

New Technology in Radiation Therapy: The NovalisTx™



Half of all cancer patients receive radiation therapy for at least part of their cancer treatment. Radiation therapy uses high-energy rays to prevent cancer cells from growing and dividing. Very targeted, radiation therapy is designed to attack the cancer cells while minimizing damage to the normal tissues that surround them.

Radiation therapy has advanced considerably during the last 10 to 15 years, allowing physicians to deliver highly precise beams of radiation during treatment. At Eisenhower Medical Center, cancer patients are treated with the most sophisticated radiation technology available today, thanks in part to Eisenhower's partnership with Varian Medical Systems, Inc.

Varian is the industry leader in radiation therapy equipment — the best in the world. Eisenhower has had the largest Varian department in Riverside County since the opening of the Lucy Curci Cancer Center in 2002. The latest advance from Varian, the Novalis Tx™ system, will be available at Eisenhower in the summer of 2009. Eisenhower is the only center in the Coachella Valley, and among only a handful of facilities in California, to acquire this cutting edge technology.

"The major impact in the field of radiation therapy has come with the advent of Intensity Modulated Radiation Therapy [IMRT]," says Monica Khanna, MD, a Board Certified Radiation Oncologist at Eisenhower. "IMRT is a technique in which the radiation beams are aimed from many directions, and the intensity and strength of the beams are controlled by sophisticated computer systems."

With IMRT, CT (computed tomography) scans are linked with sophisticated software programs, creating a 3-D simulation, and the radiation beam direction and intensity are extremely targeted. The technology delivers higher doses of radiation directly to the tumor, and lower doses to nearby healthy tissue. This technique can potentially lead to fewer side effects. The technology has been used effectively to treat cancers in the brain, head and neck, nasopharynx, breast, liver, lung, prostate and uterus.

The RapidArc™ Technology

The Novalis Tx utilizes Varian's new RapidArc™ radiation therapy technique, which enables clinicians to deliver IMRT radiation up to eight times faster than was previously possible. According to Dr. Khanna, the patient is more comfortable since the treatment can be delivered in less than two minutes, rather than the 10 to 15 minutes usually required for IMRT.

"The decrease in treatment time also minimizes the opportunity for patient movement, which increases the accuracy of the treatment," says Dr. Khanna. "It's a revolutionary approach. Completing the treatment in less than two minutes also reduces the chance of other involuntary anatomical movement during longer treatments. For example, for prostate cancer, there may be gradual filling of the bladder or sudden movement of gas that can displace a target by a few millimeters. We avoid that when we deliver the treatment in less than two minutes."

The Novalis Tx will enable physicians at Eisenhower to increase their accuracy in treating many different kinds of tumors, including lung, prostate, liver and spinal tumors. In addition, the Novalis Tx is the most powerful radiosurgery system available today for treating small brain tumors. Stereotactic radiosurgery is a non-invasive, non-surgical treatment.