

Radiation Therapy in Cancer Treatment

About half of people treated for cancer will receive radiation therapy at some point during treatment. It is used either alone or in combination with other treatments such as chemotherapy and surgery. Radiation therapy is the use of high-energy x-rays to target specific cancer sites and eliminate cancer cells. It works by damaging each cancer cell's ability to reproduce.

Radiation therapy may be used to eliminate cancer, relieve symptoms associated with cancer, and/or prevent the cancer from returning. Much of the newer, more advanced technology allows the radiation oncologists to better target these tumors while avoiding damage to the normal, healthy cells. Radiation can be delivered either from a machine outside the body (external beam radiation) or from a radiation source implanted permanently or temporarily in the body (brachytherapy). The treatment you receive will depend on the type of cancer you have as well as the location and size of the tumor(s). Your doctor will review your options and determine the best treatment plan for you.

Meet the Treatment Team

Your care will be handled by a team of experienced oncology specialists dedicated to providing you and your family with the highest quality of care.

The **Radiation Oncologist** is the physician responsible for developing an individualized plan for how the radiation will be delivered and what doses of radiation are necessary to achieve successful treatment. Along with the treatment team, the radiation oncologist will oversee your treatment, monitoring you closely to ensure the treatment is delivered precisely.

Radiation Oncology Nurses will work closely with you to answer any questions you may have before, during and after treatment and to assist with the management of side effects.

Radiation Therapists will help to position you and deliver your prescribed daily treatments.

Dosimetrists take the prescription written by the radiation oncologist and create the best treatment plan to ensure the tumor receives enough radiation while sparing the normal tissue.

Medical Physicists work closely with the radiation oncologist during treatment planning and delivery. They make certain that complex treatments are properly customized to each patient.

What to Expect Before Treatment: Simulation

During your first visit the radiation oncologist will evaluate your medical history and conduct a physical exam to assess your clinical condition and the extent of disease. Your physician will discuss the benefits and possible risks associated with radiation therapy before your treatment begins.

Once it is determined that radiation will be used as part or all of your cancer treatment, it is necessary to carefully plan your therapy. This process is called simulation. This entails:

- Taking detailed images of your body with CT, MRI, and PET/CT to determine where the cancer is for better therapy planning
- Measuring and marking the areas receiving radiation
- Placing you in the exact position in which you will be receiving your radiation treatment
- Creating devices and molds to securely hold you in treatment position
- Marking your body with implanted markers or tattoos to better target the tumor

Once you are finished with simulation, the treatment team will use the images along with your prior medical history and develop a plan tailored to your specific needs. This plan will outline how much radiation will be prescribed to certain parts of your body. Once the planning is finished, you are ready to start your therapy. During your treatments, you will be positioned as you were during the simulation process. At this time, any positioning devices that were used during simulation will be used again to ensure you are in the exact position for each treatment.

What is Image-Guided Radiation Therapy?

Image-guided radiation therapy (IGRT) is a revolutionary technology that allows the patient to be imaged before each radiation treatment is delivered. With traditional external beam radiation, cancer patients are diagnosed, staged, and imaged prior to the start of therapy. During the initial planning process, a CT is performed to precisely locate the tumor and determine where the radiation beams should be directed. With advances in imaging it has been established that many tumors are not stationary. In a situation like this, the movement could cause the radiation beam to miss its target. If this is the case, due to these variations, the original treatment plan created for the patient may not be appropriate.

With the addition of IGRT, the original planning CT is still performed, however daily CT's are compared to the original, and adjustments are made to compensate for any tumor motion. IGRT allows the radiation oncologist to track tumor movement and tumor changes on a daily basis and ensure the treatment plan is precisely delivered to the target. IGRT more accurately delivers the radiation to the tumor by using tighter margins and ultimately reducing side effects to significantly enhance quality of life.

Which Types of Cancers can be Treated with IGRT?

- Prostate cancer
- Lung cancer
- Head and neck cancer
- Gynecologic cancers
- Pancreatic cancer
- Liver cancer
- Brain tumors
- Spinal tumors
- Breast cancer

What are the Benefits of Using IGRT?

- Safe delivery of higher radiation doses ultimately leading to improved local control rates
- Capacity to track and treat the tumor on a daily basis which significantly reduces side effects and enhances quality of life
- Ability to precisely target tumors which were not considered treatable by conventional therapy due to proximity to critical structures

How Long will my IGRT Treatment Last?

Your treatment plan will be determined based on your cancer type and location as well as tumor size. Most treatments take place five days a week for a period of six to seven weeks. Each session typically lasts between ten and fifteen minutes.

What are the Side Effects Associated with IGRT?

IGRT is generally well-tolerated, and some patients will not experience side effects. Fatigue, skin irritation, and loss of appetite are the most commonly reported side effects, but additional side effects may be specific to the area where the radiation is being delivered.

Side effects usually peak within the second to third week of treatment. If they do occur, it is important that you discuss this with your treatment team. Many side effects can be managed through medications and changes in your diet. Your nurse will be able to work with you to discuss ways to make you feel more comfortable. Many patients are still able to function normally while undergoing treatment, however it is important to get plenty of rest and take time each day to relax.

What Happens after I am Finished with Therapy?

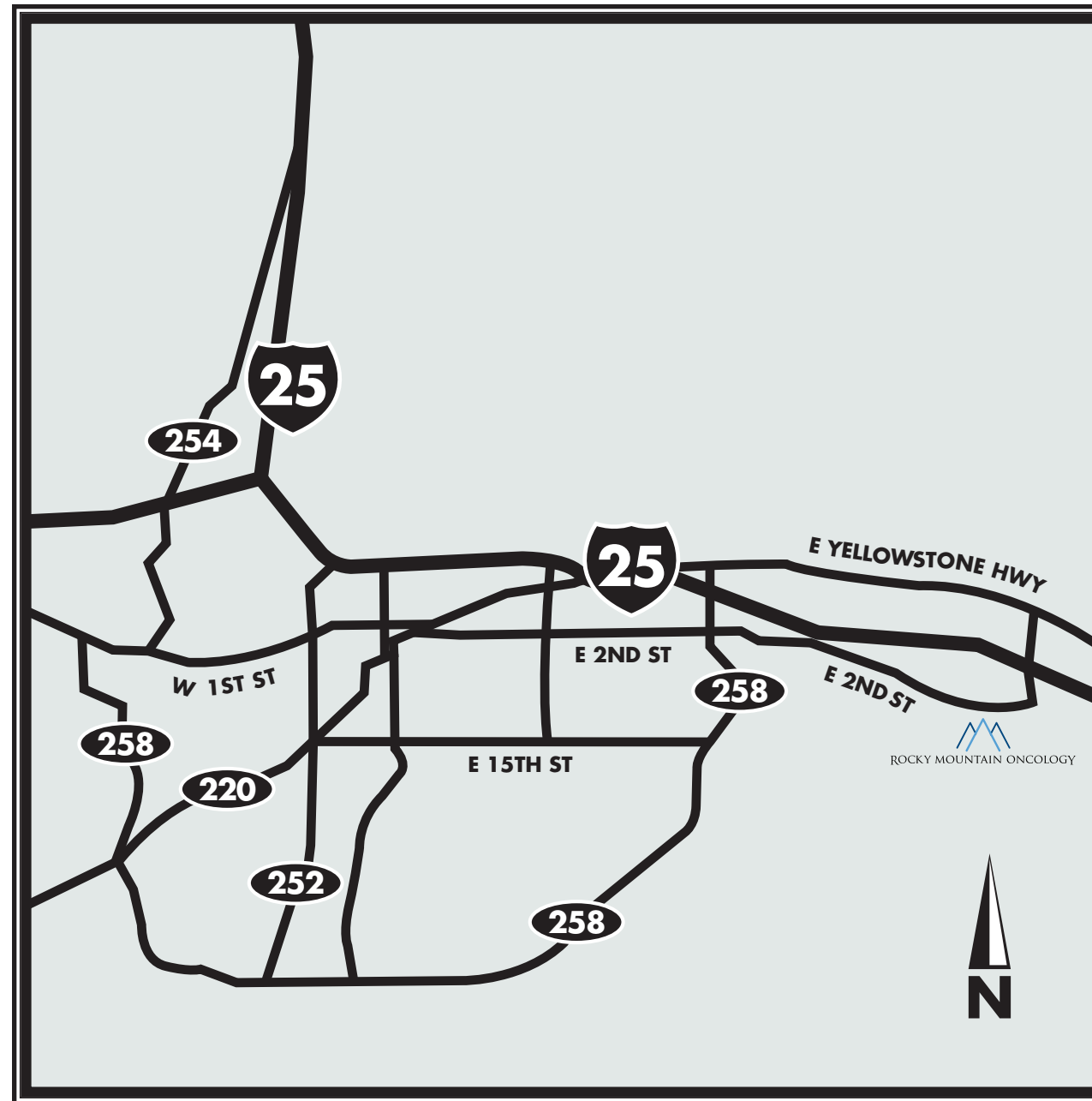
After treatment you will return for regular visits to be evaluated for side effects and ensure that you are healing properly. You may have additional testing and imaging to make sure treatment was successful and to monitor you for recurrence.

Will my Insurance Cover IGRT?

We are committed to helping you and your family have full access to all cancer services. Most insurance plans are accepted. If you have any questions regarding your insurance carrier, please contact our patient insurance specialist.



THE BEST.



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WHAT
TO EXPECT
WITH
IGRT

