

Radiotherapy to the lungs

Radiotherapy Department



Patient information leaflet

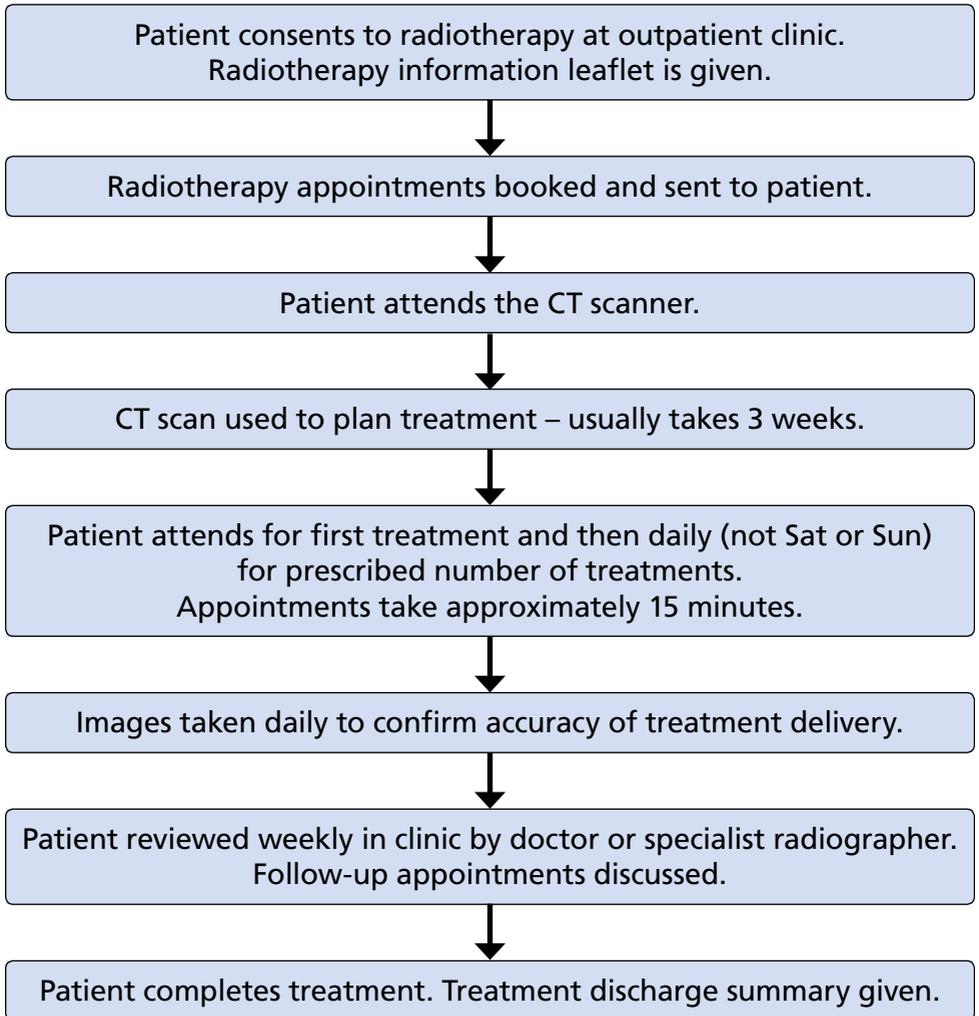
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Please see the department's website for additional information. The site also provides information on recent patient surveys carried out in the department and any actions arising from the results.

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

Patient Pathway – Lung



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 radiotherapy would be 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 would outweigh the disadvantages.

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

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

Who is this leaflet for?

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

Figure 1 shows the lungs.

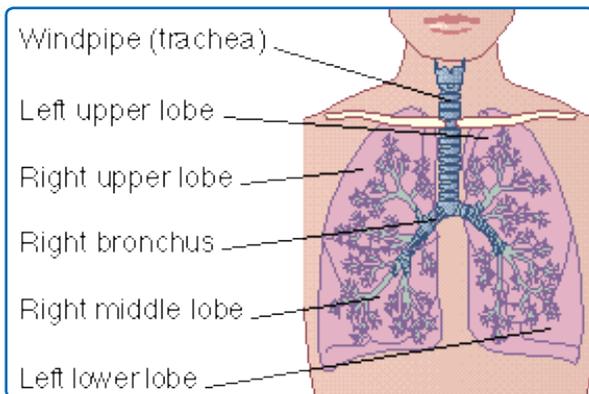


Figure 1 (courtesy of Cancer Research UK)

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 your radiotherapy planning CT scan and again before you start your first treatment. You may also ask to see your doctor if you wish.

What is radiotherapy and how does it work?

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

Carefully calculated doses of radiation are directed to a specific part of your body. Accurate planning of your radiotherapy means that the treatment is limited to a small area, avoiding as much healthy tissue as possible. However, some healthy tissues will be affected and may cause side effects. Some of these effects occur during the course of treatment and in most cases there is recovery a few weeks to a few months following completion of treatment. Radiotherapy to the lung can also lead, in some cases, to long-term side effects which are explained later in this leaflet. External beam radiotherapy is a quick and usually painless treatment.



Photograph 1

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 him/her know what you have decided.

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

What happens before radiotherapy starts?

Following your initial outpatient 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 planning CT scan.

Please book in at the radiotherapy reception desk. It is helpful to bring your appointment letter and a dressing gown with you.

A member of the pre-treatment radiotherapy team will explain the purpose of this appointment and what is going to happen. 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 or treatment undertaken in the department. The following subjects 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 still 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 may be. 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 and also measures your breathing cycle. 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 plan 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. The contrast agent is given through a needle in your arm. In a small number of people the contrast can 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 who are 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 they are not in the way when treatment is delivered. You will have a support under your knees.



Photograph 2

- This is the position you will be lying in when you are having your radiotherapy every day so it is important to let the radiographers know if you are in any pain or discomfort.
- Your breathing is monitored during the scan. This is done using a small device placed on your lower chest. You are advised to breathe as normally and 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 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.
- 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 and the image will only be accessible by the radiographers.
- Your CT scan appointment will take about 40 minutes.

Planning your radiotherapy

After your planning scan, the detailed images are sent to a specialised computer. Your oncologist will then define the exact area to be treated. The planning team will then create a treatment plan that delivers the radiotherapy to the target area while avoiding as much healthy tissue as possible.

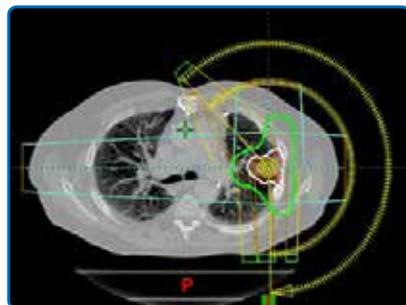


Figure 2

The plan will then go through an extensive checking procedure and will be signed by your clinical oncologist. The planning process can take up to four weeks.

First day of treatment

Please check your appointment letter for the exact location of your appointment. Please book in at reception. It is helpful to bring your appointment letter and a dressing gown with you.

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, the dates of your radiographer and doctor review clinics and any blood tests that you may need.

Your treatment

- The radiographer will call you into the treatment room and introduce you to the team members present. You will be asked to confirm your details and then lie on the treatment couch. The radiographers will then begin to get you into the correct position for your treatment.
- The radiographers may come in and out of the room several times during the treatment and you will hear them talking over you during the setting up process.
- Imaging will be done frequently and small adjustments can be made to treatments as a result of this. The treatment couch may move slightly during the imaging process.
- The radiographers are able to hear and see you at all times so if you need to communicate with them call out or 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 whole procedure will take approximately 10-20 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, most people still experience some effects from radiotherapy. The severity of side effects varies from person to person.

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 that 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 may offer help and support if the treatment gives you any problems so please feel free to discuss any issues that may be concerning you. You will also be seen regularly by your specialist radiographer and your medical team.

Short term risks

Short term side effects usually start to develop about 10 days after the start of the treatment and gradually increase in severity as the treatment progresses. They continue for about 2-3 weeks after treatment has finished but after that they should begin to slowly improve. Listed below are some possible side effects that you may experience as a result of the radiotherapy. Some people may experience all of these side effects while others may not experience any at all. You will be given lots of advice and support on how to manage any side effects.

Swallowing difficulties (dysphagia): in order to properly treat the lung, the oesophagus (food pipe) usually receives some treatment too. You may notice your throat gradually becoming uncomfortable and inflamed and it may feel as though you have heartburn or indigestion. You may also find you have difficulty swallowing. The radiographers

will be monitoring your reaction every day, so please keep them informed. During the course of your treatment you will also be seen by the dietitians who can provide further nutritional advice.

- Avoid eating or drinking anything that may irritate the throat further such as very hot or very cold drinks, alcohol (particularly spirits), spicy food, rough foods such as crisps or citrus fruit juices.
- Your doctor will ensure that you have enough pain relief medication, which can be prescribed in soluble form if necessary.
- As the treatment progresses you may find you need to try softer food such as soups, pasta, casseroles with lots of gravy and milk puddings. Using full fat cheese, milk, cream and yogurt in food can help to boost the calorific content. Please ask a radiographer if you would like a leaflet with further information.

Cough: it is quite common to develop a cough or for your existing cough to worsen 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 phlegm please tell the radiographers. Some patients notice that there are small amounts of blood in the phlegm. This may initially be alarming, but is usually just a reaction to the radiotherapy and nothing to worry about. Please discuss this with the radiographers.

Loss of appetite and nausea (feeling sick): whether you feel nauseous or not will depend on exactly where in your chest the treatment is being directed. What and how you eat can help to boost your appetite and reduce feelings of nausea. We advise eating smaller portions more frequently. Please ask a radiographer if you would like some more information on managing a smaller appetite.

Anti-sickness medication (antiemetics) can be prescribed by your doctor to help with nausea. If the antiemetics are not helping please speak to the radiographers as there are lots of different antiemetics and it sometimes takes a few tries to find the one that suits you. Complimentary therapies such as acupuncture which are available at the Fountain Centre may also help to relieve nausea. The radiographers can put you in contact with the Fountain Centre if this is something you would like to try.

Skin soreness: during treatment you may find that the skin in the treatment area becomes red, itchy or sore to the touch. You can help minimise the skin reaction by following the instructions listed.

- Wash gently with lukewarm water and pat dry.
- Using a moisturiser can help to soothe the skin and a suitable cream will be recommended to you by the radiographers on your first day.
- Please do not use any other products (including perfume or aftershave) in the treatment area without checking with your doctor or radiographer first.
- Do not go swimming.
- Wear loose, soft clothing in the treatment area.
- The treated will always be more sensitive to the sun. While you are still on treatment it is essential to keep your chest covered in direct sunlight. After this time, you must use a SPF 50+ sun cream.

Hair loss: men will notice that chest hair in the irradiated area begins to fall out about half-way through treatment. The hair should begin to re-grow 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 it is important to drink plenty of fluids; a guide is about 2.5 litres a day. Rest if you need to, but if you feel OK carry on with all your normal daily activities. It is also beneficial to take some gentle exercise. Tiredness may carry on for some time after treatment has ended.

Smoking: if you smoke it is strongly advised that you give up. Smoking during your radiotherapy can irritate your throat and increase the severity of your side effects. Please speak to your specialist radiographer or your medical team if you would like information on how to give up smoking. There are free, Stop Smoking clinics available in the department or your GP may also run free nurse-led smoking cessation clinics. Further details are at the end of this leaflet.

Long term risks

Careful treatment planning and monitoring of the doses received by healthy structures help limit the occurrence of long term 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 thickening or hardening of the lung tissue (fibrosis), although modern planning techniques help 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.

Please mention any problems to your doctor at your follow up appointments.

Oesophageal narrowing (stricture): this is the narrowing of your gullet which may affect your ability to swallow.

Spinal cord damage: depending on the dose given and area that is being treated, radiotherapy can result in damage to the spinal cord. If this occurs you would notice difficulties in mobility and a loss of sensation in the lower part of the body. However, modern planning techniques ensure that this is a very rare late effect. This can be discussed with you in more detail by your doctor.

Heart damage: depending on the dose given and the area that is being treated, radiotherapy can result in damage to the heart muscle. If this happens you may notice that you feel very tired after a small amount of exertion. You may also feel dizzy and breathless. However, modern planning techniques ensure that this is a very rare late effect. This can be discussed with you in more detail by your doctor.

Second malignancy: there is a risk that 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 but this is a very rare late effect.

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 2-3 weeks. Any short term side effects may even get slightly worse during this time but after that they should begin to slowly improve.
- The radiographer will make sure you have a follow-up appointment with your clinical oncologist. This may be at a hospital nearer to your home.
- 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.
- You will be seen by your oncologist approximately four weeks after completing your radiotherapy. However, please remember that 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.
- Please do not book a holiday too close to the end of your treatment in case the treatment does not finish on the date originally listed on your appointment schedule. This also allows you time to recover from any side effects experienced during your treatment

Where can I get further support?

Further support can be given by the various support centres at locations in Guildford, Redhill, 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
- Website: www.fountaincancersupport.com

The Olive Tree is located in Crawley Hospital, Crawley.

- Telephone: 01293 534466
- Website: www.olivetreecancersupport.org.uk

Macmillan Cancer Support is located at East Surrey Hospital.

- Telephone: 01737 768 511 ext 2078

South East Cancer Help Centre is located in Purley, Surrey.

- Telephone: 020 86680974
- Website: www.sechc.org.uk

Other support websites and groups

Cancer Research UK

- Website: www.cancerresearch.org
- Telephone: 0808 800 4040

Macmillan Cancer Support

- Website: www.macmillan.org.uk
- Telephone: 0808 808 0000

Quit 51

- Website: www.quit51.co.uk
- Telephone: 0800 622 6968

Useful telephone numbers

Telephone numbers across both sites (Guildford/Redhill)

- Treatment Appointments 01483 571122 ext 6632
- Onslow Ward (out-of-hours) 01483 571122 ext 6858
- For urgent enquiries (out-of-hours) call hospital switchboard on **01483 571122** and ask operator to bleep on-call oncology SHO.

Guildford numbers

- Radiotherapy Reception 01483 406600
- Oncology CT scanner 01483 406630
- Patient Support Office 01483 571122 ext 2066
- Lung CNS 01483 571122 ext 6319

Redhill numbers

- Radiotherapy Reception 01737 277311
- Oncology CT Scanner 01737 768511 ext 1202
- Patient Support Office 01737 277315
- Lung CNS 01737 768511 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. Please leave valuables at home.

Reference sources

- Radiotherapy Clinical Protocol – Non-Small Cell Lung Cancer – Royal Surrey County Hospital NHS Foundation Trust 2013
- Treating Lung Cancer – Cancer Research UK 2017
- Lung Cancer: The diagnosis and treatment of lung cancer – NICE Guidelines 2016

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 Liaison Service (PALS)**. Their contact details are:

PALS office in the main hospital reception area, telephone **01483 402757** or write to:

PALS Manager
Royal Surrey County Hospital NHS Trust
Egerton Road
Guildford
GU2 7XX

- Email: rsc-tr.pals@nhs.uk
- www.royalsurrey.nhs.uk

You may also write to the Chief Executive of the Trust at:

Royal Surrey County Hospital NHS Trust
Egerton Road
Guildford
GU2 7XX

Radiotherapy contact details

Radiotherapy reception

Telephone: 01483 406 600

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 on the right hand side 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–3.00pm, 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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