



Proton Therapy at Emory

How is Proton Therapy different from Conventional (Photon) Therapy?

- Proton therapy is the most precise form of radiation therapy available today. Like traditional photon radiation therapy, proton particles destroy cancer cells while leaving surrounding healthy tissue unharmed.
- Improved technology in proton therapy allows for the greatest possible control of the radiation energy deposited in the body. This is because of a particle characteristic called a Bragg Peak, which determines the rate at which a particle delivers energy as it travels through space. Protons, unlike photons, exhibit a sharper Bragg Peak, meaning they deposit more energy over a short amount of time. This enables the radiation oncologist to target cancer cells with radiation, so that energy is deposited to the tumor, not the healthy surrounding tissue.
- Increase precision means fewer side effects. Proton therapy may reduce chances for secondary cancers or organ dysfunction due to radiation exposure, as well as common side effects like skin rash or fatigue.
- Proton therapy's precision makes it ideal for areas of high sensitivity in the body, such as the prostate, brain and eye. Proton therapy is also used for treating pediatric patients. Particularly in young children, vital organs are closer together and growing rapidly. Proton therapy provides maximum protection against needless radiation exposure for these vital organs.
- Proton treatment is a painless and non-invasive procedure. The proton beam, like a traditional radiation photon beam, is silent and invisible, and each treatment takes only a few minutes.
- Proton therapy, like photon therapy, can be used in conjunction with other forms of cancer treatment, like chemotherapy or surgery. Proton therapy can be used concurrently with chemotherapy, because unlike traditional radiation, protons do not affect bone marrow.
- Patients receiving proton therapy come to a treatment center for their care once a day for a few weeks, depending on their disease and chosen course of treatment. Daily treatment takes less than an hour. Treatment takes only minutes, but more time is needed for preparation, such as positioning the body in the beam pathway.
- Between daily treatments, the patient is free to go about normal activities for the rest of the day. Some people continue to work during treatment, and others take the time to rest and enjoy a "radiation vacation".
- Proton treatment is covered by Medicare and most major health insurance plans.
- Thousands of people have been successfully treated at clinical proton therapy centers across the country since 1990. In 2011, the FDA approved 510(k) clearance of the Varian Proton Therapy System, one of the leading proton therapy systems available in the US.
- Emory will be first in state of Georgia with proton technology; less than 10 proton centers are currently operating in the US.
- Proton technology provides a unique opportunity for innovative research collaboration between Emory, Georgia Tech and other distinguished institutions.

