



SMARTBEAM™ IMRT: What is it?

Varian's Smartbeam Intensity Modulated Radiation Therapy (IMRT): Cancer Care For The Next Generation

Varian Medical Systems' SmartBeam IMRT (Intensity Modulated Radiation Therapy) is a state-of-the-art cancer treatment method that delivers **high doses of radiation directly to cancer cells** in a very targeted way, much more precisely than is possible with conventional radiotherapy. SmartBeam IMRT can deliver higher radiation doses directly to cancer cells while **sparing more of the surrounding healthy tissue**.

SmartBeam IMRT uses computer-generated images to plan and then deliver tightly focused radiation beams to cancerous tumors. Clinicians use it to exquisitely "paint" the tumor with a precise radiation beam that conforms as closely as possible to the shape of the tumor.

SmartBeam IMRT can be used to treat tumors that might have been considered untreatable in the past due to close proximity of vital organs and structures. Treating such tumors requires tremendous accuracy. For example, in the case of head and neck tumors, IMRT allows radiation to be delivered in a way that minimizes exposure of the spinal cord, optic nerve, salivary glands or other important structures. In the case of prostate cancer, exposure of the nearby bladder or rectum can be minimized. IMRT is being used to treat tumors in the brain, breast, head and neck, liver, lung, nasopharynx, pancreas, prostate, and uterus.

A powerful computer program optimizes a treatment plan based on a physician's dose instructions, and information about tumor size, shape and location in the body. A medical linear accelerator, equipped with a special device called a multileaf collimator that shapes the radiation beam, delivers the radiation in accordance with the treatment plan. The equipment can be rotated around the patient to send radiation beams from the most favorable angles for giving the tumor a high dose while preserving important healthy tissues.

Clinical studies conducted at Memorial Sloan Kettering Cancer Center in New York indicate that the higher dose rates delivered with IMRT techniques significantly improved the rate of local tumor control. At the same time, clinicians delivered these higher doses while simultaneously reducing the rate of normal tissue complications from 10 percent to 2 percent.

Varian Medical Systems, Inc., the world leader in integrated cancer care systems, offers a complete suite of hardware, software and support services for delivering IMRT treatments. For more information, please visit www.varian.com.