in Alberta



Treatment—Radiation

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Watch the **Total Body Irradiation Video**

Scan the QR code using a smartphone camera, or visit bit.ly/tbi_rt



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 in Alberta.

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

The **treatment is given in Calgary** where the radiation treatment team works with the blood and marrow transplant team. This is a centre of excellence for blood and marrow transplant.

Questions about treatment?

Call your Blood and Marrow Transplant / Cellular Therapy Coordinator
(Mon to Fri, 8:00 am – 4:30 pm)

Call: _____

Radiation Treatment

What is radiation treatment?

It is a cancer treatment that:

- Uses high energy x-rays 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 in combination with other treatments, like systemic therapy.

Common Questions

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

- You cannot feel the radiation.
- Most TBI appointments take 60 minutes. Some of this time is spent getting you into your treatment position.
- You need to **stay still** for your radiation treatment.
- **You will not be radioactive** after your treatment.

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** the body.



Total Body Irradiation (TBI)

What is TBI

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

Why do I get TBI?

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) for several days



Total Body Irradiation is given at the Arthur J.E. Child Comprehensive Cancer Centre in Calgary.

What to Expect with Arc TBI

Consultation

The first step 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



Tell us if you have any Implanted Electromagnetic Devices:

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

Pregnancy and Fertility



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



Total body irradiation can affect your ability to have children later on — **this applies to everyone**. Talk to your doctor about fertility preservation options **before** you start treatment.

Everyone should **use some form of birth control** before and during treatments. If you think you could be pregnant during radiation treatment, tell your healthcare team.

Ask your healthcare team when it would be safe to get pregnant after treatment.



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 treatment.

At your CT simulation, the radiation therapists will put you in your treatment position and take a 3D image of your whole body. 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 (jewelery, underwire bras)
- Have some measurements taken
- Have bean bags placed under your head, shoulders, knees, and ankles for comfort and positioning

This appointment takes about 45 minutes.

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 on a special table.



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

When the radiation treatment is being given:

- You will hear a beeping or chiming sound when the radiation therapists are leaving the treatment room
- You will be alone in the treatment room, but the therapists have a camera and microphone so they can see, hear and talk to you if needed
- The radiation treatment will begin
- The treatment machine will move back and forth in an arc movement above you
- The therapist may come into the treatment room to check or change something during your treatment – please continue to lie still
- 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).

You can:

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

Managing Your Side Effects

Are there any side effects from radiation treatment?

There are possible side effects. Your cancer care team will talk to you about them, but it does not mean you will have these side effects.

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 sometimes permanent.

Possible Short Term Side Effects

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 look different than it was before your treatment.

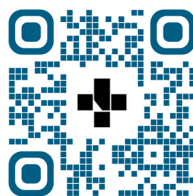
Fatigue

Fatigue or tiredness is a very common side effect related to treatment and cancer. Fatigue is best treated with regular exercise and good nutrition.

Fatigue can make you feel like you:

- are worn out, tired or sleepy, or have no energy
- can't concentrate or think
- don't have interest in doing anything with friends or family
- have no interest in sex or being intimate with your partner
- are depressed, disconnected or uninterested in anything

For more information on how to manage cancer-related fatigue, scan the QR code or visit MyHealth Alberta 'Cancer and Fatigue'.

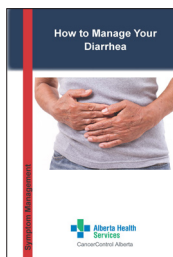


Diarrhea

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

Diarrhea is serious. 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 healthcare providers about your diarrhea.

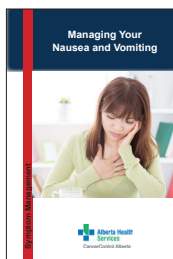


Get more information from the "How to Manage Your Diarrhea" booklet available at your cancer centre.

Nausea and Vomiting

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

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



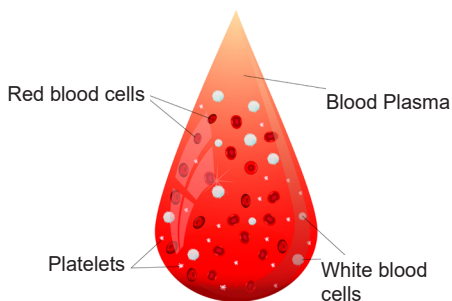
Get more information from the "Managing Your Nausea and Vomiting" booklet available at your cancer centre.

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.

Blood is made up of:



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.

Late Side Effects

Your cancer doctors 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.

Follow-Up

Your follow-up care is very important. After your treatment you will be followed by your Blood and Marrow Transplant (BMT) healthcare team. You will get more information about this from your treatment team

Health Information Resources

My Care Conversations App



You can use the free AHS **My Care Conversations** app to prepare for your next appointment and to audio record conversations with your healthcare team. You can listen to your recordings at home and share with family or trusted friends. Download it from the App Store or Google Play.

MyAHS Connect

Connect Care — MyAHS Connect Patient Portal

MyAHS Connect is a secure, online, interactive patient portal, which gives you access to your Connect Care health information.

MyAHS Connect will allow you to:

- Communicate with your healthcare team
- See the appointments we schedule for you
- Fill out questionnaires before your visits
- Add medications you are taking and let your healthcare team verify them with you

To learn more, visit: bit.ly/myahsconnect



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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 cancer.patiented@ahs.ca.

Important to remember



TBI treatment is given in Calgary



Your treatment schedule



Tell your healthcare team if you have side effects



The MyAHS Connect app can help you track your health information

For other Cancer Care Alberta resources, visit

cancercarealberta.ca



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