Radiotherapy to the Lung - CHART
Patient Information

The Beatson
West of Scotland Cancer Centre
1053 Great Western Road,
Glasgow G12 0YN
This booklet is for patients who are having a course of radiotherapy treatment to their lung. Your doctor has decided to give you a course of treatment known as CHART (Continuous Hyperfractionated Accelerated Radiotherapy). This means that you will have radiotherapy treatment three times a day for 12 days. You will be asked to stay in the ward during this time.

This booklet describes the planning and treatment procedure and briefly explains the effects that you may experience during treatment and how best to cope with them.

Before starting your radiotherapy it is important that you understand about the possible effects of the treatment. These effects will vary from patient to patient and therefore the information given is only intended as a general guide. Some people may experience all of the effects, none of the effects or a combination of the effects described.

**Preparation for treatment**

**CT Simulator**

Before you begin your radiotherapy, the treatment must be carefully planned on a special x ray machine called a CT Simulator. You will attend this appointment as an out-patient. Transport can be arranged if necessary.

You will need to undress to the waist but we will ensure your dignity is maintained by covering you up whenever possible.

Your radiographers will help you to lie on the CT Simulator couch, placing your head onto a comfortable headrest. They will position your arms above your head with armrests for support. This examination may involve a small injection of contrast into your arm prior to scan. Please let the radiographers know if you have any problems as they will help to make you more comfortable.

Once you are in the correct position, the radiographers will draw 3 small marks
onto your skin with felt tip pens. These will be on the front, left and right sides of your chest. It is important that these marks remain on your skin as they will be required to complete your planning process at a later date. To help with this your radiographers may place a clear sticky patch (called tagederm) over these marks to stop them washing off. The radiographers will leave the room now to begin your scan. It is very important that you remain as still and relaxed as you possibly can during your scan.

During this time the radiographers will monitor you closely and you will not feel anything other than the couch moving. The scan will take approximately 5 - 10 minutes. Once your scan is completed you will be able to dress and leave the department.

The scan images will be used to produce a unique treatment plan for your own individual needs. This is a complicated process and needs time to be produced; therefore we will ask you to return at a later date to complete the preparation for treatment.

**Return visit to Simulator**

Your treatment plan will now be ready to be checked before you start your treatment and on this occasion you will attend a different kind of simulator. This simulator unit is very similar to the treatment machines used to deliver your radiotherapy treatment. Your radiographers will help you to lie in the same position as when you attended the CT Simulator. Using the marks that were drawn onto your skin previously as a reference point, the radiographers will locate the exact point where your treatment is to be given. You will feel the couch moving as they do this. The radiographers and doctor will leave the room now to look at your chest on an x-ray screen. This allows them to confirm that your plan is in the correct position. Occasionally, the doctor may want to “fine tune” your position. If this is required, you will feel the couch moving briefly. Images of the treatment area will be taken.

Now that your treatment area has been established, we need
to ensure that the radiographers will always be able to locate this on you. We do this by replacing the three temporary marks drawn on you with permanent marks. These are tiny tattoos that look like little freckles. Very often patients report not being able to find these marks on their body, but don’t worry as the radiographers are used to finding these marks. Before you leave you will be given a printed list of your treatment dates and times and a slip of paper to confirm these with the ward.

Treatment
You will have your treatment on a Linear Accelerator; this is a special type of x-ray machine which delivers a measured dose of radiotherapy. Your treatment can be given from a variety of different angles. The radiographers will explain everything to you and confirm with you the number of treatments that your doctor has prescribed. When ready to begin your treatment your radiographers will ask you to lie in the same position as you were in the simulator. The lights in the room will be dimmed while they adjust you into the precise position. When they have checked all your treatment details they will leave the treatment room to switch on the machine. Your radiographers will monitor you continually during this time on closed circuit TV. The whole procedure will take approximately 30 minutes, but you are only on your own for a minute or so at a time while the machine is on.

What is the review process for the CHART patients?
You will be reviewed in the ward. This is routine and nothing to worry about.

General advice during treatment
There is no reason to change your lifestyle during treatment, but do try to:

• Avoid using perfumed soaps, creams, deodorants, lotions etc on the treated area as these may cause irritation to your skin
Try to get plenty of rest, especially when the treatment begins to make you feel tired. Having treatment three times a day with hours in between can make your days feel very long. The ward nursing staff will also encourage you to be up and about part of the time when you feel able, so you may want to bring reading materials and hobby activities that will help to pass the time for you. Once home it is also important to try to continue your normal daily activities and interests. A sensible balance between rest and activity may be best.

Please speak to the nurses, radiographers or doctor if you have any problems.

Effects of treatment (early)

Please remember that each patient is unique and as such may experience the effects of treatment to varying degrees. However, the following is a general guide to some of the effects that you may experience:

- **Tiredness/Fatigue**: The treatment will make you tired. This usually happens gradually as your treatment progresses and may last for several weeks after your treatment ends.

- **Skin**: Your skin, in the area we are treating, may become a little pink, dry and/or itchy. This again, tends to happen gradually as your treatment progresses and will settle down after your treatment finishes. Please do not put any cream or lotion onto your skin as not all creams are appropriate to use whilst having radiotherapy. Your radiographers, doctor or a member of the nursing staff will give you some if required.

- **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 (oesophagus) being irritated by the treatment. There is a liquid medicine which your doctor 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 the 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.

• **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 can prescribe some medication to help reduce this feeling.

If you have any of the above please tell the Radiographers or ward staff so they can help.

**Diet**

• When you are having radiotherapy, it is important to try to eat well and choose from a variety of foods to help you feel stronger and more able to cope with your treatment.

• If you are having difficulty eating or swallowing please let us know. You may be referred to a dietitian for advice. If necessary we can also supply you with food supplements.

**Skin care during treatment**

Radiotherapy only affects the skin that is within the area being treated and instructions relate only to the treated area.

• You may bath or shower during treatment, provided the water is not too hot. You may use mild baby soap and pat your skin dry with a soft towel. Do not add anything to the bath water.

• Avoid using perfumed soaps, creams, deodorants, lotions etc on the treated area as these may cause irritation to your skin

• Do not expose the treated area to sunshine and use a high factor sun block following the completion of your treatment.
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 if your skin is not red or feeling itchy.

Your oncology doctor will arrange to see you 4-6 weeks after the end of your treatment. You will usually be seen at the District hospital nearest to your home.

If you become unwell after your treatment has finished you should contact your G.P or NHS 24.

Late effects
Your doctor has recommended this treatment because it is felt that the benefits of your radiotherapy treatment far outweigh any risks involved. However you should be aware of these potential long-term 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.

• To give the necessary treatment to your lung, some small parts of normal tissue will be within the radiotherapy treatment area. 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 risk 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 balanced against the problems of not treating the tumour with radiotherapy.

Where can I get help?
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:

- **Beatson Clinical Nurse Specialist in Lung Cancer**
  Telephone 0141 301 7601 or 0141 301 7598

- **Macmillan Information Radiographer and Counsellor**
  Telephone 0141 301 7423

- **Information & Support Radiographer**
  Telephone 0141 301 7427

- **NHS 24 telephone** - 08454 24 2 24

The Beatson Cancer Centre has a Radiotherapy Advice Line available for all patients who have completed treatment. This is an answer phone service and is available Monday - Friday. Please leave your name and telephone number and we will call you back as soon as possible. Telephone **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. A member of the lung team will fully assess and help with any social or emotional issues you may have and refer you to this service if necessary.
The Information Centre located on Level 1 within the Beatson can provide you with further information on the services available within our Centre. Please visit or phone on **0141 301 7390**.

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

- **Roy Castle Lung Foundation**  
  Freephone 0800 358 7200. Website [www.roycastle.org](http://www.roycastle.org) 
  Providing information and support for those affected by lung cancer.

- **Macmillan Cancer Support**  
  Tel. 0808 808 0000. Website - [www.macmillan.org.uk](http://www.macmillan.org.uk) 
  Providing practical, medical, emotional and financial advice for those affected by cancer.

- **Maggie’s Centre**  
  0141 330 3311

- **Maggie’s Centre, Wishaw General Hospital**  
  Tel. 01698 358 392 
  Provides information and support with a regular programme of courses. Counselling service available

- **Cancer Support Scotland Tak Tent**  
  Tel. 0141 211 0122 
  Provides information and support, including complementary therapies. Counselling service available.

- **Smokeline**  
  0800 848848  
  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)
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