

# Prostate Cancer

## Facts About Prostate Cancer

Prostate cancer is the most common malignancy in American men.

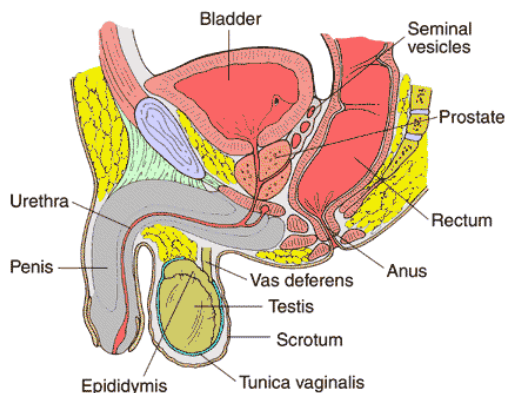
In 2003, more than 240,890 men were diagnosed as having prostate cancer, making it the number one type of cancer in men. More than 98% of men diagnosed with prostate cancer will not die from it.

## Risk Factors For Prostate Cancer

Incidence of prostate cancer increases with age. Median age at diagnosis in Caucasian males is 71. African-American men have the highest incidence of prostate cancer in the world. Heredity accounts for 5 to 10 percent of cases.

## Screening For Prostate Cancer

According to the American Cancer Society, men aged 50 or older should be offered a digital rectal exam (DRE) and a PSA blood test. However, it is a good idea to visit your doctor earlier to establish a baseline PSA level so you can monitor changes. Prostate specific antigen (PSA) is a valuable marker for prostate cancer although BPH or infection may also cause a rise in PSA. Normal range is 0-4, however, a PSA above 3 in men younger than 60 may be considered abnormal. African-American men and men with a family history of prostate cancer should be examined beginning at an earlier age.



## Diagnosing Prostate Cancer

Prostate cancer is most often diagnosed through a blood test measuring the amount

of prostate specific antigens (PSA) in the body. However, signs and symptoms of prostate cancer can include:

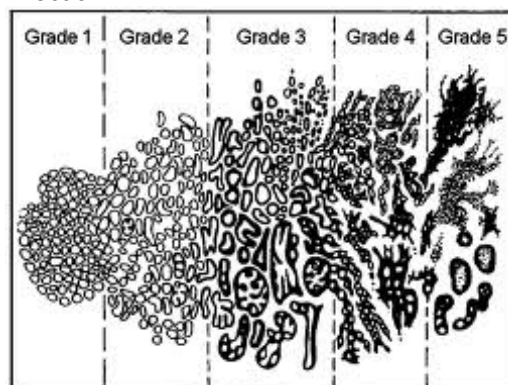
Changes in urinary flow: Frequency, urgency, hesitancy.

Frequent nighttime urination.

Painful urination.

Blood in urine.

Other conditions that may cause these symptoms include an enlarged prostate (benign prostatic hypertrophy or BPH) or infection.



## Radiation Therapy Options for Treating Prostate Cancer

After a diagnosis of prostate cancer has been established with a biopsy, the patient should discuss the treatment options with a radiation oncologist and a urologist.

### Radiation therapy treatment options to cure prostate cancer include:

- External beam radiotherapy.
- Prostate brachytherapy.

## External Beam Radiation Therapy

External beam radiation therapy involves a series of daily outpatient treatments to accurately deliver radiation to the prostate.

There are two principal methods for delivering external beam radiation.

Intensity modulated radiation therapy (IMRT) is the most common means of external beam treatment. IMRT combines multiple radiation treatment beamlets to deliver precise doses of radiation to the prostate. Tailoring the dose of radiation to accurately

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focus on the patient's tumor and allowing coverage of the prostate cancer while at the same time keeping radiation away from nearby organs such as the bladder or rectum.

Proton beam radiation therapy is a way of using proton particles that stop at the end of their treatment distance within the body and do not deliver treatment beyond the prostate target. They also allow for a sharp drop-off of dose between the prostate gland and rectum and bladder. Since proton beam therapy is so accurate, only two beams are needed for treatment instead of multiple beams. This allows for less normal tissue to be treated within the body.

Both types of external beam radiotherapy are acceptable treatment; proton therapy offers advantages for some but not all prostate cancer patients. With either type of therapy, painless radiation treatments are delivered in a series of daily sessions, each under half-hour in duration, Monday through Friday, for seven to ten weeks overall.

Potential side effects, including fatigue, increased frequency or discomfort of urination, and loose stools, typically resolve within a few weeks after completing treatments. Impotence is also a potential side effect of any treatment for prostate cancer. However, many patients who receive radiation therapy for prostate cancer are able to maintain sexual function.

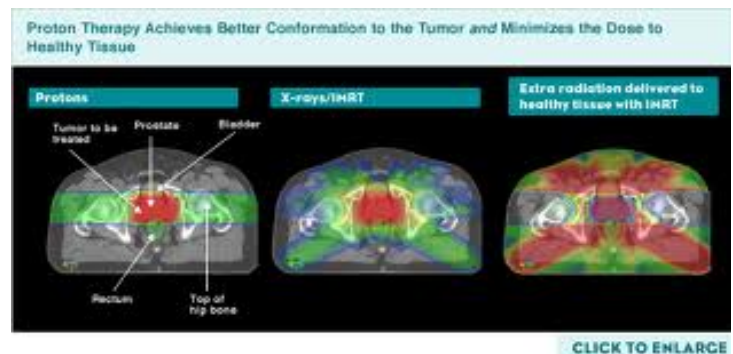
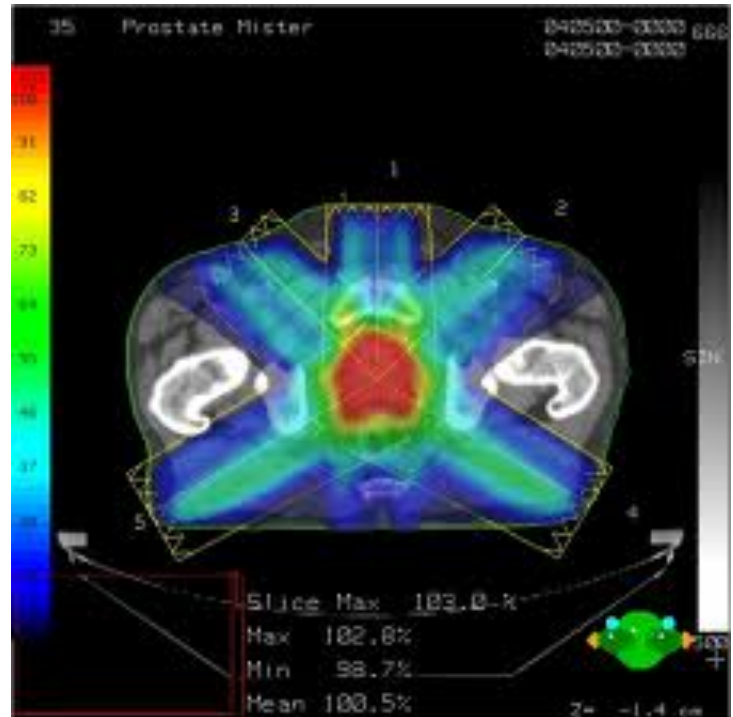
## One Week (Hypofractionated) External Beam Radiation Therapy

We offer two clinical trials based on hypofractionated radiation therapy. This allows patients to receive curative doses of radiation for their prostate cancer in five treatments. We offer this treatment using cyberknife radiosurgery as well as with proton beam radiation therapy. Please refer to the clinical trial section or talk with one of our radiation oncologists for further information.

## Prostate Organ Motion

All of our treatments are delivered using image guided radiation therapy (IGRT). This

is now standard for treatment of prostate cancer. We can track the prostate gland or prostate bed by examining the location of the gland by daily CT scan or by aligning the treatment to markers placed inside the prostate gland or with surgical clips within the prostate bed.



## Prostate Brachytherapy

Prostate brachytherapy, better known as a seed implant, is often done in the operating room.

There are two methods of delivering internal radiation for prostate cancer:

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- Permanent seed implants
- High-dose rate temporary implants

These treatments are designed to deliver a very high dose of radiation to the tumor by inserting radioactive seeds directly into the prostate gland under ultrasound guidance while the patient is under anesthesia.

Isotopes of iodine or palladium are most commonly used. The seeds are approximately four millimeters long and less than a millimeter in diameter. In certain situations, both prostate brachytherapy and external radiation may be recommended to combat the tumor. The side effects from seed implants are similar to those experienced with external beam radiotherapy. Patients usually experience urinary frequency and discomfort in urination. These effects may be lessened with medication and usually dissipate over the course of three to six months.



## **Hormone Therapy**

Certain patients may benefit from hormone therapy in addition to radiation. In some patients, hormone therapy works with radiation therapy to improve cure rates.