Proton Therapy Fact Sheet

- Proton therapy is a highly advanced form of radiation treatment for many types of cancer. Studies have shown proton therapy to be effective in treating prostate, colorectal, head and neck, and brain tumors as well as cancers that cannot be removed completely by surgery. Studies also are showing promising results in the treatment of some breast and lung tumors.
- Like traditional radiation therapy (which uses photons, or X-rays), proton therapy kills cancer by preventing the cells from dividing and growing. The difference is that proton therapy can be precisely targeted to the tumor, allowing patients to receive higher, more effective doses, and greatly reducing damage to healthy tissue near the tumor. Research shows proton therapy causes fewer side effects than traditional radiation therapy, diminishes the chances of secondary tumors and improves patients’ quality of life.\textsuperscript{1,2}
- Because it is so targeted, proton therapy can be particularly effective in treating children, who are more sensitive than adults to the effects of radiation. In addition to reducing healthy tissue damage, proton therapy has been shown to decrease the likelihood of secondary tumors later in life.\textsuperscript{3} Precise targeting also makes proton therapy ideal for treating tumors near vital organs.
- Proton therapy is non-invasive and painless. Treatments are usually given five days a week, for a period of six to eight weeks. The actual treatment time is about one minute but total daily session time can range from 15 to 30 minutes due to the time spent positioning the patient for this precise treatment. The total number of treatments needed depends on the location and size of the tumor.
- Although 250,000 cancer patients nationwide could benefit from this advanced therapy, the five centers currently operating are able to treat only about 1,500 patients a year.
- Proton therapy is not experimental. Nearly 50,000 people worldwide have received proton therapy at centers in Europe, Asia and the United States. It was first used to treat patients in 1955 in a research setting, but its use was limited because imaging techniques could not accurately pinpoint tumors. Following advances made in imaging technology such as CT imaging, MRI,
and PET scans, the first hospital-based treatment center opened in California in 1990. Since then, nearly 15,000 Americans have received proton therapy.

- Nearly all U.S. insurance providers cover proton therapy as does the U.S Medicare program and many state Medicaid programs.
- Currently, there are five proton therapy treatment centers in the United States. They are located at: Massachusetts General Hospital in Boston (affiliated with Harvard Medical School); M.D. Anderson Cancer Treatment Center in Houston; Indiana University in Bloomington; the University of Florida in Jacksonville, Fla.; and Loma Linda University Medical Center Medical Center in Loma Linda, Calif.
- Three more treatment centers are currently under development in the United States:
  - In Philadelphia, the University of Pennsylvania Health System plans to open the Roberts Proton Therapy Center in 2009;
  - In Oklahoma City, ProCure Treatment Centers has partnered with local radiation oncologists and a health care system to build the state’s first proton therapy center scheduled to open in 2009; and
  - In Illinois, Central DuPage Hospital, Radiation Oncology Consultants physician group and ProCure Treatment Centers are partnering to establish the state’s first proton therapy center scheduled to open in mid-2010.


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