

# Brachytherapy Treatment for Prostate Cancer

**Brachytherapy is a form of radiation therapy used to treat prostate cancer.**

Small radioactive seeds that slowly release radiation are implanted in the prostate gland. A prostate cancer diagnosis can cause fear or panic. You may want to start treatment right away. However, most prostate cancer grows very slowly, so there's usually no need to rush. Give yourself time to learn about your treatment options. The treatment you choose will depend on your doctor's advice and your feelings about possible side effects. Talk to your doctor if you have questions.

**Saskatchewan does not currently offer brachytherapy for prostate cancer.** If you choose this option, you will be sent out of province for treatment.

## Who can have brachytherapy?

Brachytherapy can be used to treat prostate cancer that hasn't spread outside the prostate gland. For some men, it can be as effective as surgery or external beam radiation. If your doctor suggests brachytherapy as an option, there are a few factors to consider:

### **Stage and grade of the cancer**

Brachytherapy is usually used for men with a PSA under 20, a Gleason score under 7, and a cancer stage of T1 or T2. This may vary, so talk to your doctor.

### **Size of the prostate gland**

If the prostate is too large (over 60 cc), your doctor may try to shrink it first, using several months of hormone therapy.

### **Urinary symptoms**

Brachytherapy is not suitable for men with severe urinary problems because it can make those problems worse. Treatment for urinary symptoms may be needed before you start brachytherapy.

### **TURP**

Brachytherapy may not be an option if you've had a Trans Urethral Resection of the Prostate (TURP). This may depend on how long ago you had the TURP and how much prostate tissue was removed.

## How does brachytherapy work?

Radioactive seeds, each about the size and shape of a grain of rice, are implanted directly into the prostate gland. You won't feel the seeds after they are implanted.

The seeds give off a higher dose of radiation than external beam radiation because they are contained within the prostate gland. Damage to surrounding healthy tissue is limited because the radiation is kept inside the prostate.

The seeds release most of the radiation within three months, and give off radiation for several months more. In 10 to 12 months, most of the radiation has been released and the seeds are no longer active.

## Questions to ask your doctor

- Do I need external beam radiation therapy as well as brachytherapy?
- What are the chances of short term or long term side effects?
- Do I need hormone treatment before brachytherapy?
- How will I know if the treatment worked?
- What should my PSA level be after treatment? When will you check it again?
- If my PSA keeps rising, what are my other options?

## Pros of brachytherapy:

- Brachytherapy releases a higher dose of radiation than external beam radiation.
- The radiation is concentrated inside the gland, so it may cause less damage to your rectum and the surrounding area than external beam radiation.
- The seed implant may take only 1 or 2 hours and is done on an outpatient basis, so you may go home afterwards.
- After treatment, recovery is fairly quick so you can return to normal activities soon after.



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## Cons of brachytherapy:

- One of the side effects is erectile dysfunction.
- It may not be suitable for men who already have urinary problems.
- Urinary problems such as incontinence may develop several years after treatment.
- There is a small risk of seeds travelling into the lungs.
- It requires an anaesthetic.
- Since brachytherapy doesn't reach the area around the prostate, it may leave some cancer cells untreated.
- If all the cancer cells aren't treated, there is a risk that your cancer will return.
- Immediately after treatment, your doctor may not be able to determine the status of your tumor.
- Brachytherapy is a fairly new procedure and there may be unknown long term side effects.

## How is the treatment given?

### The brachytherapy team includes:

- Oncologist: a doctor who specializes in treating cancer
- Physicist: a doctor responsible for the brachytherapy equipment and planning of the seed implantation.
- Radiographer: a specialist in using radiation therapy to treat prostate cancer
- Nurse: assists with the treatment and is responsible for your care before and after treatment

### Planning session

Before the seeds are implanted, your team will decide on your treatment plan.

You will visit the hospital for a **volume study**, which measures the exact size and position of the prostate gland.

Your doctor will explain the volume study procedure and tell you if you need to change any of your regular medication. Do not stop taking any medication without speaking to your doctor. You may

need to take a laxative the day before the planning session to clear your bowels.

At the planning session an ultrasound probe will be gently placed into your rectum. The ultrasound takes pictures of the prostate gland.

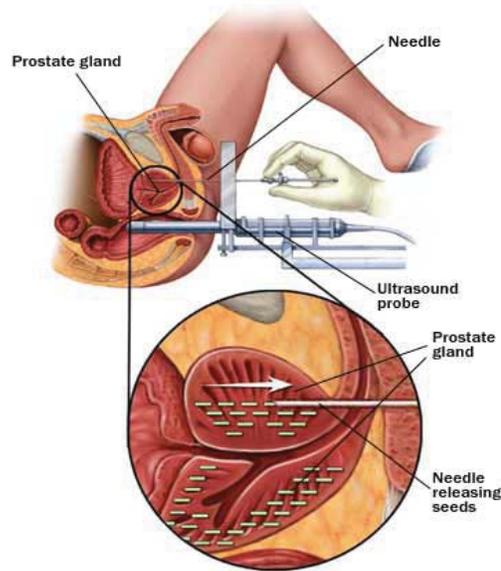
A computer makes a three dimensional image of the prostate, which allows the doctor to measure the prostate gland.

The physicist uses the images to visualize the prostate and decide how many seeds to implant and where to place them. The process only takes a few minutes and you can go home the same day.

### The seed implant procedure

Your doctor may tell you to take a laxative the day before the implant to clear your bowels.

At the hospital, you will be given an anaesthetic. During the procedure, an ultrasound probe is placed into your rectum so that the doctor can see the prostate. Thin needles are then placed into the prostate through the area of the skin between the testicles and the back passage (perineum). The doctor will then pass the seeds through the needles into the prostate (see diagram below).



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Between 60 and 120 seeds are implanted into the prostate. Some seeds are implanted individually in the middle of the gland and others are placed around the edges of the gland.

The seed implant takes about 30 to 45 minutes. Some men go home the same day after they have recovered from the anaesthesia and have passed urine normally. Others need to stay in the hospital overnight.

## **After the procedure**

Once you wake up from the anaesthetic in the recovery room, you may need a catheter for a few hours. It will be taken out before you go home. Some men cannot completely empty their bladders immediately after the treatment, and need a temporary catheter.

Your doctor will give you any medicine that you may need at home.

## **Follow-up appointment**

Four to six weeks after treatment, you will go back to the hospital for a CT or MRI to check the position of the seeds. This is called a **dosimetric analysis**.

At this time, tell your doctor if you are having any bowel symptoms, sexual problems or difficulty urinating.

Your PSA level and any symptoms will be checked regularly. It can take two years for the PSA to reach its lowest level. During this time, your PSA may fall and rise (**PSA bounce**). PSA bounce is not related to the success of the treatment. Talk to your doctor if you are concerned about your PSA level.

Brachytherapy is considered as effective as radical prostatectomy or external beam radiation therapy at successfully treating prostate cancer. However, if your PSA level continues to rise, you may need further treatment.

The months after treatment can be stressful. Family and friends can help support you during this time. You

may find it helpful to speak to someone who has been through the same experience.

## **Side effects**

Most men recover quickly, and can return to normal activities in a few days. You should be able to return to work soon after treatment, if your job does not require strenuous physical effort.

You may not have side effects for several days after treatment because the radiation from the seeds has not yet taken effect.

Side effects may be at their worst after a few weeks when the radiation dose peaks. This should improve over the following months as the seeds lose their radiation.

You may not experience all of the most common side effects. Your doctor can offer more information about the risk of side effects.

These symptoms can develop in the 1st week after treatment:

- blood in urine - may last a few days
- discoloured semen - caused by bleeding; may last a few weeks
- bruising between testicles and anus, spreading to inner thighs and penis - should disappear in a week or two
- pain or discomfort spreading to the tip of the penis
- pain or discomfort when passing urine; needing to pass urine more often, especially at night

These symptoms can develop a few weeks after treatment:

## **Difficulty urinating**

Radiation can damage the urethra, which is the tube that carries urine from the bladder. This damage can lead to urinary problems such as difficulty passing urine. You may experience symptoms such as needing to pass small amounts of urine frequently, needing to go urgently, hesitating before starting to urinate, and poor flow.



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These symptoms can get worse in the first few weeks after treatment but normally improve after a few months.

Inflammation may cause the urethra to narrow, making it difficult to pass urine. This is called urinary retention. If it happens you should call your doctor or go to the nearest hospital emergency department. A catheter will be inserted to help you pass urine and you may be shown how to use a temporary catheter. The inflammation normally eases after four to 12 weeks.

Urinary incontinence is rare in men treated with brachytherapy. You may be at greater risk if you previously had surgery to treat urinary problems.

The risk of urinary problems increases if you have a large prostate or if you had urinary symptoms before treatment. The risk is also higher if you have external beam radiation as well as brachytherapy.

You may be given drugs to help with problems passing urine. Drink plenty of fluid (1½ to 2 litres a day) but avoid caffeine drinks like tea or coffee and carbonated soft drinks. It is safe to drink alcohol in moderation.

## **Erectile dysfunction**

Radiation can damage the nerves that control erections and slow down blood flow to the penis. Over time, the damage may make it difficult to have an erection strong enough for sexual intercourse.

The risk of erectile dysfunction increases if you had problems getting and maintaining an erection before treatment, or if you are also having hormone therapy or external beam radiation therapy.

Your ejaculate may contain less fluid. This is a permanent side effect of brachytherapy.

## **Bowel Problems**

You may have mild bowel problems in the first year after brachytherapy. Symptoms may even start two or three years after treatment.

You may experience rectal bleeding or need to empty

your bowels more often. If you are also having external beam radiation therapy you are more likely to have bowel problems. Tell your doctor about any symptoms, as there are treatments available that can help.

## **Fatigue**

Brachytherapy seeds release radiation for several months, so you may feel tired for some time after treatment.

## **Precautions**

It is safe for you to be around other people, because the radioactive seeds are inside the prostate gland and almost all the radioactivity is being absorbed.

However, for the first three months after treatment you should avoid close contact with pregnant women or children under age two. Your doctor can give you more information on this.

The seeds are permanently imbedded in the prostate gland, but you may pass a seed in your urine. Ask your doctor what to do if this happens.

Call your doctor if you need surgery on your abdomen or bowel within one year of having brachytherapy. Your doctor will advise the surgeon on the risk of being exposed to the radiation from the seeds.

## **Sexual activity**

Very rarely, seeds may be passed to your partner when you ejaculate. As a precaution, you should use a condom for the first six months after treatment.

Brachytherapy's effect on fertility is not known. You may still be fertile even though you produce less fluid when you ejaculate. You should avoid fathering children for two years, as the radiation could harm an unborn child.

## **Travel**

You will be given a card stating that you have been treated with internal radiation. Take the card with you when you travel by plane, as the brachytherapy seeds will set off airport radiation sensors.

