FACT SHEET

Treating Lung Cancer with Helical TomoTherapy

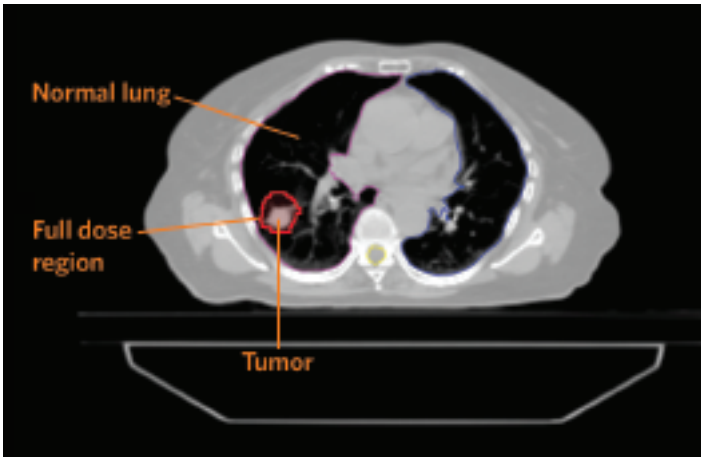
Helical TomoTherapy uses the same proven type of radiation as conventional therapy, but allows the physician to customize delivery to target **your** tumor.

It combines intensity modulated radiation therapy, or IMRT, with a CT scanner. That means physicians can deliver beams of different doses to the body, 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. By reducing the radiation dose to an area of normal, healthy tissue, a patient will experience fewer side effects than they would in a more conventional treatment setting. And by more specifically targeting that radiation on the cancer, it gets delivered where it's needed most.



Treatment of prostate cancer with TomoTherapy compared to conventional technique. Radiation dose is confined to the prostate. With conventional techniques more of the rectum and bladder receive the full dose.

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 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

City of Hope
Division of Radiation Oncology
800-341-HOPE (4673)
Or visit us at **www.cityofhope.org/radonc**

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City of Hope

WHEN IS TOMOTHERAPY THE RIGHT TREATMENT CHOICE?

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

- Early stage lung cancer in medically inoperable patients. These are patients whose surgeons have said they could not tolerate surgery for their small lung cancers due to emphysema, heart disease or other medical condition.
- Patients with a history of prior radiation therapy that prevents standard radiation therapy fields from being used. This includes patients who have undergone radiation for breast cancer, lung cancer and various chest tumors.
- Patients with advanced lung cancer where TomoTherapy may spare lung tissue better than standard radiation therapy fields.
- Some patients with uncommon tumors of the chest or spine — especially children — may be better treated with TomoTherapy.

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