

- **Alopecia** – hair loss

Temporary body hair loss is possible. This can continue after treatment has finished. In some cases, hair can grow back patchy, thinner or a different colour and texture.

- **Mucositis** – dry and sore mouth

Please let your team know if you're experiencing any pain or difficulty swallowing. There are pain killers and mouthwashes available to help with this.

- **Loss of taste and appetite**

Your taste may be altered temporarily. This can vary from patient to patient. Food may become bland, unpleasant or you may have no taste at all. Try eating smaller meals more regularly rather than three large main meals.

- **Irritability**

- **Altered sleep**

- **Parotitis** – swelling or discomfort of in the parotid/salivary glands.

TBI and chemotherapy causes your blood levels to become low. You are more at risk of infection, anaemia (low red blood cell levels) and bleeding. This could include bleeding gums or nose bleeds.

Due to the high risk of infection, you may be cared for in a single room (isolation) in the hospital.

Intermediate/delayed effects

These are very rare but can cause serious complications which occur from six weeks up until 12 months after treatment.

- Radiation pneumonitis – inflammation of the lungs
- Hepatitis – inflammation of the liver/VOD (Veno-occlusive disease).

Long term effects

These complications may arise many years after treatment due to a combination of the chemotherapy and radiation therapy. Apart from cataract formation and infertility, they are rare:

- Cataracts
- Infertility – options should be discussed with your doctor prior to starting treatment
- Endocrine deficits – hormones changes
- Impaired bone growth and development (paediatrics)
- Vascular events (e.g. strokes and Myocardial infarction)
- Renal failure (kidney damage)
- Secondary malignancy.

Contacts

Regional Blood and Cancer Service
 Building 8, Level 4, Auckland City Hospital
 Auckland DHB
 Phone: 09 307 4949
 Reception ext 22631
 Nurses ext 22837
 Acute Oncology ext 23826 (Mon-Fri 8-4pm)

TBI - Total Body Irradiation: Patient Information Overview

Total Body Irradiation (TBI) is radiation therapy given to the whole body in combination with high dose chemotherapy as preparation for a bone marrow transplant (BMT). Radiation therapy consists of high energy x-rays delivered by a machine called a linear accelerator.

Radiation therapy is given in conjunction with chemotherapy for the following reasons:

- It provides additional suppression of the immune system to prevent rejection of bone marrow transplant
- It eradicates any remaining cancer cells, particularly in sites where chemotherapy can be less effective
- It destroys the existing bone marrow and creates space for the new bone marrow to graft.

Procedure / Timeline:

Initial consultation: A Radiation Oncologist will discuss the TBI treatment with you and your support people. This is an opportunity to ask questions, discuss side effects and sign consent.

CT/planning session: You will receive an appointment for a planning session. This will involve radiation therapists and physicists taking various measurements of your body to allow for accurate planning of radiation dose. This may also include a CT scan of your chest for further accuracy of dose to your lungs.

Planning: Behind the scenes, various calculations will be made to create perspex blocks. These will be used during your treatment to create a uniform dose of radiation across your body. The blocks sit between you and the linear accelerator.

Unit setup / block fitting: You will be asked to come in for another planning session which involves a mock set-up of the treatment to ensure everything is set up as planned.

Treatment: You will have either been prescribed a single treatment or six treatments, two per day over three days. You will have a morning and afternoon appointment 6-8 hours apart.

During treatment you will be lying on your back with your knees bent up. You must stay very still and breath normally for approximately 30 minutes.

Treatment couch and an example of the perspex blocks.



Further information:

- Treatment sessions are one hour long, some of this time is spent setting up your treatment position.
- The staff can see and hear you at all times from a console area outside the treatment room. The staff will come back into the room halfway through to change your position and whenever else may be required.
- The treatment itself causes no pain or discomfort.
- You will not be radioactive.
- Remove all jewellery/watches (unlike above photo)
- Wear comfortable clothing.
- Bring in any music you would like to play in the room.
- Parents can communicate with their children over the microphone during the treatment.

Side Effects

You may experience side effects from the radiation treatment which may be heightened due to the chemotherapy treatment as well.

It can be difficult to distinguish if the side effects are from radiation therapy or chemotherapy. Please talk to the team about any side effects you are experiencing.

Acute side effects

These occur during treatment and in the few weeks after completing radiation therapy.

- **Fatigue**
 - Ensure you eat a balanced diet
 - Drink plenty of fluids
 - Rest and gentle exercise
 - Practice self-care.
- **Nausea and vomiting**

Nausea can be well managed by anti-nausea medication. If experiencing vomiting, it's important to stay hydrated to avoid dehydration.

- **Diarrhoea**
 - There is medication to stop/slow down diarrhoea
 - Ensure fluid uptake
 - Try small more frequent meals
 - Talk to the team about a low fibre diet.
- **Skin reaction** – reddening or itchy

Please ask the radiation therapists or nurses for our skincare information leaflet.