If you find out you have cancer, you should discuss your treatment options with a radiation oncologist — a cancer doctor who specializes in treating cancer with chemotherapy. A urologist — a surgeon who specializes in the genital and urinary systems — and a medical oncologist — a cancer doctor who specializes in treating cancer with chemotherapy.

**Prostate cancer treatment options include:**
- **External beam radiation therapy** — a radiation oncologist directs high-energy radiation at the cancer. It is delivered along with daily treatments to cure prostate cancer.
- **Brachytherapy** — a radiation oncologist surgically implants high-energy radiation seeds or delivers a high-energy radiation source through catheters within the prostate.
- **Surgery** — a urologist surgically removes the entire prostate.
- **Active Surveillance** — a physician monitors men with low-risk prostate cancer with repeat PSAs and biopsies.
- **Hormone therapy** — a urologist or interventional radiologist prescribes medicine to stop the production of hormones that help prostate cancer grow.
- **Chemotherapy** — a medical oncologist prescribes medicine as a pill or medicine delivered through the veins to kill cancer cells.
- **Cryosurgery** — a urologist or interventional radiologist freezes the tumor within the prostate.
- **High Frequency Ultrasound** (HIFU) — a urologist or interventional radiologist uses high-intensity focused ultrasound beam to locally heat and destroy cancer cells.

A combination of treatments is best for your cancer, such as hormonal therapy along with external beam radiation therapy.

**TREATING PROSTATE CANCER**

If you have prostate cancer, it can be treated using a series of daily treatments to accurately deliver radiation to the prostate. Research has shown that higher doses of radiation can improve cure rates. Modern radiation therapy is as effective as surgery to cure prostate cancer.

Before treatment begins, your radiation oncologist will develop a treatment plan using information from your biopsy, imaging and physical exam. CT scans are done in the position you will be treated, often with a supportive device to keep you comfortably in the same position for treatment. This is often called a simulation. Depending on your overall health, your treatment plan will include not only the prostate but the seminal vesicles (glands on the back of the prostate) and lymph nodes.

Ask your doctor to explain what treatment area is appropriate for you.

With CT scans, 3-D targets of the prostate and normal tissues are created. These treatment planning CT scans focus radiation beams on the prostate while limiting radiation to healthy tissues around it such as the bladder and rectum.

**Intensity-modulated radiation therapy (IMRT)** and **image-guided radiation therapy (IGRT)** are treatment approaches that allow the radiation beams to treat the cancer and lessen the risks of side effects.

External beam radiation therapy can be delivered using a variety of techniques. In medicine delivered through the veins, high-energy photon beams, or X-rays, pass through the body to reach the prostate. In a few clinics around the country, proton beam therapy is used to treat prostate cancer. Proton beam therapy is a form of external beam radiation therapy that uses protons rather than photons to treat cancer cells.

With all external beam therapy, treatment is delivered in a series of daily sessions, Monday through Friday, for several weeks. Each treatment is painless and similar to a light skin burn. You will likely feel nothing.

The length of your treatment will depend on your health and the type of radiation used. The use of even shorter schedules of external beam radiation therapy is being studied for patients with early-stage prostate cancer.

**EXTERNAL BEAM RADIATION THERAPY**

External beam radiation therapy (also called radiotherapy) involves a series of daily treatments to deliver radiation to the prostate. Research has shown that higher doses of radiation can improve cure rates. Modern radiation therapy is as effective as surgery to cure prostate cancer.

Before treatment begins, your radiation oncologist will develop a treatment plan using information from your biopsy, imaging and physical exam. CT scans are done in the position you will be treated, often with a supportive device to keep you comfortably in the same position for treatment. This is often called a simulation.

Depending on your overall health, your treatment plan will include not only the prostate but the seminal vesicles (glands on the back of the prostate) and lymph nodes.

Ask your doctor to explain what treatment area is appropriate for you.

With CT scans, 3-D targets of the prostate and normal tissues are created. These treatment planning CT scans focus radiation beams on the prostate while limiting radiation to healthy tissues around it such as the bladder and rectum. Intensity-modulated radiation therapy (IMRT) and image-guided radiation therapy (IGRT) are treatment approaches that allow the radiation beams to treat the cancer and lessen the risks of side effects.

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**HYPOFRAC TON A T I O N R A DIATION T HERAP Y**

Hypofractionated radiation is a form of daily treatment giving higher doses over four to six weeks compared to a more standard treatment time of seven to nine weeks. Stereotactic body radiation therapy (SBRT) is a technique for treating cancers in five or fewer treatments at substantially higher doses. Hypofractionated and stereotactic radiation are currently being evaluated for long-term data and may be considered for certain patients.

**PROSTATE BRACHYTHERAPY**

Brachytherapy involves treating the cancer by inserting radioactive sources directly into the prostate. It is used to treat prostate cancer in areas of the prostate gland that do not have high-risk features.

1. **Permanent seed, or low-dose-rate (LDR) brachytherapy** consists of inserting small metal “seeds” directly into the prostate gland. This treatment is done as an outpatient surgical procedure and requires anesthesia. The seeds are temporarily radioactive and deliver the radiation to the prostate over several months. After losing their radioactivity, the seeds remain in the prostate.

    - These seeds are harmless and should not bother you.

    - For the short time that the seeds are given off large amounts of radiation, men should avoid being in close proximity to children or pregnant women.

    - Ask your radiation oncologist or oncology nurse for instructions about radiation safety and exposure for family members or pets.

2. **Temporary, or high-dose-rate (HDR) brachytherapy** involves treating the cancer by inserting radioactive sources directly into the prostate. In HDR brachytherapy, a series of daily treatments to accurately deliver radiation to the prostate results in higher doses over four to six weeks compared to a more standard treatment time of seven to nine weeks. Stereotactic body radiation therapy (SBRT) is a technique for treating cancers in five or fewer treatments at substantially higher doses. Hypofractionated and stereotactic radiation are currently being evaluated for long-term data and may be considered for certain patients.

**HORMONE THERAPY**

Hormone therapy is used to treat prostate cancer alone or may be combined with external beam radiation therapy and hormonal therapy. Ask your doctor whether LDR or HDR is a reasonable treatment option for you.

**CARING FOR YOURSELF DURING TREATMENT**

Cancer treatment can be difficult. You have many issues to cope with. Your oncology team, along with family and friends, are available to help.

- Get plenty of rest during treatment, and don’t be afraid to ask for help.

- Follow your doctor’s orders. Ask if you are unsure about anything.

- There are no stupid questions.

- Tell your doctor about any medications, vitamins or supplements you are taking to make sure they are safe to use during radiation therapy.

- Eat a balanced diet.
OF RADIATION FOR PROSTATE CANCER

External beam radiation therapy is not invasive, so it is rare for side effects to show up immediately. With brachytherapy, there may be some swelling, soreness and frequent urination just after the procedure. However, these side effects are from the brachytherapy procedure rather than the radiation itself. Over a period of weeks, other side effects may develop:

- Urinary frequency, urgency or a weaker stream are reasonably common side effects. Sometimes there is mild discomfort. The symptoms tend to be more noticeable with brachytherapy. Your doctor can prescribe medication to help relieve these symptoms.
- Changes in bowel habits are also common. There is usually some urgency or loose bowel movements. In some cases, you may have some diarrhea, increased gas or some mucus. Less commonly, some men have a flare of hemorrhoids. These side effects are temporary, with long-term symptoms less likely.
- Mild tiredness may develop, starting in the middle of treatment. However, tiredness from radiation should improve within a few weeks after radiation treatment ends.
- Mild skin irritation may occur with external beam radiation. Clean the area regularly with mild soap and warm water.
- Impotence is a common side effect of any treatment for prostate cancer. The risk depends partly upon the ability to have an erection before treatment. Many men treated with radiation can maintain erectile function. Don’t be shy about talking to your doctor about your sex life. He or she may be able to suggest remedies or prescribe medication.
- Incontinence can often occur after radiation. If you are considering having children after radiation treatment, ask your doctor about sperm banking before treatment.

Some side effects can be controlled with medications and changes to your diet. Ask your doctor or nurse whether you should make any changes in your diet. Tell them if you experience any discomfort so they can help you feel better.

FACTS TO HELP PATIENTS MAKE AN INFORMED DECISION

Because surgery and radiation can both be equally effective in treating prostate cancer, it is important to review all of your treatment options.

Ask your urologist about surgery and your radiation oncologist about radiation therapy. Learn about the risks and benefits to see what best meets your goals: balancing cure and quality of life.

HELPFUL WEBSITES ON PROSTATE CANCER

National Prostate Cancer Coalition
www.fightprostatecancer.org
Prostate Cancer Foundation
www.prostatecancerfoundation.org
Radiation Therapy Answers
www.rtanswers.org
Us TOO International Prostate Cancer Education and Support Network
www.ustoo.org

AMERICAN SOCIETY FOR RADIATION ONCOLOGY

2151 18th Street South, 8th Floor, Arlington, VA 22202
Phone: 703-502-1550 • Fax: 703-502-7852
www.astro.org • www.rtanswers.org

LEARNING ABOUT CLINICAL TRIALS

The radiation oncology team is constantly exploring new ways to treat cancer through studies called clinical trials. Today’s standard radiation therapy treatments are a result of clinical trials completed many years ago. For more information, ask your doctor or contact the National Cancer Institute at 1-800-4-CANCER or visit www.cancer.gov/clinicaltrials.

ABOUT THE RADIATION ONCOLOGY TEAM

Radiation oncologists are the doctors who oversee the care of each person undergoing radiation treatment. Other members of the treatment team include radiation therapists, radiation oncology nurses, medical physicists, dosimetrists, social workers and nutritionists. For information on what each of these professionals does or to locate a radiation oncologist near you, visit www.rtanswers.org.

ABOUT ASTRO

The American Society for Radiation Oncology is the largest radiation oncology society in the world with more than 10,000 members who specialize in treating cancer with radiation therapies. ASTRO is dedicated to improving patient care through education, clinical practice, advancement of science and advocacy.

PROSTATE CANCER IS THE MOST COMMON CANCER IN AMERICAN MEN. ACCORDING TO THE AMERICAN CANCER SOCIETY, ONE IN EVERY SIX MEN WILL DEVELOP PROSTATE CANCER IN HIS LIFETIME. THIS YEAR, APPROXIMATELY 180,890 MEN WILL BE DIAGNOSED. PROSTATE CANCER IS VERY MANAGEABLE AND OFTEN CURABLE. MORE THAN 99 PERCENT OF MEN WITH PROSTATE CANCER WILL LIVE MORE THAN FIVE YEARS AFTER DIAGNOSIS.