

PROTON THERAPY HAS CHANGED.



 **MEVION**
medical systems

FALL 2019

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.
- Up to 3X sharper penumbra minimizing dose uncertainty at the edge of the target (Spot penumbra <2 mm at 230 MeV, <4.5 mm at 70 MeV).

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.
- Treat lung tumors in a single breath hold (4 cm sphere to 2 Gy in 5 seconds).
- With HYPERSCAN's energy layer switching as low as 50ms, a one-liter volume can be treated to 2Gy in <30 seconds.
- Minimizes motion risk by quickly delivering robust fields.



IMAGE GUIDED PROTON THERAPY



Customized and Optimized for You.

This year Mevion is launching new CBCT, CT on Rails, surface tracking, and immobilization options to give customers more choice in IGPT.

Our open-architecture platform allows us to partner with leading IGPT providers, to find the optimal configuration for your proton therapy needs.

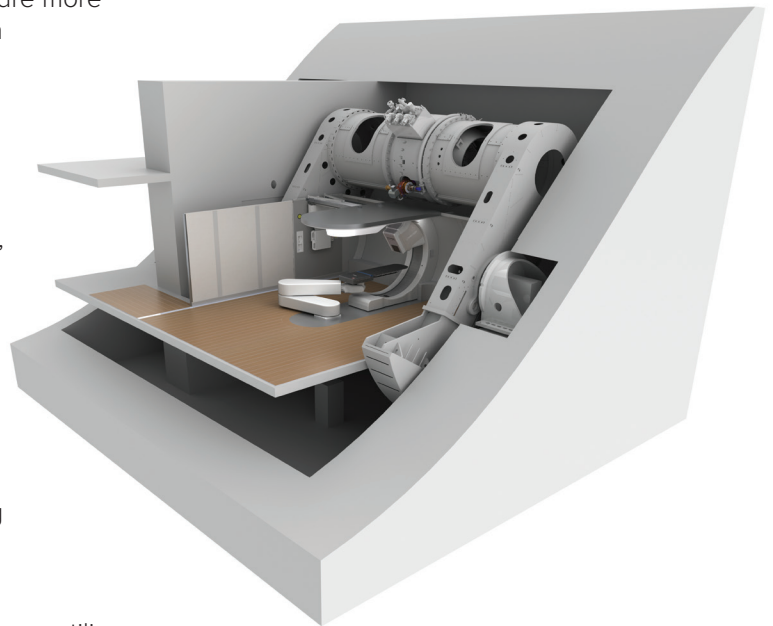
PROTON THERAPY...SIMPLIFIED

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

On July 29th, 2019 Mevion delivered the accelerator for the 2nd Mevion proton therapy system at Siteman Cancer Center based at Barnes-Jewish Hospital and Washington University School of Medicine. This will be 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:

- Foreword thinking planning
- Enabled patient & program growth to drive financials, not financials driving volume targets
- Minimized technology risk

FIRST MEVION VAULT
Barnes-Jewish Hospital

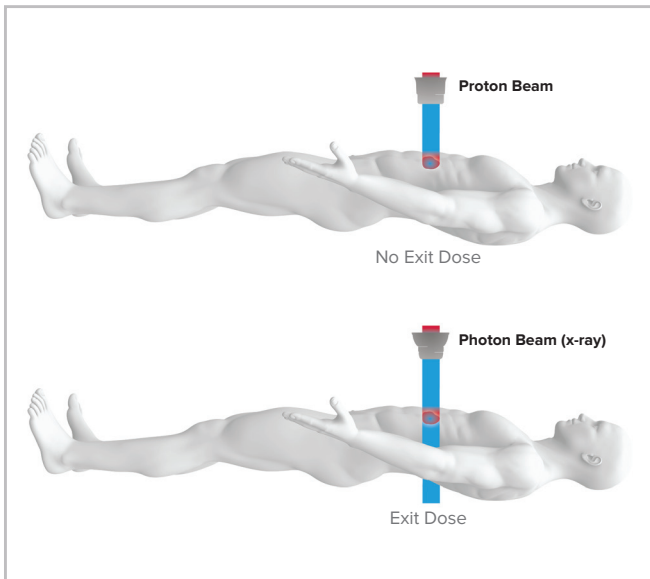
SECOND MEVION VAULT
Barnes-Jewish Hospital



RIGHT SIZE.

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 ADVANCED CANCER CARE



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

1. Chang et al., Significant reduction of normal tissue dose by proton radiotherapy compared with three-dimensional conformal or intensity-modulated radiation therapy in Stage I or Stage III non-small-cell lung cancer. *Int J Radiat Oncol Biol Phys.* 2006 Jul 15;65(4):1087-96.

2. Health Council of the Netherlands. Proton radiotherapy. Horizon scanning report. The Hague: Health Council of the Netherlands, 2009; publication no. 2009/17E

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