

# Treatments: Brachytherapy

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**Prostate cancer may be localised – only affecting the prostate - or it may be locally advanced or advanced –the cancer has moved outside the prostate.**

**If your doctors believe the cancer just affects the gland, they will discuss different kinds of treatment with you. These could be external beam radiotherapy – where radiation is used to kill cancer cells; surgery – where the prostate is removed; brachytherapy – where radioactive seeds are implanted into the prostate, or active monitoring - sometimes called watchful waiting where the state of the cancer is closely observed and treatment started only when, or if, necessary. This sheet is about brachytherapy for localised prostate cancer.**

**This fact sheet gives you some idea about what happens in hospital, and guides you on what to expect when you go home.**

**The details here are general principles, to which you can add your local details. Your specialist team will give you specific information about your local services. They will also give you any special instructions that you need to follow.**

## Brachytherapy

Brachytherapy is becoming recognised as an alternative to both radical surgery and standard radiotherapy.

Prostate Brachytherapy is a form of radiation treatment for localised prostate cancer. Radioactive seeds are implanted directly into the prostate gland. This means a higher dose of radiation can be given than is possible with external beam radiotherapy. It also means that the radiation is concentrated in the part of the body that needs treatment.

Occasionally, extra treatment with external beam radiotherapy may also be necessary. In external beam radiotherapy the radiation to destroy the cancer is directed at the gland from outside the body.

Brachytherapy is a short procedure, usually requiring

only one night in hospital. Recovery is generally rapid, and you should be able to resume your normal activities quickly.

There is a less common form of brachytherapy called High Dose Rate (HDR) brachytherapy, which is usually combined with external radiotherapy. It is used to treat more advanced prostate cancer, where full coverage of the prostate gland, plus a margin, needs treatment.

### Advantages of brachytherapy

- Simple one or two day procedure
- Rapid return to normal life
- Allows high doses of radioactivity to the prostate, whilst minimising damage to surrounding tissues, such as the bladder and bowel
- So far, American evidence suggests it is as effective in the long term as other treatment options
- Urinary and sexual side effects exist, but are less frequent than with other treatment options for early prostate cancer

### Disadvantages of brachytherapy

- Increasing numbers of centres offering seed implants in the UK but not every man has easy access to it as yet
- Can cause a burning sensation whilst urinating and this may last for some time
- One, and usually two anaesthetics are required
- Long term effectiveness has still to be evaluated in a large number of men with prostate cancer

### Who is eligible for brachytherapy?

If you are eligible for surgical removal of your prostate, because the cancer is completely contained within it, you are likely to be eligible for brachytherapy as well. Brachytherapy works well if you have a cancer that is small and fully contained within the prostate gland. If you are over 70 you may find that your doctors are

more likely to recommend external beam radiotherapy or active monitoring.

## Effectiveness

Recently published data has suggested that brachytherapy is as successful as surgery in curing small, slow growing, prostate cancers. However, few studies have been published where the results have been established after ten years.

You will already have had a PSA test to help diagnose your cancer. PSA tests are also used to monitor the effectiveness of any treatment you receive. An American study showed that 85% of men had no rise in their PSA in the ten years following brachytherapy - results similar to those seen with surgery.

## What is available in the UK?

Brachytherapy has been available in the UK for a number of years. There are more than ten centres that offer the standard form of brachytherapy treatment. The service is becoming more widespread across the country. It may not be available to you in your area. You can ask to be referred out of your area. Sometimes this works, but this will depend on your local health authority.

## Permanent seed implants

This is the common form of brachytherapy. In this technique, approximately 100 radioactive seeds are placed inside the prostate. The seeds release their radiation dose over a few months and will have released 95% of their radiation after a year.

The seeds are implanted under anaesthetic. They remain in the prostate permanently, with the strength of the radiation lessening over a period of months. The dose is carefully worked out to cover the size and shape of your prostate, plus a small area of the surrounding tissue. Every effort is made to reduce unnecessary radiation to the surrounding healthy tissue.

## Planning Your Treatment

Before you can have prostate brachytherapy your prostate has to be assessed. The assessment will help make sure that brachytherapy is the right treatment for you. You may hear this called a "planning volume study.

Before the assessment you will have to follow a low fibre diet and take some laxatives prior to the assessment. Your specialist will give you precise instructions to follow. The special diet means that your bowel is clean and that your specialist can get a good view of your prostate with the ultrasound probe.

The assessment takes only a few minutes. You should be able to go home later the same day.

The size of your prostate gland has to be measured and the shape outlined. This is done under a short anaesthetic, using images from the same kind of ultrasound probe that was used when you had your biopsy. Based on the results of this assessment the specialist plans the number and position of the seeds.

If your prostate is the right size, you will come back to the hospital to have the seeds implanted. If your prostate is too big you may be offered hormone therapy for three months to reduce the size of your prostate. If you need this the size of the prostate is reassessed before the seeds are implanted.

If your prostate remains too large, in spite of hormone therapy, alternative treatments will be discussed with you.

## Preparation at home

Before your brachytherapy seeds are implanted you will have some instructions to follow at home. You will have to eat a low fibre diet for a few days, and take some laxatives. Your specialist will give you precise instructions to follow. The diet and laxatives are important because your bowel must be clean before you receive the implants. This makes it much easier for your doctor to see your prostate using the ultrasound scan.

You will also get special advice if you take Aspirin or Warfarin or any other medication that might thin your blood. Do not make any changes to your usual drug treatments, whatever they are for, without consulting your specialist first.

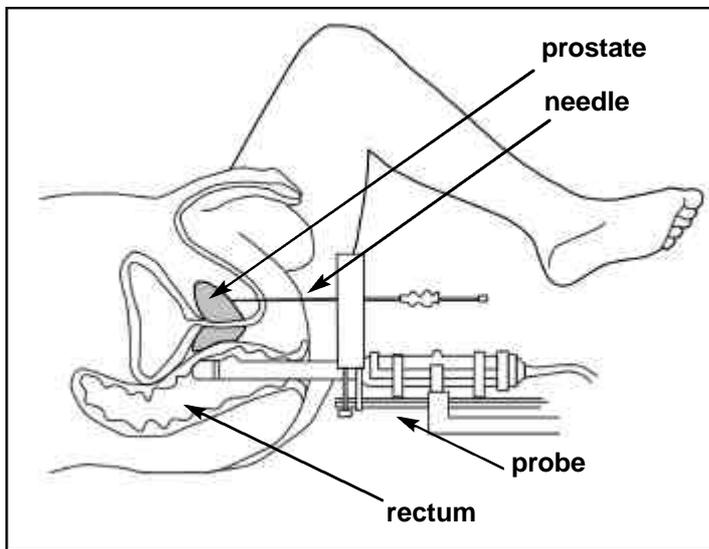
## The Seed Implantation

You will go into hospital for 1-2 nights for the treatment. The length of your stay depends on the team looking after you.

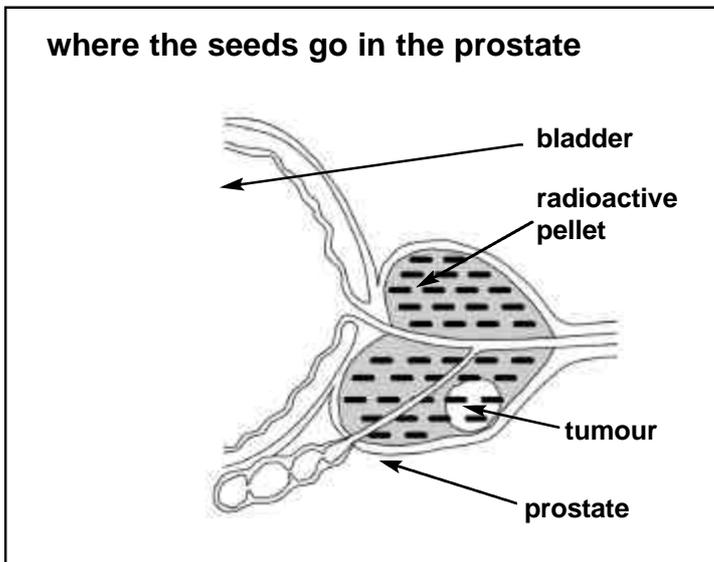
The seeds are implanted under a general, or sometimes, a spinal anaesthetic.

The doctor inserts an ultrasound probe into your rectum, so he or she can see where the seeds are to be placed.

Once the prostate can be clearly seen, needles containing the radioactive seeds are inserted through your perineum - the area of skin beneath your scrotum. The seeds are passed along these needles and into your prostate. Your doctor follows your personal implant plan, which is computed from the results of your prostate size assessment.



After the implant is finished, you will be taken to the recovery room and remain there until you come around from the anaesthetic. This may take an hour or so. You will then return to your ward. Special isolation is not required.



On the day of the implant, friends and family members can wait in the ward day room and visit you afterwards. The urologist or radiotherapist may see you after you have returned to the ward and your nurse has settled you in.

You will be given painkillers as needed. You can take oral painkillers when you can take fluids by mouth without feeling sick

### Post Implant Care

You should be ready to leave hospital on the same day, or the day after the seeds have been implanted. You may have a catheter for a short while. This is a tube to drain urine from your bladder into a drainage bag. Usually, this will be taken out before you go home.

After discharge you will be able to return to normal

activities within 3 days and be back at work within 5 days. There are no restrictions on travel, but make sure you get plenty of rest.

A month or so after the implant, you will probably have a CT scan of the prostate, to check the position of the seeds.

### Potential problems

**In the first 2 to 3 days after the implant you might experience:**

- Discomfort over your bottom when you sit down
- Blood stained urine
- Bruising beneath your scrotum
- Difficulties in passing urine

Sometimes problems with urination need additional treatment for a few days. For example, you may need a catheter to drain your urine. Any urinary problems usually resolve in time.

**After 3 to 4 weeks post implant you might experience:**

- Painful ejaculation, or reduced force, or reduced amount of ejaculate
- Urinary frequency, which is going many times to pass small amounts of urine
- Urinary incontinence. This is rare, but if it happens it is usually in men who have had previous operations to correct a poor urinary stream.
- Loss of erections. This is rare but there are a variety of treatments available should they be required.

If problems occur later they may continue for some time and require other treatment from your specialist.

### High dose rate brachytherapy

In high dose rate brachytherapy thin stiff plastic tubes are inserted through the perineum – the area of skin behind the scrotum - and into the prostate. This is done under an anaesthetic. A radiotherapy machine inserts a radioactive wire through each plastic tube and into the prostate. These wires are left for a few minutes and then removed.

The tubes are left in place overnight, so an overnight stay in hospital is necessary. The insertion and removal of the wires is repeated on the second day.

The procedure is repeated for each tube. The whole procedure is over in around 30 minutes. The tubes are then removed.

High Dose Rate brachytherapy is currently only available at one centre in the UK.

## **Some important things to remember:**

### **Contacts**

Bear in mind that, though your prostate carries radioactive seeds, you have not become radioactive yourself. You can stay at home with your family, move around, travel or meet other people. You are not a danger to others.

### **Returning to Normal Activity**

You should feel well and be able to return to normal activities within 3 days.

### **Going back to work**

The length of time you stay home depends on the amount of physical effort your work requires. Most men return to work within 3-5 days. Contact your GP for a sick certificate if you need one.

### **Driving**

Most men are able to drive a car within 3-5 days. Some men even drive themselves home after seed implants.

### **Sexual intercourse**

Sexual intercourse should be avoided for the first 2 weeks after the implant. Thereafter, you should use a condom for a further 3-6 months. Make sure you ask your specialist when sexual intercourse can be resumed.

### **Discharge Medications**

Before going home, you may be given oral pain medication and stool softeners. These should be taken as prescribed.

### **Other treatments**

Within the first two years after brachytherapy, treatment for other unrelated medical problems in your pelvic, abdominal or rectal area should, perhaps, be avoided. Your brachytherapy specialist will be able to guide you on the advisability of treatments that other specialists may want to offer you.

## **Tips to Help You**

You may not experience any side effects for several days until the radiation from the seeds begins to take effect. You might experience mild discomfort at the sites of the needle punctures. You can use a simple painkiller such as Paracetamol to relieve this, but avoid Aspirin. Aspirin thins the blood and so might make any bruising or bleeding worse. You may also see some bruising near your scrotum or below it, which can spread into your upper thighs. This will

disappear within a week or two. Your urine may be blood stained for a few days afterwards.

## **Radiation Safety and Precautions**

After brachytherapy you will have radioactive seeds in your prostate, but the dose of radiation outside your body is very low. The seeds are sealed so that none of the radioactive material can leak out.

After prostate brachytherapy, you should avoid prolonged cuddles with pregnant women or very young infants, for about 2 months. You should not be worried about visiting, or being visited by your family or friends.

You should avoid letting young family pets sit in your lap for long periods. This is not a problem if the animal is mature.

Your specialist will give you advice on sex. They may recommend that you avoid sexual intercourse with a woman of childbearing age for at least 2 weeks after the implant, in the unlikely event that a seed comes out in your ejaculate. You should avoid receiving oral sex from your partner for the same reason.

You should use condoms during sexual intercourse for as long as your specialist recommends.

In the rare event that you pass a loose seed in your urine there are some basic precautions to follow. If this happens, and you happen to see it in the toilet bowl, pick it up with a pair of tweezers and place it in a sealed container. A jam jar would do the job. Contact your brachytherapy team for advice on its safe disposal.

## **Foods and fluids**

- Eat high fibre foods and fruit every day to keep your bowel motions loose. You may find it helps to eat a piece of fruit with each meal.
- Drink 11/2 - 2 litres of fluids each day.
- Limit your fluid intake after 7pm (especially coffee, tea and alcohol). This will help to decrease the amount of urine produced during the night. It may be necessary to do this for the first few months after the implant to decrease the number of times you have to get up in the night.

## **Call your GP if:**

- Your urine is very bloody, has clots in it or you are having difficulty in passing urine
- You cannot pass urine
- You develop fever of more than 38°C \ 101°F, or chills with a raised temperature