

Understanding Radiation Therapy

What To Know About External Beam Radiation Therapy

What is external beam radiation therapy?

- It is a common cancer treatment that uses high doses of radiation to destroy cancer cells and shrink tumors.
- A large machine aims radiation at the cancer. The machine moves around you without touching you.
- It doesn't make you radioactive.

How does treatment work?

- At low doses, radiation is used as an x-ray to take pictures inside your body. In cancer treatment, higher doses of radiation are used to destroy cancer cells.

How long does treatment take?

- The length of your treatment depends on your type and stage of cancer.
- Most treatments take 2 to 10 weeks.
- Most people get treatment once a day for 5 days in a row. Treatment usually happens on Monday through Friday.
- Most treatments will take about 20 minutes.

Why do I need another CT when I Had one?

- This CT scan is for planning purposes only. The CT scan that we use serves as a copy of your body when we enter it into our computer planning software. Our physics department will then incorporate the necessary angles needed to treat the area of interest and the software will simulate how the radiation will work.

What is an IMRT radiation treatment?

- IMRT means Intensity Modulated Radiation Therapy. IMRT is a new type of conformal radiation therapy that uses radiation beams of varying intensities to deliver different doses of radiation to small areas of tissue at the same time. This technology allows for delivery of higher doses of radiation within the tumor and lower doses to nearby healthy tissue.

What about side effects?

- You can discuss the possibility of side effects with your physician. If any side effects are experienced during your treatments, it is important that you tell your doctor.

INTENSITY MODULATED RADIATION THERAPY (IMRT) ***PROSTATE CANCER***

Intensity Modulated Radiation Therapy (IMRT) allows the radiation oncologist to change the intensity of the radiation. This new technology allows a high dose of radiation to be delivered to the prostate, while at the same time limiting the dose to the surrounding healthy tissues including the bladder and rectum. Image-Guided Radiation Therapy (IGRT) is utilized to track the exact location of the prostate gland immediately prior to treatment. These two advances in radiation therapy allow a higher dose of radiation with precise delivery while minimizing the possibility of side effects.

The IMRT treatment process generally consists of several steps. A dedicated team of medical professionals will guide you and work with you every step of the way.

CONSULTATION

The first step is to meet with your radiation oncologist, who will review your medical history and pathology reports, and conduct a physical examination. After the physical exam, your radiation oncologist will explain in detail your treatment options. Your questions regarding the different treatment options will be answered.

GOLD SEED MARKER PLACEMENT

If IMRT is the treatment option chosen, an appointment for you will be made with your urologist. Gold fiducial markers will be placed into your prostate gland. These markers are used to image your prostate on a daily basis immediately prior to treatment. These help track the exact location of your prostate gland. Their placement is done similarly to a prostate biopsy.

SIMULATION

A CT simulation (special CT scan) is done approximately one week after the gold markers have been placed. A special mold is created around your legs to keep your body in the same position for the treatments. The information from the CT scan is transferred to one of our treatment planning systems. Pinpoint-sized tattoos with permanent ink are used to mark your skin. This allows the radiation therapists to align you in the same position on a daily basis. The simulation takes approximately 1 hour. When the simulation is complete, you will be given an appointment to return and start your treatment.

TREATMENT PREPARATION AND PLANNING

The radiation oncologist, dosimetrist, and physicist work together to design the radiation plan. A three-dimensional reconstruction of your pelvis is created. The prostate, bladder, and rectum, as well as other structures, are identified and mapped on the CT scan. A radiation plan that is specific for each individual patient is created based on national guidelines. This plan is tested on the machine to ensure its accuracy.

TREATMENT DELIVERY

Radiation therapy for prostate cancer is given five days a week for eight weeks. Each radiation therapy session lasts about 15 minutes. The radiation beam is only on for a few minutes. Prior to turning on the radiation beam, the exact location of the prostate is determined with an advanced Image-Guided Radiation Therapy (IGRT) system. The radiation is produced by a machine called a linear accelerator. The treatment radiation given by the linear accelerator is invisible. You will not feel it, just as you do not feel an X-ray. The linear accelerator emits a buzz sound as it produces the radiation beams. It is important to lie as still as possible during this time, so that the radiation dose is delivered to the exact same treatment area. The table you are lying on may move slightly to an exact treatment location. The linear accelerator will rotate around you. IMRT does not cause a patient's body to become radioactive. It is completely safe to be around other people while undergoing this therapy.

If you have any questions about IMRT, feel free to ask your doctor or staff members for further information.