



## Haematology and Transplant Unit (HTU)

# Total body irradiation (TBI)

### What is radiotherapy?

This is a form of treatment which uses controlled x-rays to cause maximum damage to cancer cells. Radiotherapy is usually given in a number of small doses called fractions over several days. The number of fractions depends on several factors, such as the seriousness of the disease, your age, general health and the specific cancer. For this reason the treatment is planned individually, and even with the same type of cancer, two people may not have identical treatment. You cannot see or feel radiotherapy and the treatment is painless.

Radiotherapy does not make you radioactive and it is perfectly safe for you to be with other people, including children, throughout your treatment.

### Consenting to treatment

We will ask you to sign a consent form agreeing to accept the treatment that you are being offered. The basis of the agreement is that you have had The Christie's written description of the proposed treatment and that you have been given an opportunity to discuss any concerns. You are entitled to request a second opinion from another doctor who specialises in treating this cancer. You can ask your own consultant or your GP to refer you. Your consent may be withdrawn at any time before or during this treatment. Should you decide to withdraw your consent then a member of your treating team will discuss the possible consequences with you.

### What is TBI and what are the benefits of this treatment?

TBI is a form of radiotherapy used for patients about to undergo a bone marrow or stem cell transplant. It destroys any undetectable cancer cells and allows the new cells a good grounding in which to grow. Fractions of radiation are given to the whole body to destroy the cells of the bone marrow.

### Having your treatment

It is quite normal to feel anxious about having your treatment but as you get to know the staff and the procedure it should become easier. Do not be afraid to express any fears or worries to the staff. They are there to help you. It is important for you to feel you are involved in your treatment, so ask as many questions as you like.

Please make sure that you do not wear any metallic jewellery etc when you go for radiotherapy. It's best to wear loose light clothing with no zips.

TBI itself is painless and takes about half an hour per fraction. Depending on your treatment plan you will receive 6 or 8 fractions of radiotherapy. These are given in the morning and evening over 3 or 4 days allowing a six-hour gap to allow normal tissue

recovery. Because your positioning is so important, the radiographers may take a little while to get you ready. Once you are in the correct position the staff will leave you alone in the room. This is to prevent them from being exposed to any unnecessary radiation. They are just outside the room if you need them and they will watch you via a camera at all times.

### **Side effects**

Radiotherapy affects the cancer cells and it also affects the surrounding normal cells. It is difficult to predict exactly which side effects will occur and how severe they may be. Your chemotherapy can also cause these symptoms, so they may not be due to the radiotherapy alone.

- **Skin reaction and care**

The skin sometimes becomes red and sore similar to sunburn. You may notice your skin becomes discoloured shortly after your TBI and this is more evident in skin folds. Use unperfumed soaps and toiletries, as perfumed products may cause irritation. Do not rub your skin vigorously with towels as this will make it sore. Just pat dry with a soft towel. Creams can be prescribed to improve any symptoms that may develop.

- **Avoiding the sun**

Because the skin becomes sensitive it should not be exposed to the sun or cold winds. It's advisable to cover your skin as much as possible when you go out in the sun or cold wind. You should not go out in strong sunlight for at least one year. Even after this time, the skin will be more sensitive and extra care should be taken. We advise you to use a high factor sun cream, and to wear a hat and long sleeved T-shirt when you go out in the sun.

- **Mucositis**

Mucositis is when your mouth becomes sore, causing difficulty swallowing food and drink which can lead to loss of appetite and weight. The glands in your neck may become swollen and uncomfortable during your TBI. We can give you painkillers to help to control any pain and discomfort.

- **Hair loss**

Your hair usually begins to fall out about fifteen days after radiotherapy. This includes the hair on your head and body hair including eyebrows and underarm hair. Most hair loss is temporary and will start to grow back within two to three months. Wigs are available and we can arrange for you to have a wig before your treatment starts. Please ask the staff about this.

- **Nausea and vomiting**

Some people find that the treatment makes them feel sick and they may even vomit. Anti-sickness drugs can be given to help relieve these symptoms.

- **Diarrhoea**

This is a fairly common side effect and drugs can be given to combat this. We encourage you to drink more fluid whenever possible, between 2 and 3 litres a day, so as not to become dehydrated.

- **Emotions**

People having TBI can often feel very emotional during the treatment or for several weeks following radiotherapy. This kind of depression is usually short term but can be difficult for you and your family to cope with. It is important to know that there is help available if needed so please ask the staff if you have any worries.

- **Lethargy**

You may feel a sense of fatigue or have less energy during and after your course of treatment. You can help yourself by taking time to rest and relax.

## **Sexuality**

- **Women**

TBI will damage your ovaries and will normally cause infertility. Currently it is not possible to store female eggs for future use. However, clinical trials are in progress to investigate new ways of preserving female fertility. Even though sterility is likely to occur, we strongly recommend you to use barrier forms of birth control such as condoms. TBI will also cause an early menopause, the signs of which are hot flushes, irritability, dry skin and dryness in the vagina. This may happen gradually over a few months after your transplant. We will refer you to an endocrinologist about three months after transplant for review and hormone replacement therapy may be prescribed. Please talk to the staff if you develop any new symptoms or have any worries.

- **Men**

Radiotherapy to the testes can lead to infertility. Before treatment begins you will be asked if you wish to store a sample of sperm for future use. The sperm can be saved for several years in a frozen form. Please note that if you have had chemotherapy in the past your sperm count may be low.

Men who undergo radiotherapy may experience some problems with sexual function. It may be that you lose interest due to anxiety about your illness or worries about the future. Please talk to the staff if you have any concerns.

## **Late effects**

Radiotherapy-induced somnolence can occur. This is when you can become extremely tired and drowsy for long periods of the day and generally feel unwell. This may happen several weeks after treatment but it will gradually fade.

Other side effects may occur years after exposure to TBI. These include cataracts, high blood pressure, respiratory problems or there may be more serious problems in the form of a secondary cancer. We will see you regularly at follow-up appointments to see if any of these late effects are developing and offer you help and advice.

## **Are there any alternatives to this treatment and what happens if I do not have TBI?**

In some cases chemotherapy alone can be given but may not be as effective. TBI is the treatment of choice for your disease. However, if you are worried about having treatment please discuss this with your specialist nurse or doctor.

**If you would like to discuss any of these issues please ask a member of The Christie staff. If we cannot help with your questions we will introduce you to someone who can.**

**If you have any questions please contact the Transplant Co-ordinators:  
Angie Leather, Rita Angelica, John Murray on 0161 918 7219 or 0161 446 8011 or via  
The Christie switchboard on 0161 446 3000.**



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