

Treating Primary & Metastatic Brain Tumors with Helical TomoTherapy

Helical TomoTherapy uses the same proven type of radiation as conventional therapy, but allows the physician to customize the delivery to target your tumor.

It combines intensity modulated radiation therapy, or IMRT, with a CT scanner. That means physicians can deliver beams of varied intensity to your tumor, under the guidance of advanced imaging.

City of Hope's Division of Radiation Oncology was one of the first facilities in the country to use TomoTherapy, and our physicians offer unmatched expertise with this advanced technology.

HOW DOES RADIATION THERAPY WORK?

Radiation therapy is a localized treatment, which means it provides benefits — and side effects — in the exact area where it's delivered. With the technology to deliver radiation treatment with millimeter precision, normal, healthy brain tissue can be spared. This degree of accuracy provides City of Hope radiation oncologists with the tools to deliver more powerful radiation dose exactly where it is needed.

TREATMENT PLANNING

The ability to visualize the tumor with superior imaging technology is driving radiation therapy in a new direction. Radiation oncology now requires PET/CT or MRI imaging modalities to be placed in the treatment planning process. With the use of these advanced imaging studies, the radiation oncologist relies on specialized 3-D planning software to establish the precise contours for each region of interest (tumor site) and any regions of risk (sensitive organs or structures). The physician decides how much radiation the tumor should receive, as well as limits to surrounding structures. The TomoTherapy system then calculates the



Radiation dose is precisely confined to the target volume.

appropriate pattern, position and intensity of radiation beams to be delivered in order to match the physician's prescription.

PATIENT POSITIONING

More critically important than the way TomoTherapy delivers radiation, is the 3-D image-guidance systems used to direct therapy, since no matter how sharp shooting a device you have, it is ineffective if the ability to aim the device is compromised. TomoTherapy's built-in CT image guidance system gives it the capability of 3-D x-ray vision. This is utilized at the City of Hope everyday to help align the therapy beam on target. This critical feature is important for cancers that are not in the exact same position each day due to differences in patient and normal organ position. This daily CT image guidance is used everyday in all patients.

FOR MORE INFORMATION, PLEASE CONTACT

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800-341-HOPE (4673)
Or visit us at www.cityofhope.org/radonc

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WHAT MAJOR BENEFITS CAN TOMOTHERAPY OFFER?

- In many cases, the ability to avoid whole brain irradiation for patients with limited number of metastatic tumors to the brain
- Decrease treatment toxicity for certain childhood brain tumors
- Provide therapy with stereotactic surgical precision in single or multidose sessions

WHEN IS TOMOTHERAPY THE RIGHT TREATMENT CHOICE?

Only a qualified radiation oncologist can make the final recommendation on your care, but TomoTherapy offer benefits for many conditions:

- Primary Brain Tumors
- Metastatic Malignant Brain Tumors
- Pediatric Brain Tumors

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