
Frequently Asked Questions About Your Radiation Therapy Options

What are the types of radiation used to treat prostate cancer?

Radiation therapy for prostate cancer can be delivered in two ways, externally and internally (also known as brachytherapy or seeds). During external beam radiation therapy, high energy X-rays produced by a linear accelerator are directed through the skin at multiple angles and aimed at the tumor. During brachytherapy, radioactive seeds (each about the size of a grain of rice) are permanently implanted into the prostate under ultrasound guidance. After losing their radioactivity over a period of months, the seeds remain in the prostate and are harmless.

How does radiation therapy work?

Radiation therapy is similar to having a routine X-ray except that the X-rays are of a much higher energy. These X-rays damage the DNA and other vital components of the cancer cells, causing them to die. Each treatment is usually delivered in 15 minutes or less.

Why is radiation treatment given over several weeks?

To minimize side effects, the treatments are given five days a week, Monday through Friday, for several weeks. This allows the tumor to safely be treated to a high enough dose while allowing healthy tissues such as the bladder and rectum time to recover.

What is 3D conformal radiation therapy (3D-CRT)?

3D conformal radiation therapy is a type of radiation that is tailored to the patient's unique anatomy by obtaining 3D images of the body with a CT scan. Physicists who work with radiation oncologists control the size and shape of the beam from multiple different angles to effectively conform the radiation to the patient's prostate while sparing the surrounding normal tissues such as the bladder and rectum.

What is IMRT?

Intensity modulated radiation therapy, or IMRT, is a specialized form of 3D conformal radiation therapy. With IMRT, each radiation beam can be broken up into many "beamlets," and the intensity of each beamlet can be individually adjusted. Using IMRT, it is possible to further conform radiation to the prostate while significantly limiting the amount of radiation given to the bladder and rectum. This allows a higher and more curative dose to safely be delivered to the prostate and often enables patients to complete treatment with very minimal or no side effects.

What is proton beam therapy?

Proton beam therapy is a form of external beam radiation therapy that has been available for many years and uses protons rather than X-rays to kill cancer cells. There is no difference between

protons and X-rays in the ability to kill cancer cells. Historically, the benefit of protons was their ability to deposit energy at a given depth in the body while avoiding surrounding normal organs. Today, with technologies such as IMRT, there is no advantage of protons over X-rays and there is no clinical evidence that protons are better at treating prostate cancer than IMRT.

What is the chance of cure with radiation therapy?

Radiation therapy has high success rates in treating prostate cancer as demonstrated in the scientific literature. It can provide long-term cure and survival rates equivalent to other treatments, including surgery.

What are the side effects of external beam radiation therapy?

Since radiation therapy is a local treatment, only areas of the body where it is directed will experience side effects. When treating prostate cancer, this involves the bladder, rectum, and small intestines. Patients experience side effects in a cumulative manner such that they may not experience any side effects for weeks until closer to the end of the treatments. Most of these symptoms are temporary and resolve after the radiation therapy ends. Patients continue with their normal daily activities and continue to work during treatment. Side effects may include fatigue, frequent urination, possibly burning with urination, and loose bowel movements. However, with new technologies such as IMRT, many of these side effects are historical and patients often complete the course of radiation with very minimal or no side effects.

Will radiation therapy affect my sexual function?

Impotence is a possible side effect of any treatment for prostate cancer. However, many patients who receive radiation therapy for prostate cancer are able to maintain sexual function. In fact, when patients experience a decline in sexual function it is often gradual over years, and they respond well to medications for erectile dysfunction.

Since the prostate is not removed, how do I know that I have been cured?

A PSA blood test will be checked every three to four months after completion of radiation therapy. The PSA is followed over time to ensure that it decreases to a low level and does not rise. If the PSA remains low long-term, the cancer has most likely been cured.
