

# TomoTherapy®

## Revolutionizing Cancer Treatment using Radiation Oncology

by **Robert A. Harris, MD**  
*Board Certified Radiation Oncologist*

Residents of Davis County, Utah (since January 2009), and most recently (November 2010) residents of Washington County (St. George, Utah) and surrounding populations are now able to conveniently access the world's most advanced radiation cancer treatment technology, the TomoTherapy® Hi-Art® treatment system. TomoTherapy is available on the Davis Hospital campus in Layton, Utah. Gamma West just opened a beautiful stand-alone TomoTherapy Treatment Center in St. George at 900 South and River Road. Gamma West Cancer Services has also announced the opening of a new TomoTherapy Cancer Treatment Center at St. Mark's Hospital in Salt Lake City this coming Summer, 2011.

The TomoTherapy solution can be used to treat a wide variety of cancers, from the most common to the most complex. The ring gantry-based TomoTherapy platform combines integrated computerized tomography (CT) imaging with conformal radiation therapy to deliver sophisticated radiation treatments with speed and precision while reducing radiation exposure to surrounding healthy tissue.

The TomoTherapy system is known as a fully-integrated radiology and radiation delivery system that utilizes a ring-gantry

that revolves 360° around the patient being treated combining the powerful precision of a CT scanner and linear accelerator for the delivery of image-guided, intensity-modulated radiation therapy (IG-IMRT). The TomoTherapy Hi-Art system also enables development of sophisticated treatment plans. These very specific plans then allow the system to utilize its unique helical radiation delivery capabilities for precise tumor targeting from all angles around the patient while sparing normal, healthy tissue. With imaging capabilities built into the TomoTherapy system, highly skilled clinicians can acquire daily 3D CT images to ensure

accurate delivery of radiation, thus minimizing damage to surrounding normal tissues and structures while reducing side-effects for patients. Having access to CT images of the patients anatomy on the same physical equipment used to treat the patient brings physician's unprecedented confidence that tumors will receive their intended dosage from one day to the next.

Another major difference is the way that radiation hits the treatment area. A single beam of radiation is modulated into smaller "beamlets", which are delivered in a helical pattern, from any point in a 360° radius around the patient. Typically, tens of thousands of beamlets are included in this unique delivery pattern. With that many beamlets, delivered from all angles around the patient, dose conforms to the tumor and avoids critical organs like never before—which can mean improved outcomes, fewer side effects and a higher quality of life.

"We researched several options and concluded that this technology is different and unique, essentially a step above the rest," explains Dr. John K. Hayes, Gamma West founder, President and Medical Director. "We are certain that our patients will benefit tremendously from TomoTherapy treatments since the radiation can be pinpointed exactly where it needs to go, minimizing damage to healthy tissues and reducing side effects."

### HOW THE TOMOTHERAPY HI-ART TREATMENT SYSTEM WORKS:

1. Before each treatment, the patient, lying on the couch, moves through the Hi-Art machine for a CT scan, called a CTrue image. Images taken verify the shape, size and location of the tumor.
2. The CTrue image is compared to the original planning CT image (which may have been taken days before). If necessary, adjustments to the plan and patient set-up are made immediately.
3. The patient then moves through the Hi-Art treatment system again where radiation is delivered in tens of thousands of beamlets in a helical pattern (360°) around the tumor.
4. Each procedure takes approximately 15 to 20 minutes.

“By combining image guidance and the most precise delivery pattern possible, TomoTherapy optimizes the tools of radiation therapy, while simplifying the process,” says Dr. Fred Robertson, CEO of Madison, Wisconsin-based TomoTherapy Incorporated, manufacturer of the Hi-Art treatment system. “The patients benefit greatly, and we make life easier on our treatment center partners, too. That’s why each new installation is so rewarding for us. And this one is certainly no exception.”

### ABOUT GAMMA WEST CANCER SERVICES

Gamma West Cancer Services is based in Salt Lake City, Utah with 8 clinics from St. George to Ogden, Utah. Gamma West was founded by John K. Hayes, MD, a pioneer in the delivery of radiation therapy using brachytherapy (given by placing a radioactive seed or source directly in or near the tumor). Today, Gamma West is one of the largest providers of brachytherapy treatments by volume in the United States.

Robert A. Harris, MD a board-certified in Radiation Oncologist leads an experienced team of cancer clinicians at the TomoTherapy Cancer Center at Davis Hospital in Layton, Utah. He received his training at the National Cancer Institute in Bethesda, Maryland. After training, he helped establish the first Radiation Oncology center in the Washington, DC, area that offered treatment using advanced IMRT techniques. He relocated to Utah in 2004 to join Gamma West Cancer Services at Davis Hospital. Consultations can be scheduled

at 801.807.7777 or go to [www.davishospital.com](http://www.davishospital.com).

The Gamma West TomoTherapy team in St. George is led by Board Certified Radiation Oncologist Ray S. Richards, M.D. Dr. Richards has served cancer patients in the St. George area for over 20 years, utilizing radiation therapy as a very powerful anti-cancer

tool. Dr. Richards is supported by an outstanding team that includes James W. Clarke, MD, also a Board Certified Radiation Oncologist, radiation oncology nurses, dosimetrists, therapists, medical physicists, administrative and support staff. Consultations can be scheduled by calling 435-767-9104.



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THE REST

FOCUSED ON  
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Introducing a radiation  
therapy system that  
revolves around you.

The TomoTherapy® Hi-Art® treatment  
system was designed to get cancer  
patients back to their lives.

With integrated daily CT imaging and a 360° delivery pattern, the *Hi-Art* treatment system customizes delivery based on patient anatomy. For more information on this innovative approach, now available at Gamma West Cancer Services, please visit [www.gammawest.com](http://www.gammawest.com) or [www.TomoTherapy.com](http://www.TomoTherapy.com).



**GAMMA WEST**  
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