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# **Stereotactic Ablative Body Radiotherapy (SABR)**

## **For non-small cell lung cancer**

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Reference No.

**GHPI1683\_10\_21**

Department

**Radiotherapy**

Review due

**October 2024**

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## Introduction

Your oncologist has recommended that you have a course of radiotherapy. This information leaflet aims to tell you about radiotherapy and what will happen.

Please be aware that radiotherapy centres are training centres for doctors, nurses and radiographers including both male and female members of staff. Students may be present in the department but they are supervised at all times. If you would prefer not to have students present during your treatment please let a member of staff know.

You may find it useful to write down some questions before you start your treatment. A space is provided towards the back of this leaflet for you to do so.

## Useful contacts

Radiotherapy appointments: \_\_\_\_\_

Radiographers: \_\_\_\_\_

\_\_\_\_\_

Clinical Nurse Specialist: \_\_\_\_\_

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## What is radiotherapy?

Radiotherapy is the use of radiation to treat a disease, most commonly cancer. Radiotherapy is the use of high energy X-rays and other types of radiation, to treat cancer. Radiotherapy itself is painless and does not make you radioactive. It is perfectly safe for you to be with other people, including children and pregnant women, during the course of your treatment.

Your treatment will be divided evenly into a number of sessions (fractions), usually given every other day, Monday to Friday, with weekends off. Some departments work at weekends, or weekend treatments may be given around bank holidays or in the event of a machine breakdown. The treatment delivered will be exactly the same every day. The number of sessions you have will vary depending on a number of factors. For this reason, each patient's treatment is specially tailored to them, and even those with the same type of cancer as you may receive different treatments.

The treatment will cause damage to the normal cells in the area too, but they can repair themselves much more effectively than the cancer cells. This damage is what causes the side-effects you are likely to experience during the treatment.

The radiotherapy will be delivered by a team of therapeutic radiographers who will see you every day and can answer your questions about radiotherapy, as well as help look after you during your treatment.

You may regularly see other professionals during your treatment, these may include:

- Specialist Therapeutic Radiographers
- Dosimetrists and Medical Physics Experts
- Mould Room Technicians
- Clinical Oncologists
- Oncology Doctors/Registrars
- Clinical Nurse Specialists
- Cancer Support Workers

There is a space at the front of this booklet to write down their contact numbers should you need them.

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## What is Lung Stereotactic Ablative Body Radiotherapy (SABR)?

SABR is a technique which is an effective way of treating lung cancer. It involves giving a high dose of radiotherapy to a small area of the lung. Because such a high dose is given each time a smaller number of treatment sessions are required. SABR treatment is usually given in three, five or eight treatments on alternate days (Monday to Friday). The number of treatments you have will depend on the position of your tumour and can often not be determined until after you have attended for your planning appointment.

Radiotherapy is given by therapy radiographers. You will usually see two radiographers at each treatment session and they will be happy to answer any questions you may have. You will have your radiotherapy on a treatment machine called a linear accelerator.

### Planning your treatment

At your planning appointment you will be asked to sign a consent form giving your consent to treatment, if this has not already been completed. It is a good idea to bring a list of any questions you may have and an up to date list of all your medication. This visit may take up to 1-2 hours to complete. As the planning appointments can be quite long, you may wish to bring something to read, eat, and drink.

During this appointment you will need to have a scan taken on a machine called a CT simulator. The team will work on the best position for you at this appointment. This may mean using a wing board, creating a custom bag which supports your back and arms with your arms up or a mask.

Some patients find having their arms up uncomfortable, especially if they have arthritis. If you think that you might have difficulties keeping your arms above your head please discuss this with your oncologist. Please take pain relief at least 30 minutes before your scan if you think this will make the experience more comfortable.

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Once you are in a suitable position the radiographers will take the required CT scans to accurately plan your radiotherapy treatment. The treatment radiographers will replicate this position at each treatment appointment.

You may be asked to take a special contrast agent commonly referred to as a dye. This involves inserting a small needle into your vein and injecting the dye. It is used to make specific organs, blood vessels and/or tissue types 'stand out', to aid the doctor in planning your treatment. You should inform the radiographer if you have any allergies, but they will go over this before they use any dye. The most common side-effects of the dye are; a warm or hot 'flushed' sensation during the actual injection, the feeling that you need to urinate, and a "metallic" taste in the mouth. This does not last and there is no treatment necessary.

Depending upon your position the radiographer may use a marker to mark your skin. Once the scan has been completed, with your permission, the radiographers may make several small permanent skin marks (tattoos), similar in size to a small freckle on your skin at the point of these marks to help position you for each treatment.

The consultant and planning technicians then produce an individually designed treatment plan.

## Radiotherapy treatment



A team of radiographers will see you at each treatment appointment and to ask how you are feeling. The radiographers work together in the treatment room to position you accurately, moving yourself, the treatment couch and machine. You will hear them giving each other instructions and information relating to your treatment.

During treatment, the machine will move around you but it will not actually touch you.

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During treatment it is important for you to stay as still as possible but to breathe normally unless directed to breath-hold or follow a breathing pattern.

Once you are in the correct position the radiographers will leave the room to switch on the machine. The radiographers will be watching you on a closed circuit TV monitor (CCTV) to ensure your safety during the delivery of the radiation. This allows the radiographers to see that you are keeping still and are not experiencing any distress during your treatment. The CCTV camera is not recording or saving any images.

Each session takes approximately 30 - 45 minutes. During this time the radiographers may re-enter the room a number of times to adjust your position move the treatment couch or the machine.

Some treatment machines make a high-pitched noise when delivering x-rays. This is the only way that you will know that the machine is switched on. You will not feel pain, heat or any other sensation.

Some days the radiotherapy department may be very busy and your appointment time may be delayed. We will keep you informed of any delays.

Your appointments for radiotherapy may not all be at the same time each day and are subject to change. It is possible that during your course of treatment you may miss a day's treatment due to planned machine maintenance or bank holidays. It is therefore important to speak to a health care professional before booking a holiday immediately following your radiotherapy.

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## Side-effects of treatment

As your treatment progresses you may experience some side effects. Not everyone will experience all of these effects. Do not worry if you develop any of the following early reactions. They usually begin about halfway through the course of treatment and may last for several weeks after it has finished and then slowly settle down. Please tell the radiographers how you are feeling particularly if your symptoms worsen, so that you can get the care you need.

### Early reactions - during or up to 12 weeks after your treatment

- **Tiredness (fatigue)**

Radiotherapy can make you feel more tired than usual, especially if you have to travel a long way distances. You should try to 'pace' yourself, listen to what your body is telling you and try to keep active. Your energy levels may take weeks or months to return to normal.

- **Chest pain**

Some patients can experience pain after this type of radiotherapy treatment. This is usually mild and relieved with simple painkillers such as paracetamol. If the pain is more severe, please speak to your radiotherapy treatment team.

- **Shortness of breath and/or raised temperature**

Shortness of breath and a cough are common side effects of SABR treatment. Occasionally, radiotherapy to the lung can produce swelling (inflammation) in the lung tissue. This inflammation or 'pneumonitis' can cause symptoms of increase shortness of breath, wheezing, fever and cough. This usually occurs in the first 3 months after the treatment has finished. It can often be mistaken for a chest infection but it is not helped by antibiotics. Pneumonitis is rare, but if you get these symptoms please contact your Clinical Oncologist, your Lung Cancer Nurse Specialist or other contact numbers you have been given as we would wish to see you in clinic as soon as possible. If pneumonitis is suspected your Clinical Oncologist will start you on oral steroid tablets to help your symptoms and reduce the inflammation.

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**Later reactions - after 3 months**

- **Lung scarring/collapse**

Lung SABR will cause scarring of the lung in the area treated. This scarring is permanent and can cause a small portion of the lung to collapse.

The precise planning of your treatment keeps this amount of lung scarring/collapse to a minimum. However, in some patients this scarring and collapse can make you become more short of breath. For patient's not on oxygen before lung SABR, this may require you to have oxygen for a short period of time and in very rare cases you may need oxygen therapy permanently as a result of the treatment. Very rarely a larger portion of the lung can collapse, and this can be life threatening.

- **Chest wall pain/rib fractures**

Radiotherapy can weaken the ribs and cause pain or fracture. For most patients this does not cause any symptoms and is discovered when you have a scan after the treatment. A small number of patients who have a rib fracture as a result of the lung SABR treatment can have pain that requires pain killers, sometimes for a long period of time.

- **Second tumour**

Radiation, in theory, carries a slight risk of causing a second cancer, but this is extremely rare.

**Radiotherapy summary**

This page is intended for your health care professional to use when they talk to you about your radiotherapy. It is not an official document or consent, but to help summarise everything in one place for you.

You are having radiotherapy delivered to:

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Your radiotherapy consultant is: \_\_\_\_\_

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### Treatment intent

Radical radiotherapy – aiming to give long term benefits and cure in some patients – and may be in combination with chemotherapy given before, during or after the radiotherapy

You will be having \_\_\_\_\_ treatments over \_\_\_\_\_ days, not including weekends.

### Side-effects

The ticked boxes below are potential side-effects that will arise from your Radiotherapy treatment. This is to be taken as a guide, and will not be experienced by all patients.

#### Frequently occurring short term side-effects

- Fatigue
- Difficulty swallowing
- Chest pain
- Shortness of breath, cough and/or raised temperature
- Bony pain
- Skin reaction

#### Long term side-effects

These may occur many months to years after treatment:

- Lung scarring/collapse
- Chest wall pain/rib fractures
- Fracture/compression of treated bones
- Temporary or permanent damage to the spinal cord
- Bony pain
- Oesophageal stenosis / narrowing
- Permanent hair loss in treated site

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- Delayed skin healing in treatment site
- Brachial plexopathy
- A radiation induced malignancy (very rare)

**Further information**

Further information is readily available online, we would recommend beginning with:

**Macmillan Cancer Support**

Tel: 0808 808 0000

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

**Cancer Research UK**

Website: [www.cancerresearchuk.org](http://www.cancerresearchuk.org)

**Roy Castle Lung Foundation booklet**

Website: <https://roycastle.org/help-and-support/lung-cancer-information/>



Further support will be available locally, please speak to your oncology team who can advise what local charities are there to help you, and what support groups are available near you.

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## **Your data**

All personal images and photographs taken during your radiotherapy will be used in accordance with the local Trust policy on the protection and use of patient information.

**Content reviewed: October 2021**