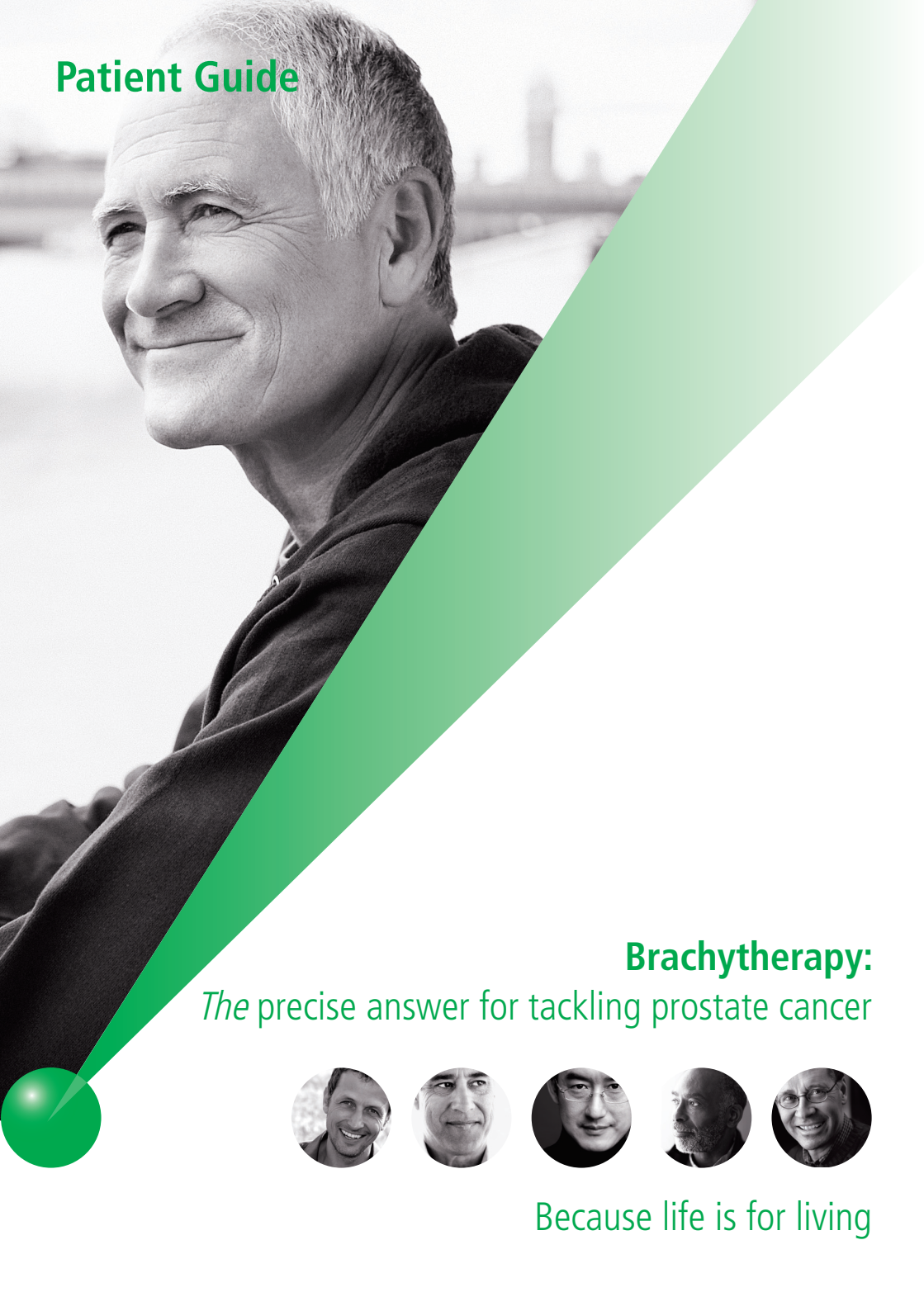


Patient Guide



Brachytherapy:

The precise answer for tackling prostate cancer



Because life is for living

The aim of this booklet is to help men who have been diagnosed with prostate cancer – and their family and friends – at the time when they are deciding which type of treatment will be best for them.

This is inevitably an emotional and stressful time. It is important to have the advice and support of your healthcare team together with all the information you require. This can give you confidence that you are in control and making the best choices available to you.

To treat your prostate cancer there are a number of options that your healthcare team may discuss with you, including:

- Active surveillance (monitoring) or watchful waiting
- Radiotherapy – including a treatment called brachytherapy
- Surgery – also known as radical prostatectomy
- Hormone therapy
- Chemotherapy

This booklet provides you with information about brachytherapy, which is a kind of radiotherapy. Brachytherapy is also known as **‘internal radiotherapy’** or **‘seed therapy’**.

The following pages explain:

- How prostate cancer is **diagnosed and classified** by doctors.
- **The different treatment options available for prostate cancer.**
- Specific information on the **brachytherapy options** for prostate cancer including what they are, how they work and their potential benefits and side effects.
- Where to **find further information.**

“The different treatments I could choose from were total removal of the prostate, brachytherapy and external radiotherapy. The reason I chose brachytherapy is that I had the least chance of incontinence and impotence with this treatment. With the other two treatments, the chances were bigger. All three therapies gave an equal chance of curing my cancer. I thought about quality of life after the procedure as my doctor was confident I would be fine and that is what is important to me.”

Frank V, brachytherapy patient, the Netherlands

How is prostate cancer diagnosed, and what tests are done?

If your doctor thinks that you may have prostate cancer, she/he may recommend a series of tests to confirm the diagnosis. There is no single test that can tell whether you have prostate cancer, so your doctor may recommend a combination. The results of the tests below will also help in deciding which treatment option might be best to treat your tumor.

Digital rectal examination

By inserting a finger into the back passage (rectum) the doctor can feel any changes in size or shape of the prostate.

Prostate specific antigen (PSA)

Men with prostate cancer have higher than normal levels of a protein called prostate specific antigen in their blood. This can be measured with a simple blood test.

Biopsy

A small sample of cells is taken from the prostate using a needle. The cells are examined under a microscope to see if cancer cells are present and their appearance is also checked.

Other tests which may be performed to confirm the diagnosis or learn more about the tumor include a computed tomography (CT) scan or a magnetic resonance imaging (MRI) scan.

Your doctor may talk to you about the **'grade'** and the **'stage'** of your prostate cancer.

Grading is an estimate of how quickly the cancer may progress. It is based on the way that cancer cells from a prostate biopsy appear under the microscope. One of the grading systems most often used is called the 'Gleason score.' Based on how the cells look, a score between 2 and 10 is given. A lower score means the cancer is slow growing. A higher score means that the cancer cells divide and grow more quickly, with a higher risk of the cancer spreading.



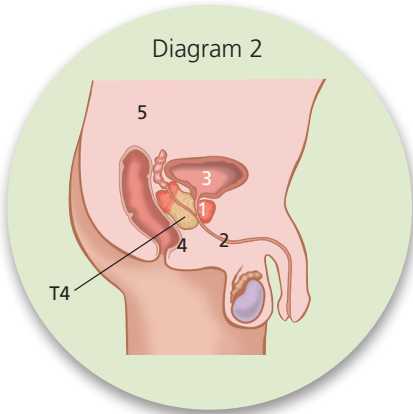
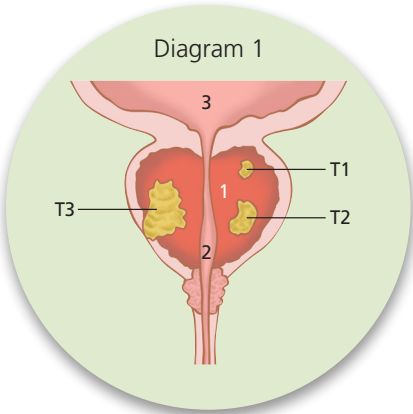
Staging (table below) tells you about the size of the tumor, and if it has spread to other places in your body.

Doctors often use a system called TNM. When talking about prostate cancer, they will often refer to tumor (T) stages.

You may also hear about the **‘risk’** of your cancer. Doctors often group prostate cancer into low, intermediate (middle) or high-risk.

This is based on a combination of things such as the stage and the grade of your prostate cancer, and is used to help make treatment choices.

Type	Stage	Description
Localized/early prostate cancer	T1	The tumor is small and has stayed inside the prostate gland.
	T2	The tumor is bigger, but it is still inside the prostate gland.
Locally advanced prostate cancer	T3	Cancer has started to spread out of the prostate gland and cancer cells have been found in the tissue around the prostate gland.
Advanced prostate cancer	T4	The tumor has spread into nearby organs such as the bladder and/or the bones.



Diagrams showing the stages of prostate cancer (Diagram 1) and surrounding tissues (Diagram 2)
1. Prostate 2. Urethra 3. Bladder 4. Rectum 5. Spine

Treatment options available for prostate cancer

Once the grade and the stage of the tumor are known, the first thing your doctor will discuss with you is whether you need treatment, and what sort of treatment is best for you.

If your cancer is not very advanced, your doctor may recommend **‘active surveillance’**. This can be an option for some men because certain prostate cancers grow slowly and may not be causing immediate health problems. Your doctor will monitor your prostate cancer, and you will probably have regular follow-up blood tests and physical examinations – some people will also have follow-up biopsies. If tests start to indicate that the cancer might progress, treatment can start straight away.

You may also hear about **‘watchful waiting’**. This is slightly different to active surveillance, and usually applies to older men, or to people with other serious health problems. The follow-up tests are usually done less frequently than with active surveillance.

In most cases however, one of the following treatment options will be considered. Depending on things such as the size or stage of your cancer, this may be one or a combination of treatments:

Radiotherapy: Brachytherapy (internal radiotherapy)

Brachytherapy works by precisely delivering the radiation dose into the prostate, sparing healthy surrounding tissues and organs from unnecessary radiation.

Radiotherapy: External beam radiotherapy (EBRT)

The source of radiation is directed at the tumor from outside of the body. The radiation passes through healthy tissues to reach the site of the tumor.

Surgery (often called ‘radical prostatectomy’)

Surgical removal of the prostate and some surrounding tissues.

Hormone therapy

Oral tablets to shrink the size of the tumor. This treatment is usually given in addition to another treatment.

Chemotherapy

A course of chemotherapy may be recommended in more advanced prostate cancer in addition to surgery and/or radiotherapy. Several drugs are effective and your doctor will be able to tell you the best one for you.

Each treatment has its advantages and disadvantages. You should consider these and discuss them with your healthcare team when choosing the treatment option most suitable for you.

What is brachytherapy for prostate cancer?

Brachytherapy is an effective and convenient form of treatment for suitable prostate cancer patients. It is recognized as a standard treatment option alongside surgery and EBRT. It works by targeting the cancerous tumor from inside the body.

Two types of brachytherapy can be used to treat prostate cancer:

- **Low dose rate (LDR) brachytherapy**, sometimes called 'seed therapy', 'internal radiotherapy' or 'permanent seed implantation'.
- **High dose rate (HDR) brachytherapy**. This type of brachytherapy is often used alongside EBRT, but is also used alone to treat prostate cancer.

Both LDR and HDR brachytherapy will be discussed on the following pages.

What are the benefits of brachytherapy?

The benefits of brachytherapy include:

- **Proven to be effective:** Many clinical studies have shown that brachytherapy is an effective treatment for prostate cancer. Cure rates are the same as for EBRT and surgery.
- **Minimized side effects:** The accurate and targeted nature of brachytherapy reduces the risk of side effects, such as urinary incontinence and erectile dysfunction.
- **Minimally invasive with short recovery times:** Brachytherapy avoids the need for extensive surgery. The recovery times with brachytherapy are shorter than with surgery (days versus weeks).
- **Convenience of short treatment:** Brachytherapy is usually given on an outpatient basis. It can be completed in about a day for LDR brachytherapy or in a couple of days for HDR brachytherapy. Overall treatment times vary by hospital – ask your healthcare team. You can get back to everyday life quickly. This is considerably faster than EBRT which can take up to about 7 weeks of treatments to achieve the required effect.



How does brachytherapy work?

Low dose rate (LDR) brachytherapy

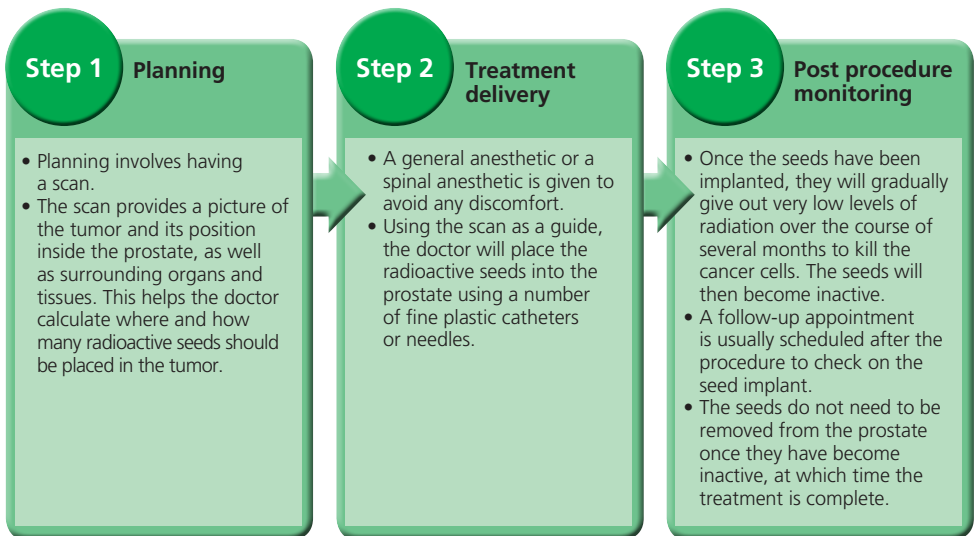
LDR brachytherapy is commonly used to treat **low-risk** prostate cancer. It can also be used in **intermediate-risk** prostate cancer. Small radioactive seeds (about the size of a grain of rice) are inserted into the tumor. The seeds are left inside the tumor and give out low levels of radiation for a few months, which kills the cancer.

What happens when you have LDR brachytherapy?

There are 3 main steps to the procedure; 1) planning; 2) treatment delivery and; 3) post procedure monitoring. With modern techniques, steps 1 and 2 are performed together, and take about an hour, usually with a day spent in the hospital. Some patients may have an overnight stay.



Radioactive seeds used in LDR brachytherapy



High dose rate (HDR) brachytherapy

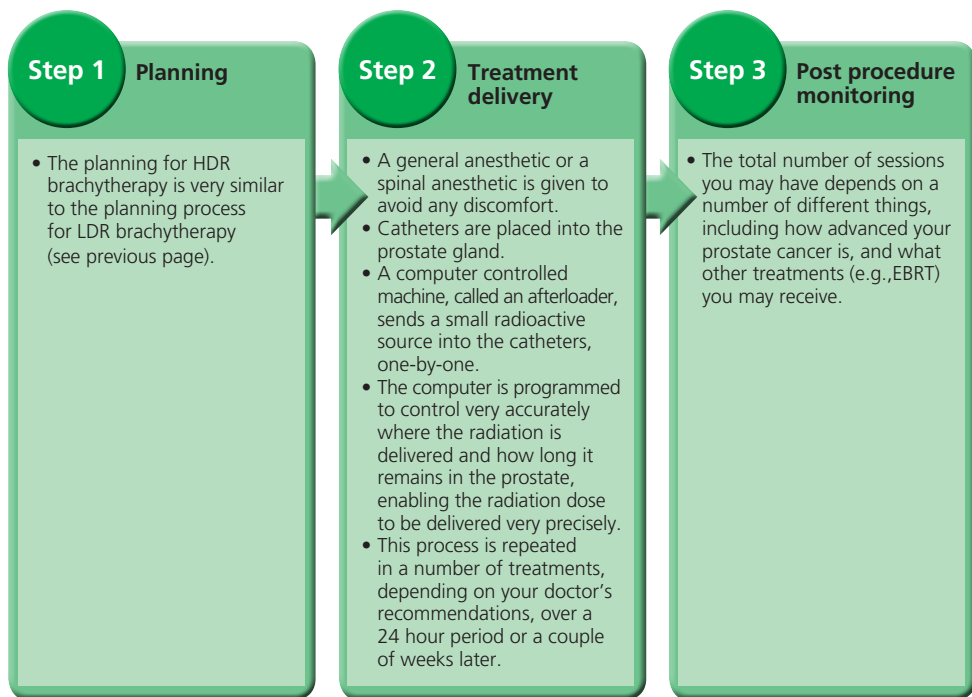
HDR brachytherapy can be used to treat **intermediate-** and **high-risk** prostate cancer. It involves putting a radioactive source inside the tumor for a short time.

Unlike in LDR brachytherapy, no source is left in the prostate after treatment. HDR brachytherapy can be used with EBRT to provide an additional, targeted dose of radiation. HDR brachytherapy is also used on its own.

What happens when you have HDR brachytherapy?

Like LDR brachytherapy, HDR brachytherapy involves 3 main steps; 1) planning; 2) treatment delivery and; 3) post procedure monitoring.

An HDR brachytherapy treatment session takes about 1.5 to 2 hours, usually with 1 day spent in hospital, sometimes with an overnight stay (see Step 3, below).



For both LDR and HDR brachytherapy, follow-up appointments are usually scheduled after the procedure to check that the treatment is going well and has been successful. This usually involves blood tests to check your PSA level.

What else should I know about prostate brachytherapy?

As with all treatments for prostate cancer you may experience side effects after brachytherapy.

The type of side effects that you may experience depends on a number of factors, including the stage of your prostate cancer and whether you have any other health problems. **People respond to treatments in different ways and you may, or may not, experience some of these side effects.**

Just after the brachytherapy procedure itself you may experience some bruising or soreness around the area between the scrotum and anus. Some patients may notice tenderness between the legs where the catheters entered, and some discomfort when passing urine. This usually goes away quickly.

Other symptoms which some patients initially experience include:

- Urinary discomfort (may include needing to pass urine urgently or frequently, or finding it difficult to pass urine).
- Blood in the urine or semen.
- Problems with having an erection occur in a small proportion of patients.
- Bowel discomfort.

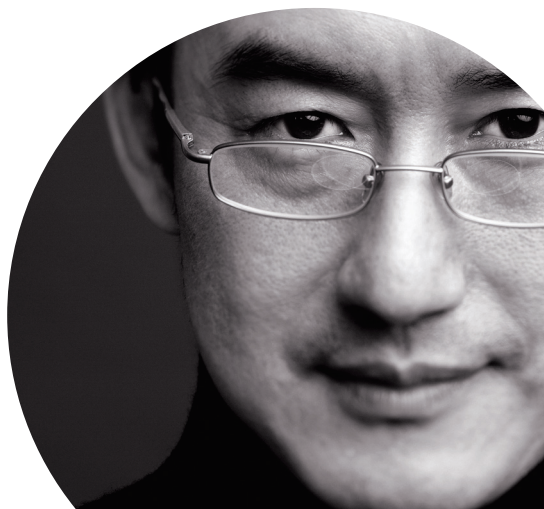
Most patients find that their urinary, sexual and bowel function returns to normal 6–12 months following the treatment.

Importantly, the rates of side effects are generally lower with brachytherapy compared with other treatments for prostate cancer, including surgery (radical prostatectomy) and EBRT.

A common question about brachytherapy is whether the procedure causes any radiation risks to family and friends. If HDR brachytherapy is used, the radiation sources are only temporarily placed in the body and are removed after each treatment. Hence, there is no radiation risk to family or friends.

If LDR brachytherapy ('seed therapy') is used, only the seeds give out radiation, and these will not make you radioactive. The radiation levels given out by the seeds are very low and reduce to almost undetectable levels over the course of several months.

As a precaution however, your healthcare team may advise you to avoid close contact with small children and pregnant women for a short time after the brachytherapy procedure.



Is brachytherapy right for me?

So, how do you know if brachytherapy is an option for you?

Ask – find as much information as you can about the options you have before deciding the best course of action. There are some suggestions at the end of this brochure on where further information can be found. Your healthcare team are the people who know specifically about your condition and whether you could benefit from brachytherapy treatment. Talk to them and discuss your options as you go through the decision making process. You could write a list of questions to ask your healthcare team – some examples are provided adjacent. You will also find these on the website www.aboutbrachytherapy.com including some general answers.

Finding all the right information will help ensure that together with family, friends and your healthcare team, you have explored all the different options available to you. This way, you can choose the course of treatment you believe is best to tackle your prostate cancer.

Below are some questions you might want to include in your list:

- What are my treatment options?
- What impact will the different treatments have on my life (work, family, etc.)?
- How effective are the different options?
- Is brachytherapy an option for me?
- Will there be any side effects?
- In which cases does it work?
- Please describe exactly what happens, step-by-step.
- How long will the treatment last?
- Will I need to stay in hospital and, if so, for how long?
- Where can I be treated?
- How should I prepare for my treatment?
- What will my family need to know?





Further support and advice

About brachytherapy website

For further support and advice about brachytherapy and its role in the treatment of prostate cancer, you can visit www.aboutbrachytherapy.com

Local patient groups

You can also find more information about brachytherapy, other treatment options or someone to talk to about your feelings and concerns by getting in contact with a prostate cancer patient group in your country.

The internet, library and your healthcare team are good places to start when looking for a patient group.

Other resources include:

Prostate Cancer Research Institute (North America)

<http://www.prostate-cancer.org>

Prostate Cancer Foundation (North America)

<http://www.pcf.org>

Prostate Cancer Foundation of Australia

<http://www.prostate.org.au>

The European Prostate Cancer Coalition

<http://www.europa-uomo.org>

Brachytherapy:

The precise answer for tackling prostate cancer

- Brachytherapy is a type of radiotherapy that places the radioactive source in, or at, the tumor site
- Brachytherapy is a precise treatment that targets the tumor and minimizes side effects
- Brachytherapy is as effective as traditional treatments such as radiotherapy or surgery
- Brachytherapy can be administered in a short treatment period allowing people to get back to their everyday life sooner

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