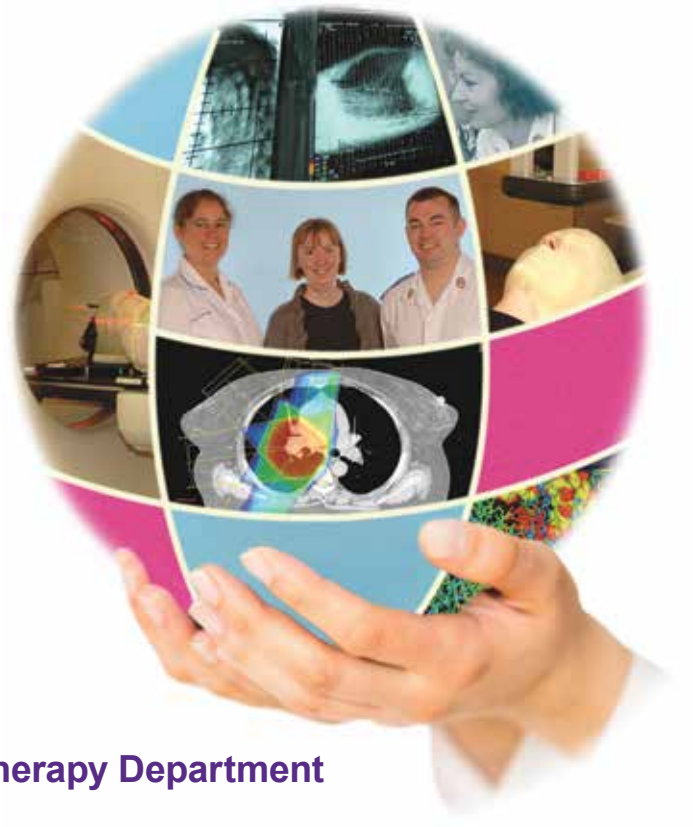
Patient information leaflet

Royal Surrey County Hospital NHS
NHS Foundation Trust

Stereotactic Ablative Body Radiotherapy (SABR) – Lung



Radiotherapy Department

Patients 1st
The Patient's First Choice

What does this leaflet cover?

Please see the department's website for additional information. The site also provides information on recent patient surveys carried out in the department and any actions arising from the results.

www.royalsurrey.nhs.uk/st-lukes-centre

Patient Pathway – Stereotactic Ablative Body Radiotherapy – Lung

Patient consents to radiotherapy in outpatient clinic. Radiotherapy information leaflet is given.

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Radiotherapy appointments booked and sent to patient.

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Patient attends the CT scanner.

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CT scan used to plan treatment – usually takes 3–4 weeks.

↓

Patient attends for simulated treatment session (a practice run)

Patient then attends for the prescribed number of treatments (usually 3–8 sessions)

Any medications necessary for treatment are prescribed at the simulated session. Appointments take approximately 25 minutes.

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A CT scan is taken at every treatment session to confirm the accuracy of treatment delivery.

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Patient completes treatment. Treatment finishes and outpatient clinic follow-up information given.

St Luke's Cancer Centre

Please be aware that St Luke's Cancer Centre has two Radiotherapy Departments. One is located at the Royal Surrey County Hospital in Guildford and the other at East Surrey Hospital in Redhill. Please refer to your appointment letters for the location of all your appointments. All information contained in this leaflet is relevant to both sites.

Introduction

Your clinical oncologist has decided that a course of stereotactic ablative body radiotherapy (SABR) is the most appropriate way of treating your tumour. When recommending radiotherapy, your doctor takes into account the risk of the tumour returning or growing if no radiotherapy is given. While the treatment may have some side effects, it is felt that the advantages for you will outweigh the disadvantages.

At this stage your doctor will probably have discussed with you the risks and benefits of undergoing a course of stereotactic radiotherapy and you may have been presented with a consent form to sign agreeing to have the treatment.

The risks of receiving stereotactic radiotherapy to the lung are outlined towards the end of this leaflet.

What are the alternatives?

You may decide that you do not want to have radiotherapy; this is an option you can choose. Talk again with your doctor if you wish and let them know what you have decided.

You may request a second opinion on your diagnosis or treatment at any time during your consultation or treatment process. Please speak to your clinical oncologist or GP.

Who is this leaflet for?

This leaflet is specifically for patients having stereotactic radiotherapy to the **lung**.

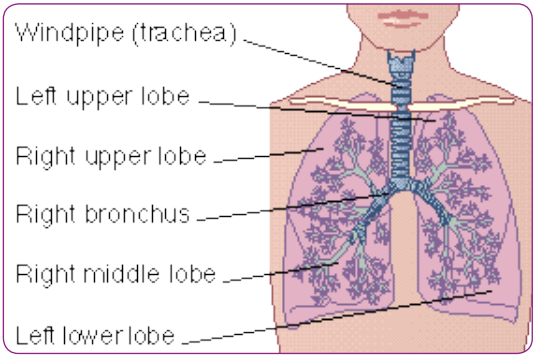

Figure 1 (courtesy of Cancer Research UK)

Please be aware that your treatment will be tailor-made for your specific needs. It may differ slightly from what is described in this leaflet, and also from what another patient with a similar diagnosis may be having.

You will have an opportunity to talk with a radiographer before the planning of your radiotherapy, and again before you start your first treatment. You may also request to see your doctor if you wish.

What is radiotherapy and how does it work?

Radiotherapy is the use of high energy x-rays to treat tumours. It is delivered from a machine called a linear accelerator or Linac for short (LA). See photograph 1.

Stereotactic ablative body radiotherapy or **SABR** is an effective way of giving accurate radiotherapy to a tumour in the lung. It is given over fewer treatment sessions and increases the chances of controlling the tumour. The aim is usually to eradicate all the tumour. Carefully calculated doses of radiation are directed precisely to the tumour(s) within your lung while sparing the rest

Photograph 1

of the normal tissue in the chest as much as possible. This can lead to a reduction in side effects experienced. However, some healthy tissue can be affected and you may experience short term side effects. Radiotherapy to the lung can also lead, in some cases, to long term (after 12 weeks following radiotherapy completion) side effects which are also explained in this booklet

What happens before radiotherapy starts?

Following your initial out-patient appointment with the doctor you will be sent a letter asking you to attend the radiotherapy department for a pre-treatment appointment. This appointment will be for the **Oncology C.T. Scanner**.

Please check your appointment letter for the exact location of your appointment. It is helpful to bring your appointment letter and a dressing gown with you. Please arrive 20 minutes before your appointment time.

A member of the pre-treatment radiotherapy team will explain what is going to happen and give you a further opportunity to discuss your treatment and side effects before proceeding with the treatment preparation. However, if you feel you have questions that you would like to address to the doctor, a radiographer can organise a meeting for you.

During this discussion you will be asked to confirm your name, address and date of birth. **You will be asked for this information before every procedure/treatment undertaken in the department**. The following issues will also be addressed:

- **Confirmation of consent:** you will probably have already signed a consent form with your clinical oncologist. That consent will be re-confirmed with a radiographer prior to your first planning session, to ensure that you agree to proceed with the proposed treatment.
- **Pacemakers:** If you have a pacemaker and you did NOT discuss this with your clinical oncologist when you signed the radiotherapy consent form please phone the CT scanner to let them know. The number is at the end of this information leaflet. It is safe to give radiotherapy to patients who have a pacemaker but there are a few precautions we may need to take. The radiotherapy department will send you an

information sheet entitled ‘Pacemakers and Radiotherapy’ for you to read and keep with your other patient information leaflets. This leaflet will explain why extra precautions may be needed and what those precautions are. It will also highlight any extra appointments you may need to attend the hospital for. Please bring your pacemaker ID card to your CT appointment.

- **Pregnancy:** All female patients under the age of 55 will be asked to confirm their pregnancy status before the first planning session starts. It is very important that you **are not** and **do not become** pregnant while undergoing radiotherapy planning and treatment. If you think you may be pregnant at any time during your course of treatment please tell your clinical oncologist or radiographer immediately. If necessary please speak to your doctor about contraception methods suitable for use during radiotherapy.

The CT scanner

You may eat and drink normally on the day of your scan and throughout your treatment appointments.

A CT (computerised tomography) scanner is a special X-ray machine that produces a series of detailed pictures showing the lungs and surrounding tissues while measuring your breathing cycle. (See photograph 2). The scans are sent to a computer and used to reconstruct a 4-D image of your lungs. The radiotherapy team will then use this image to accurately target your radiotherapy.

- Your oncologist may request that a contrast agent (a fluid that shows up on X-ray images) be used during your scan. This allows the lungs and surrounding tissues to show up more clearly on the images. This contrast agent is given through a needle in your arm. In a small number of people the contrast agent can occasionally cause side effects. A radiographer will give you a questionnaire to fill in, which will help highlight if you may be one of those people more prone to these side effects. The radiographer will then decide whether to go ahead with the contrast agent. If you do not have the contrast agent it does not mean that the planning of your treatment will be any less accurate.

- As photograph 2 shows, you will lie on the bed with your arms supported above your head. This is to ensure that your chest is exposed and the radiotherapy beam can access the treatment target in your chest without your arms receiving any radiation. To support you whilst in this position, a device (vac-bag) will be moulded to fit under your head, shoulders and arms.

Photograph 2

- Your breathing is monitored during the scan. This is done using a small device placed on your lower chest. You are advised to breathe normally and as regularly as you can.
- The radiographers will go in and out of the room several times during the procedure and you will hear them talking over you during the setting up process.
- They are able to hear and see you at all times so if you need to communicate with them, call out or wave your arm.
- At the end of the session the radiographers will, with your permission, place two or three permanent ink dots under the skin around the area to receive treatment. These marks will not come off your skin but they may fade over time. Radiographers on the treatment units will use these permanent marks to make sure that you are correctly positioned on the couch on each visit and to ensure an accurate treatment.
- Very occasionally, in order to show clearly how you are positioned on the couch, the radiographers may take a digital photograph of you. They will get your permission for this beforehand.
- Your CT scan appointment will take about 40 minutes

Why doesn't my treatment start straight away?

After your planning scan, the detailed images are sent to a specialised computer. Your oncologist will then define the exact area to be treated with radiation and also outline the normal organs to be protected from high doses of radiotherapy. The rest of the planning is carried out by planning radiographers and physicists.

RapidArc™ radiotherapy technology is used. This is an advanced method of planning and delivering your treatment. Using this, we are able to use precise radiation beams that conform to the shape of your tumour, while limiting the amount of radiation that reaches the surrounding healthy tissues. Figure 2 shows a SABR lung plan. The plan will then go through an extensive checking procedure and will finally be checked and signed off by your clinical oncologist. The entire planning process can take up to 4 weeks.

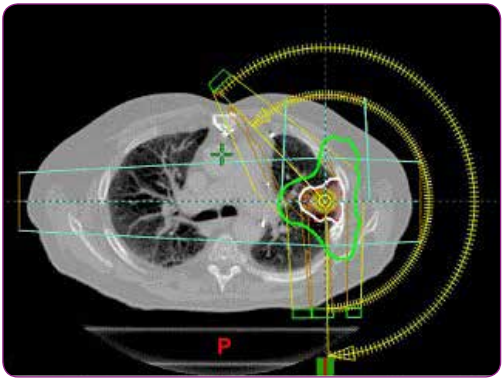

Figure 2

First day of treatment

Please check your appointment letter for the exact location of your appointment. It is helpful to bring your appointment letter and a dressing gown with you. Please arrive 20 minutes early on your first day.

One of the treatment team will greet you and discuss your treatment with you. This discussion provides an opportunity to ask questions that may have arisen since your last appointment. There is space at the end of this leaflet to write down anything you may want to ask.

You will be given a list of all your appointment times and instructions for further treatment sessions.

The treatment

The radiographer will call you into the treatment room, introduce you to the team members present and ask you to lie on the treatment couch. The radiographers will then begin to get you into the correct position.

- The radiographers will come in and out of the room during the treatment and you will hear them talking over you during the setting up process.
- Imaging will be done frequently and small adjustments may be made to deliver precise treatment. As a result the treatment couch may move slightly during the treatment process.
- The radiographers are able to see you at all times so if you need to interrupt the treatment and communicate with them, raise your arm.
- When you are positioned correctly the treatment couch will be quite high up (about 4.5 ft). Therefore it is very important you do not move or attempt to get off the couch. The radiographer will tell you when it is safe to sit up and get off the couch.
- The linear accelerator machine rotates around you in an arc to deliver your treatment whilst the couch is constantly moving. This allows the radiation treatment to be delivered quickly and precisely.
- The whole procedure will take approximately 25-30 minutes.

What sort of side effects might I have, and for how long?

Although modern planning and treatment methods have helped us to reduce side effects, some people may experience side effects from the radiotherapy. Radiotherapy side effects are closely related to the exact area of your body where you are treated. As you are to receive treatment to your lung most side effects you have will be limited to this area of your body.

As your treatment progresses the radiographers will be talking to you each day to find out how you are feeling. This is so they can offer help and support if the treatment gives you any problems. Please feel free to discuss all issues that may be concerning you. You will also be seen regularly by your medical team during your treatment.

Short term risks

Short term side effects may start to develop during your treatment and can occur up to 12 weeks after the end of your radiotherapy. After that they should begin to slowly improve. The list below may look very daunting but you will be given lots of support and advice from all staff members involved in your care to help you manage any side effects. It is also helpful to remember that many are temporary and will improve given time.

Cough and shortness of breath: You may develop a cough while having treatment. It is usually a dry cough, which may be uncomfortable and tiring. It may be suggested that you try a simple cough linctus to help manage this side effect. If you begin to cough up mucous or notice that there are small amounts of blood in the mucous, please discuss this with the radiographers and your medical team. You may also find that you are more short of breath than usual.

These are uncommon side effects with SABR treatment, but if they do occur please inform your medical team. They are a result of the inflammatory reaction of your lung to the radiation.

Skin soreness: the skin in the area being treated may gradually become red, dry and itchy. Using a moisturiser can help to soothe the skin and a suitable moisturiser will be recommended to you by the radiographers on your first day.

- Please do not use any other products in the treatment area without checking with your doctor or radiographer first; this includes perfume or aftershave.
- You must not soak the treated skin in water or go swimming.
- Wear loose, soft clothing in the treatment area.
- The treated area may be more sensitive to the sun. While you are still on treatment and while any skin reaction is present it is advisable to keep the area covered up. After this time you can use a maximum factor sun cream.

Hair loss: Men may notice that chest hair in the irradiated area begins to fall out during or after treatment. The hair should begin to regrow about 3 months after treatment has finished.

Tiredness: It is quite common to feel more tired than usual while having radiotherapy. As the treatment can make you dehydrated, drinking more fluid than normal can help with this. Rest if you need to, but if you feel OK you can carry on with all your normal daily activities. Tiredness may carry on for some time after treatment has ended.

Chest pain: If your lung tumour is close to the chest wall, you can have some chest wall pain after your radiotherapy treatment. This is usually mild and relieved with simple painkillers such as paracetamol. If the pain is more severe, please tell your doctor.

Smoking: if you smoke it is strongly advised that you give up. Smoking during your radiotherapy makes your treatment less effective. In addition smoking can make any reactions that you may have more marked and increase the likelihood of long term side effects arising. Surrey Primary Care Trust has a Stop Smoking Service on the following number, 0845 602 3608. Your GP practice may also run free nurse-led smoking cessation clinics.

Long term risks

Careful treatment planning and monitoring of the doses received by healthy structures help limit the occurrence of long term side effects. If they do arise it can be several months or even years after the treatment has finished.

Once your radiotherapy has ended you will have regular follow-up appointments with your consultant and you will be carefully monitored for any signs of these long term effects. It may be useful to keep a note of your side effects during and after your radiotherapy so they can be more easily monitored. There is space at the end of this leaflet for any notes you wish to make.

Lung damage: Irradiation of the lungs can lead to permanent scarring of the lung tissue (fibrosis), although modern planning processes have helped to reduce this risk. If lung damage occurs you will notice you become more breathless than normal and you may develop a cough. There are a number of ways these problems can be managed, including medication and breathing exercises. Lung damage from radiation treatment can occur in about 5% of cases. Irradiation can also put you at risk of developing a type of pneumonia. This will respond to treatment with steroids. Please mention any problems to your doctor at your follow-up appointments.

Chest wall pain/rib fractures: For tumours close to the ribs there is a small risk that the radiotherapy may weaken the ribs and cause pain, and possibly a rib fracture. For most patients a rib fracture does not cause any symptoms and is incidentally discovered. A small number of patients can experience chest wall pain requiring painkillers, sometimes for a long period of time.

Brachial plexopathy: For tumours close to the top of the lungs, there is a very small risk of damage caused by the radiotherapy to the nerve bundles going to the arm. This would mean that there may be weakness or numbness in part of the arm. The chance of this happening is very small. Great care is taken to avoid or minimise the doses of radiation to these nerves.

Second malignancy: treatment with radiotherapy can give rise to a second primary cancer. This would normally occur in the area of the body that had received the radiation. This is a **very** rare long term side effect.

Side effects relating to the other organs in your chest such as the spinal cord, oesophagus and heart are negligible as the radiation dose to these areas are kept as low as possible.

What happens when treatment ends?

- On the last day of your treatment a radiographer will explain that the treatment will carry on working for another 3-4 weeks. Any short term side effects may get slightly more marked during this time. After that they should slowly improve.
- The radiographer will make sure you have a follow-up appointment with your clinical oncologist in a month's time. This may be at a hospital nearer to your home. You will have a chest x-ray as part of the follow-up visit.
- You will be given a leaflet and two copies of your radiotherapy discharge summary. One copy is for your records and the other is for you to give to your GP. In due course a letter summarising your treatment in more detail will be sent through the post to your GP.
- Please remember you are free to contact the radiographers at any time after your treatment has finished should you have any concerns or questions. Contact numbers are at the end of this leaflet.

Where can I get further support?

Further support can be given by the various Support Centres at locations in Guildford, Crawley and Purley. These centres provide information, complementary therapies, support groups and one to one support. To find out more contact the individual centres or ask radiotherapy department staff for a leaflet.

- **The Fountain Centre** is located in St Luke's Cancer Centre at Guildford.
  Telephone: 01483 406618
  www.fountaincancersupport.com
- **The Olive Tree** is located in Crawley Hospital, Crawley
  Telephone: 01293 534466
  www.olivetreecancersupport.org.uk
- **South East Cancer Help Centre** is located in Purley, Surrey.
  Telephone: 020 8668 0974
  www.sechc.org.uk

Other support websites and groups

Cancer Research UK www.cancerresearchuk.org	0808 800 4040
Macmillan Cancer Support www.macmillan.org.uk	0808 808 0000
British Lung Foundation www.blf.org.uk	03000 030 555
Roy Castle Lung Cancer Foundation www.roycastle.org	0333 323 7200
Surrey Primary Care Trust Stop Smoking Service	0845 602 3608

Useful telephone numbers

Telephone numbers across both sites (Guildford/Redhill)

Transport Queries	01483 571122 ext 4436/7
Private Patient Co-Ordinator	01483 571122 ext 2713
Treatment Appointments	01483 571122 ext 6632
Onslow Ward (out of hours)	01483 571122 ext 6858
For urgent enquiries (out of hours)	01483 571122 and ask the operator to bleep the on-call oncology SHO

Guildford numbers

Radiotherapy Reception	01843 406 600
Patient Support Office	01483 571122 ext 2066
Clinical Nurse Specialist	01483 571122 ext 6319
Mould Room	01483 406 640
Oncology CT Scanner	01483 406 630

Redhill numbers

Radiotherapy Reception	01737 277311
Oncology CT Scanner	01737 7680511 ext 1202
Patient Support Office	01737 277315
Clinical Nurse Specialist	01737 7680511 ext 6687

Additional information

- In order to improve treatments and services, audits are regularly carried out in the department. This can involve using patient notes. The notes will have all identifiable details removed to ensure patient confidentiality. However, if this is unacceptable to you please let your consultant know so your wishes can be respected.
- Clinical trials are undertaken within the department. If appropriate your doctor will discuss this with you.
- If you require this information in a different format or language please let a member of staff know as soon as possible.
- Staff at St Luke's Cancer Centre cannot take responsibility for patient belongings brought into the hospital. Please keep all your personal belongings with you at all times and leave valuables at home.

Reference sources

- Radiotherapy Clinical Protocol – Stereotactic Ablative Body Radiotherapy – Royal Surrey County Hospital NHS Foundation Trust 2013
- Treating Lung Cancer – Cancer Research UK 2012
- Lung Cancer: The diagnosis and treatment of lung cancer – NICE Guidelines 2011

If you wish to make a comment or complaint about any aspect of the treatment or services provided by St. Luke's Cancer Centre and its staff please speak to a member of St. Luke's. Alternatively you can visit, email, phone or write to the **Patient Advice and LiaisonService (PALS)**. Their contact details are:

PALS office in the main hospital reception area
Telehone: 01483 402757

Write to:
PALS Manager
Royal Surrey County Hospital NHS Trust,
Egerton Road, Guildford. GU2 7XX

Email: rsc-tr.pals@nhs.net

You may also write to the Chief Executive of the Trust at:
Royal Surrey County Hospital NHS Trust
Egerton Road
Guildford
GU2 7XX

Questions and notes

Questions and notes

Authors: E West in conjunction with the consultant clinical oncologists and healthcare professionals of St. Luke's Cancer Centre.

Radiotherapy contact details

Radiotherapy reception

Telephone: 01483 406 600

Royal Surrey County Hospital (RSCH) NHS Foundation Trust fully subscribes to the National Patient Safety Agency (NPSA) *Being Open* best practice framework, November 2010.

PALS and Advocacy contact details

Contact details of independent advocacy services can be provided by our Patient Advice and Liaison Service (PALS) who are located in far left corner as you enter the main reception area. PALS are also your first point of contact for health related issues, questions or concerns surrounding RSCH patient services.

Telephone: 01483 402757

Email: rsc-tr.pals@nhs.net

Opening hours: 9.00am–4.00pm, Monday to Friday

If you would like information documents in large print, on tape or in another language or form please contact PALS.

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