

## What happens when my IMRT plan is complete?

When your IMRT plan is complete, the staff will schedule you for a verification simulation appointment. You will be brought into the actual treatment room for a final run through to double check your position, measurements, and the feasibility of the computer derived plan. A scan will be taken at this time. Your daily treatments can begin the next appointment day after the verification simulation.

## What do you do with the images obtained before receiving the radiation treatment each day?

With IGRT, 2 robotically controlled "arms" capture CT and x-ray images on a daily basis. The staff then uses these new images by superimposing them over the original CT image; pinpointing the position of the markers within the prostate just prior to treatment. Notation can be made of any internal organ movement and the treatment position can be adjusted to accommodate, thus increasing the accuracy of the treatment. Increased accuracy over the 7-9 weeks of treatment can be associated with an increased potential for cure with a decreased risk of side effects and complications.

## How are the radiation therapy treatments given?

Your radiation treatments are administered by a licensed radiation therapist in a dedicated treatment room. External beam radiation therapy is non-invasive and painless. It is much like getting a regular x-ray, but for a longer time. While receiving the treatment, you are monitored by closed circuit TV and may converse with the staff by intercom if needed.

## This treatment sound interesting. But can I afford it?

The treatment is a Medicare reimbursed therapy and is approved by most private insurance carriers. Coverage is generally good, although your individual plan may be subject to co-pay and/or deductible amounts. Feel free to contact our staff if you have any questions and we will do our best to assist you.



Vera Petras, M.D., Radiation Oncologist is the Medical Director of the AUA Prostate Cancer Center. She is a respected member of the Radiation Oncology Community in the greater Chicago area, where she has practiced her entire career. Dr. Petras completed her residency in Radiation Oncology at Veterans Administration Hospital, in Hines, Illinois, followed by her fellowship in Radiation Oncology at the University of Chicago Medical Center. Dr. Petras is board certified by the American Board of Radiology in Therapeutic Radiology (Radiation Oncology). Her most recent position was the Medical Director of Radiation Oncology at Morris Hospital. She has been involved in many of the hospital and community cancer related programs in the past years. Her professional memberships include: Illinois Medical Society, Chicago Medical Society, American Society of Therapeutic Radiology and Oncology, and the European Society of Radiation Oncology.



## Image Guided Intensity Modulated Radiation Therapy (IGRT/IMRT) for Prostate Cancer



Prostate Cancer Center  
Advanced Urology Associates  
1541 Riverboat Center Drive  
Joliet, Illinois 60431  
[www.advuro.com](http://www.advuro.com)

# Frequently Asked Questions About Image-Guided IGRT/IMRT

## My Urologist says my Biopsies showed prostate cancer. What do I do now?

Prostate Cancer is in general a very curable disease. A wide range of good treatment options exist for prostate cancer. Consult with your urologist, radiation oncologist, and other trusted physicians about the best option for you.

## Radiation Therapy is an option for treatment of my prostate cancer. How does it work?

Radiation Therapy is a time proven treatment for prostate cancer. The curative dose of radiation therapy can be delivered to the prostate without compromising the tolerance of the normal tissue in the area (bladder & rectum). Treatment modalities include radioactive seed implants to the prostate, proton beam therapy, and most widely used, external beam radiation therapy with high energy x-rays generated by linear accelerators.

## I have heard the term IMRT. What does it mean?

**Intensity Modulated Radiation Therapy (IMRT)** is an advanced mode of high precision radiation therapy treatment technique that is able to shape radiation beams to the contour of the tumor while minimizing the impact on surrounding healthy tissue or organs. Considered to be one of the most significant technological breakthroughs in cancer

treatment in the last 10 years, IMRT can be used to treat tumors in most areas of the body and allows very precise external beam radiotherapy treatments.

In IMRT, the intensity of radiation beams is varied across the treatment field. This is accomplished through the use of multiple small beams with varied intensity instead of a single, large beam. This results in a high dosage to the tumor and a lower dose to the surrounding healthy tissues. Because the ratio of normal tissue dose to tumor dose is reduced to a minimum, higher and more effective radiation doses can safely be delivered with fewer side effects when compared to conventional radiotherapy techniques.

## What about Image Guided Radiation Therapy (IGRT)?

IGRT is the process of imaging the location of the patient's organ/tumor on a daily basis and comparing the tumor's current location to the location the organ/tumor was on the day the CT for the radiation treatment plan was completed. IGRT requires your urologist to place 2 fiducial markers in the prostatic area which are visualized and tracked daily.

Example: The prostate often will move in excess of 1 cm in any direction based on the content of the patient's bladder and bowels. With IGRT, we track the exact location of the markers within the prostate and compensate for the change in position on a daily basis.

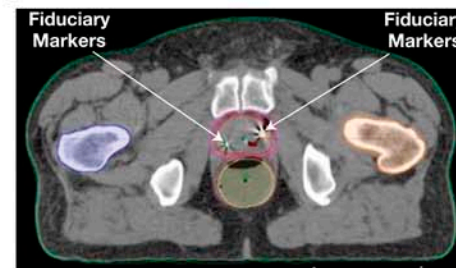
IGRT is very important when using IMRT because this technology allows us to decrease the margin we treat around the tumor to 5mm or less. This precision of the exact position of the organ/tumor allows the application of IMRT to be even more effective.

## So what is all the excitement about IGRT/IMRT and what is it anyway?

Image Guided Radiation Therapy (IGRT) in combination with Intensity Modulated Radiation Therapy (IMRT) is the most advanced treatment delivery technique today. On a daily basis, IGRT identifies the prostatic area and the normal structures in the area of treatment. ACT scan of the prostatic area is obtained daily to overlap and match the fiducial markers for positioning and treatment.

## How do you get set-up for IMRT and/or IGRT?

Several steps are required to set up your therapy. Prior to beginning your treatment, you will come to our office for consultation with the physician to be sure that radiation therapy treatments are a good option for you. This visit is similar to those in other doctors' offices with a review of your history and a physical exam. At this time the doctor will decide if having the markers placed is the best option for you. We review with you the procedure as well as the risks. You will receive complete information about the treatment, the necessary steps of preparation, as well as the possible treatment related side effects. Once the decision for the treatment is made, and following the placement of the fiducial markers, you will be set up for an imaging session. Then we will set you up for an imaging session. During this first "simulation" visit, a CT scan of the pelvis is performed. Occasionally, additional scans including such as an MRI are obtained. The whole process generally takes about 30-45 minutes. During the next few days, treatment is carefully planned by using the 3-D CT images in conjunction with computerized dose calculations to determine the dose pattern that will best conform to the prostate shape. You do not need to be present during this time. Your IMRT treatment plan is prepared by your physician and the medical physics staff.



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