

Abstract Submitted  
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**Proton therapy for cancer: A superior method for the treatment of localized tumors.** RUPRECHT MACHLEIDT, University of Idaho — About 50% of all cancer patients receive radiation, besides other forms of treatment. Conventionally, X-ray (photon) radiation is used, because it is cheap to generate. However, photon radiation is difficult to focus on a localized area at a certain depth in the human body. Thus, in X-ray therapy, also wide areas of healthy tissue are damaged leading to potentially severe side effects. In contrast, proton radiation, by its nature, causes destruction that is mainly confined to a localized area known as the Bragg peak, which can be focused on the tumor. Thus, in proton therapy, healthy tissue is less affected resulting in a much lower rate of severe side effects as compared to photons. Recently published follow-up studies have shown that the long-term cure rate of proton therapy is a high or even higher than with other forms of cancer treatment. Unfortunately, proton facilities are expensive, which is why, until the year of 2000, we had only two such facilities in the country. This is changing now and four more facilities have been finished or are under construction.

Ruprecht Machleidt  
University of Idaho

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