

Patient Education

Radiation Medicine Department

Prostate Cancer: Treatment

Treatment

Treatment for prostate cancer depends on the stage of the disease and the grade of the tumor (which indicates how abnormal the cells look, and how likely they are to grow or spread). Other important factors in planning treatment are age and general health and a man's feelings about the treatments and their possible side effects.

Treatment for prostate cancer may involve

- Watchful waiting
- Surgery
- Radiation therapy
- Hormonal therapy
- Combination therapy

Watchful waiting may be suggested for some men who have prostate cancer that is found at an early stage and appears to be slow growing. Also, watchful waiting may be advised for older men or men with other serious medical problems. For these men, the risks and possible side effects of surgery, radiation therapy, or hormonal therapy may outweigh the possible benefits.

Surgery

Surgery is a common treatment for early stage prostate cancer.

- **Radical prostatectomy** - Removal of the entire prostate
- **Partial prostatectomy** – removal of part of the prostate
- **Nerve-sparing surgery** - a new technique that may save the nerves that control erection. (Note: men with large tumors or tumors that are very close to the nerves may not be able to have this surgery).
- **Radical retropubic prostatectomy** – removal of the prostate and nearby lymph nodes through an incision in the abdomen.
- **Radical perineal prostatectomy** – removal of the prostate through an incision between the scrotum and the anus. . Nearby lymph nodes are sometimes removed through a separate incision in the abdomen.
- **Transurethral resection of the prostate (TURP)** - removal of part of the prostate with an instrument that is inserted through the urethra. The cancer is cut from the prostate by electricity passing through a small wire loop on the end of the instrument. This method is used mainly to remove tissue that blocks urine flow.

If the pathologist finds cancer cells in the lymph nodes, it is likely that the disease has spread to other parts of the body. Sometimes, the doctor

removes the lymph nodes before doing a prostatectomy. If the prostate cancer has not spread to the lymph nodes, the doctor then removes the prostate. But if cancer has spread to the nodes, the doctor usually does not remove the prostate, but may suggest other treatment.

Your doctor can describe the types of surgery and can discuss and compare their benefits and risks.

Hormonal Therapy

Hormonal therapy keeps cancer cells from getting the male hormones they need to grow. It is called systemic therapy because it can affect cancer cells throughout the body. Systemic therapy is used to treat cancer that has spread. Sometimes this type of therapy is used to try to prevent the cancer from coming back after surgery or radiation treatment.

There are several forms of hormonal therapy:

- Orchiectomy is surgery to remove the testicles, which are the main source of male hormones.
- Drugs known as luteinizing hormone-releasing hormone (LH-RH) agonists can prevent the testicles from producing testosterone. Examples are leuprolide, goserelin, and buserelin.
- Drugs known as antiandrogens can block the action of androgens. Two examples are Flutamide and bicalutamide.
- Drugs that can prevent the adrenal glands from making androgens include Ketoconazole and aminoglutethimide.

After orchiectomy or treatment with an LH-RH agonist, the body no longer gets testosterone from the testicles. However, the adrenal glands still produce small amounts of male hormones. Sometimes, the patient is also given an antiandrogen, which blocks the effect of any remaining male hormones. This combination of treatments is known as *total androgen blockade*. Doctors do not know for sure whether total androgen blockade is more effective than orchiectomy or LH-RH agonist alone.

Prostate cancer that has spread to other parts of the body usually can be controlled with hormonal therapy for a period of time, often several years. Eventually, however, most prostate cancers are able to grow with very little or no male hormones. When this happens, hormonal therapy is no longer effective, and the doctor may suggest other forms of treatment that are under study.

Radiation Therapy

There are two types of radiation therapy.

External Radiation Therapy

External radiation therapy uses a machine called a linear accelerator to deliver a uniform dose of high-energy x-ray to the region of the tumor.

These x-rays can destroy the cancer cells, while sparing the surrounding normal tissue.

The linear accelerator uses microwave technology (similar to that used for radar) to accelerate electrons in a part of the accelerator called the wave guide and then allows these electrons to collide with a heavy metal target. As a result of these collisions, high energy x-rays are scattered from the target.

A portion of these x-rays is collected and then shaped to form a beam that matches the tumor. The beam comes out of a part of the accelerator called a gantry, which rotates around the patient. The patient lies on a movable treatment couch and lasers are used to make sure you are in the proper position.

Radiation can be delivered to the tumor from any angle by rotating the gantry and moving the treatment couch.

External beam therapy is painless. You do not see or feel the actual treatment. Most patients are treated on an outpatient basis, coming from and returning home after each treatment. Most people can even continue with their normal daily activities.

Internal Radiation Therapy (Brachytherapy)

Brachytherapy involves placing radiation sources as close as possible to the tumor site. Sometimes, they may be inserted directly into the tumor. The radioactive sources or isotopes are in the form of wires, seed, (or molds), or rods.

In some instances, brachytherapy may be used in conjunction with external beam therapy. When both forms are employed, the external beam radiation is intended to destroy cancerous cells in a large area surrounding the tumor, while the brachytherapy delivers a boost, or higher dose of radiation, to help destroy the main concentrated mass of tumor cells.

Side Effects of Radiation Therapy

Because treatment may damage healthy cells and tissues, unwanted side effects are common. These side effects depend on many factors, including the location of the tumor and the type and extent of the treatment.

Side effects may not be the same for each person, and they may even change from one treatment session to the next.

Before your treatment starts, your health care team will explain possible side effects and suggest ways to help you manage them.

These are some common side effects of radiation therapy:

