

Proton Therapy for Patients with Prostate Cancer

Talk to your doctor about how Proton Therapy can help.

Precision Therapy. Very low risk of long-term side effects.

Proton Therapy is the most advanced form of radiation therapy that precisely targets tumors. Because of the precision, proton therapy significantly reduces the amount of unnecessary radiation that is delivered to surrounding healthy tissues compared to standard x-ray therapies including intensity modulated radiation therapy (IMRT). Proton therapy is effective in treating a broad range of tumors including prostate cancer, brain tumors, head and neck cancers, tumors of the skull base and spine, lung cancer, breast cancer, sarcomas, and most types of pediatric cancers.

Compared to other forms of radiation therapy, proton therapy reduces the amount of radiation given to surrounding critical organs such as the rectum and bladder by as much 60%.¹ Men treated with proton therapy have a very low risk of long-term side effects.

Particularly effective in treating prostate cancer

Most men with prostate cancer are candidates for proton therapy, depending on the stage of the cancer and the general health of the patient. Prostate cancer can be treated with surgery, standard X-ray therapy, or radioactive seed implantation (brachytherapy). However, to minimize damage to the bladder and rectum, which are near the prostate, the total dose of radiation that can be delivered to the prostate cancer is limited.

Proton therapy is the most advanced and precise form of radiation therapy. With protons, a high dose of radiation can be delivered directly to the tumor, while sparing much of the adjacent bladder and rectum from unnecessary radiation. Studies have shown that treatment with proton therapy results in excellent rates of cancer control with very low rates of serious bowel or bladder complications.²

¹ Vargas C, Fryer A, Mahajan C, et al. Dose-volume comparison of proton therapy and intensity-modulated radiotherapy for prostate cancer. *Int. J. Radiat. Oncol. Biol. Phys.* 2008; 70(3): 744-51

² Zietman AL, Bae K, Slater JD, et al. Randomized trial comparing conventional-dose with high dose conformal radiation therapy in early-stage adenocarcinoma of the prostate: long term results from proton radiation oncology group/american college of radiology 95-09. *J. Clin. Oncol.* 2010; 28(7): 1106-111

Prostate cancer treatment with protons compared to treatment with conventional radiation/X-rays/IMRT

With proton therapy, the rectum and bladder receive much less radiation compared to conventional radiation/X-rays/IMRT. Men treated with proton therapy have a very low risk of long-term side effects, such as incontinence and bowel damage.

With conventional radiation/X-rays/IMRT, more healthy tissue around the tumor receives radiation. The extra dose to healthy tissue from modern X-ray therapy is equivalent to smoking four packs of cigarettes a day for a year.

In the chart below, the grey/white areas indicate no radiation exposure, while the colored areas indicate radiation exposure.

