

**New Patient
Referral:**

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[www.mdanderson.org/
protontherapy](http://www.mdanderson.org/protontherapy)

Proton therapy for pediatric cancer

M. D. Anderson takes a patient-centered approach to treating children with cancer. Radiation oncologists, surgeons, pediatric oncologists, radiologists and pathologists work together to plan a course of treatment unique to each patient. The Radiation Oncology team at M. D. Anderson now offers a new treatment modality called proton beam therapy.

Cancer is the leading natural cause of death among children in the United States between the ages of 1 and 14 years. In 2001, there were 8,600 new cases of cancer among children and about 1,600 cancer deaths. Approximately 40 percent of newly diagnosed cancers are leukemias and lymphomas; the rest are made up of various solid tumors such as brain tumors, bone and soft tissue sarcomas and kidney tumors.

Most solid tumors are treated with a combination of surgery, radiation therapy and chemotherapy. While conventional radiation therapy with X-ray beams is an effective treatment, it can produce certain long-term side effects in some children, such as a decrease in bone and soft tissue growth in the treated area, hormonal deficiencies, intellectual impairment and, occasionally, second tumors.

Proton therapy offers another way to deliver a high radiation dose to a tumor. Protons deposit their radiation differently than X-rays. Compared to an X-ray beam, a proton beam has a low “entrance dose” (the dose delivered from the surface of the skin to the front of the tumor), a high dose designed to cover the entire tumor and no “exit dose” beyond the tumor.

This unique characteristic, combined with sophisticated image guidance, gives proton therapy the ability to deliver a radiation dose in a precise manner, thus minimizing damage to the surrounding normal tissue, and thereby reducing the long-term side effects to many critical structures. It is estimated that proton therapy could also significantly reduce the risk of second tumors, when compared to X-ray therapy. This approach may translate into better local control of the disease, higher survival rates and improved quality of life as the treated children grow to adulthood.

M. D. Anderson oncologists are world leaders in the development of emerging treatment strategies and technology. Our focus has always been on providing the best care for our patients, with an eye toward continued improvements of this care for the future. Because so much clinical research is conducted here, M. D. Anderson patients are among the first anywhere to benefit from emerging treatment strategies and technology.

M. D. Anderson continues to be a leader in the care of children with cancer. With the addition of proton therapy, we have added another weapon in the fight against this disease.