SPOTLIGHT ON

External Beam Radiotherapy for Prostate Cancer

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Introduction

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.

This booklet is to help you, your partner and your family understand more about External Beam Radiotherapy (EBRT) – what it is, who it's suitable for, what happens and the advantages and drawbacks of this treatment. 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 starts out about the size of a pea then slowly grows reaching the size of a walnut when the man is in his 20s. Around the age of 40, it starts to grow or enlarge again and this may cause problems for a man when passing urine. Only men have a 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. Therefore, the prostate can't be seen or checked from outside the body.

It supplies a thick, clear fluid that mixes with sperm to form semen, called the ejaculate. This fluid helps to nourish and protect sperm during intercourse. The prostate also makes Prostate Specific Antigen or PSA which is a protein that makes semen more fluid and so helps sperm move more easily.

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;

- **Brachytherapy.** This involves small metal seeds which emit radiation being implanted (put into) the prostate to kill the cancer cells from inside the prostate. If relevant for you, there is a booklet 'Spotlight on prostate brachytherapy' available from Prostate Scotland www.prostatescotland.org.uk, or by emailing info@prostatescotland.org.uk or by calling us.
(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 aimed at 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. 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.

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 24-29.

3. As a treatment, after a period of active surveillance. If there are signs of the cancer growing or progressing, then EBRT may be one of the treatment options offered to you;

4. For men who are expected to live for at least 10 years;

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 (2-3 years);

8. Smaller doses of EBRT can also be used very effectively to treat bone pain in cases of cancer spread to the bones.
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 several 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 - 6 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 it?
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 can be similar to those experienced by women 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;
- Feeling tired and lacking in energy;
- Not being able to get and keep an erection. This is called erectile dysfunction;
- Lack of sexual desire (you may hear this called loss of libido);
- Mood swings – feeling upset or depressed;
- Swelling and tenderness around the breast area;
- With longer term use, you might find that you gain some weight especially around your tummy area;
- Potential impact on bone density and bone health particularly with the injections. This is called Osteoporosis or bone thinning.

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.

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 above should gradually become less when hormone treatment is stopped.

For more information on hormone therapy there is a booklet entitled ‘Hormone therapy for prostate cancer’ available to download from our website www.prostatescotland.org.uk or email info@prostatescotland.org.uk or call us and a copy will be sent to you.
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 19 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 days.

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). 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 targeted at the prostate so minimising the amount of radiation to the bowel and bladder.

What happens?
If you take warfarin, 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 use these markers then you will need to have these implanted into your prostate at least 7-10 days before your CT scan, so they have a chance to settle into place.

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 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 using 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 dots or tattoos 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.

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**Radiotherapy treatment**

*(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 days;

• 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 “tattoos” 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;

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;
- Some men find drinking cranberry juice is helpful but if you normally take warfarin you shouldn’t drink cranberry juice;
- 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 or oncologist before using any other constipation medicines.
**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;
- The doctor or CNS may be able to prescribe medication to help with bowel symptoms;
- 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. The doctor, CNS or a 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.

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. 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.

Difficulties with erections
Difficulties in getting and keeping erections (erectile dysfunction (ED) or impotence) may occur in up to 60% of men after radiotherapy. 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.
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?

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Drawbacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBRT is non-invasive, it does not require a general anaesthetic.</td>
<td>It can have a delayed, but long-term, effect on getting and keeping erections.</td>
</tr>
<tr>
<td>Offers cure rates if cancer is low-risk comparable to the results with surgery and brachytherapy taking into account the relative aggressiveness of cancers</td>
<td>It can cause urinary symptoms such as frequency and urgency.</td>
</tr>
<tr>
<td>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.</td>
<td>It can cause inflammation of the rectum called proctitis (feeling of fullness in the rectum) leading to diarrhoea and urgency of bowel motion.</td>
</tr>
<tr>
<td>It is less invasive than surgery or brachytherapy.</td>
<td>A small number of men have persistent symptoms including rectal bleeding after EBRT that may need further treatment.</td>
</tr>
</tbody>
</table>

Difficulties with getting and keeping erections are not as common as with surgery.
Less likely to have long-term urinary incontinence.

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 20 days.

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.
EBRT is not recommended for men with inflammatory bowel disease.

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?
For more information…………………..
If you have any questions, then you can speak to your consultant oncologist, CNS 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 men (and often their family) who have been diagnosed with prostate cancer. These support groups may provide you with additional information.

Often these men 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.

### 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

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Website</th>
<th>Contact number</th>
<th>Helpline available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostate Scotland</td>
<td><a href="http://www.prostatescotland.org.uk">www.prostatescotland.org.uk</a></td>
<td>0131 603 8660</td>
<td>Telephone information service (not a helpline) 0300 666 0236</td>
</tr>
<tr>
<td>NHS 24</td>
<td><a href="http://www.nhs24.com">www.nhs24.com</a></td>
<td>111</td>
<td>√</td>
</tr>
<tr>
<td>Prostate Link UK</td>
<td><a href="http://www.prostate-link.org.uk">www.prostate-link.org.uk</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prostate Cancer UK</td>
<td><a href="http://www.prostatecancer.org.uk">www.prostatecancer.org.uk</a></td>
<td>0141 314 0050</td>
<td>√</td>
</tr>
<tr>
<td>Macmillian Cancer Support nurses</td>
<td><a href="http://www.macmillan.org.uk">www.macmillan.org.uk</a></td>
<td>020 7840 7840</td>
<td>0808 808 0000</td>
</tr>
<tr>
<td>Cancer Research UK</td>
<td><a href="http://www.cancerresearchuk.org">www.cancerresearchuk.org</a></td>
<td>020 7242 0200</td>
<td>√</td>
</tr>
<tr>
<td>Cancer Information Nurses</td>
<td></td>
<td>0808 800 4040</td>
<td></td>
</tr>
<tr>
<td>Edinburgh and Lothian Prostate Cancer Support Group</td>
<td><a href="http://www.eprostatecancersupport.co.uk">www.eprostatecancersupport.co.uk</a></td>
<td>07933 260 066</td>
<td>√</td>
</tr>
<tr>
<td>Livingston group [for West Lothian]</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Both groups run a buddy programme for additional support</td>
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<td>01506 845 981</td>
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</table>
**EXTERNAL BEAM RADIOTHERAPY FOR PROSTATE CANCER**

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</tr>
</thead>
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<tr>
<td>Prostate Cancer Support Group, Maggie’s Dundee</td>
<td>Email <a href="mailto:Lorna.McGoldrick@maggiescentres.org">Lorna.McGoldrick@maggiescentres.org</a></td>
<td>01382 632999</td>
<td></td>
</tr>
<tr>
<td>Prostate Cancer Support Group Maggie’s Gartnavel General Hospital, 1053 Great Western Road Glasgow G12 0YN</td>
<td><a href="mailto:glasgow@maggiescentres.org">glasgow@maggiescentres.org</a></td>
<td>0141 357 2269</td>
<td></td>
</tr>
<tr>
<td>UCAN Care Centre Ward 209, Aberdeen Royal Infirmary</td>
<td><a href="http://www.ucanhelp.org.uk">www.ucanhelp.org.uk</a></td>
<td>01224 550333 (voicemail)</td>
<td></td>
</tr>
<tr>
<td>Prostate Cancer Support Network Fife</td>
<td>Maggie’s Centre, Victoria Infirmary, Kirkcaldy</td>
<td>01592 647 997</td>
<td></td>
</tr>
<tr>
<td>Scottish Borders Prostate Cancer Support Group</td>
<td>Macmillan Centre Borders General Hospital</td>
<td>01721 722 655</td>
<td></td>
</tr>
<tr>
<td>Highland Prostate Cancer Support Network</td>
<td>Maggie’s Centre, Raigmore Hospital, Old Perth Rd, Inverness IV2 3FL</td>
<td>01463 706306</td>
<td></td>
</tr>
<tr>
<td>Webmd</td>
<td><a href="http://www.webmd.com">www.webmd.com</a></td>
<td></td>
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<tr>
<td>Patient UK</td>
<td><a href="http://www.patient.co.uk">www.patient.co.uk</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicine net</td>
<td><a href="http://www.medicinenet.com">www.medicinenet.com</a></td>
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**EXPERT OPINION**

Maggie’s Aberdeen, Aberdeen Royal Infirmary, Elizabeth Montgomerie Building, Westburn Road, Foresterhill, Aberdeen, AB25 2UJ, telephone 01224 645928, email aberdeen@maggiescentres.org

Maggie’s Dundee, Ninewells Hospital, Tom McDonald Avenue, Dundee, DD2 1NH, telephone 01382 632999, email dundee@maggiescentres.org

Maggie’s Edinburgh, The Stables, Western General Hospital, Crewe Road, Edinburgh, EH4 2XU, telephone 0131 537 3131, email edinburgh@maggiescentres.org

Maggie’s Fife, Victoria Hospital, Hayfield Road, Kirkcaldy, KY2 5AH, telephone 01592 647997, email fife@maggiescentres.org

Maggie’s Centre Forth Valley, Forth Valley Royal Hospital, Stirling Road, Larbert, Stirlingshire, FK5 4WR, telephone 01324 868 069, email forthvalley@maggiescentres.org

Maggie’s Glasgow, Gartnavel General, 1053 Great Western Road, Glasgow, G12 0YN, telephone 0141 357 2269, email glasgow@maggiescentres.org

Maggie’s Highlands, Raigmore Hospital, Old Perth Road, Inverness, IV2 3FL, telephone 01463 706306, email highlands@maggiescentres.org

Maggie’s Lanarkshire, Monklands Hospital, Monkscourt Avenue, Airdrie, ML6 0JS, telephone 01236 771199, email lanarkshire@maggiescentres.org

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

Other booklets from Prostate Scotland that you may find useful:
- ‘Early prostate cancer explained’
- Spotlight on ‘Pelvic floor exercises for men’
- Spotlight on ‘Prostate conditions and erectile dysfunction’
- Spotlight on ‘Incontinence as a symptom of prostate problems’
- Spotlight on ‘Hormone therapy for prostate cancer’