PROTON THERAPY HAS CHANGED.
RIGHT TECHNOLOGY.

HYPERSCAN® PENCIL BEAM SCANNING (PBS)

The next generation of pencil beam scanning is here. The MEVION S250i Proton Therapy System® with HYPERSCAN® technology is a radically different PBS solution, built to eliminate the shortcomings of first generation PBS systems. HYPERSCAN technology utilizes a unique combination of optimum spot sizes, hyper-fast layer switching and a novel multi-layer proton multi-leaf collimator (pMLC).

SHARPER SPOT SIZE. SHARPEST DOSE GRADIENT.

• Adaptive Aperture® pMLC is a compact PBS collimating system designed for multi-layer conformal delivery.

• Collimation over the full 20 x 20 cm² field.

FAST VOLUMETRIC SCANNING. ROBUST FIELD DELIVERY.

• Single focus scanning magnet, hyper-fast layer switching, and optimized spot size are designed to minimize sensitivity to motion.

• HYPERSCAN’s energy layer switching is as low as 50ms.

• Minimizes motion risk by quickly delivering robust fields.

FOCUS ON THE FUTURE: FLASH THERAPY

Driven by innovation and guided by a coalition of clinical partners and FLASH thought leaders, Mevion’s Advanced Development Team has yielded strong results from an initial small animal study that could propel this potentially promising cancer treatment forward. The results, presented at ASTRO 2020 and performed on a production proton accelerator in our Littleton headquarters, reveal that MEVION S250i proton therapy systems are capable of delivering ultra-high dose rates, with the FLASH effect observed at the Bragg Peak, at any energy.

Mevion’s strong results were bolstered by it’s high intra-pulse dose rate of 10,000 Gy/sec. A high intra-pulse dose rate has been shown in previous clinical research* to enhance the FLASH effect. Mevion’s new FLASH Development Mode will allow researchers to quickly and simply switch from clinical IMPT to FLASH Development Mode, making it easier for researchers to study this potentially revolutionary treatment modality.

* N. Esplen et. al., Physics and biology of ultrahigh dose-rate (FLASH) radiotherapy: a topical review, Physics in Medicine and Biology

**FLASH Therapy is currently under preclinical research and is not yet available for commerical sale or clinical use.
PROTON THERAPY...SIMPLIFIED

From build to operation, technology implementation with less risk.

Proton therapy is a valuable tool for leading cancer centers, however, it must make economic sense for the hospital and the healthcare system. Mevion has led the way in establishing compact proton therapy as the financially viable choice in proton therapy.

LOWER COST, LOWER RISK

• Compact systems enable more hospitals to bring proton therapy to their region and establish local radiotherapy leadership.

• Not all compact systems are the same. Mevion systems are more than 50% smaller, leading to more than 50% reduction in building costs.

• Typical Mevion projects are complete in under 2 years by design.

• Mevion is the proton therapy single-room system leader. Mevion has more clinical systems, more patients treated, more NCI designated centers and no financial failures.

FLEXIBLE IMPLEMENTATION

• With the smallest footprint, Mevion systems enable integration into a dense hospital campus.

• Independent units can be added incrementally matching hospital floorplans. Other systems require a fixed layout that cannot be customized.

• Mevion proton vaults can more easily be co-located to cross-utilize existing resources.

CASE STUDY: ONE PLUS ONE STRATEGY

In July 2020, the second proton therapy system at Siteman Cancer Center based at Barnes-Jewish Hospital and Washington University School of Medicine began treating patients. This is the first cancer center with two Mevion systems. Several other sites are following this approach, having planned a second room at the time of the first to accommodate expansion as needed.

KEY TAKEAWAYS:

• Forward-thinking planning.

• Enabled patient & program growth to drive financials, not financials driving volume targets.

• Minimized technology risk.
**RIGHT NOW.**

**IMAGE GUIDED PROTON THERAPY**

Customized and Optimized for You.

While other companies believe in a “one-size-fits-all” IGPT solution, we believe your radiation therapy department is unique. Our open-architecture platform allows us to natively integrate and partner with best-in-class companies across the radiation oncology marketplace to provide our customers the optimal configuration to meet your needs.

Mevion has integrated new CBCT, CT on rails, surface tracking, respiratory gating and immobilization options to give customers more choice in IGPT.

**SHARPER AND FASTER**

RayStation 10A has brought significant improvements to HYPERSCAN’s unique multi-layer treatment planning experience that enables sharp, superior plans generated in as little as 5 minutes. The 2020 release includes new features, like fast Graphic Processing Units (GPU) and Multi-Criteria Optimization (MCO) for calculations.

MCO delivers a prescribed radiation dose to the tumor while keeping the unavoidable dose to the surrounding healthy organs as low as possible. This is done by calculating a number of simultaneously calculating competing plans and allowing the user to trade-off criteria to achieve the best clinically deliverable plan. When combined with the GPU calculation speeds, superior treatment plans can be rapidly be generated easily.
TRANSFORMATIVE PROTON THERAPY

Proton therapy is superior to traditional x-ray radiation because it reduces radiation exposure to nearby healthy tissue, potentially eliminating short and long term treatment complications and providing superior dose delivery to the tumor volume.

PROTON DOSE DELIVERY ADVANTAGES

• 1/3 to 2/3 less dose to normal tissue compared to x-ray therapies1.
• Sharp radiation dose fall-off to better protect healthy tissue.
• >17% of all radiation therapy patients could benefit from proton therapy. Currently < 1% of radiation therapy patients are treated with proton therapy2.

PROTON THERAPY CLINIC EXPERIENCE

• Expand treatment capabilities and retain patients in your facility.
• Differentiate your program and attract new patients.
• Extend the reach of other service lines.
• Deliver value based cancer care with precise cost effective treatment.

INNOVATION TO ADVANCE CANCER CARE

Mevion’s research team is continuously pursuing new innovations to propel proton therapy to new levels. Through our technology experts and partnerships with clinical researchers, we are constantly improving the clinical tools for our customers.

Mevion Medical Systems was established in 2004 with a simple goal: to provide superior proton therapy to as many cancer patients as possible.


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