Total body irradiation (TBI)

WHAT IS RADIOTHERAPY?
Radiotherapy is a treatment that uses high energy x-rays to destroy cells in a specifically targeted area, anywhere in the whole body.

You will not feel anything while you are having the treatment and this kind of external radiotherapy will not make you radioactive, so other people, including children, will be perfectly safe to be around you.

Some people may receive just one treatment, while others may receive treatment over several weeks. If you’re being treated over a period of time, you may have one treatment a day, from Monday to Friday, with a rest over the weekend. However everyone’s treatment is different.

You may have a lot of questions about your treatment; we hope this leaflet will help to answer some of them. Please remember that your treatment is designed specifically for you, so it may be slightly different from what is described here and from the treatment given to other patients with a similar diagnosis.

WHAT IS TBI?
Total body irradiation (TBI) is radiotherapy to your whole body. We use it to destroy any cancer cells in patients with leukaemia, lymphomas, myeloma and some rare blood disorders, before they undergo a bone marrow or stem cell transplant.

You will be given the treatment over a number of sessions, or fractions. Each session will take about half an hour and you will receive six or eight sessions, depending on your treatment plan.

The sessions will take place in the morning and afternoon over three or four days, with a gap of six hours to allow normal tissue to recover.

Radiographers and physicists will be in the treatment room checking the measurements to make sure you’re in the correct position for treatment.

WHAT DOES THE TREATMENT INVOLVE?
1. Setting up your treatment
On your first day we will take a radiotherapy planning CT scan to identify the area that needs to be treated.

To help us treat you accurately, we may need to place a few small permanent marks on your skin. These are the size of tiny freckles.
and your therapy radiographer will ask your approval before using a small needle to prick ink under the skin. We will also ask your permission to take your photograph for identification purposes.

2. Planning your treatment
Your consultant will use the images from your CT scan to plan the details of your radiotherapy. This may take up to a week. You are not required to be present for this part of the process.

3. Receiving your treatment
Once we have determined your treatment plan, you will return to the radiotherapy department to start your course of radiotherapy.

Please inform us if you have a pacemaker fitted, if you think you may be pregnant or if you are currently taking any medication.

WHAT HAPPENS ON MY FIRST DAY OF TREATMENT?
You will be collected from your room and brought to The London Clinic Duchess of Devonshire Wing at 22 Devonshire Place, W1G 6JA and checked in at the radiotherapy reception on basement level 3 (B3).

You will then be taken to the treatment room where the radiographers will put you in the correct position. Everyone will leave the room; however we will be able to see you at all times and will be able to communicate through a two way intercom.

When you hear a buzzing noise it means the machine is switched on. It will not touch you. You’ll need to keep still throughout the treatment, and you should try to relax. When the radiotherapy is finished the radiographers will come back into the room and help you off the couch.

We always aim to treat you with dignity and respect.

WILL I EXPERIENCE ANY SIDE EFFECTS?
You may experience side effects; however this depends on the dose given. Everyone is different, so even if you’re having the same treatment as someone else, you may experience different side effects.

The radiographers will check on you daily, and you will have a more formal review towards the end of your treatment. Please tell us how you are getting on so we can help you with other forms of intervention and medication if you need it.

Side effects may start during your treatment and are often temporary. They are often at their worst towards, or just after, the end of your treatment and can last for a few weeks after the treatment has finished. If you are worried about any possible side effects, please talk to your radiotherapy team.
WHAT KIND OF SHORT-TERM SIDE EFFECTS SHOULD I EXPECT?
These are some of the side effects you may experience during treatment and/or for a short time after treatment has finished.

**Skin**
Your skin may become red and a little itchy, a bit like sunburn. You can help to reduce these effects by:

- washing the area with lukewarm water and using a mild non-perfumed soap such as Simple soap. Try not to soak in the water for too long – we would recommend a shower rather than a bath. Do not scrub skin, and gently pat dry with a soft towel
- wearing loose fitting underwear and clothes made from natural fibres, such as cotton, to allow air to circulate around your skin
- only using creams given to you by the radiotherapy team
- avoiding wet shaving. Please seek advice from your radiotherapy team regarding electric razors
- keeping the treated area of skin protected with clothing as it will now always be sensitive to the sun, wind and cold temperatures

**Tiredness**
As your treatment progresses you may begin to feel more tired. This may be due to a combination of lifestyle changes such as attending appointments, experiencing side effects and coping with your diagnosis. You may feel tired for several weeks after your treatment has finished, or possibly a lot longer. You can help to reduce these effects by:

- eating a balanced diet and choosing light snacks throughout the day rather than large meals
- taking some gentle daily exercise if you feel up to it
- resting when you feel you need to

**Nausea and/or vomiting**
Some people may experience nausea and/or vomiting. This can occur hours after your treatment and may last for a few weeks after the treatment has finished.

**Bowels**
Radiotherapy may irritate your bowels; however it affects different people in different ways. Some people may need to open their bowels more frequently. You may feel the urge to empty your bowels but find you are unable to pass anything. Opening your bowels may become painful and you may also pass a small amount of blood.

**Sore or dry mouth and throat**
The lining of your mouth may become dry and ulcerated a few days...
into treatment. This can last up to three months after your radiotherapy has finished. We will advise you on how to care for this.

**Hair loss**
Unfortunately you may lose any hair. Most hair loss is temporary, although in some people it may be permanent. This will depend on the dose and length of treatment you have had. Sometimes hair grows back a slightly different colour and texture.

Avoid using heated appliances. We don’t recommend you colour or perm your hair during, or for at least one month after your radiotherapy.

Hair usually starts to grow back about two to four months after finishing treatment. If you would like some information on wigs or headwear please ask one of the information and support team.

**Bone marrow depression**
This is also a side effect of chemotherapy and usually happens seven to ten days after treatment. Your bone marrow will begin to die and this will result in anaemia, low white blood cell count and low platelet count. You will be prone to infection and bleeding, and you may need to have antibiotics, blood and platelet transfusions.

**ARE THERE ANY LONG-TERM SIDE EFFECTS?**
Late side effects can occur months or even years after your radiotherapy has finished. These effects are hard to predict and can be permanent. Your consultant will have talked to you about this as part of your informed consent. Here are some of the possible long-term side effects:

**Cataract**
Because we cannot avoid exposing your eyes to radiation, the lenses may become opaque. This could happen 3 to 4 years after your treatment. It can be corrected with a simple surgical procedure that can normally be carried out as a day case.

**Lung, heart and kidney toxicity**
Since TBI can damage the lungs, heart and kidney you will be monitored regularly.

**Fertility**
The high doses of drugs and radiotherapy you receive during TBI mean it is highly likely that you will become infertile. It may be possible for men to store sperm and for women to freeze eggs before treatment. Please talk to your consultant oncologist if you’d like to know more about this.

**Altered hormone level for men and women**
Many women will become menopausal as a result of TBI. Normal
signs of the menopause such as dry skin, hot flushes and vaginal dryness may develop gradually over a period of a few months. The treatment will reduce testosterone levels in men. This can cause low sex drive and, in some cases, impotence. Please talk to your consultant.

**Secondary cancers**
Radiotherapy may increase the risk of developing another cancer (secondary cancer). Please talk to your consultant oncologist about this.

**WHO SHOULD I TALK TO IF I HAVE QUESTIONS?**
Please talk to the radiotherapy team if you have any questions about your treatment or side effects.

**CONTACT**
*Treatment support team*
T 0203 219 3532

*Radiotherapy Clinical Nurse Specialist*
T 0207 935 4444 extension 8551