Fred Hutch Cancer Center

A Guide to Proton Therapy for Patients with Cancer

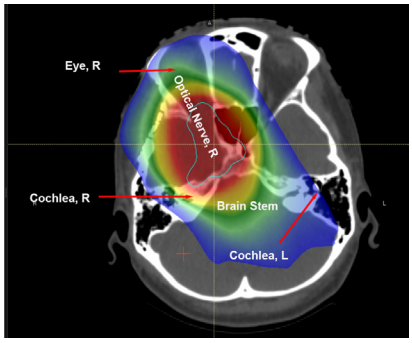
Proton therapy is a next-generation, precisely targeted radiation technology. It was developed to treat tumors and minimize radiation to healthy tissue. Many patients with solid tumors are good candidates for proton therapy and proton therapy is particularly beneficial for treating tumors near critical organs or structures such as the brain, heart or spinal cord.

This is because proton therapy can be targeted to release most of its energy within the tumor, minimizing radiation to surrounding healthy tissues. Our radiation oncologists can help you better understand the use of proton therapy in your treatment. Call today to schedule a consultation. The radiation oncologists at Fred Hutch Cancer Center use other forms of radiation to treat cancers, so they will provide you with an expert recommendation. Many patients with prostate cancer are good candidates for proton therapy.

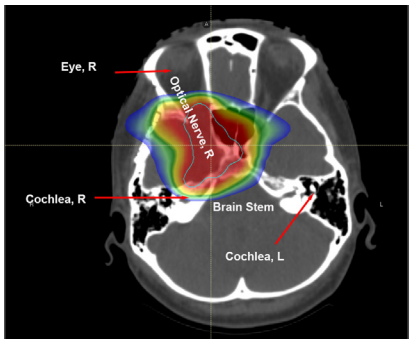
To better understand the use of proton therapy in your treatment, call to schedule a consultation with a radiation oncologist. The radiation oncologists who practice at Fred Hutch and UW Medicine use many forms of radiation to treat prostate cancer. They will provide you with an expert treatment recommendation to consider.

Proton Therapy vs. Standard Therapy with X-rays

Standard radiation



Proton therapy



Radiation levels

Less Radiation — More Radiation

Above is an example of a brain tumor treated with proton therapy and the same tumor treated with standard X-ray radiation. Both therapies treat the tumor with radiation. However, proton therapy spares the healthy brain tissue around the tumor and the nearby critical organs. Healthy tissue may receive more radiation with X-ray therapy than with proton therapy.

Fred Hutch Cancer Center - Proton Therapy

Our proton therapy facility is equipped with the most advanced technology available. Our dedicated team of radiation oncologists and highly skilled medical professionals provides exceptional and personalized patient care. Patients who come to Fred Hutch for treatment will benefit from the latest research-based cancer therapies. We offer leading-edge technology, leadership in cancer care and a personalized care team.

Children and Proton Therapy

Children's bodies are more vulnerable to the effects of excess radiation. They can suffer more serious short- and long-term side effects like developmental delays and growth problems. Proton therapy may minimize these risks. This makes it a particularly important treatment option for kids.

Proton Therapy and Other Treatments

Proton therapy can be combined with chemotherapy and used after surgery. It can also be combined with standard X-ray therapy. Fred Hutch has joined with several medical centers to provide patients with additional cancer services.

Effectiveness of Proton Therapy

There are many clinical trials that demonstrate the effectiveness and benefits of proton therapy. We continue to add to these studies by offering clinical trials at our center.

Find out more.

To learn more about proton therapy for brain cancer or to schedule a consultation, please call us at **(888) 645-6934** or visit **FredHutch.org/protontherapy**

About Proton Therapy

The Bragg Peak

During proton therapy, a beam of subatomic particles called protons is sped up in an accelerator and then aimed at the tumor. The nature of protons is such that the radiation dose increases suddenly, in what is called a Bragg Peak. Then the radiation falls effectively to zero. This allows radiation oncologists to precisely target tumors, minimize radiation to healthy tissue in front of the tumor, and avoid healthy tissue behind the tumor. Radiation oncologists can spread the Bragg Peak to cover the entire tumor.

The Advantages of Pencil Beam Scanning (PBS)

PBS is the latest proton technology that allows for even greater accuracy when treating cancer with proton radiation. PBS uses a narrow proton beam to paint the tumor with radiation. Because the pencil beam can be targeted even more precisely, higher, more effective doses can be used. The pencil beam deposits radiation starting at the deepest layer, and works slice by slice through the tumor.

About our Specialists

All our radiation oncologists are faculty at the University of Washington School of Medicine and all are board certified. All our physicians are experts in proton therapy and other forms of radiation. They will provide you with an expert recommendation for you to consider.

References

1. Acta Oncol. 2013 Apr;52(3):492-7. doi: 10.3109/0284186X.2013.767983. Kil WJ1, Nichols RC Jr, Hoppe BS, Morris CG, Marcus RB Jr, Mendenhall W, Mendenhall NP, Li Z, Costa JA, Williams CR, Henderson RH.

2. Int J Radiat Oncol Biol Phys. 2014 Mar 1;88(3):596-602. doi: 10.1016/j.ijrobp.2013.11.007. Mendenhall NP1, Hoppe BS2, Nichols RC2, Mendenhall WM2, Morris CG2, Li Z2, Su Z2, Williams CR3, Costa J3,Henderson RH2.

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