

# High Dose or Radical Radiotherapy to the Lung

Patient Information



# **High Dose or Radical Radiotherapy to the Lung**

This leaflet is for patients receiving radiotherapy to the lung. It describes:

- What is radiotherapy?
- Your radiotherapy planning and treatment.
- The side effects that you may experience during and after treatment, and how best to cope with them.
- Who to contact if you have any questions or concerns.

## **What is Radiotherapy?**

Radiotherapy uses radiation (high energy x-rays) to target and damage cells, stopping them dividing and growing. It kills the cancer cells but allows your normal cells to recover.

Radiotherapy can be given in a variety of ways. It is most often given in several small doses over a period of days or weeks. Most people will attend for radiotherapy as an outpatient but some treatments may require a short stay in hospital.

Therapy radiographers are specially trained staff that operate the radiotherapy planning and treatment machines. They will be able to answer any questions or concerns that you may have.

Before treatment starts you will receive a list of your radiotherapy appointments which will include a planning session and all your radiotherapy treatment dates and times.

If you are in doubt about anything or have any questions or problems, please let us know as soon as possible.

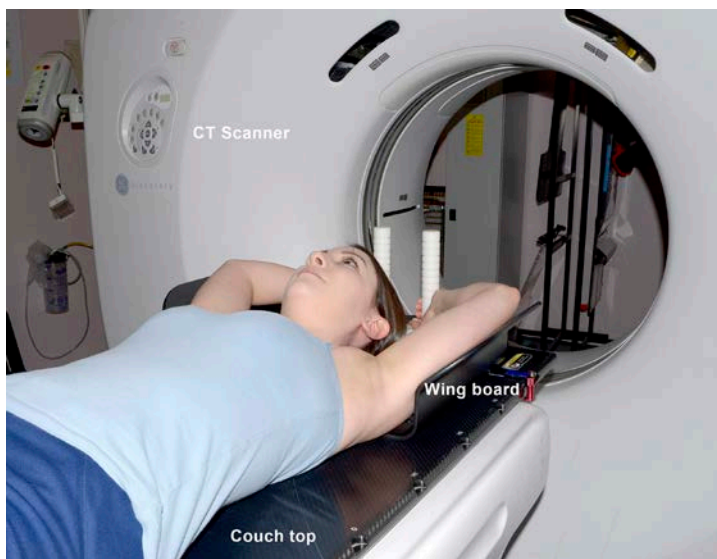
## **Preparation for treatment**

It is very important that you lie in the exact same position each day for your treatment. There are two ways we can help position you. Both are detailed below.

You will need to undress from the waist upwards. We will ensure your dignity is maintained by covering you whenever possible. Our treatment couch is not very comfortable so if you need medication

(e.g. painkillers) to help you lie still or flat please bring them with you.

## Option 1: Wing board



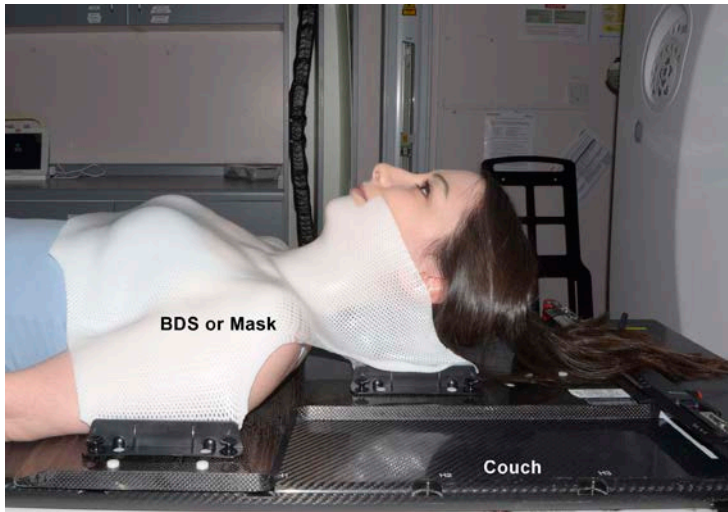
### Picture 1: Wing Board

We will position you lying on your back with your hands above your head holding onto two short grips. For extra support and comfort there are ledges at either side that will help to support your arms (it feels similar to clasping your hands above your head). Let your radiographers know if you are uncomfortable as you will have to lie in this position for each treatment.

## Option 2: A shell/mask

Before you go to the CT Simulator, you will visit the mould room to have a 'beam directional shell (BDS)' or 'mask' made. It is custom made from a light plastic mesh material which will be moulded to the shape of your neck and shoulders. It fastens to the treatment couch helping to keep you still during radiotherapy.

## Picture 2: Shell



The mould room team will explain the process of making the shell when you come for your appointment.

It is important that your skin is smooth before we start to make your shell. If you have a beard we therefore advise you to shave it off or be close shaven before coming to the mould room.

You will have to wear this shell when you come for your planning and treatment.

## CT Simulator

Before you begin your radiotherapy, the treatment must be carefully planned. You will come to the CT simulator for a CT scan. This is an x-ray scan of your chest and lungs, which will take about 15 minutes. The scan is not painful. You will not get any results from this scan.

**Picture 3: CT Scanner**



Your radiographers will help you to lie in your treatment position on the CT scanning couch. They will draw 3 small marks onto your skin or shell with a felt tip pen. These are our reference points for your treatment. It is important you stay still, relax and breathe normally.

Once the scan is finished, your radiographers will make the pen marks on your skin permanent. They will give you three tiny tattoos which look like freckles on your skin. These tattoos will be used every day as a reference point for treatment. However, if you have a shell, you will not need tattoos as the marks are on your shell instead.

You may need to have an injection of contrast (dye) that will help us to see the area we want to treat more clearly. Your doctor or radiographer will put a small hollow tube (cannula) into a vein. It is inserted using a fine needle which is removed once the cannula is in place. We will tape the cannula in place to keep it in position during the scan. We will inject the contrast (dye) through this. It may feel a little cold but you should not feel any discomfort. You may need this dye for the CT planning process, but not for treatment appointments.

## Treatment

You will have your radiotherapy treatment on a special machine called a linear accelerator.



**Picture 4: Linear Accelerator**

## Pre-verification Day (Image Check)

A few days before your treatment starts, we will do a trial run of your treatment. This allows us to confirm your treatment position is correct before you start the actual treatment. Your radiographers will position you on the treatment couch. They will take some measurements and also some x-ray pictures. You will not have treatment at this appointment.

Each day you attend for treatment, your radiographers will help position you on the couch. The lights in the room will dim slightly while your radiographers move you into the precise position. The machine will move around you but it will never touch you.

During treatment your radiographers will leave the room to switch the machine on. They are watching you all the time on closed circuit TV. The whole procedure will take 10- 15 minutes.

After approximately 5 treatments, you will be due a treatment review by a member of the lung team. This is a routine assessment to ensure your treatment is not causing unacceptable side effects; it is not to give results. Your radiographers will let you know which day your review takes place. We advise that you allow extra time for your visit on this day.

Please remember, if you have any new symptoms or side effects that you are worried about, let the radiotherapy staff know and they will arrange for someone to see you.

## Effects of Treatment (early)

Not everyone will experience all of the side effects listed below. People react individually to the treatment.

- **Tiredness/Fatigue:** The treatment will make you tired. This usually happens about 2-3 weeks into your course of treatment and may last for several weeks after your treatment ends.

Try to get enough rest and sleep, especially when the treatment begins to make you feel tired. However, it is also important that you try to continue normal daily activities. Research has shown that gentle exercise is beneficial for people who have had a cancer diagnosis both in the short and longer term. There are rehabilitation programmes available that can help with this. Please let us know if you are interested in finding out more.

- **Skin:** Your skin, in the area we are treating, may become a little pink, dry and/or itchy. This again, tends to be about 2-3 weeks into your treatment and will settle down after your treatment finishes. You may bath or shower during treatment, provided the water is not too hot. Pat your skin dry with a soft towel.

Please check with your radiographers or nurse specialist before putting any cream or lotion onto your skin. Not all creams are appropriate to use whilst having radiotherapy.

Do not expose the treated area to sunshine while on treatment. When treatment has finished, protect yourself with

a sunscreen with both UVA/UVB protection with a minimum of SPF 50.

- **Gullet:** You may feel a discomfort in your gullet, like a lump is in the way of swallowing food. This is due to the gullet being irritated by the treatment. There is a liquid medicine which your doctor, nurse specialist or radiographer can prescribe for you if this becomes a problem. This will settle down within a few weeks of completing your treatment.
- **Cough:** Some patients notice an increase in their cough and/or production of sputum. This is quite normal, but if it is causing you difficulty, please let your radiographers know.
- **Chest Pain:** A few patients experience some pain in the chest in the 24 hours following their first treatment. This is usually mild and should settle quite quickly. It is important to let us know if you experience any pain.
- **Nausea:** You should not be sick with the treatment, but some patients find that they feel a little nauseous. If nausea becomes a problem during treatment, your doctor or nurse specialist can prescribe some medication to help this.

## Diet

- When you are having radiotherapy, it is important to try to eat well and choose from a variety of foods. Avoid very hot drinks, rough food e.g. toast, and strong spices particularly if the gullet (oesophagus) has become irritated. Soups, pasta and puddings are generally easier to manage.
- If you are having difficulty eating please let your nurse specialist or radiographer know at your review appointment. They can help with dietary advice and if necessary supply you with food supplements.
- Avoid smoking and drinking alcohol, especially spirits, as both are likely to make the effects of radiotherapy worse. Cutting back will help if you feel that you cannot cut them out completely.



## After treatment ends

Most of the effects you may have experienced during treatment will wear off within a couple of weeks of finishing your treatment; however the tiredness will take a little longer to settle. You may begin washing normally once your skin is no longer red or feeling itchy.

Your doctor will not request any scans or x-rays to determine your response to the treatment until the treatment has finished and you have had your first follow-up appointment. Scans or x-rays will be done at your local hospital where you first met the doctor.

Your oncology doctor will usually arrange to see you 4-8 weeks after the end of treatment, either at the Beatson Cancer Centre or at the hospital where you first met him/her.

**If you become unwell after your treatment has finished you should contact your GP, nurse or if within 6 weeks of treatment The Cancer Treatment Helpline (see where to get help section).**

## Late Effects

Your doctor has recommended this type of treatment because it is felt that the benefits of radiotherapy treatment far outweigh any risks involved. However you should be aware of **potential** long-term side effects which **may** affect a small number of people. It is important to point out again that effects can vary from person to person and your doctor will explain specific issues to you personally. The following effects are a general guide:

- The portion of your lung treated with radiotherapy may not work as well as before and you might notice a slight increase in breathlessness. This is due to scarring of the lung tissue (fibrosis) in and around the tumour area. If the rest of your lung works well then any symptoms you may notice will be very mild.
- Radiation pneumonitis (inflammation of the lung) can typically occur 6-12 weeks after treatment finishes. This can cause shortness of breath, fever and cough. It can be mistaken

for a chest infection but does not improve after a course of antibiotics. This is rare, but do contact your doctor or specialist nurse if you have these symptoms. It can be treated with steroids to reduce the inflammation.

- To give the necessary treatment to your lung, some small parts of normal tissue will receive some of the radiation. Very rarely, if the treatment is close to the spinal cord, it can cause some spinal scarring (fibrosis). This might affect the function of the nerves to your legs. Your doctor will discuss this with you if you are considered to be at particular risk.
- A very rare but potential effect is that radiation can cause tumours. Although this is a serious possible consequence of your radiotherapy, it is important to bear in mind that the effect is **very rare**. If it does happen it is likely to be many years after treatment.

Remember, any of these small risks should be considered against the problems of not treating the tumour with radiotherapy.

## Where can I get help?

The Cancer Centre has a Cancer Treatment Helpline for urgent calls. This is for patients on or within 6 weeks of treatment who have urgent or severe symptoms such as:

- Shivering or flu-like symptoms.
- Temperature greater than 37.5°C.
- Gum/nose bleeds or unusual bruising.
- Worsening or sudden breathlessness.
- Leg weakness/difficulty walking.
- Severe nausea/vomiting/diarrhoea/constipation.
- Sudden increased or uncontrolled pain.
- Other concerning symptoms associated with your cancer treatment.

The line is available 24 hours for emergencies, although it would be helpful if you called early in the day if this is at all possible.

## **For Urgent Calls:**

**Beatson 8am-8pm Tel: 0141 301 7990**

**National 8pm-8am Tel: 0800 917 7711**

All our staff are here to make sure your treatment goes as smoothly as possible and will try to help with any questions or problems that you may have. Further specialist help is available from:

- **Clinical Nurse Specialists in Lung Cancer**  
Tel. 0141 301 7601/ 0141 301 7598
- **Information & Support Radiographer**  
Tel. 0141 301 7427
- **Information & Support Radiographer and Counsellor**  
Tel. 0141 301 7423
- **NHS 111**

**If you have any problems you can also contact your GP or your local Lung Clinical Nurse Specialist.**

The Macmillan Information & Support Centre is on Level 1 at the main entrance of the Beatson. They offer emotional support, information and signposting to services within and near to the Beatson and in your own local area. Open Monday to Friday 8.15am to 4.15pm. Tel: **0141 301 7390**

The Cancer Centre has a **Radiotherapy Advice Line** available for all patients who have completed treatment. This is an answer phone service available Monday – Friday. Please leave your name, telephone number and a short message and we will call you back as soon as possible. Tel: **0141 301 7432**

## Counselling & Clinical Psychology

This leaflet deals with the physical aspect of your treatment, but your emotional well being is just as important to us. Being diagnosed with cancer can be a distressing time for you and those closest to you. Within the department we have a counselling and clinical psychology service that can help with worries and difficulties you might be having. If you think this may be of help to you, please ask a member of staff to put you in touch.

There are also voluntary organisations providing information and support. These include;

- **Roy Castle Lung Cancer Foundation**

Tel: 0333 323 7200

[www.roycastle.org](http://www.roycastle.org)

Providing information and support for those affected by lung cancer.

- **British Lung Foundation:** Helpline 03000 030 555 or visit [www.blf.org.uk](http://www.blf.org.uk) Provides information and publications.

- **Macmillan Cancer Support.** 0808 808 0000

[www.macmillan.org.uk](http://www.macmillan.org.uk)

Providing practical, medical, emotional and financial advice for those affected by cancer.

- **Maggie's Gartnavel:** 0141 357 2269

- **Maggie's Lanarkshire, Monklands General Hospital**  
01236 771 199

- **Maggie's Forth Valley:** 01324 868 069

Maggie's centre provides a comprehensive cancer support programme for people and their families affected by cancer.

[www.maggies.org](http://www.maggies.org)

- **Cancer Support Scotland -The Calman Centre, Gartnavel Complex.** Freephone 0800 652 4531.  
Provides emotional and practical support on a one-to-one basis and through community based groups. Complementary therapies available.  
[www.cancersupportscotland.org](http://www.cancersupportscotland.org)
- **Quit Your Way Scotland:** 0800 84 84 84  
Provides support and guidance to help you stop smoking.
- **Macmillan Benefits Team (within the Beatson)**  
0141 301 7374  
Provides free and confidential advice for people affected by cancer and their carers.
- **Beatson Cancer Centre** – if you want to find out more about our Centre please visit [www.beatson.scot.nhs.uk](http://www.beatson.scot.nhs.uk)
- **NHS 24 – 111**
- **Vitality exercise classes:** 0141 232 1860  
Specifically designed classes for people living with a range of health conditions.
- **Local authority Activity Opportunities.** For more information on what is available in your area visit:  
[www.nhsggc.org.uk/getactive](http://www.nhsggc.org.uk/getactive)
- **Live Active.** A 12 month programme tailored to meet individual needs. One to one consultation with a trained advisor. Supports a healthier active lifestyle. Referral by your local team or GP.

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