

Prostate Scotland acknowledges the help and support from the members of the group:

Mr. Ben Thomas, Consultant Urologist, Western General Hospital/ Borders General Hospital, Edinburgh, Chair of PAGES
Professor Alan McNeill, Consultant Urologist, Western General Hospital, Edinburgh
Mr Feras Al Jaafari, Consultant Urologist, NHS Fife
Dr David Astill
Derek Brown
Brian Corr, Urology Clinical Nurse Specialist, Raigmore Hospital, Inverness
Alan Dickinson
Dr Andrew Dunlop, General Practitioner Principal, East Calder Medical Practice, West Lothian
Mr Daniel Good, Consultant Urologist, Western General Hospital, Edinburgh
Ms Stephanie Guillaumier, Consultant Urologist, NHS Fife
Sioned Hancock, Advanced Practice Physiotherapist NHS Lothian
Scott Little, Clinical Nurse Specialist, Western General Hospital, Edinburgh
Bill Taylor, Advanced Practice Physiotherapist specialising in pelvic floor dysfunction, Lecturer in Physiotherapy
Dr Ashleigh Ward, Nurse Consultant Cancer and Palliative Care NHS Forth Valley
Prostate Scotland staff: Adam Gaines, Director. Mae Bell, Information and Advice Manager

We would also like to acknowledge support from:

Professor Duncan McLaren, Consultant Oncologist, Western General Hospital, Edinburgh
Dr Aravind Sundaramurthy, Consultant Oncologist, Western General Hospital, Edinburgh

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Contact Us

Prostate Scotland, 14 Torphichen Place, Haymarket, Edinburgh EH3 8DU

Tel: 0131 603 8660 (Choose option 1 for information)

Email: info@prostatescotland.org.uk

www.prostatescotland.org.uk

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SPOTLIGHT ON

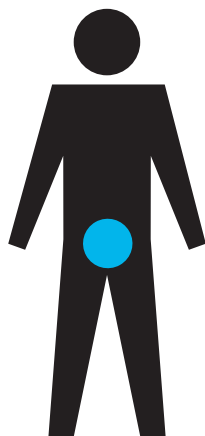
Radiotherapy for Prostate Cancer

External beam radiotherapy

External beam radiotherapy with seed boost

External beam radiotherapy with HDR boost

Stereotactic body radiation therapy



Introduction

Our aim is to help all those affected by prostate problems whether it is the benign condition BPE (an enlarging prostate), the benign disease prostatitis or prostate cancer. It is anticipated that most of our information will be suitable, relevant and helpful for men and those born biologically male who still have a prostate. However, there might be times when your health care (such as appointments and treatment(s)) may be slightly different from our information. Our information will not be as applicable for those men not born with a prostate. Most of our publications will use the term 'you' but there may be times that we will have to use the terms man, men or male.

It might be helpful if you are comfortable and willing to make your healthcare team aware of your gender identity so that they can provide the most relevant information and appropriate health care for you.

You may have been told that you have prostate cancer and are now facing the decision on which treatment might suit you best. Whilst this may sound daunting to you at first, it has been shown that the more you and your family are involved in helping to make the decision about treatment, the more confident and satisfied you may feel with your treatment choice. It doesn't mean that you need to make this decision on your own; doctors, clinical nurse specialists (CNS) and other men who have been in the same position will give you information, help and support along the way. The Prostate Scotland COMPASS service may be able to help as well.

<https://www.prostatescotland.org.uk/help-and-support-for-you>.

The news that you have been diagnosed with prostate cancer may have come as a shock to you and your family and something that you were not expecting to hear. After being given your diagnosis, you perhaps didn't hear or take in another word that was said. It may be helpful when going to future appointments with the urologist, oncologist or clinical nurse specialist (CNS) if you can have a someone to go along with you so you can both listen, ask questions and get the most out of your appointment. You may find the Prostate Scotland Cancer Navigator App helpful as, with permission from your health care team, you can record and playback the appointment as many times as you like.

That is not to take away from how you and your family are feeling right now. It's normal to have a wide range of feelings or emotions – fear, worry, sadness, guilt, anxiety, stress, feeling very low and depressed. Although all these feelings are quite normal, they can have a huge impact on your life and on your family.

The first step is to let someone from your health care team know that you're having difficulty in coping with everything that is going on. There is lots of help and support out there to help you and your family deal with and cope with your diagnosis. There are some helpful contacts and more information from pages 37-46.

The main message to hold onto is that treatments are available and, depending on your individual circumstance, some treatments for early prostate cancer can be with curative intent.

This booklet is to help you, your partner and your family understand more about External Beam Radiotherapy (EBRT), EBRT and seed boost, EBRT with HDR boost and Stereotactic Body Radiation Therapy (SBRT). This booklet gives more information of what these treatments are, who these might be suitable for, what happens during the treatments and the advantages and drawbacks of each of the treatments. This may help you decide if this is the right treatment choice for you. It is intended for those men who have been diagnosed with early prostate cancer which is cancer that is still contained within the prostate.

EBRT can also be used to treat symptoms of more advanced prostate cancer which has spread out of the prostate. An example of this may be to help ease bone pain.

There are other treatments available for prostate cancer but treatments must be tailored to each individual and some of the following may not be suitable in your particular circumstances; Active Surveillance, Radical Prostatectomy, Brachytherapy, hormone therapy alone or hormone therapy with EBRT. Your consultant will talk over which treatments may be suitable for you.

About your prostate

The prostate is found inside the pelvis, just below the bladder and in front of the back passage. It wraps around the tube, called the urethra, which allows urine to flow out of the bladder and semen to pass out through the penis.

The prostate supplies a thick, clear fluid that mixes with sperm to form semen, called the ejaculate. It also makes Prostate Specific Antigen (PSA).

About prostate cancer

Prostate cancer occurs when the cells in the prostate develop abnormalities, multiply and grow faster than normal. This causes a growth or a tumour. As the prostate is inside the body this growth can't be seen and often causes no symptoms in the early stages.

Radiotherapy for prostate cancer

Radiotherapy can be given in two ways, external beam radiation to the prostate or prostate brachytherapy. This booklet provides more information on External Beam Radiation – EBRT.

- *External Beam Radiotherapy or EBRT.* High energy X-rays are used to treat your prostate cancer. The X-rays are generated by special machines called Linear Accelerators, which allows the delivery of X-rays to the prostate from outside your body. The treatment is given at the hospital on a daily outpatient basis. You don't need to stay in hospital;
- *EBRT combined with brachytherapy seed boost.* This combines a course of EBRT (as explained above) followed by an implant of brachytherapy seeds (see below) about 2 weeks after EBRT has finished.
- *EBRT followed by HDR boost.* This combines a course of EBRT followed by one treatment with HDR brachytherapy either 2 weeks before or 2 weeks after EBRT has finished.
- *Stereotactic body radiation therapy.* Like EBRT, this is a type of radiation that very accurately delivers larger doses of radiation in a shorter period of time. A tumour tracking system is used that allows for any movement of the prostate so the radiation beams can be precisely adjusted to where the tumour is.
- *Brachytherapy*
 - LDR brachytherapy** involves permanently implanting tiny metal seeds that emit radiation into the prostate.
 - HDR brachytherapy.** Small pellets of Iridium-192 are briefly placed into

the prostate through special needles. After a few minutes when the radiation has been delivered the pellets and needles are withdrawn. Both of these work to kill cancer cells inside the prostate.

(The information that follows about External Beam Radiotherapy (EBRT) is meant as general guidance. As procedures may vary slightly from hospital to hospital, ask for more advice from staff at the hospital you are attending. If you have been given any specific guidance by the hospital then it is important that you follow their instructions.)

Please also be aware that you will have treatments tailored to suit your specific needs; so your treatment may be slightly different to that of another patient with a similar diagnosis.

What is EBRT?

A special machine called a linear accelerator produces high energy x-ray beams which are then very carefully and accurately focused on the prostate. The treatment can also cover a small area around the gland, including the seminal vesicles, in case the cancer has spread to these areas. Sometimes the treatment can also cover the lymph glands in the pelvis. As all the organs inside your body lie quite close to each other, the beam is shaped by the use of multi-leaf collimators within the head of the linear accelerator. This beam is shaped to fit your anatomy and surrounding areas (prostate, bladder, back passage, hips) so the prostate can be accurately targeted and reduce the dose to the healthy surrounding normal tissues of the bladder and bowel. These beams kill the cancer cells inside the prostate.



Image courtesy of Varian Medical Systems, Inc. All rights reserved.

As you might expect, healthy cells in the area are affected by the radiation and this may result in some of the side-effects described later in the booklet. However, most of these side-effects will be short-term as healthy cells can repair themselves.

Why might EBRT be used?

EBRT can be used in the following ways:

1. As the primary/main treatment when the cancer is localised, contained within the prostate and has not spread (metastasised) to other parts of the body. This is called radical radiotherapy;
2. For men with low, intermediate and high-risk prostate cancer. For more information on what low, intermediate and high risk means please see Early prostate cancer explained pages 26-32.
3. As a treatment, after a period of active surveillance. If there are signs of the cancer growing or progressing, EBRT, EBRT with seed boost or SBRT may potentially be one of the options offered to possibly cure your cancer.
4. Men who are medically fit for treatment.
5. After radical prostatectomy (surgery to remove the prostate) if there are high-risk features or if there are signs of the cancer growing again (shown by rising PSA after surgery);
6. For men who are fit enough to have treatment and do not have other significant medical conditions that may impact on survival and life expectancy;
7. In combination with hormone therapy for treatment of cancers that have spread out-with the prostate capsule or affected other organs nearby such as the seminal vesicles. Hormone treatment can be used on a short term basis (3-6 months) or long term basis (1-3 years);
8. If prostate cancer has spread to the bones then smaller doses of EBRT can be used very effectively to treat bone pain.
9. If the lymph glands become swollen following tumour spread EBRT can sometimes help.

Why might I have to have hormone therapy before or after EBRT?

Prostate cancer grows in response to the male hormone testosterone. Hormone treatment (or therapy) works by reducing the amount of testosterone in your body and as a result slows down the growth of the cancer or shrinks it. However, hormone treatment does not cure prostate cancer.

Some men may be given hormone treatment for 3-8 months before radiotherapy treatment with the aim of shrinking the cancer so that radiotherapy has a higher/better chance of working. You might hear this called neo-adjuvant hormone therapy.

For men who have high-risk prostate cancer hormone therapy may be continued after radiotherapy.

In this case radiotherapy usually starts after 3-8 months of hormone therapy and only when the PSA level is less than 1. Hormone therapy is continued for up to 2-3 years as it has been shown to reduce recurrence rates and improve survival. You might hear this called adjuvant hormone therapy.

Ask your oncologist or CNS for more information as to whether you might have hormone therapy.

What is hormone therapy?

Hormone treatment can be given in two ways, by an injection or taking tablets. At the beginning, you will often have both.

Tablets

By taking a tablet, testosterone can be blocked from getting into the cancer cells. This may be given for a week or two before starting injections and may be continued for a week or so after your injections have started. Sometimes, tablets (Anti Androgens) can be used as a single agent without injections for 6 months (short-term) or 2-3 years (long-term).

By injection

Testosterone production is 'switched off' by having an injection. The site (where on your body) and how often you are likely to have the injection will vary according to individual circumstances. Injections might be given once every 4 weeks or every 12 weeks or every 24 weeks. You will most likely be given the injection by your GP or nurse at your local clinic.

What are the potential side-effects of hormone treatment?

Side-effects vary from person to person and being on hormone therapy for a longer time makes side-effects more likely. Side-effects can be similar to those experienced by a woman going through the menopause. Although you might not have all of these, the most common side-effects are:

- Hot flushes of your face and neck and sweating;
- Loss of libido (lack of interest in having sexual intercourse);
- Erectile dysfunction. Not being able to get or keep an erection;
- Feeling sluggish, having no energy, fatigue or tiredness;

- Changes to your body shape;
- Swelling and tenderness around the breast area called gynaecomastia;
- Mood swings;
- Anxiety and depression. Please see pages 37-43 for more information;
- Potential impact on bone density and bone health particularly with injections, this is called osteoporosis or bone thinning;
- Hair loss.

For more information see Early prostate cancer explained on pages 97-98.

Heart problems

When your testosterone level drops, your blood pressure and cholesterol level may increase and some studies suggest that this may put the man at greater risk of developing heart problems. The longer you are on hormone therapy the greater the risk becomes. The team looking after you will respond to any concerns that might arise and again this is more of an issue with long term hormone therapy.

It may be helpful to think about some healthy lifestyle changes such as stopping smoking, not drinking more alcohol than the healthy guideline limits, having a well- balanced diet and taking exercise.

Although it may take up to several months the side-effects mentioned on pages 6-7 should gradually become less when hormone treatment stops.

For more information download 'Hormone therapy for prostate cancer' from our website www.prostatescotland.org.uk or email info@prostatescotland.org.uk or call us and a copy will be sent.

What happens during EBRT treatment?

Decision and consent

Your treatment will be overseen or supervised by a doctor who specialises in the treatment of cancer, known as a clinical oncologist with the treatments being given by specially trained radiographers.

If you have a pacemaker you should let the oncologist know. You should

also tell the cardiologist (heart doctor) about your EBRT treatment. Your cardiologist may want to monitor you during this treatment.

When you and your oncologist have decided that EBRT is the most appropriate treatment in your particular circumstances, you will be asked to sign a consent form agreeing to go ahead with the treatment. Please ask the CNS or oncologist if you have any questions about your treatment.

Every patient will have an individual plan of care so you will be told when and how many treatments (you may hear these treatments called *fractions*) you are likely to have. Although there may be variations in the treatment centre you attend, it is usually in the region of between 20 to 40 treatments carried out over 4 to 8 weeks. It is becoming more common for men with low or intermediate risk to be given higher doses over a shorter period of time, often 20 fractions. However if the oncologist needs to treat the pelvic lymph nodes your treatment would be given over 8 weeks.

Each day you will be given your daily dose of radiation, called a fraction. By breaking up the treatment like this, normal tissue which might be affected by the treatment has time to recover between treatments, but the cancer cells don't recover so easily. As each dose of radiation causes a little more damage to the cancer cells, it's important to attend all your appointments without a break and let staff know if you can't manage for any reason. If you have any questions or concerns at this stage, please ask the oncologist or CNS.

Pre planning

Before starting radiotherapy, your treatments need to be carefully planned and this may take a few weeks. This is to locate the exact position of your prostate and make sure that the same area is treated each time.

Gold Fiducial Markers or seeds

In some treatment centres, gold fiducial markers or seeds may be implanted into the prostate prior to a planning scan. These markers are very small between 1-5mm (smaller than an uncooked grain of rice). These seeds/markers are not radioactive but are used to ensure that the radiotherapy beams are very accurately focused on the prostate gland. The markers will remain in your prostate permanently but shouldn't cause any difficulties and won't harm your body in any way. In fact, you won't know they're there.

Why are markers used?

These markers show up clearly on scans to pinpoint the precise position of the prostate helping ensure that the radiotherapy beams are very accurately focused on the prostate so minimising the amount of radiation to the bowel and bladder.

If you don't have fiducial markers inserted you may have a special scan done each day before your radiation treatment begins. This is called a Cone Beam CT or CBCT for short. This can be used to ensure the radiation beam is directed as planned at each daily treatment.

What happens?

If you take warfarin or clopidogrel, rivaroxaban or apixaban then you will most likely be advised to stop these for a few days before the procedure. Your oncologist or CNS will give you more information on when to stop and re-start these medications.

If the hospital you attend uses gold marker (fiducial) seeds these may be inserted into the prostate gland any time prior to or just before the planning scan.

Getting the markers into your prostate (or implanting) is very similar to having a prostate biopsy. An ultrasound probe will be guided into your back passage and usually a local anaesthetic will be injected into the prostate, then the markers will be put into your prostate using a fine needle; usually 3 of these markers are used. The whole procedure to implant the markers usually takes around 10 minutes.

Before going home staff will most likely want to check that:

- You are able to pass urine;
- Your urine is not heavily stained with blood although there may be some blood in your urine;
- In some hospitals you may be provided with antibiotics to take home to reduce the risk of you developing an infection. If provided, please remember to take all the tablets as directed.

Check with ward staff if you can drive home afterwards or if you should arrange for someone to collect you.

As with the biopsy, if you have some discomfort or pain then taking simple pain killers such as paracetamol or ibuprofen should help but if in any doubt, please check with your oncologist, CNS or pharmacist.

For a few days afterwards you may have some discomfort and notice some bleeding from your back passage or blood in urine. Drinking extra fluids should help clear blood from your urine.

Although not very common, some men may develop an infection after the procedure. Symptoms of infection may include:

- Passing a large number of blood clots;
- Struggling to pass urine;
- A burning feeling when passing urine;
- Being in pain;
- Developing a high temperature over 38°C
- Feeling hot, cold and shivery.

If you do have any of these symptoms then you should contact your GP or NHS 24 (Phone 111) straight away. If you have been given a particular number to call by hospital staff, then you should call that number.

After this procedure you will be given a date and time for your CT planning scan.

CT (computerised tomography) Planning Scan

Before starting your radiotherapy treatments, you will have an appointment for a special CT scan; this is the first stage in planning your radiotherapy treatment. The CT scanner is a special type of x-ray machine that is used to take many detailed pictures of different views inside your body. The appointment for the CT scan usually takes about 30 – 45 minutes.

Before the CT scan and radiotherapy appointments you may be given suppositories/enemas which are used to get rid of wind or gas in your bowel. As the use of enemas varies in different hospitals, speak to the CNS, radiographer or oncologist as to if, when and how many enemas you might have.

Suggested preparation for CT planning scan and future radiotherapy treatments

The hospital you attend may provide additional guidance on how you may be asked to prepare before your appointment(s);

- Although it's normal to have wind or gas in your bowel, too much trapped wind may cause some difficulty during your treatment. The wind that we have comes from swallowing air while we are breathing and eating. It's easy to swallow a lot more air than usual without realising it; chewing gum, smoking, sucking hard sweets or having loose-fitting dentures can all add to swallowing more air.

Tips that you may want to try to help cut down on the amount of wind:

- Aim for 3 small easily digested meals each day with a light snack between. If food is easier to chew then it will be easier for your body to digest it. Chew food slowly and thoroughly – swallowing large pieces of food can cause you to swallow more air. Avoid really spicy food;
- Make time for your meals, instead of eating on the go. This will give your body time to digest your food;
- Foods to limit or avoid during planning and radiotherapy treatment; baked beans, other bean types, nuts, peas, lentils, pulses, onions, sprouts, cabbage, broccoli, cauliflower, prunes, kiwi fruit, raisins, raw apples, bananas;
- Avoid fizzy drinks and cut down on drinks with caffeine such as tea and coffee. Limit alcohol;
- Adding herbs such as fennel, ginger, and peppermint may help and some of these are available as a tea;
- Try to take some exercise every day. Going for short walks may not only help avoid build-up of gas but also with feelings of tiredness or fatigue.
- You may be asked to empty your bladder when you arrive for your appointment then drink a specific amount of water so your bladder fills; this is to try to minimise some of the side-effects of radiotherapy. The scan will be done about 30 minutes after you have finished drinking the water;

- You will lie on your back on the scanner bed and the radiographers will get you into the correct position sometimes propping you up with rests and supports to get you into an exact position now and for all your future radiotherapy treatments;
- To make sure the same area is treated every time, the radiographer will:
 - Permanently mark or 'tattoo' tiny dots (about the size of a freckle) onto your skin so they can't be washed off. Special ink dots may gradually fade over time;
 - Radio-opaque markers may be put onto your skin which will show up on the CT scan but will be taken off before you leave the simulator;
 - Some measurements may also be taken.

These tiny permanent dots don't show where you need treatment or show where the tumour(s) are they're just to make sure you lie in the correct position;

- The bed will move through the scanner which takes special pictures of your pelvic area. You will have to lie very still while continuing to breathe in a normal, relaxed way. Although the machine may make a loud whirring or clicking noise it won't hurt;
- The CT scan is downloaded into a special computer which gives 3D images of your pelvic area and other organs on the screen. The clinical oncologist will review your scan and use it to accurately plan your treatment. The exact dose will depend on the size and type of your cancer and your general health;
- Because of all the planning involved your radiotherapy treatment will not start straight away and it may take around 2 weeks before your treatment starts.

EBRT treatments

(The information that follows is meant as general guidance. As procedures may vary slightly from hospital to hospital, ask for more advice from staff at the hospital you are attending. If you have been given any specific guidance by the hospital then it is important that you follow their instructions.)

Please also be aware that your treatments will be tailored to suit your specific needs. So your treatment may be slightly different to that of another patient with a similar diagnosis.

As already mentioned, the treatment plan will be different for everyone, so when you arrive, don't be surprised if the radiographers check your name, date of birth and address with you every time so they can check their records to make sure that they have correct treatment plan.

- When going for your treatment, you may find it easier to wear loose fitting or elasticated waist trousers so the treatment area can be reached quite easily;
- You will usually have radiotherapy treatment every day, Monday to Friday;
- This will continue for between 4 - 8 weeks; For radical radiotherapy to the prostate, it is becoming more common for men with low or intermediate risk to be given higher doses over a shorter period often 20 fractions;
- Before every radiotherapy appointment you may be given suppositories/enema to get rid of gas in your bowel. In some hospitals, you may have an enema before your first 7-10 treatments. The hospital you attend may provide additional guidance on how you may be asked to prepare before your appointment(s);
- To minimise side-effects, you can't be treated with an empty bladder. You may be asked to come to hospital with a comfortably full bladder. Alternatively, you may be asked to empty your bladder and then drink a specific amount of water prior to treatment each and every day so your bladder fills, similar to having your CT planning;
- As with your CT scan you will lie down on the bed. The radiographers who give the treatments will line you up using lasers and the tiny permanent dots that were given at the simulator to ensure that you are in the correct position. Perhaps rests and supports will be used to help keep you in the same position;
- If you have gold fiducial markers in your prostate, the radiographers will take 2 x-ray images prior to treatment to visualise these markers and then switch the machine on for treatment;
- Once everything has been confirmed and you are ready the machine will move into place ready to give your first treatment;

● EXTERNAL BEAM RADIOTHERAPY FOR PROSTATE CANCER

- The radiographer can't stay in the room while you are being treated so you will be on your own. He/she will be in another room to operate the machine but will still be able to see and talk to you. If you think it might help you to relax, check with the radiographer if you can take in a CD of your choice to be played before and during your treatment;
- You will hear a buzzing sound as the machine delivers the treatment although you shouldn't feel anything and a clicking or ticking noise as the machine moves around, perhaps into three or four different positions;
- You can breathe normally, but it's important to lie **still** and remain in the same position that the radiographer put you in. Ask the radiographer what you should do if feel you need to cough, sneeze, urgently need to use the toilet or start to feel sick when the machine is delivering your treatment;
- Each day you will be given your daily dose of radiation, called a fraction. By breaking up the treatment like this, normal tissue which might be affected has time to recover between treatments, but the cancer cells don't recover so easily. As each dose of radiation causes a little more damage to the cancer cells, it's important to attend all your appointments as they have been planned. Let staff know if you can't manage for any reason;
- The amount of time you will be in the department for your treatment will vary with individual circumstances (for example if you come into hospital using hospital transport services) and individual departments. You may find that the radiographers will spend a lot of time making sure that you are in the correct position to have your treatment. The treatment session will last about 15 minutes with the machine only being on for about 5 minutes;
- This treatment doesn't make you radioactive, so it's safe to go home and be with other people, pregnant women and children.

The vast majority of men will not need to stay in hospital as treatment is given on an outpatient basis. This means that you will need to travel to and from hospital each day to have your treatment.

For those men who have to travel very long distances, it may not be possible to travel from home each day so alternative arrangements have to be made.

Some men and their families prefer to make their own arrangements for accommodation whilst a minority of men may be admitted to a ward for the 5 day treatments.

You may be eligible to claim some financial assistance for travel either from Macmillan or from the health board who referred you for treatment. If you think this may apply to you, please ask the CNS for more details.

Will I have an anaesthetic when having EBRT?

No. The treatment is like having an x-ray. You can't see the radiation, it doesn't feel hot or cold and shouldn't cause you any pain.

Are there any potential side-effects from EBRT?

While the treatment itself doesn't hurt, it may have some troublesome side-effects. However, not all men react the same to the treatment and the side-effects you may have could be different from someone else having EBRT. If you experience side-effects, these could start a few weeks into your treatment and may go on for a few weeks after your treatment finishes. The type of side-effects, how troublesome these might be or indeed the absence of side-effects doesn't mean that your treatment is not working.

There are potential short-term and long-term side-effects. Many of the short-term side-effects can be helped with medications if necessary and usually settle down. Please let the radiographer, oncologist or CNS know about any troubling side-effects. These potential side-effects may not become apparent until towards the end of your treatment or after your treatment finishes.

Potential short-term side-effects from EBRT

Side-effects can vary greatly with EBRT even for those whose treatment is very similar. Most men start to feel any short-term side-effects in the second half or towards the end of their treatment. Many of these can be helped with medications, if necessary, and usually settle between 4-6 weeks after your treatment has finished.

Feeling tired and having little energy.

Most people find that they are able to carry on with their usual daily activities and some people carry on working.

However, over the course of treatments, feelings of tiredness can build up because your body uses a lot of energy dealing with the effects of radiation on normal cells. How tired you might be and for how long varies from man to man. Another factor that might contribute to tiredness is travelling to the treatment centre every day and for some people this may involve quite a long journey.

Hints that might help with tiredness or fatigue:

- Save your energy by doing less and resting a bit more; if you are tired and people offer a helping hand, accept;
- Try to get a good night's sleep and have a short rest or nap during the day;
- Think about work - do you need some time off, can you have some time off, work for fewer hours, work from home? Some people are well enough to continue to work full- time and organise their treatment to fit in;
- If you can manage try to do some light exercise every day such as going for a walk as this often helps.

Symptoms when passing urine

Because the bladder lies just above the prostate it may become irritated or inflamed due to the treatment. You may notice that:

- You need to pass urine more often;
- You need to pass urine in more of a hurry;
- You need to pass urine more often during the night;
- You have a burning feeling when passing urine;
- If you are in a lot of pain and stop passing urine, you should contact your GP, NHS 24 or go to your nearest A&E department.

Hints that might help with with urinary symptoms:

- Try cutting down on drinks with caffeine such as tea, coffee, fizzy juice and energy type drinks. De-caffeinated options may be better;
- Avoid alcohol which is a bladder irritant;

- Drinking plenty of water and fluids to flush out your bladder.

Bowel difficulties

As the bowel lies close to the prostate it may become irritated or inflamed because of the treatment.

You may notice that:

- You need to open your bowels more often and motions may be much looser;
- You have a feeling of urgency to open your bowels and need to rush to the toilet;
- You might have cramps in your lower tummy, pain around your back passage and pass a lot of wind;
- You may have a small amount of blood or mucus in your motions.

If you have any of these changes then you should let the CNS or oncologist know.

Constipation

Alternatively some men find difficulty in opening their bowels (constipation). If this is the case then you may be prescribed Fybogel granules to help. These should be stirred into a glass of water and taken as soon as the fizziness disappears. You should speak with the CNS, oncologist or pharmacist before using any over-the-counter constipation relief medications.

Proctitis

Proctitis is an inflammation of the lining of the rectum and may be troublesome towards the end of and for 4-6 weeks after your treatment has finished.

- A frequent or continuous feeling that you need to have a bowel movement;
- Some rectal bleeding and pain;
- A feeling of fullness in your rectum;
- Diarrhoea;
- Pain with bowel movements.

Hints that might help with bowel difficulties:

- Try to have 3 small meals during the day with a light snack in between;

- Continue to drink enough fluid during the day; try to have 6-8 glasses of water each day;
- Your GP, oncologist or CNS may be able to prescribe medication to help with bowel difficulties; some patients benefit from using Immodium or Fybogel.
- If you are straining to pass a bowel movement, it may help to have your knees bent up higher than your hips. If this is difficult for you raise your feet by putting them on a small footstool in front of the toilet bowl. Then lean forward resting your hands on your thighs.
- Try to avoid straining to move your bowels. See your GP to discuss enemas or suppositories that may be of benefit.

Skin problems

You may find that the skin around the area of treatment will become red and sore for a short time, a bit like sunburn and the area may become a bit dry and itchy with some men finding the area becoming very red.

Hints that might help with skin problems:

- You may be advised to moisturise your skin with an aqueous cream which is available from pharmacies or supermarkets. Your GP, CNS oncologist or pharmacist will be able to advise if you are unsure what to get;
- When washing or showering avoid using harsh, perfumed body washes or soaps and it may be best just to use water for washing around the treatment area. It may be best overall to use gentle action, unperfumed soap or baby soap. If in doubt check with your doctor, CNS or a pharmacist what you can use;
- Having a shower rather than a bath may be best at this time and certainly it's best that you don't soak in a hot bath. Rather than rubbing with a towel when getting dried, pat your skin dry around the treatment area;
- Wearing loose natural fibre clothing around the treatment area is best such as cotton or silk. You might find that boxer shorts are more comfortable than pants;
- You may find the area being treated to be a bit more sensitive to the sun

during and for a little while after your treatment has finished, so it's best to keep the area covered at this time.

Hair loss

You will lose hair in the area of treatment and it may not grow back, but it won't cause you to lose hair from your head.

Potential long-term side-effects from EBRT

Most side-effects will settle down with time but for some men the side-effects may be longer. You can ask the CNS or oncologist how these might affect you.

Bowel habit

For a small number of patients, bowel habits will change permanently. It might be small changes like opening your bowels more often during the day, having a slightly looser bowel motion or passing more wind.

Recent studies have shown that there is a low risk (about 1 in every 12 men) of faecal incontinence (not being able to control passing motions) about 15 years after radiotherapy treatment. This can range from smearing on underpants to needing to wear pads.

If you find that changes in your bowel habits are having a big effect on your life then speak to the CNS or oncologist, especially if you have bleeding from your back passage.

Your bladder

You may find that you are passing urine more often or have difficulty in passing urine or you may find a small leak of urine when you cough, laugh or sneeze. You may also find that you have a sudden urge to pass urine.

There are often ways to help with these and your CNS or oncologist will be able to give you more advice.

During your radiotherapy treatment it's not common to find blood in your urine. However, because radiotherapy has made the blood vessels in your bladder a bit weaker, if they burst it will cause a very small leak of blood into your bladder which then passes out in your urine. As a result, you may find blood in your urine for a few months or even longer after your treatment has finished.

Urethral stricture

After radiotherapy treatment, a very small number of men (about 1-5%) may develop a urethral stricture (or narrowing of the urethra). This narrowing is caused by scar tissue forming after radiotherapy treatment. It may happen in the first few years after treatment but can also happen many years later. When there is a stricture of the urethra, men have difficulty in passing urine and blockage of their urine flow. This leads to symptoms like urgency and frequency when passing urine, incontinence due to overactive bladder, or overflow of a full bladder, pain, and bladder infections.

If you experience these symptoms, then speak to your oncologist or CNS. You would most likely be referred to have a flow test and residual ultrasound. If these show a very weak flow and a significant amount of urine in your bladder then you will most likely have a cystoscopy to diagnose and dilate a stricture if this is present.

Difficulties with erections

Recent studies suggest that difficulties in getting and keeping erections (erectile dysfunction (ED) or impotence) may occur in up to 75% of men 5 years after radiotherapy. However, it was also found that a good proportion of the 75% will have had ED prior to treatment and that even if ED does develop, it may not be such a major problem for them.

This is because the blood vessels and nerves needed to get an erection can be damaged during the treatment. You may not notice this at first, as it happens gradually and can take up to 2 years before becoming fully apparent.

There are several types of treatment available for ED, and, if this becomes a difficulty you should speak with your CNS or oncologist. Options might include medication taken as a tablet, medication as a pellet using an applicator, cream, medication which is injected or through the use of a vacuum pump.

Some men find that there is a reduction or in the amount of fluid when they ejaculate while others don't produce any fluid at all, called a 'dry orgasm'.

For more information on ED there is a booklet 'Spotlight on prostate conditions and erectile dysfunction' available to download or call us and a copy will be sent to you.

Possible risks of EBRT

Possible complications	Prevention/notes
<p>Urinary symptoms such as frequency and urgency</p> <p>Blood in urine at a later date after radiotherapy treatment has finished</p>	<p>Newer radiotherapy techniques using IMRT (intensity modulated radiotherapy) and fiducial markers make this less common than previously and normally they are short-term. Urinary incontinence is very rare with EBRT compared to surgery.</p>
<p>Bowel frequency and upset</p>	<p>Newer radiotherapy techniques (IMRT) make this less common than previously and normally side-effects are short-term. A small number of men have rectal bleeding after EBRT which can usually be treated successfully by a simple procedure such as argon treatment done without needing a general anaesthetic.</p>

What if I have anything to ask about my treatment?

The oncologist, CNS and radiographers dealing with your treatment will want to keep an eye on you during your treatments and may ask about any side-effects and answer any questions that you may have.

What happens after my EBRT treatment?

If you have had any side-effects from your treatment you will most likely find that these begin to ease off a few weeks after your treatment finishes, although you may still feel tired for a little longer. After your course of treatment, you will be sent a follow-up appointment to see the oncologist and/or urologist. In some centres, you will find that your follow up appointment will be nurse led.

How do I know if the EBRT treatment has worked?

Your PSA level will be measured and is a good indicator of whether your treatment has been successful. After radiotherapy, your PSA will drop slowly and it is variable when it reaches its lowest level. If you have also had hormone treatment then your PSA may rise slightly when hormone treatment is stopped because there are still some normal (non-cancerous) prostate cells making PSA.

If your PSA level rises sharply, the doctor may want to do more tests to find out what might be causing this rise and if it might be due to the recurrence of prostate cancer.

What advantages and drawbacks are there to think about with EBRT?

Advantages

EBRT doesn't require any cuts/incisions to be made on the outside/inside of the body. However, surgery and brachytherapy don't pose any greater risk to the man than EBRT.

It doesn't require a general anaesthetic.

It can be offered to all men no matter what grade or stage of cancer they have.

Offers cure rates if cancer is low-risk comparable to the results with surgery and brachytherapy taking into account the relative aggressiveness of cancers.

For higher risk prostate cancer, i.e. T3 cancers, this is the most established treatment and is usually combined with hormone treatment for between 3 months to 3 years.

Drawbacks

EBRT isn't suitable for those with inflammatory bowel disease and for some who had previous surgery or a kidney transplant.

If the cancer comes back after radiotherapy, then a salvage prostatectomy may give a second chance at curing the cancer. However, there will be more significant, potential side-effects such as incontinence and erection problems. This type of prostatectomy requires an experienced surgeon.

Salvage focal re-irradiation with EBRT or brachytherapy seeds may be an option for some men.

Cryotherapy and HIFU are other options that could be considered. (At the time of writing (June 23, HIFU is not currently available in Scotland, but this may change in the coming months)

For some men observation and delayed hormone therapy may be more appropriate.

<p>Erection difficulties may not be noticeable straight after treatment.</p>	<p>There may be difficulties in getting and keeping an erection anything up to around 2 years after treatment. Recent figures suggest that it may be up to 75% 5 years after treatment. Please see page 20 for more information.</p>
<p>Less likely to have long-term urinary incontinence</p>	<p>It can cause urinary symptoms such as frequency and urgency. For some men these may be short-term but for others these be more significant and continue longer term.</p>
<p>Bowel difficulties may not be noticeable straight after treatment.</p>	<p>It can cause inflammation of the rectum called proctitis (feeling of fullness in the rectum) leading to diarrhoea and urgency of bowel motion.</p> <p>Recent studies have shown that there is a low risk (about 1 in every 12 men) of faecal incontinence (not being able to control having a bowel movement) about 15 years after radiotherapy treatment. Faecal incontinence can range from smearing on pants/boxers to having to use a pad.</p> <p>A small number of men have persistent symptoms including rectal bleeding after EBRT that may need further treatment.</p>
<p>Treatment is painless and can be done as an outpatient. It is suitable for men of any age. Minimal or no time off work is possible and normal activities can usually be continued. For some men treatment will be given over a shorter period of time, often shorter than 20 days.</p>	<p>It usually needs to be done 5 days a week for between 4 - 8 weeks although often appointments can be given to suit your other commitments.</p>

It may also be suitable for men whose general health and fitness would rule out surgery.

The PSA level should continue to fall but can take some time to reach its lowest 'nadir' level.

It is not possible to know how successful the treatment has been until after a period of follow up.

There is a very small increased risk of a radiation induced cancer 5-10 years after treatment in the pelvic area. Most are early tumours of the bladder, bowel or skin and easily treated.

What might this mean for you when choosing treatment?

Any treatment for prostate cancer will have an impact on your quality of life. Recent studies have shown that for the majority of men whichever treatment is chosen for early prostate cancer there is an equal impact on the risk of mortality around 15 years after treatment.

So, when deciding on which treatment to choose it's important that you consider both the short-term and longer-term side-effects and when these effects are likely to happen. Then you can choose the treatment that you consider will be the most appropriate and acceptable for you and on **your** life and lifestyle **now and in the future**.

When making a decision about which primary (or first) treatment to choose, men and particularly younger men may need to think about which other treatment(s) may be available to them if their first treatment isn't successful or cure their cancer and their cancer comes back again.

Before choosing radiotherapy you may have some questions.....

Before choosing radiotherapy, you may have some questions to ask your oncologist or CNS. A list of possible questions is given below. Think about what you would like to know, so perhaps you would need only to ask a few of these or you may have questions of your own.

- Is radiotherapy a suitable option for me to think about? Is it available in my area?
- What do you expect the radiotherapy to do to the cancer? Could it cure my cancer?

- Would I need to have hormone therapy before the radiotherapy?
- Why do I need to take hormones? If I do, how long will this be for and what are the possible side-effects of the hormone treatment?
- Why do you think this might be the best option for me?
- Could having radiotherapy make me feel worse?
- Can you explain what the risks and side-effects are likely to be? Are these likely to affect me in the short-term or are they more likely to be longer term?
- In your unit, after having radiotherapy, roughly how many men do you find have problems with incontinence and erectile dysfunction and for how long?
- Is there anything I could do to help with the side-effects?
- When would radiotherapy start?
- How often will I have the treatment and for how long?
- Where would I have the treatment?
- Is it ok for me to drive to and from the hospital to have my treatment?
- When and how will we know whether the radiotherapy treatment has been successful?
- What check-ups would I have and how often would I need follow-up appointments?
- What would be done at the check-ups – PSA check, scan?
- If radiotherapy is not successful then what would be my options?
e.g. surgery, hormone treatment?
- Are there other suitable treatment choices that I could think about?
- Why would EBRT be better for me than a radical prostatectomy or brachytherapy?
- What is the outlook for me?
- Is there someone that I can talk to who has had the radiotherapy treatment that I am thinking about?

EBRT with seed boost

This section explains a bit more about combining 2 treatments:

- External beam radiotherapy where high energy x-ray beams from outside your body are targeted to the cancer cells/tumour in your prostate to destroy these cancer cells. (please see information in previous chapter)
- Brachytherapy means that tiny seeds that emit radiation are placed inside your prostate next to the cancer cells to destroy the cancer cells from the inside. You will need to have a general or spinal anaesthetic to have these seeds put into your prostate. (please see more information about brachytherapy in our booklet 'Spotlight on brachytherapy')

Why might combination treatment be suggested for me?

- The aim of combining the 2 treatments is to treat more aggressive and more widespread cancers with a higher dose of radiation.
- It can be used very effectively to treat intermediate and high-risk prostate cancers.
- As the radiation emitted from the seeds only travels a very small distance (about a couple of millimetres) to kill the cancer cells, a higher dose of radiation can be given than having EBRT on its own.

Combination therapy involves:

- A 4 ½ week course (23 fractions) of external beam radiotherapy given for 5 days a week, Monday to Friday.
- A boost with brachytherapy seeds around 2 weeks after the course of radiotherapy has finished.

Side-effects of combined treatment

Side-effects that you might come across include needing to pass urine frequently (especially during the night), having a weak stream, needing to pass urine urgently, bowel upset, fatigue and problems with erections. There is more information about these side-effects in the section on EBRT from page 14 to 19.

EBRT with high dose rate brachytherapy (HDR) boost

This is a new procedure available from the oncology department at the Western General Hospital in Edinburgh. At the time of writing (February 2023) HDR boost is available to those living in the NHS areas of Fife, Borders, Lothian and Dumfries and Galloway. Eligible (those who fit certain criteria/conditions) patients who are interested in having HDR boost and don't live in these areas should discuss the possibility of having this treatment with their consultant.

This section explains combining 2 treatments:

- External beam radiotherapy (EBRT) where high energy x-ray beams from outside your body are accurately focused on the cancer cells/tumour in your prostate to destroy these cancer cells. (please see EBRT section)
- High dose rate (HDR) brachytherapy means that specially designed, needles called HDR catheters are very accurately inserted/placed into the prostate next to the cancer. A small pellet of Iridium-192 is sent through the HDR catheters into the prostate. There, the pellet emits high doses of radiation to kill the cancer cells. After a very specific amount of time, usually only a few minutes, the pellet is taken back up into a machine and the catheters are taken out. (for more information see our 'Spotlight on LDR and HDR brachytherapy. Please only read the section on HDR brachytherapy)

Why might combination treatment be suggested for me?

- The aim of combining the 2 treatments is to treat more aggressive and more widespread cancers with a higher dose of radiation.
- It can be used very effectively for those with stage T3B* in the area of the prostate to the front of the urethra. This is generally those with high-risk prostate cancer.
- As the Iridium-192 pellet only emits radiation for a few minutes then is taken out a higher dose of radiation can be given than having EBRT on its own.

Combination therapy involves:

- A 4 ½ week course (23 fractions) of EBRT given 5 days a week, Monday to Friday.
- A boost with HDR brachytherapy pellets around 1-2 weeks before or after the course of external beam radiotherapy.

Side-effects of combined treatment

Side-effects that you might come across include needing to pass urine frequently (especially during the night), having a slow stream, needing to pass urine urgently, bowel upset, fatigue and problems with erections. There is more information about these side-effects in the section on EBRT from page 14 to 19 and in Spotlight on LDR and HDR brachytherapy, pages 46 and 48. 24 *T3b means that the cancer has broken through the capsule(cover) of the prostate. For more information on stages, please see 'Early prostate cancer explained', page 31.

What is Stereotactic Body Radiation Therapy (SBRT)?

SBRT is a type of external beam radiation treatment that delivers very precise and higher doses of radiation from outside the body. This works in the same way as other radiotherapy treatments to damage the cancer cells.

Currently, (July 2023) this is only available as a clinical trial, called the PRINToUT research study, in Lothian health board.

The trial is investigating whether the release of chemicals in the breath when the man is having a course of radiotherapy can predict how the prostate cancer and surrounding tissues respond to the radiotherapy. If the trial is successful it could allow radiotherapy to be even more personalised with the doses of radiotherapy being adjusted up or down during the course a man's treatment.

If you are invited to take part in this trial, you will be given a Participant Information Sheet which explains the procedures and tests in much greater detail. If you decide to take part in the trial, you will be asked to sign a consent form.

An overview of the treatment

The very sophisticated equipment (Linac) is used to pinpoint the exact position of the tumour within the prostate and then delivers SBRT. To deliver SBRT, changes are made in the way that the LINAC machine is used; the dose rate is increased, and the beam is delivered without a flattening filter. In this way the direction of the radiation beams can be very precisely adjusted and corrected to the tumour site, supported by the use of a tumour tracking system. This allows for any movements or slight changes of position made by the patient.

The dose of each fraction of radiotherapy is larger than with traditional EBRT. As a result, the treatment dose is delivered in 5 large doses of radiotherapy over 5 days and you will not be treated on a Saturday or Sunday. To deliver such doses safely, they need to be delivered very accurately to the prostate. Because the beams are so precisely targeted there is less radiation reaching other healthy tissues or organs around the tumour site. Additional hormone therapy is not required.

When might this be suggested?

As a primary/main treatment to potentially cure the cancer when it is contained in the prostate and has not spread (metastasised) to other parts of their body.

- As a treatment, after a period of active surveillance if there are signs of the cancer growing.
- For men with low or intermediate risk prostate cancer.
- For men who are medically fit for treatment.
- For men with a prostate volume of 70cc but possibly up to 90cc if their urinary flow rate is acceptable.

What happens?

(The information that follows is meant as general guidance. As procedures may vary slightly, ask for more advice from staff at the hospital you are attending. If you have been given any specific guidance by the hospital, then it is important that you follow their instructions.)

There are a few steps for SBRT using the RayPilot® HypoCath® system. (Raypilot Hypocath uses a special short-term urinary catheter with a built-in transmitter. This continuously tracks the prostate and clearly shows where the urethra is when radiotherapy is given.)

1. At present this is only available as part of a clinical trial.

The research nurse will organise a consultation with the oncologist to discuss the trial and your treatment. If you are happy to go ahead then you will be given written information about the trial, then you will sign the consent form.

2. Gold fiducial seeds or markers

Before putting the seeds into place, you will be asked to stop any blood thinning medicines that you take such as Clopidogrel, Aspirin, Apixaban or warfarin for 7 days before this procedure.

Tiny gold fiducial seeds/markers are inserted into the prostate through the bowel wall. You will have a local anaesthetic. It is a similar procedure to having a biopsy. The whole process of inserting the seeds should only take about 30 minutes. You will be asked to take antibiotics for 3 days afterwards.

3. MRI radiotherapy planning scan

Around 7-14 days after you had the gold markers implanted, an initial MRI scan will be done which will last for about 30 minutes. Before your MRI scan you will be given a suppository (medication into your back passage) to expel gas.

Some local anaesthetic will be given into the urethra then a urinary catheter is passed down the urethra into the bladder and fixed in place. This is to mimic the position of the RayPilot® HypoCath®. This scan will be combined with the radiotherapy planning CT scan to pinpoint where the tumour is.

4. Radiotherapy planning CT scan

As far as possible, this will be done on the same day as the MRI scan. Before your CT scan you will be given a suppository (medication into your back passage) to expel gas.

You will be asked to empty your bladder, then 250mls of sterile water will be run through the urinary catheter into your bladder to refill the bladder with an exact amount of water. Measurements will be taken of the prostate to find out exactly where it is. Some small permanent dots will be marked onto your skin.

The scan takes about 20 minutes.

After the scan the catheter is taken out.

The results of the MRI and CT scans are used to create your individual radiotherapy treatment plan. You will probably start your radiotherapy treatment about 1-2 weeks after the scans.

5. *Placing the tumour tracking system*

The day before your radiotherapy treatments are due to start, you will have the RayPilot® HypoCath® put into your bladder. This is exactly the same procedure as when the urinary catheter was put into your bladder during the planning stages.

The RayPilot® HypoCath® is held in place in the bladder by filling the balloon at the end of the catheter with 10mls of sterile water. The RayPilot® transmitter sits in the HypoCath® inside the part of the urethra that runs through the prostate. The RayPilot transmitter shows the prostate in 3D and continuously tracks the position and any movement of the prostate.

6. *Treatment days*

You will have a suppository to get rid of any gas in your bowel then you will need to empty your bladder and 250mls of sterile water will be run into your bladder. This is the same procedure as when you had the CT scan.

You will have to lie on your back on a special treatment bed with your arms at your side. The RayPilot® HypoCath® is connected to the treatment bed. The special machine that delivers the treatment is called a linear accelerator and the tracking device plugged into the bed tells this machine about the exact position of your prostate as a 3D image. Any movement of the prostate is picked up and the radiotherapy beam switched off.

From start to finish, your treatment will take about 30-40minutes. For each of the 5 days that you have treatment, the procedure will be the same.

7. What about an anaesthetic

No. The treatment is like having an x-ray. You can't see the radiation; it doesn't feel hot or cold and shouldn't cause you any pain.

8. What about potential side-effects?

While the treatment itself doesn't hurt, it may have some troublesome side-effects. However, not all men react the same to the treatment and the side-effects you may have could be different from someone else having SBRT. You may notice side-effects just after your treatment has started and these may go on for a few weeks after your treatment finishes. The type of side-effects, how troublesome these might be or indeed the absence of side-effects doesn't mean that your treatment is not working.

Please let the radiographer, oncologist or CNS know about any troubling side-effects as some side-effects can be helped with medications if necessary and usually settle down.

Feeling tired and having little energy.

Most people find that they are able to carry on with their usual daily activities and some people carry on working. However, feelings of tiredness may build up because your body uses a lot of energy dealing with the effects of radiation on normal cells. How tired you might be and for how long varies from man to man.

Symptoms when passing urine

Because the bladder lies just above the prostate it may become irritated or inflamed due to the treatment. You may notice that:

- You need to pass urine more often.
- You need to pass urine in more of a hurry.
- You need to pass urine more often during the night.
- You have a burning feeling when passing urine.

These side-effects are often temporary and settle within 4 weeks of treatment. However, if you are in a lot of pain and stop passing urine, you should contact your GP, NHS 24 or go to your nearest A&E department.

Bowel symptoms

As the bowel lies close to the prostate it may become irritated or inflamed because of the treatment. You may notice that:

- You need to open your bowels more often, have a feeling of urgency and motions may be much looser.
- You might have cramps in your lower tummy, pain around your back passage and pass a lot of wind.
- Alternatively, some men find difficulty in opening their bowels (constipation).

These side-effects are often temporary and settle within 4 weeks of treatment.

As with all other treatments for prostate cancer, there is a small risk of longer-term urinary and bowel symptoms.

Difficulties with erections

Over time you may notice difficulties in getting and keeping an erection (erectile dysfunction or ED) although this is much less likely than with EBRT or prostatectomy. This is because the blood vessels and nerves needed to get an erection can be damaged during the treatment.

One recent study has suggested that 25% of men experienced a decrease in erectile function after SBRT.

There are several types of treatment available for ED, and, if this becomes a difficulty you should speak with your oncologist or CNS. Options might include medication taken as a tablet, medication as a pellet using an applicator, cream applied to the tip of the penis, medication which is injected or through the use of a vacuum pump.

For more information see Page 19 or 'Spotlight on Prostate conditions and erectile dysfunction'.

At home...

It may help if you:

- Try to get a good night's sleep and perhaps a short rest during the day.
- Think about work – do you need some time off, can you have some time off, work for fewer hours, work from home? Some people are well enough to continue to work full- time and organise their treatment to fit in.
- Taking light exercise every day (such as going for a walk) and keeping active should actually help with any feeling of tiredness.
- Have a healthy, well-balanced diet.

For more information on any of these, speak to the research nurses, CNS or oncologist.

How do I know if the treatment has worked?

After you have had SBRT, the oncologist or CNS will want to see how you are with regular check-ups and your PSA level will be measured. It's been noticed that the PSA level often falls most in the first month after treatment then steadily reduces over time for about 2 years after treatment.

Following SBRT, there may be occasions where the PSA may 'bounce or spike'. This doesn't necessarily mean that your treatment isn't working, and your oncologist or CNS will most likely want to chat over why this might happen. However, if your PSA level keeps on rising, this may be due to the cancer recurring and your doctor or CNS will talk this over with you and may want to do further tests.

Advantages

Drawbacks

<p>SBRT is minimally invasive, does not require a general anaesthetic and no hospital stay. Offers cure rates for cancer with low and intermediate risk prostate cancer comparable to the results with surgery, brachytherapy and EBRT.</p>	<p>Follow up of patients treated is still relatively recent so long term side- effects are not well known.</p> <p>If cancer comes back then treatment options might be cryotherapy, HIFU or surgery with and increased risk of side-effects. (At the time of writing (July 23, HIFU is not currently available in Scotland, but this may change in the coming months)</p> <p>There may also be the option of focal salvage seed brachytherapy.</p>
<p>Difficulties with getting and keeping erections are not as common as with surgery or External beam if additional hormone therapy is used.</p>	<p>Risks increase over time.</p>
<p>Number of treatment visits is much less than with conventional external beam</p>	<p>Mainly suitable for prostate volumes of less than 70cc but a prostate volume of up to 90cc might be considered if their urinary flow is good. Not suitable for men with significant urinary bother or those who have had a TURP.</p>
<p>SBRT very accurately and precisely targets the tumour with less chance of healthy tissue and organs near the tumour being affected.</p> <p>At the time of writing (July 2023) Stereotactic body radiation (SBRT) is available as part of a clinical trial. This involves receiving curative radiotherapy in only 5 large doses over 1 week.</p>	<p>Any movement of the prostate during treatment could increase the dose to the normal tissue or decrease the dose to the tumour, however this risk is significantly reduced by monitoring the prostate position with specialist systems such as RayPilot® Hypocath® and Calypso®.</p> <p>There is a very small increased risk of a radiation induced cancer in the pelvic area 5-10 years after treatment. Most are early tumours of the bladder, bowel or skin and easily treated. (3 cases per 1000 patients treated)</p>

Follow up

You will have review appointments after 6 weeks, 12 weeks, 24 weeks, 12 months, 18 months and 24 months.

Before each appointment you should see your GP to have a PSA blood test, at least 48 hours before your clinic visit.

The Calypso® system

This is a slightly different system in that three Calypso beacons are inserted into the prostate. These beacons act as radio transponders to track the position of the prostate, so if the prostate moves at all, the radiotherapy beams are switched off.

The beacons are put into the prostate in the same way as the fiducial markers. You will be asked to lie on your side. The ultrasound probe will be slid gently into the back-passage to see the prostate and guide the insertion of the beacons.

Antibiotics will be given to take for a few days after these have been inserted to help stop any spread of infection from the bowel to the prostate.

These beacons will remain in the prostate after the radiotherapy is completed in the same way as the fiducial markers are.

Getting the system in place will take about 20-30 minutes in total from start to finish.

With the Calypso® system the planning CT scan is usually performed 7-10 days later to let the beacons settle in the prostate.

Just like the Raypilot® Hypocath, an individual treatment plan will be developed. For more information about this system and whether it is available, please speak to your consultant oncologist.

The emotional impact of cancer.

This section is relevant for those who have had EBRT, EBRT with seed boost, EBRT with HDR brachytherapy or stereotactic body radiation therapy.

In addition to managing the physical side-effects of prostate cancer and treatments, it can sometimes be hard to deal with how you are feeling. There are however many things that can be done to help you manage if you are affected. Everyone is different and not everyone will be affected, or by the same feelings.

Some people going through treatment or after treatment might feel worried about whether they are making or have made the right treatment choice, about the side-effects they are experiencing from treatment or about getting their PSA or scan results. Sometimes people's moods and how they are feeling can be affected as they go through treatment. And for some if their treatment has finished, they may feel relief, but also fearful of the cancer coming back. Some people may find their moods and how they are feeling may go up and down. All these feelings are normal.

What kind of feelings are we talking about?

Some people going through or after treatment may at times have:

Low mood or feeling depressed.

How having a low mood or being depressed might make you might feel:

- Very sad, or very low for most of the day and these feelings persist.
- Not having the energy to do things that you took for granted before.
- Losing interest in hobbies, not taking part in activities you used to enjoy, not feeling up to see family and friends.
- Feeling very tired yet having trouble sleeping.
- Having trouble focusing or concentrating and perhaps not able to make decisions.

Feeling anxious

Being anxious can affect you in many ways:

- Feeling very worried all the time and finding it difficult to let go of these thoughts.
- It can make it hard for you to carry out everyday jobs and not able to take care of yourself.
- Being very restless, feeling on edge for a lot of the time or jumpy.
- Feeling tired, short tempered, touchy.
- Feeling shaky or trembling

Feelings of panic

Panic attacks are severe/strong feelings of being anxious or scared. You feel as though you have very little control over them and these can be very scary. These can come on at any time and sometimes for no apparent reason.

For instance, panic attacks may mean that:

- Your heart rate shoots up and you feel the beats almost pounding in your chest.
- You feel hot and sweaty.
- You feel shaky or numb or tingly.
- You feel dizzy, light-headed or feel you might faint.
- It's difficult to catch your breath and you take very small quick breaths or feel that you have difficulty in breathing.

Coping with these feelings

Just like with everything else in life, people find different ways of helping them cope with these feelings. Some people try new activities that they never thought they would enjoy so don't rule anything out.

Here are some ideas for you to think about. Not all of these will be for you but maybe give some a try.

Getting more information.

For some men and their family, it helps to know more about everything that is going on, so they feel more in control and more knowledgeable when they go to see the urologist, oncologist, CNS or GP. They have a better grasp of what they are being told during their consultation and can ask questions about anything they don't understand. When searching for more information use reputable/trustworthy websites for example:

<https://www.prostatescotland.org.uk/>

Prostate Scotland Cancer Navigator App is free to download from Google play or the App store

<https://www.cancerresearchuk.org/>

<https://www.macmillan.org.uk/>

<https://prostatecanceruk.org/>

<https://www.maggies.org/>

<https://www.samh.org.uk/>

Remember too that your CNS, urologist, oncologist and GP can provide you with more information and answer your questions.

Talking it out

For some men talking to their partner or spouse or their family and friends provides them with the support that they need. They feel comfortable and at ease showing how they feel – sad, teary, angry etc.

Other men might find it easier to talk someone from the team looking after him – the CNS, urologist, oncologist and GP.

The important thing to realise is that you're not alone – others have had similar feelings and thoughts. There are Prostate Cancer Support Groups throughout Scotland where you can talk to other men who have already been on or still on the same journey as you are right now. Some of the groups run a 'buddy scheme' and you can talk to someone who has had/is having the same treatment as you. (see the Prostate Scotland website for more details).

There are organisations who provide confidential support to let men talk about what they are going through, for example:

<https://www.prostatescotland.org.uk/> One-to-One support run in partnership with some Maggie's Centres

<https://www.maggies.org/>

<https://www.cancersupportscotland.org/>

Prostate Cancer UK Specialist Nurses tel 0800 074 8383

Macmillan cancer support line call 0808 808 00 00

Cancer research UK, Nurse helpline 0808 800 4040

For some men once they have come to terms with their diagnosis and treatment, like to share their personal stories with others, often to stress the importance of early diagnosis and for men not to bury their head in the sand. This can be through talking to work colleagues, family, friends, sharing their story in the press etc. Here you will find great examples of men sharing their stories. If you don't feel ready to talk about your own experience, it can still be useful to hear other men talk about their experience of prostate cancer, and the videos below allow you to listen without needing to join a group:

<https://www.theinfopool.co.uk/personal-stories>

Keeping track

Some men like to keep a record of their cancer journey from PSA test results to treatments and side-effects. If this is something you would consider then the Prostate Scotland Cancer Navigator App is free to download from Google play or the App store and has a special section where you can do just that including keeping track of your fatigue as well as levels of anxiety. For others it may be as simple as keeping a notebook handy or using the Prostate Scotland Log Book.

You could also try writing down your feelings, worries and concerns and think about any practical things you could do to help yourself.

Time out

Would time away and just forgetting about everything help for a wee while? Trying a new hobby that you've thought about doing for a long time but never got round to it?

- Getting back to a hobby or activity that you enjoyed before - a game of golf, bowls or darts.
- Mending the fence, cutting the grass, putting up the shelf.
- Visiting gardens or historical sites that you've always put off.
- Visiting museums, art galleries, listening to music, trying to paint or sketch, write short stories or poetry, go dancing.
- Trying yoga, meditation, Tai Chi.

There are so many things out there that you might never have tried so give them a go and have fun!

Looking after yourself.

It's all too easy to fall into the trap of thinking about your diagnosis so much that you forget to look after you. Try to have a good diet with plenty of fresh fruit and vegetables. Sleep is important too. Talk to your CNS, Urologist, Oncologist or GP if you're having trouble sleeping.

Some people may be tempted to try and escape it all by drinking too much alcohol or using drugs. This is never a good idea. Alcohol and unprescribed drugs may make how you're feeling worse and might affect the treatment that you are on.

Look out for our 'Living well with prostate cancer' 6 week course run in partnership with some Maggie's Centres. <https://www.prostatescotland.org.uk/help-and-support-for-you/living-well-with-prostate-cancer-course>

This website is well a worth a look as it is dedicated to giving support at every stage of your journey. They offer a range of workshops and classes providing advice and guidance around the physical changes you may experience while undergoing treatment. <https://lookgoodfeelbetter.co.uk/support/men/> <https://lookgoodfeelbetter.co.uk/workshops/>

Getting active

Speak to your CNS, Urologist, Oncologist or GP first, but research has shown that exercising when you have prostate cancer can make a difference:

- It might relieve some of the side-effects of treatment.
- It may help slow the risk of progression of prostate cancer.
- It might improve prostate cancer survival.
- Overall, it may improve your mood and relieve some stress, tension and anxiety.

If you've been used to regular exercise you might be keen to get going again. If exercising is completely new to you then doing a small amount of exercise is better than not doing anything so don't feel daunted about getting started.

Try going for a walk, playing golf or going bowling, washing the car, doing the weeding, walking up the stair – all these things and more count towards having some exercise.

Prostate Scotland have an exercise video on our website specifically designed for men with prostate cancer so grab your trainers and give it a go!

<https://www.prostatescotland.org.uk/news/prostate-cancer-exercise-video>

In some areas we also offer Prostate FFIT 12 week exercise courses for men living with prostate cancer <https://www.prostatescotland.org.uk/help-and-support-for-you/prostate-ffit>

Above all if you're struggling to cope then please talk to someone. Your CNS, Urologist, Oncologist and GP are great sources of help along with the many voluntary organisations out there.

Palliative radiotherapy

Palliative radiotherapy is used in completely different circumstances and is not covered in this booklet. Another booklet, Advanced Prostate Cancer Explained gives more information on this type of treatment and can be downloaded from our website. **www.prostatescotland.org.uk**

This section is relevant for those who have had EBRT, EBRT with seed boost, EBRT with HDR brachytherapy or stereotactic body radiation therapy.

COMPASS

Prostate Scotland is currently developing a range of support and wellbeing services to help people across Scotland navigate prostate cancer. It's called our COMPASS project and in time it will cover information, courses, exercise programmes, workshops and support services for people with prostate cancer and disease. Visit www.prostatescotland.org.uk/help-and-support-for-you to see what's available.

We currently offer:

- Prostate Scotland Cancer Navigator App available and free to download from the Apple Store or Google play. This includes information on treatment decision making, the ability to record your consultation (with permission), appointment and medication diaries, monitor side-effects and much more.
- The opportunity to speak to a Cancer Support Specialist through a joint initiative with Maggie's in some areas of Scotland. The Cancer Support Specialists have expert knowledge of prostate cancer, and you can speak to them face-to-face at a Maggie's centre, on the phone or by video call. Whether it's talking through being diagnosed with prostate cancer, chatting about your treatment options, speaking about your symptoms and side-effects or the impact it's had on your life, this service can help.
- A 'Living Well with Prostate Cancer' This is a 6 week course for those undergoing treatment or when treatment has finished. We take a look at fatigue, urinary problems, side-effects and how to minimise them, erectile dysfunction and relationships, eating well and the practicalities of living with prostate cancer.

- Our special online exercise programmes for those living with prostate cancer are particularly relevant for those on hormone therapy. Please check with your CNS, oncologist, urologist or GP that these programmes are suitable for you before starting to exercise. Available on our website <https://www.prostatescotland.org.uk/help-and-support-for-you/exercise-video>
- In some areas of Scotland, we will have a 12 week programme to participate in a specially designed exercise course as well as building your knowledge on diet and nutrition and healthier lifestyles. We ran 2 pilot programmes earlier in 2023. These were so successful that other football clubs are now offering the Prostate FFIT (Football Fans in Training) 12 week programme. For more details, please go to our website <https://www.prostatescotland.org.uk/help-and-support-for-you/prostate-ffit>
- There will shortly be a 'Treatment decision making' workshop. Check our website as to when this will be available.

For more information visit

[prostatescotland.org.uk/help-and-support-for-you](https://www.prostatescotland.org.uk/help-and-support-for-you)

Prostate Scotland

Other booklets from Prostate Scotland that you may find useful:

- **'Early prostate cancer explained'**
- Spotlight on **'Pelvic floor exercises before and after radical prostatectomy'**
- Spotlight on **'Prostate conditions and erectile dysfunction'**
- Spotlight on **'Incontinence as a symptom of prostate problems'**
- Spotlight on **'Hormone therapy for prostate cancer'**
- Spotlight on **'Caring for your indwelling Catheter at home'**
- Spotlight on **'Prostate conditions and erectile dysfunction'**
- **'Advanced prostate cancer explained'**

Maggie's Centres in Scotland

Maggie's Centres provide support for anyone diagnosed with cancer and also for their family.

To find a Maggie's Centre near you visit: www.maggies.org/our-centres/

Prostate Scotland works in partnership with some Maggie's Centres to run the Prostate Scotland COMPASS service providing the one-to-one support service or the 'Living well with prostate cancer' course.

Please note Prostate Scotland is not responsible for the content of any of the external websites.

Useful contacts

For more information:

If you have any questions, then you can speak to your CNS, oncologist or GP. It may also help to look at the following websites or contact the organisation by phone or email. These organisations also have information leaflets available and some offer telephone helplines which you can contact for support or to answer your questions. There may be a prostate cancer support group in your area where you can talk to other people (and often their family) who have been diagnosed with prostate cancer. These support groups may provide you with additional information.

Often these people share their experiences when they were diagnosed with prostate cancer, how they decided on treatment and about the various types of treatment they are having or have had.

● EXTERNAL BEAM RADIOTHERAPY
FOR PROSTATE CANCER

Organisation	Website	Contact number	Helpline available
Prostate Scotland (includes support group details)	www.prostatescotland.org.uk	0131 603 8660	Telephone information service (not a helpline)
NHS 24	www.nhs24.com	111	✓
Prostate Cancer UK (Includes some support group contact details)	www.prostatecancer.org.uk	0141 314 0050	✓ 0800 074 8383
Macmillan Cancer Support Support Nurses	www.macmillan.org.uk		✓ 0808 808 0000
Cancer Research UK Cancer Information Nurses	www.cancerresearchuk.org		✓ 0808 800 4040

Our work

All our awareness materials, introductory guides, explanatory guides and ‘Spotlight on’ guides such as this booklet are available free of charge to people and their families and all healthcare settings.

If you found the booklet helpful, you can help us reach many more people with awareness and information about prostate disease and prostate cancer by:

- Obtaining and wearing a Prostate Scotland badge
- Volunteering some of your time
- Taking part in or organising a fundraising event or making a donation.