

# Understanding total body irradiation

## Multi-fraction treatment



Total body irradiation may be given with chemotherapy to prepare for a stem cell or bone marrow transplant.

### What is total body irradiation?

- Total body irradiation (TBI) is radiation treatment to the whole body using high energy x-rays (called ionising radiation).
- TBI can be used to:
  - lower your immune system (immunosuppression) to reduce the risk of your body rejecting transplanted cells.
  - remove existing bone marrow to make room for the new transplanted cells.
  - destroy tumour cells that may be left behind after chemotherapy.

### How many treatments will I have?

- The number of TBI treatments (or fractions) varies.
- Most people will have between five and eight treatments. This is called multi-fraction treatment.
- These treatments are given over three to four days. Each day, there will be two treatments, with at least six hours between each.
- Ask your radiation oncologist how many treatments you will have, and why.

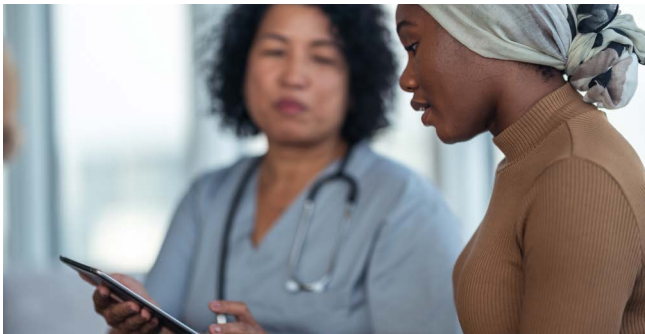
### What can I expect during TBI?

There are many steps and appointments when having TBI treatment.



### Initial consultation appointment

- At this appointment you will see your radiation oncologist (specialist doctor).
- Your radiation oncologist will talk with you about:
  - your medical history and test results
  - your treatment options
  - the aim of radiation therapy
  - the benefits and risks of having (or not having) radiation therapy
  - possible side effects
  - giving consent to have radiation therapy.
- You may have a physical examination at this appointment.



### Simulation and planning appointment

- Before starting radiation therapy treatment, you may have a simulation or planning appointment. This appointment may take approximately one hour.
- At this appointment:
  - You may be asked to change into a gown.
  - You may need to remove dentures, hearing aids or metal objects such as jewellery and hair clips.
  - Important information including measurements of your body will be collected by the treatment team.
  - Photos and an imaging scan (computed tomography (CT) scan) may be taken to help plan how to deliver your radiation therapy treatment.

Your treatment team will tell you if you need to do anything else to prepare for this appointment.

### Treatment preparation

- You will be admitted to hospital before or immediately after your first TBI treatment.
- Before the TBI treatment your treatment team will help to set you up in your treatment position.
- The treatment position can be different for each person. Your treatment team will explain what position you will be in for treatment. You may be positioned:
  - on a bed and sitting up or laying down on your back or side. Often this bed has clear plastic (Perspex) walls.
  - standing up.
- Radiation measuring devices may be used during treatment to ensure you receive the correct dose.
  - This may include small devices placed on your body or clothes, or a device called an ion chamber placed between your legs. These may be connected to thin plastic wires.
  - These are removed after treatment.
- You may have different materials placed on and around your body such as rice bags, wax blocks, jelly-like sheets (bolus) or plastic.
- These help to correctly deliver the radiation dose along your body.
- The treatment preparation may take approximately 15 to 45 minutes.

#### ! Important!

- Before radiation therapy begins and during treatment tell your treatment team if you are pregnant (or there is any chance you may be pregnant).
- Both men and women should use contraception during and after the radiation therapy treatment course. Do not try to get pregnant or father a child.
- Talk to your doctor if you have any questions.



### TBI treatment

- When you are in the treatment room, the lights will be dimmed, and laser lights may be visible.
- The treatment team will take some measurements and check your position is correct before they leave the room to start treatment.
- You will be on your own in the treatment room. However, the radiation therapists can see and hear you on a video camera.
- Your team may turn the machine off and come into the room to make some changes such as turning the bed around or help you if needed.
- It is important you remain still until the treatment team tells you that you can move.

### How long will treatment take?

- A treatment session will take up to one and a half hours. This includes the treatment preparation and treatment.
- The radiation therapy treatment beam is usually on for 20 to 30 minutes of this total time.

### Treatment follow-up

- Ask your treatment team what follow-up you will need after you finish treatment.

### Treatment side effects

TBI treatment can cause damage to normal cells in your body, which can cause side effects. Everyone gets different side effects, and some people will have more than others.

Some of the side effects you may have are listed below. You are unlikely to get all of these, and you may get some side effects that are not listed. TBI treatment is usually given with chemotherapy and the side effects may be from the radiation or chemotherapy.

### Short-term side effects

*These may occur within a few weeks of having radiation therapy (usually temporary).*

These include:

- nausea and vomiting
- diarrhoea
- feeling tired (fatigue)
- skin redness
- sore mouth (mucositis)
- hair loss (alopecia)
- swelling of the parotid gland (parotitis).

### Long-term side effects

*These may occur months to years after treatment has finished and may be permanent.*

These include:

- infertility
- early menopause
- hormone changes
- feeling tired (fatigue)
- vision changes (cataracts)
- dry eye syndrome
- heart problems
- lung changes or inflammation
- secondary cancer.

**Ask your radiation therapy team which side effects you may experience and how to manage them. For more information see the patient information sheets at [www.eviq.org.au/patients-and-carers/patient-information-sheets/managing-side-effects](http://www.eviq.org.au/patients-and-carers/patient-information-sheets/managing-side-effects)**

### FAQs

#### What should I wear to treatment?

Wear light comfortable clothing (without metal zips or buttons).

Avoid wearing clothes that are very loose or baggy.

You must remove all jewellery, piercings, safety pins and metallic objects for your treatment.

#### Can I eat and drink before treatment?

If you are feeling well, you can eat and drink before your treatment.

Keep in mind you may be in the treatment room and treatment position for an hour or more, so you will not be able to use the bathroom during that time.

#### Will I feel claustrophobic or nervous?

Some people may feel claustrophobic or nervous before or during their radiation therapy treatment. Talk to the radiation therapy team about this and ask them to explain what is happening.

They can support you by giving you some options that may help. These may include listening to music or podcasts, breathing exercises or meditation. Sometimes your doctor may order some medication to help.

#### Will I feel anything when the treatment machine is on?

When the treatment machine is turned on you may hear a buzzing noise, but you will not feel anything.

Some people may see a flash of light when the treatment begins, have a metallic taste in their mouth or smell an odd scent. This is normal.

#### What happens if I move during treatment?

It is important that you remain as still as possible during your treatment.

Normal breathing movements and small movements or twitches will not affect your treatment.

Tell your treatment team before you move if you feel uncomfortable.

#### What happens if I feel ill during treatment?

Let your treatment team know if you are feeling sick before treatment starts.

If you feel you need to vomit during your treatment, call out to the radiation therapist and they will stop the treatment to come and help you.

#### Will I be radioactive after treatment?

You will NOT be radioactive during or after your treatment.

#### Where can I get more information?

- The Cancer Council NSW: [cancercouncil.com.au](http://cancercouncil.com.au)
- The Cancer Council Australia: [cancer.org.au](http://cancer.org.au)
- The Cancer Council Helpline: 13 11 20
- The Leukaemia Foundation: [leukaemia.org.au](http://leukaemia.org.au)
- Targeting Cancer: [targetingcancer.com.au](http://targetingcancer.com.au)
- Look Good Feel Better [lgfb.org.au](http://lgfb.org.au)
- Canteen (support for young people living with cancer 12-24 years) [canteen.org.au](http://canteen.org.au)



For information for patient and carers please scan the QR code.