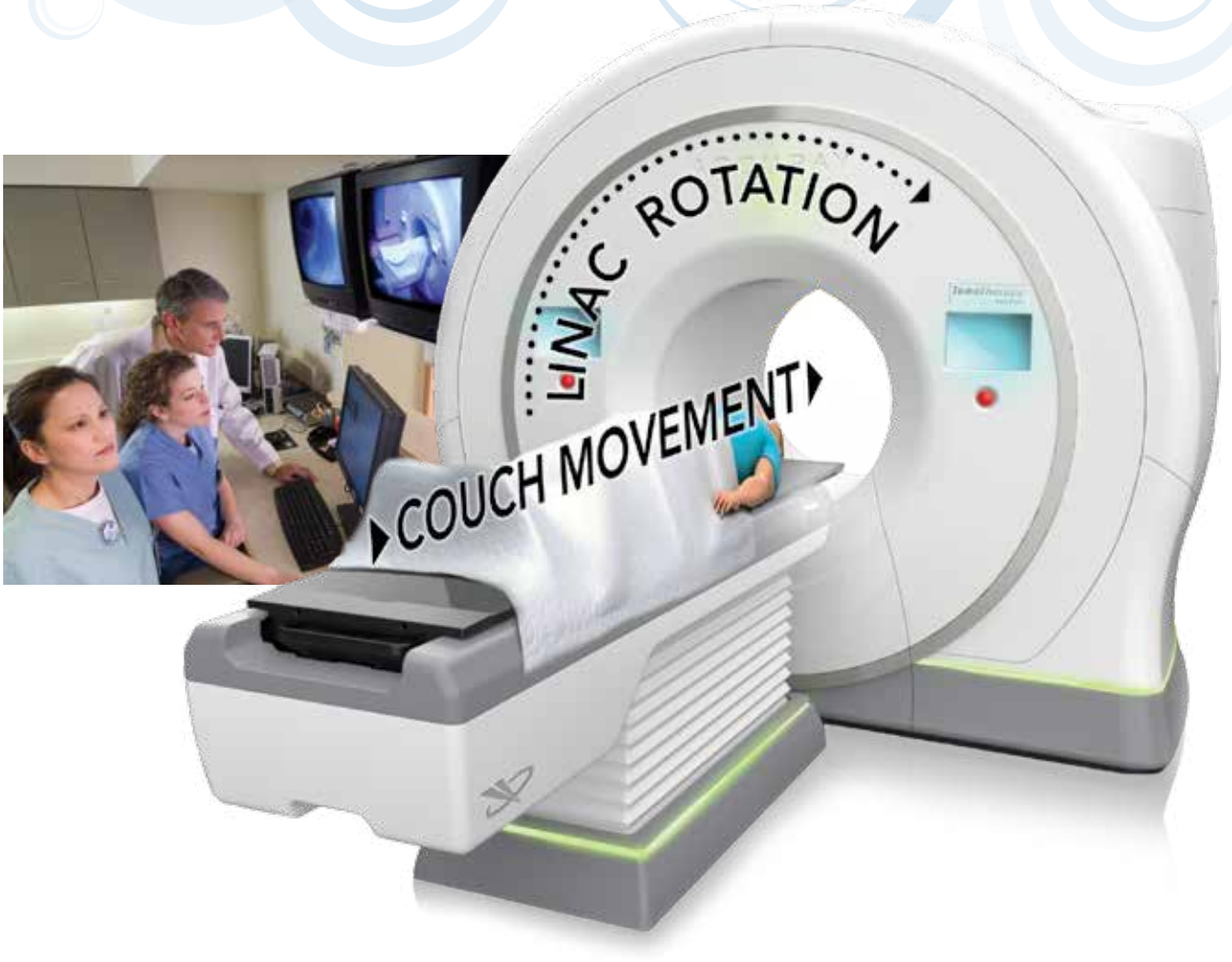
TomoTherapy®
ACCURAY®

A Revolution in the Fight Against Cancer



Introducing a Truly Integrated Approach to Radiation Therapy

The TomoTherapy® treatment system is the only radiation therapy system designed on a CT scanner foundation. The system looks like a CT scanner because it *is* one. Combined with the option of innovative, TomoHelical™ and TomoDirect™ radiation delivery, the all-in-one system results in more control and greater accuracy in treating a wide variety of cancers.

Since physicians began using the *Tomo Therapy* treatment system in 2003, more than 1,500 papers, posters and abstracts have been published on the application of *Tomo Therapy* across a wide range of clinical indications. The growing body of evidence demonstrates the inherent advantages of the *Tomo Therapy* system's CT scanner-based platform compared to conventional radiotherapy systems.

Daily low-dose CT imaging helps us know that radiation will reach the tumor as planned, and that exposure to healthy tissue will be minimized along the way. And, these daily images can be used to monitor and maintain the prescribed treatment during each and every treatment session.

We are proud to be part of a growing number of treatment centers worldwide bringing the highest quality cancer care closer to home.

The Tomo® Advantage for Physicians	The Tomo® Advantage for Your Patients
• Image-guided radiation therapy (IGRT) enables efficient, **daily CT scans of the patient** to be performed, so fine adjustments in treatment position can be made immediately prior to radiation delivery.	• Image-guided radiation therapy (IGRT) combines CT imaging and radiation delivery into a single device. This unique design makes *Tomo Therapy* a viable option for treating a **wide range of cancers**, including recurrent disease in patients who've already received maximum radiation doses to critical organs.
• More beam angles provide a **highly conformal dose distribution**—delivering greater accuracy and precision in treating a wider variety of cancers, while minimizing radiation exposure to surrounding tissues.	• Customized treatment plans can be **monitored and modified** during the course of treatment.
• Treatment precision promotes **reduced toxicity,** especially important for concurrent chemo-radiation regimens.	• **Minimized dose** to surrounding healthy tissue can result in reduced treatment-related side effects and improves patients' quality of life.
• Images acquired for daily patient positioning can be used to monitor the treatment progress and **adapt treatment** if necessary.	• **Simultaneous treatment** of multiple tumors is possible, which means reduced time on the table and greater comfort for patients.
• System facilitates creation of aggressive, higher-dose treatment regimens, including **hypofractionated or stereotactic** treatment courses, which can deliver the prescribed dose in a shorter, more convenient treatment cycle for patients.	• *Tomo Therapy* treatment is **noninvasive** and as painless as having a CT scan or an x-ray.

TomoTherapy Radiation Delivery

The *TomoTherapy* system is a pioneering radiation therapy platform that enables precise cancer treatment by tightly conforming the radiation dose delivered to the shape of the tumor.

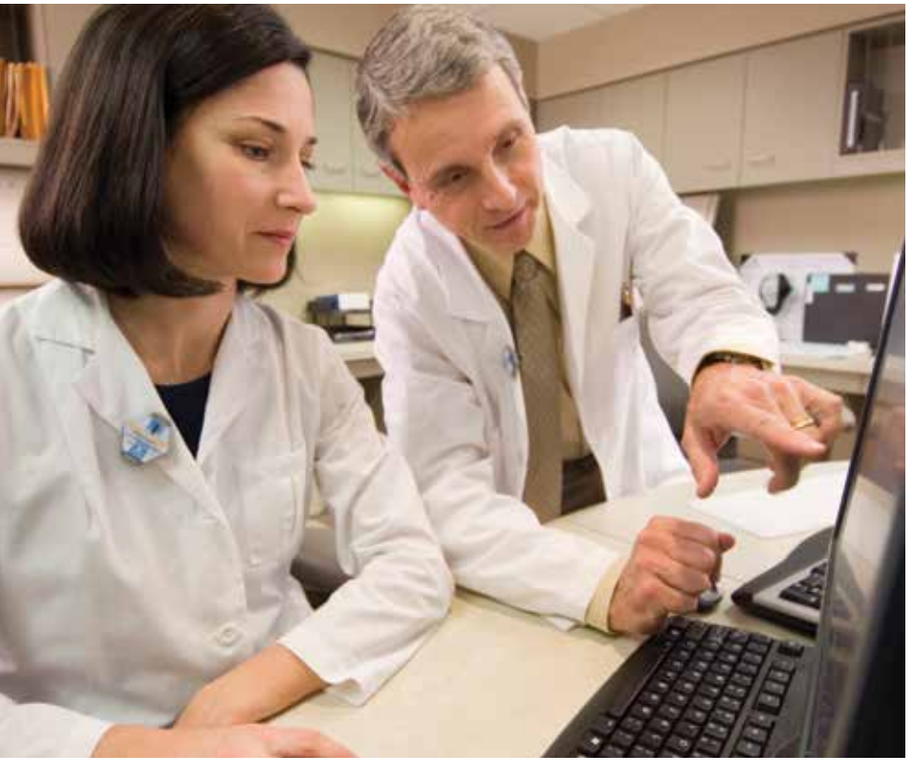
TomoTherapy's flagship helical mode of treatment combines a continuously rotating beam with intensity-modulated radiation therapy (IMRT). This helical IMRT delivery—with a patented binary multi-leaf collimator (MLC)—allows not just conformal dose delivery to complex targets, but separation of the irradiated volume into multiple dose levels. And, thanks to continuous, high-dose rate delivery, treatment times are short compared with many other types of radiation therapy.

Other technologies have tried to replicate the helical delivery principle that *TomoTherapy* introduced almost a decade ago, but TomoTherapy continues to set the standard for treatment flexibility with its unique beamlet-based delivery.

More recently the *TomoTherapy* platform's capabilities have expanded with the addition of *TomoDirect*. This form of treatment utilizes non-rotational, static beams as a clinical complement to the *TomoHelical* delivery mode. *TomoDirect* enables users to plan and treat routine cases with greater efficiency while still benefiting from the beam delivery pattern unique to the binary MLC.

With both *TomoHelical* and *TomoDirect* delivery modes available in the *TomoTherapy* platform, clinicians can:

- Provide a broader patient population with innovative, high quality radiation therapy.
- Have a complete solution for treatment optimization, plan quality assurance, imaging, and radiation delivery in a single system.
- Offer treatment options for a wider variety of cases – from the simplest to the most complex.

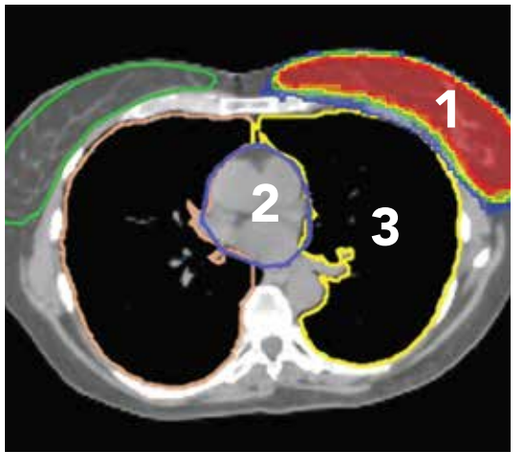


Highly Conformal Dose Distribution

TomoTherapy delivers radiation therapy for the treatment of cancer as prescribed by a radiation oncologist. As reported by many users, reduced side effects are often observed with *TomoTherapy* as compared to conventional forms of radiation therapy. Because of the ability to more precisely deliver the radiation to the targeted area, oncologists have reported that they are able to treat patients who have been treated before, when their cancers have returned.

Radiation oncologists have treated many types of cancers with the *TomoTherapy* system, ranging from routine to complex, including the following:

Breast Cancer



Shows plan for treatment of breast tissue while helping to avoid the heart and lung.

TomoTherapy treatment is suitable for simple or complex breast cases, including those involving nodal areas or both breasts.

1 - breast 2 - heart 3 - lung

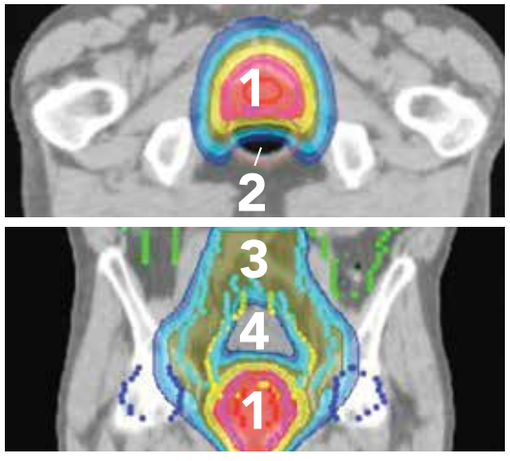
Prostate Cancer

The high dose is contained within the tumor (red color) while minimizing dose to the rectum.

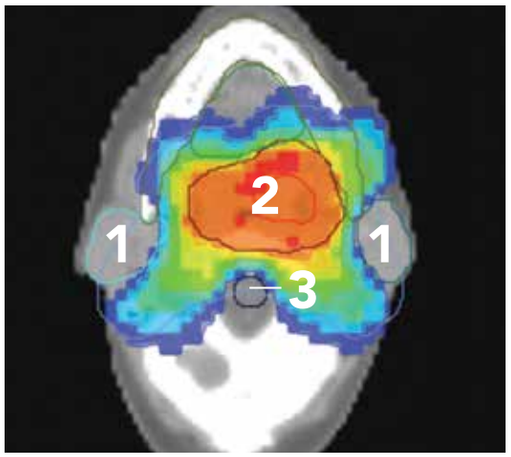
TomoHelical delivery allows treatment of the prostate and lymph nodes while helping to avoid the bladder.

TomoTherapy has been used to treat both early and late-stage prostate cancer.

1 - prostate 2 - rectum
3 - pelvic nodes 4 - bladder



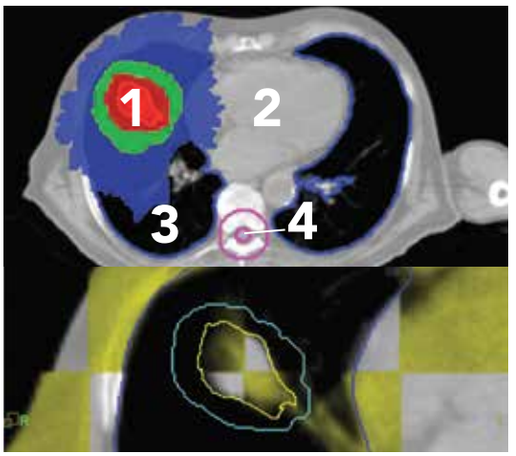
Head and Neck Cancer



A plan for treatment of a gross target volume and surrounding clinical target volume while limiting dose to the spinal cord and parotid (salivary) glands.

1 - parotid (salivary) glands
2 - gross target volume
3 - spinal cord

Lung Cancer

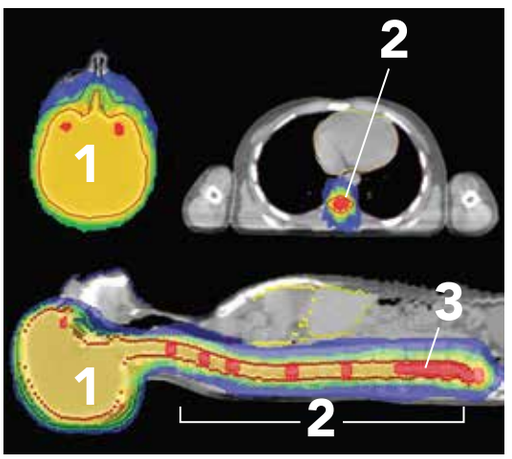


A plan for treatment of the tumor with a rapid falloff of dose to limit exposure to healthy lung tissue, while helping to avoid the heart, mediastinum and spinal cord.

Merged registration image. Daily pre-treatment CT (yellow) is seen to be correctly placed relative to the planning CT.

1 - lung tumor
2 - heart/mediastinum
3 - healthy lung tissue
4 - spinal cord

Pediatric Cancer



Craniospinal irradiation is a common treatment for children and a difficult challenge due to the amount of tissue to be treated. The image shows the treatment of the brain and spinal cord while helping to avoid eyes, mouth, heart, kidneys and liver. Using image guidance can help keep the exposure of healthy tissue treated as small as possible.

1 - brain
2 - spinal cord
3 - metastases

TomoTherapy®

ACCURAY®

ACCURAY®