

Radiotherapy to the prostate

Information for patients

The aim of this leaflet is to provide you with information about the use of external beam radiotherapy in treating prostate cancer, including details of the procedure and side effects that you may experience.

Although you may have heard about radiotherapy from other patients it is important to remember that their experience may not be the same as yours. If you have any questions please let us know. We are here to help and are happy to talk through any concerns.

What is radiotherapy?

Radiotherapy uses precise, carefully measured doses of high energy x-rays to treat cancer. Cancer cells are more sensitive to radiation than normal cells. The x-rays either destroy the cancer cells or stop them from growing.

Radiation also damages normal cells in or around the area being treated causing side effects, but these will usually recover and heal after treatment. The aim of treatment is to destroy the cancer cells while avoiding and protecting the healthy cells as much as possible.

The specialist team looking after you will help you to understand the treatment and answer any questions you may have. If you have any doubts or concerns, please do not hesitate to speak to a member of your healthcare team, however insignificant it may seem.

Using external beam radiotherapy to treat prostate cancer

External beam radiotherapy is one of the different treatment options available in treating prostate cancer. This type of radiotherapy may be used:

- to treat cancer in the prostate only (localised prostate cancer)
- to treat prostate cancer that has spread to the area just outside the prostate (locally advanced prostate cancer)
- to treat prostate cancer at risk of spreading to local pelvic lymph nodes
- after surgery (post radical prostatectomy) if there is a risk the cancer has not been completely removed (adjuvant radiotherapy) or if there is evidence suggesting it may have come back (salvage radiotherapy)
- to control symptoms when prostate cancer has spread to other parts of the body (palliative radiotherapy). This is a shorter course of treatment where the aim is to control symptoms and minimise side effects.

Your doctors and nurses will explain why we are recommending that you have radiotherapy, what type you will need and what we hope to achieve by it.

Techniques used to treat the prostate with external beam radiation

3D conformal radiotherapy (CRT)

CRT is a technique used to shape and target radiotherapy treatment beams to the prostate while avoiding normal tissue around the prostate, particularly the rectum (back passage) and bladder.

Intensity modulated radiation therapy (IMRT)

IMRT is a more complex type of CRT where the beams can be shaped more tightly around the prostate or the prostate and the pelvic lymph nodes. IMRT allows for different areas to be treated at different doses at the same time. It is used with the aim of further reducing the amount of normal tissue treated by high dose radiation, thereby reducing side effects.

We now use IMRT as our standard method in radical external beam radiotherapy treatment for prostate cancer.

Image guided radiotherapy (IGRT)

IGRT is where we take images during treatment to check the position of the prostate and make adjustments if required. The aim of this is to improve the accuracy of your treatment. In the majority of cases it requires the implantation of three small gold seeds into the prostate prior to radiotherapy. Information about this is covered in a separate leaflet that we will give you if needed.

Brachytherapy

Brachytherapy is a different radiotherapy technique where we implant radioactive pellets inside the prostate to give the radiation dose directly to the prostate.

It may be used alone in treating some cases of localised prostate cancer. It may also be used in combination with external beam radiotherapy when treating the prostate and pelvic nodes as a way of increasing the dose to the prostate. This may make the treatment more effective. However, there may be a greater risk of side effects and in some patients the technique is not recommended.

Brachytherapy is given at designated units outside the Royal Free Hospital. Your doctor will discuss this in more detail with you if this option is being considered.

Hormone therapy

A course of hormone therapy may be advised prior, during and for a period following radiotherapy. This is to reduce the body's testosterone levels, which stimulates prostate cancer cells to grow. In some prostate cancer it has been shown to improve the effectiveness of radiotherapy.

Giving hormone therapy prior to radiotherapy may also allow the prostate to shrink in size, allowing less healthy tissues to be treated and reducing the side effects. Your doctor will discuss how long you should be on hormone therapy with you.

You will also receive a separate information sheet explaining hormone therapy and its side effects.

External beam radiotherapy – treatment schedules

You will need to attend the radiotherapy department as an out-patient, for a course of daily treatments (Monday to Friday). Treatment is given either over four or seven and a half weeks, depending on the nature of your disease and other factors that may affect side-effects or how the treatment is tolerated.

When treating after surgery (radical prostatectomy) the course is given over six and a half weeks. Other treatment schedules may be advised and your doctor will discuss these with you.

Preparing for your treatment

Before your treatment can start we need to tailor it to your specific needs. You will need to attend the radiotherapy department for two appointments before starting treatment. The first appointment is to go over how you will need to prepare for your treatment and the second is to have a planning scan.

We will contact you to arrange an appointment for you to meet with one of the radiotherapy review specialists. They will explain how you need to prepare for your treatment.

To prepare you will need to empty your bowels and drink water to comfortably fill your bladder directly before the scan. This is to help reduce the side effects of radiotherapy. At the first appointment we will find out how much fluid you can comfortably hold in your bladder for about one hour and whether you will need any medication to help with your bowel movement. A separate leaflet about bladder and bowel preparation will be given to you at this appointment. Please let us know if you already have a catheter in and inform us if anyone suggests having one during your treatment.

You will need to follow this preparation before your planning scan and each time you attend for treatment.

About one to two weeks later, you will need to visit the department for your second appointment to have a planning scan. This is a different scan from your previous ones and is needed to design your treatment around you.

If your pelvic lymph nodes are also to be treated, you will receive an injection of a dye, called contrast medium, during the planning scan. This is to help us more easily identify the lymph node region.

At the end of the scan, three permanent ink markings are made on your skin using a pinprick of ink. These are used to make sure that you are accurately positioned for your treatment each day.

Treatment

The treatment itself is like having an x-ray or scan. It will not make you radioactive and it is safe for you to be around other people, including small children, afterwards.

You will need to prepare (empty your bowels and drink fluid) before you attend for treatment, as advised during your preparation appointment – you will need to do this each time you attend. The aim is to have an empty rectum (back passage) and fairly full bladder before each treatment and is important for the accuracy of your treatment.

Each session takes about 15 minutes. Most of this time is spent making sure you are in the correct position. The actual treatment lasts a few minutes, during which you will be alone in the room. You will be asked to lie still on a couch while the radiotherapy machine moves around you, giving treatment from different directions. The radiographers will be observing and, if necessary, will be able to talk to you from the next room where they will be able to hear you at all times. You will not feel anything and the machine will not touch you.

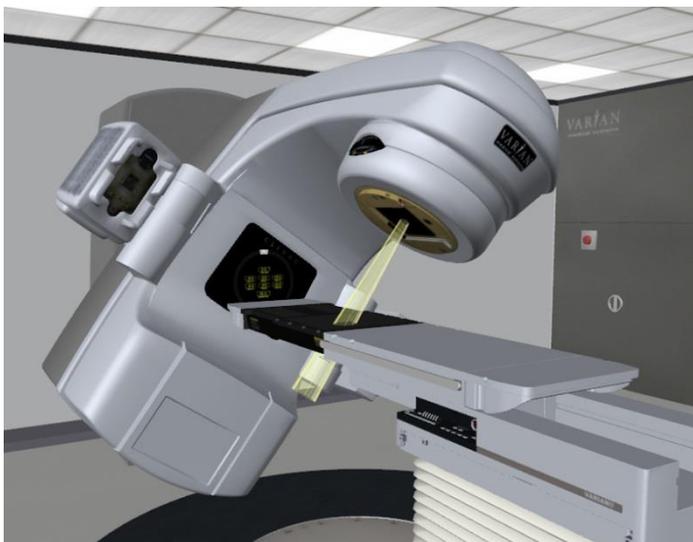


Figure 1. Virtual image of a radiotherapy linear accelerator treatment machine

We may perform a scan once a week as part of your treatment. This is to check your bladder and bowel as well as the accuracy of treatment. Treatment on these days may take a few minutes longer.

Side effects of radiotherapy treatment

You may develop side effects as you go through the treatment. Most of the side effects begin about half way through the course of treatment and continue for a short while afterwards. The radiotherapy review specialist will see you regularly during your treatment. They will ask you about any symptoms you may be experiencing and also request a urine sample.

Possible side effects include:

- Radiotherapy may cause part of the bladder to become inflamed, making you want to pass urine more frequently and may cause a burning feeling when you pass urine. It is important to keep drinking fluids. Aim to drink two litres (three pints) a day, but avoid acidic drinks (eg fruit juices, sugary drinks), alcohol, fizzy drinks or drinks with caffeine (eg tea, coffee, cola) that can make the symptoms worse. Drinking more through the day and less in the evening may help you to pass less urine at night. Unsweetened cranberry juice may also help.
- The rectum (back passage) may also become sore when motions are passed. Occasionally, there may be bleeding or passing of mucus. You may notice a change in your bowel habits and may pass more gas or have more frequent bowel movements. If the pelvic lymph node region is being treated, you may also pass looser stools or have diarrhoea and possibly feel nauseous. Please let us know so we can help you manage this in the best way.

- You may lose some pubic hair. This often grows back but may be thinner than before.
- Your skin may become discoloured over the treated area. We advise you not to soak in hot baths. Use a mild, non-perfumed soap and pat the area dry rather than rubbing it. Do not use talcum powder or any lotions and creams other than those advised by us.
- You may become tired. Gentle exercise can help, but save your energy for activities you enjoy doing.

You may experience some or all of these side effects. They may continue for 10-14 days after treatment, but should then begin to improve. Always let the radiotherapy team know of anything worrying you. We want to help you recover as soon as possible.

Possible long-term side effects

In most patients symptoms return to near normal about four to six weeks following radiotherapy, but some may experience long-term side effects.

Fertility and sexual function:

- About three to five out of 10 men treated with radiotherapy find that their ability to have an erection (potency) declines after treatment. This is more likely if you experienced any problems before starting radiotherapy. Potency may also be affected by hormone therapy as well as other medical conditions and stress. It is possible to offer advice and treatment. Please talk to your doctor or specialist nurse if this is a concern for you.
- You may experience a dry orgasm or produce a small amount of semen on ejaculation. This is common after radiotherapy.
- Radiotherapy is likely to make you infertile. If this is a concern for you, please talk to your doctor before you start any treatment, so sperm storage before treatment can be considered.
- We do not recommend that you conceive children during your radiotherapy treatment. You should use barrier contraception during treatment and for three months afterwards.

Bladder and bowel function:

- Blood vessels in the bladder or bowel may become more fragile and you may notice blood in your urine or motions. Let your doctor know if this happens as you may need tests and treatment (2-3% of patients require treatment for this).
- The bladder may not hold as much urine as before and so you may need to pass urine more frequently.
- Some men may develop a narrowing of the urethra making it more difficult to pass urine. This can be treated with a simple surgical procedure. Urinary incontinence is rare unless you have previously had surgery to the prostate.
- Some men may find bowel habits are affected in the longer term. In many this may be a minor change, but for some it may be more severe. Bowel motions may become more loose, urgent or frequent than before. If the pelvic lymph node region is also treated, this is more likely.
- After radiotherapy to the pelvic node region, bone pain over the bottom of the back (sacrum) may occur. If you experience pain, we will advise you to use over the

counter painkillers, such as paracetamol, to help. This is very unlikely to occur if only the prostate is treated.

- Very rarely, radiotherapy may increase your risk of developing a second cancer in the treated area. If it were to occur, it usually takes 10 years to develop.

After treatment finishes

Side effects may get worse for two weeks after your radiotherapy treatment has finished but will then start to improve. A few weeks after treatment has finished you will receive a telephone call from the radiotherapy review specialist for a check on your symptoms. If you have any concerns before or after, please contact the radiotherapy review specialist.

An out-patient appointment will be arranged for six to eight weeks after completing your treatment. Out-patient appointments will then continue initially on a three to six monthly basis, or more frequently if required.

A blood test, called PSA (prostatic specific antigen), will be used to assess and monitor the effectiveness of your treatment. Provided this remains within expected levels we can be confident that there is no cancer activity. If your PSA rises above these levels, we will discuss the need to carry out further investigations and any further treatment with you.

Support available at the Royal Free Hospital

We have a number of support services available for you to access. If you would like to know more about them, please read our leaflet: '[What support is available to you on a diagnosis of cancer?](#)' or pick up a copy in the Macmillan cancer information and support centre at the Royal Free Hospital.

We are here to help, and if you have any questions or concerns, please do not hesitate to speak to a member of staff.

Our contact numbers

- Radiotherapy review specialist: 020 7830 2919
- Radiotherapy department reception: 020 7830 2919
- Radiotherapy information service: 020 7472 6739
- Radiotherapy and oncology counsellors: 020 7472 6739

Other useful contacts and websites

Macmillan Cancer Support

- Macmillan cancer information and support centre at the Royal Free Hospital: 020 7794 0500 ext 31337
- Macmillan cancer information and support centre at Barnet Hospital: 020 8216 4142
- Macmillan cancer information and support centre at the Whittington Hospital: 020 7288 5305 or 07881 834433
- Macmillan's support line: 080 8808 0000
- Website: www.macmillan.org.uk

Prostate Cancer UK

- Phone: 0800 074 8383
- Website: www.prostatecanceruk.org

More information

For more information about cancer services at the Royal Free London, please visit our website: www.royalfree.nhs.uk/services/services-a-z/cancer-services

Your feedback

This booklet was written by staff from the radiotherapy department. If you have any comments on this leaflet please call 020 7472 6739 and leave a message for the information officer.

Alternatively, please email: rf.communications@nhs.net

Alternative formats

This leaflet is also available in large print. If you need this leaflet in another format – for example Braille, a language other than English or audio – please speak to a member of staff.

© Royal Free London NHS Foundation Trust
Service: Radiotherapy department
Version number: 13
Approval date: February 2019
Review date: February 2021
www.royalfree.nhs.uk