



Trinidad & Tobago Prostate Brachytherapy

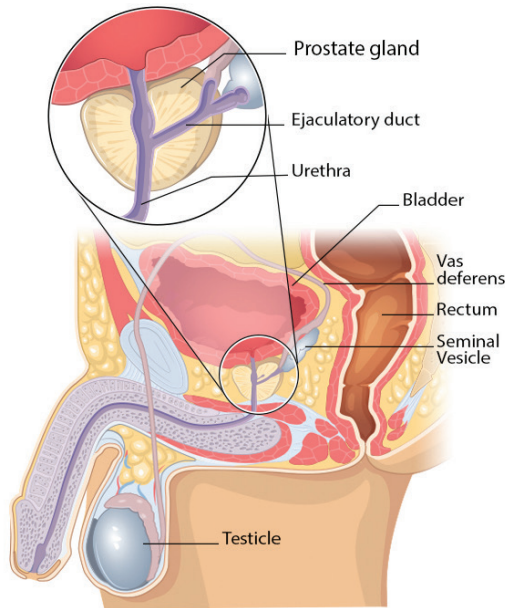
Let's Talk...

# PROSTATE

## Understanding Brachytherapy for Prostate Cancer







The prostate gland is found only in men and is a key part of the male reproductive system. It produces the fluid that transport sperm during ejaculation.

The prostate is approximately the size and shape of a walnut and is located just below the bladder. The urethra, the tube that carries urine out of the bladder, passes directly through the prostate. The three share an intimate relationship, which is why abnormalities of the prostate can result in urinary problems. For example, if the prostate becomes enlarged it can push against the bladder and cause a great deal of discomfort. An enlarged prostate does not mean a man has cancer and it does not mean he is at risk of

developing prostate cancer.

The prostate is also located directly in front of the rectum, and the only way for a doctor to do a proper examination of the prostate is through the rectum.

Studies have shown that the prostate is a very common place for cancer to begin. The European guidelines recommend that the average man should be screened at the age of 50, every 4 years, however, men of African descent who have a father, brother or son diagnosed with prostate cancer younger than 65 years are at a higher risk. For this group, the discussion should start between 40-45 years of age.

## Cancer of the Prostate

Prostate cancer, like other cancers, is a disease of the body's cells. Normal cells reproduce themselves by dividing and replacing worn-out and injured cells. Cancer is characterized by the uncontrolled growth of abnormal cells which sometimes grow into a tumor mass. Some tumors are benign or non-cancerous, others are malignant or cancerous. Cancers invade and destroy nearby tissues and organs, and can spread to other parts of the body.

Prostate cancer is rare before the age of 40, and the risk increases with age. Its cause is unknown. Early stage prostate cancer is most commonly found in the outer portion of the prostate gland. It can grow without symptoms or problems for months or years.

Cancer of the prostate is normally slow-growing, but there are a few that can be aggressive and quickly spread to other parts of the body, especially the lymph nodes and bones.

## Early Detection of Prostate Cancer

Early detection and treatment of prostate cancer may result in cure.

Unfortunately, except for occasional difficulty with urination, most men with prostate cancer have no symptoms. Sometime ago, the only method of possibly detecting prostate cancer used to be a Digital Rectal Examination (DRE), a simple procedure used to examine the lower rectum by gently inserting a lubricated, gloved finger into the rectum to determine the size of the prostate and feel for any abnormalities. But while the DRE is useful in finding small lumps, the method sometimes misses many early cancers.

Now, in addition to the DRE, there is a blood test that detects the level of Prostate Specific Antigen (PSA) in a man's blood. PSA is produced by cells in the prostate gland and this is often the first indicator of prostate cancer. It appears in high concentration in the blood when the glandular structure is damaged.

However, because other non-cancerous conditions such as infections and benign prostatic hyperplasia can elevate the PSA reading, the PSA test by itself cannot be used to make a prostate cancer diagnosis. When combined with the DRE and follow-up evaluation it is highly reliable. And even then, further testing is required, usually with a transrectal ultrasound (TRUS) - a

procedure that uses sound waves to create an image of the prostate gland and surrounding tissue - and a biopsy - removal of a small amount of prostate tissue to be tested for cancer cells. A biopsy is the only way to definitely diagnose prostate cancer.

## Staging of Prostate Cancer

If cancer is found in the prostate it is important to determine the extent (stage) of it so the best treatment option can be pursued.

The following may be used to determine the stage of the cancer:

- CT (computerized tomography) and MRI (magnetic resonance imaging) scans
- Bone scan

Developing a treatment plan is dependent on a number of factors, including:

- Age
- General health
- Staging of tumor

It is important that the patient and doctor discuss the advantages and disadvantages of each type of treatment.

## Grading of Prostate Cancer

In addition to staging, prostate cancer is graded to determine how aggressive or fast-growing the tumor is. Cancer cells taken during the biopsy are graded by determining how closely they resemble normal cells. Normal cells have certain distinguishing characteristics that cancer cells do not. Grading is the process of measuring how similar the normal and cancer cells are.

There are several grading systems but the Gleason system is the most popular. It ranges from a score of 2 (the lowest) to 10 (the highest). Lower scores (2-4) mean that the cancer cells look similar to the normal cells, and are usually less aggressive and slower in progression. A score of 5-7 is intermediate, while a score of 8-10 means the cancer cells are more likely to be aggressive.



Treatment Options	Advantages
Surgery	<ul style="list-style-type: none"> <li>+ Surgery is a one-off procedure that has very good cure rates for early prostate cancer.</li> <li>+ Surgery has been used for many years to treat cancer.</li> </ul>
External Beam Radiotherapy	<ul style="list-style-type: none"> <li>+ External Beam Radiotherapy has good cure rates for early prostate cancer.</li> <li>+ It is well tolerated in men who are older.</li> <li>+ When compared to radical prostatectomy the risk of erectile dysfunction is lower and the incidence of incontinence is small.</li> </ul>
Radioactive Seed Implants	<ul style="list-style-type: none"> <li>+ Recent clinical data shows a higher percentage of implants patients remaining disease free than with external beam radiation alone and at least an equal if not better cure rate than radical prostatectomy.</li> <li>+ Seed implantation normally takes about 1-2 hours to perform. The patient usually leaves the hospital the day after the implant procedure although some leave the same day. Many patients resume normal activities within a few days.</li> <li>+ Because the seeds are placed directly into the prostate they can deliver 2-3 times more concentrated radiation to the prostate gland than external beam radiotherapy.</li> <li>+ Incontinence occurs in less than 5% of patients under the age of 60. For patients over the age of 60, erectile dysfunction occurs more often.</li> <li>+ The procedure is better tolerated than surgery or external radiation.</li> <li>+ Using Brachytherapy combined with either External Beam Radiotherapy or with Hormone Therapy has been recently shown to give good results for slightly more advanced cancers.</li> </ul>

## Disadvantages

- Radical Prostatectomy requires hospitalization.
  - It is not tolerated well in older men who are not in overall excellent health.
  - The side effects from surgery include erectile dysfunction (inability to have an erection) in a relatively high percentage of patients as well as incontinence (a loss of urinary control).
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- The patient must make daily visits to the hospital for up to 2 months.
  - There is still a significant risk of erectile dysfunction.
  - External Beam Radiotherapy can cause a variety of side effects and complications due to radiation damage of healthy tissue. Most of these are minor and disappear shortly after therapy stops. These side effects include:
    - Fatigue • Skin reactions in the treated areas
    - Frequent and painful urination • Upset stomach
    - Diarrhoea and rectal irritation or bleeding
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- The long term results are still being evaluated at this time. The current clinical data show good results up to 13 years. It is common to experience problems with urination for several months after seed implantation. These symptoms will, however gradually ease up and eventually disappear as the radiation levels drops.
  - Although the seeds remain radioactive for several months, the energy and activity of the seeds is so low that there is negligible risk of exposure to others and only simple precautions are necessary for the first 2-3 months.



## Questions and Answers

**Q:** I have heard that prostate cancer is slow-growing and that some doctors advocate no treatment, particularly with surgery or external radiation. Why should I consider treating it at all and specifically with seed implants?

**A:** Treatment of prostate cancer presents a dilemma. On the one hand, many patients do not actually need treatment because their cancer is growing so slowly. On the other hand, prostate cancer is the second most common cause of cancer death in men. With experience, a specialist doctor can reasonably predict how a cancer may behave, but there is no fool-proof way to detect how aggressive a cancer will be in any specific patient. This is why most men choose some type of treatment for early stage prostate cancer.

Because the seed implant is significantly less traumatic, and is not associated with the degree of unpleasant side effects and complications that can occur with surgery and external beam radiation, it may be the best treatment option depending on your age, general health and the stage of the cancer.

**Q:** My doctor said that radioactive iodine seed implants were tried many years ago and proved ineffective. Is that true?

**A:** Almost 30 years ago a cancer treatment centre in the US pioneered prostate implants using iodine-125 seeds. In those days, however, these implants were done using an “open” implant technique, which involved surgery to expose the prostate gland.

The open technique required the urologist to feel the prostate gland with his fingers to determine where to place the seeds. This was an extremely imprecise method because it relied entirely on the doctor’s skill and experience. In many ways the placement of the seeds was poor. Poor placement of the seeds meant that there were areas where the seeds were too far apart, creating “cold spots” in the prostate. These “cold spots” did not have a high enough amount of radiation to kill the cancer cells and the cancer returned over time.

Today, the guesswork is gone. With the invention of TRUS there is now a precise way to guide the seeds in place and ensure that there are no “cold spots” in the prostate. This non-surgical technique has largely eliminated complications and significantly reduced recovery time.



Specialist doctors who are not familiar with the improved implantation techniques still recall the problems from using the old method. The Trinidad and Tobago Prostate Brachytherapy (TTPB) performs iodine-125 seed implants using the improved technology.

**Q: How do radioactive seed implants compare to external radiation?**

**A:** Recent clinical data shows an equal, if not higher percentage, of low risk implant patients remaining disease-free than with radical prostatectomy or external radiotherapy treatment options. The average complication rates in patients who opted for radioactive seed implants are less than those for who did radical prostatectomy and external beam radiotherapy. After a radioactive seed implant the odds of incontinence or impotence in patients are fewer than with other treatments.

**Q: Will I need a blood transfusion during the implant procedure?**

**A:** With the ultrasound guided implant no incision is made, so no blood is needed.

**Q: How long after the implant do I have to wait before returning to work or my regular activities?**

**A:** Implant patients can usually return to work and regular activities within 3-4 days after the procedure.

**Q: Will I experience hair loss or nausea and vomiting after the implant procedure?**

**A:** No. Even though the tumor receives up to 3 times more radiation than with external beam radiotherapy, the effects of the implants are highly concentrated and primarily confined to the prostate.

**Q: What are my treatment options if Brachytherapy fails and the cancer comes back?**

**A:** It is important to talk directly with your Urologist, who is your best adviser and closest to your individual circumstance. He will be able to answer any questions and explain the benefits and disadvantages regarding further treatment options.





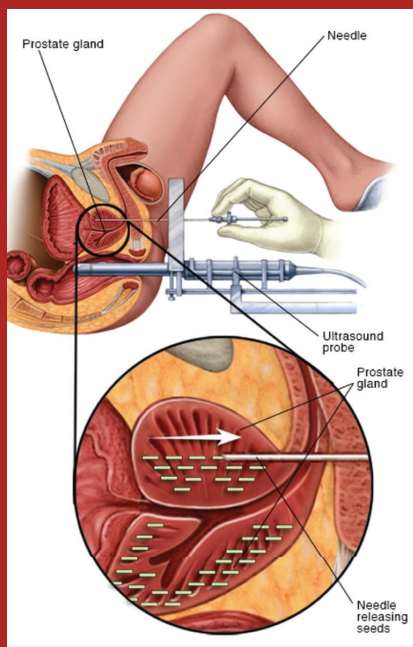


# TTPB



**Trinidad & Tobago Prostate Brachytherapy**

## **PROVIDERS OF PROSTATE BRACHYTHERAPY: A CURATIVE TREATMENT FOR EARLY PROSTATE CANCER**



**PROSTATE BRACHYTHERAPY  
(PROSTATE SEED IMPLANT)**

- Same-day procedure
- Quick recovery
- No hospitalization
- Minimal side effects
- Non-surgical

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