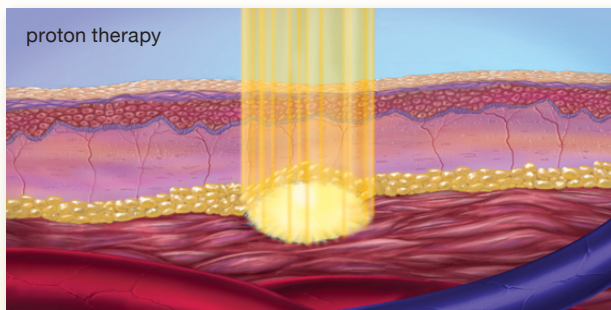


about Proton Therapy

“Proton beam therapy has emerged as the “Gold Standard” in external beam radiation therapy. The superior dose distribution characteristics of protons provide physicians and therapists with greater control while minimizing the unwanted side effects of conventional radiation therapy.”

Proton Beam Therapy has emerged as the **“Gold Standard”** in external beam radiation therapy



Proton beams cause much less collateral damage than conventional X-ray beams, with virtually no exit and very little entry tissue damage.

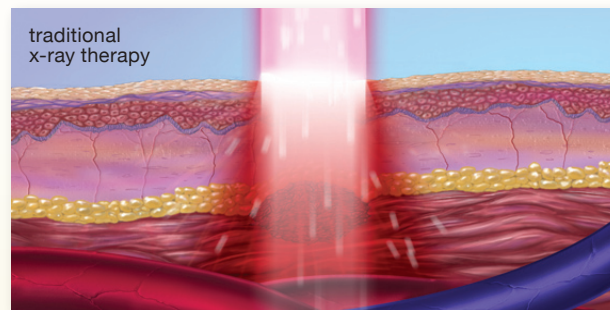
Traditional Radiation Therapy

Traditional or Conventional Radiation Therapy (X-ray) has been used since the late 1800s. The primary goal of any external beam radiation therapy is to destroy diseased and cancerous cells. Today, physicians and therapists can only control X-ray beams laterally in two dimensions. An X-ray beam deposits radiation in all tissues in its path—healthy and cancerous. X-ray radiation releases much of its energy at the entry site, passing through the body to the tumor and out through the remaining tissues beyond the tumor site. X-ray radiation can control many forms of cancers if given in sufficient doses, which is difficult because of the collateral damage caused by this form of radiation.

The entry point receives a higher dosage of radiation than the tumor. As normal tissues surrounding the cancerous tumor receive more energy from radiation than they can tolerate, patients typically experience unpleasant side effects. This excess radiation is even more harmful in children.

Proton Radiation Therapy

Proton beam therapy is a newer form of external beam radiation therapy that is a proven, painless, precise and safe treatment modality. Protons have been used to treat more than 65,000 patients worldwide since 1954. Proton Therapy is particularly well-suited to solid localized tumors. The physical characteristic of a proton particle allows physicians



and therapists to form the radiation beam to the shape of the tumor site with sub-millimeter accuracy. This conformability minimizes the exposure of healthy surrounding cells to harmful radiation, while decreasing the side effects that are normally associated with conventional X-ray therapy. Proton Therapy allows clinicians to treat tumors in areas that might have been too sensitive to treat with X-ray radiation.

How Does Proton Therapy Work?

Protons are stable, positively charged subatomic particles with a mass 1,800 times that of an electron. This characteristic makes it possible to control the beam’s energy and allow the proton’s dose of radiation to an exact shape and depth within the body. When the velocity of the proton beam is slowed down enough, it releases the bulk of its energy and ends in a sharp burst of ionization. This phenomenon is known as the Proton’s Bragg Peak.

X-rays (photons) lack charge and mass and subsequently are less controllable. X-rays must be delivered into the body in total doses sufficient to ensure enough ionization events occur to damage all the cancer cells. Unfortunately, much of the energy from a single x-ray beam is deposited in normal tissue near the body’s surface, and some undesirable energy is deposited beyond the cancer volume. This inefficient pattern of energy placement can result in unnecessary damage to healthy tissue.

Treatment Comparison	proton therapy	x-ray therapy
Controlled three-dimensional energy distribution	X	
Few to no side effects	X	
Little to no impact on patient energy level	X	
Painless treatment	X	X
High treatment dosage	X	X
High treatment dosage with minimal risk to healthy tissues and organs	X	

Proton Therapy has had tremendous success with prostate cancer, where its precision, speed, and low incidence of side effects versus other treatment options makes it extremely attractive.

Below is a partial list of currently treated conditions:

- Brain
- Early Stage Breast Cancer
- Eye
- Liver Cancer
- Base of Skull
- Head and Neck
- Prostate
- Chest and Abdomen
- Tumors in Children

The Future of Proton Therapy

The range of treatable diseases continues to expand in today’s world of medical advancements. Radiation oncologists can take full advantage of the proton’s precision and accuracy using Optivus’ Image Guided Proton Therapy (IGPT) and Intensity Modulated Proton Radiation Therapy (IMPT). Extending proton therapy to larger cancers, advanced breast cancer, larger liver cancers, more forms of lung cancer, as well as non-cancerous and neurological diseases will enable many more patients the opportunity to receive this superior form of radiation therapy.



about Optivus

The Proton Therapy Pioneers™

Optivus Proton Therapy, Inc. was founded on the principle of continuous excellence in the design and development of disease treatment technology. Committed to saving lives, the company's mission focuses on developing and advancing the state of the proton therapy it pioneered. This form of radiation therapy, already clinically established to provide significant advantages over traditional radiation treatment or surgery for certain cancers and other diseases, is the sole focus of Optivus' business activities.



optivus.com • 1.800.PROTONS
1475 South Victoria Court, San Bernardino, CA 92408

The Proton Therapy Pioneers™

In 1987, a team of engineers joined with physicians and scientists from Loma Linda University Medical Center, (LLUMC), a major Southern California teaching hospital, to pioneer the world's first hospital-based Proton Beam Cancer Treatment Center. Thirty-seven months later, in October 1990, the first treatment room went online. Inspired by the success physicians and patients experienced, that engineering team founded Optivus in 1993 to pursue their vision of making proton therapy available to cancer patients throughout the world.



Since that time, Optivus has demonstrated its commitment to this vision by designing, developing and integrating more than \$100 million of enhancements to the original LLUMC system, while maintaining an unsurpassed record of patient throughput, operational reliability, and safety. The Optivus system offered today represents sixth-generation advanced proton beam technology that, when matched with Optivus' track record for reliability and customer support, provides a superior treatment modality combined with proven revenue generation.

Company Mission

Optivus' singular driving force and company mission is "to save lives with proton therapy."

Since its early beginnings, the Optivus team embraced all aspects of proton therapy research and development, maintenance and operations and quality assurance to insure the success of future Optivus systems.

Optivus Leadership and Accomplishments

The Optivus approach has earned an impressive list of accomplishments for its Proton Beam Therapy Systems (PBTS) while maintaining its leadership roll in the field for two decades:

Throughput

- More daily patient treatments at a single Optivus center than all other proton centers worldwide
- Unmatched throughput with up to 175 patients treated per day. More than 100 daily treatments continuously for more than twelve years

Experience

- Nearly a half million individual patient treatments since 1990, representing the largest percentage of proton therapy treatments worldwide performed at a PBTS facility

Reliability

- 98% uptime record of scheduled treatment time for more than 10 years
- Dozens of major/minor upgrades over a 20-year period without impacting clinical operations

Safety

- Perfect safety record after nearly a half million individual patient treatments
- Superb operational characteristics – immediate system maintenance after shutdown without potential residual radiation exposure to technicians
- Recyclable, environmentally-responsible apertures and tissue compensators

State-of-the-art Beam Delivery

- Image Guidance Proton Therapy (IGPT), increasing speed and accuracy of patient positioning, boosting patient throughput and offering potential for future proton techniques in other areas of medicine
- FDA-cleared Intensity Modulated Proton Therapy (IMPT) system allowing proton beam delivery with three-dimensional conformity to multiple targets, and enabling effective treatment for patients with advanced disease as well as palliative measures

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OPTIVUS
PROTON THERAPY

our mission:

To Save Lives with Proton Therapy

Optivus Firsts

Optivus helped to create and define the gold standard in the proton therapy industry, providing unparalleled experience to treatment facilities with everything from selecting technology and designing floor plans to training staff and servicing equipment. Optivus sets the standard for proton beam therapy with more than twenty patents in the U.S. and more than fifty internationally. It was the first company to:

- Create a therapeutic PBTS product
- Receive FDA clearance for up to five treatment rooms
- Treat more than 175 patients per day in one facility
- Develop the first synchrotron accelerator capable of running for multiple days without service
- Demonstrate greater than 98 percent system reliability for more than 10 years
- Obtain two decades of clinical data and best practices
- Implement a 24/7 integrated support system providing immediate diagnostics and on-site servicing