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Introduction to Particle Therapy

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Particle therapy is a form of radiation therapy that utilizes accelerating particles to target cancerous cells with high levels of precision. The technology works by accelerating particles to high speed and then directing them towards tumor, where they release their energy and destroy cancer cells. The particles used are electrons, photons, and protons. The proton therapy has become increasingly popular due to its ability to minimize damage to healthy tissues and reduce the risk of long-term side effects commonly associated with traditional radiation (electrons, photons) therapy. The process involves precise targeting, imaging, and planning, and typically requires a team of specialized healthcare professionals. The Proton therapy is particularly useful for treating cancers of the brain, spine, and prostate, among others. The Proton therapy is a rapidly evolving technology, with new techniques and technologies continually being developed to enhance its effectiveness and minimize side effects. One such technology is pencil beam scanning (PBS), which is a type of proton therapy that allows for more precise targeting of tumors. Overall, these different types of proton therapy technologies offer patients and clinicians greater control and precision in the treatment of cancer, while reducing the risk of side effects and damage to surrounding healthy tissues. Despite its many benefits, proton therapy is still a relatively new technology, and ongoing research is focused on improving its effectiveness, accessibility, and affordability.

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