YOUR DOCTOR THINKS PROTON THERAPY IS A TREATMENT OPTION FOR YOUR PROSTATE CANCER
What is the best treatment for prostate cancer?

There are several effective treatment options for prostate cancer, all of which have advantages and disadvantages. A patient needs to explore his options and discuss the specifics of his case with physicians experienced in all treatment options to discover a personalized, best treatment plan. Depending on the stage, most patients with prostate cancer have a very good chance of being cured with surgery, proton therapy, seed implants (brachytherapy), regular x-ray therapy or focused ablation.¹

Explore your treatment options

Radiation therapy, like surgery, is one of the main treatments for prostate cancer. This informational brochure focuses on a unique form of external beam radiation therapy called “proton therapy”.

What is proton therapy?

Proton therapy uses charged particles (protons) rather than x-rays to selectively destroy cancer cells. This results in excellent rates of cancer control with a much lower risk of side effects compared with other forms of radiation therapy.

What makes proton therapy different?

Proton therapy is a highly advanced and extremely precise form of radiation. The physical properties of protons, described by the Bragg-Peak (Figure 1), and the increased conformality of pencil beam scanning make it possible to spare healthy surrounding organs from unnecessary radiation exposure during treatment.

Figure 1: Plotting the Deposition of Energy

Proton therapy deposits less radiation dose before reaching the tumor, then deposits the prescribed dose within the tumor, and has no exit dose. X-ray radiation must start with a higher dose that gradually declines to the prescription dose at the tumor, then continues to deposit radiation in healthy surrounding tissue as it exits the body.
**Why is this important?**

Traditionally, adverse events caused by exposure of healthy surrounding organs to the radiation field has been a concern. (Figure 2) When treating prostate cancer with proton therapy, the rectum and bladder which are near the prostate, are exposed to much less radiation. Therefore, men treated with proton therapy have a very low risk of short or long-term side effects such as bowel problems or urinary incontinence.

**Figure 2: Radiation Exposure Comparison**

![Comparison of radiation exposure between Proton Therapy and Conventional Radiation Therapy/X-Rays/IMRT](image)

These images show the areas exposed to radiation during treatment.

**Is proton therapy effective?**

Yes! Many clinical studies have demonstrated the effectiveness of proton therapy for treating prostate cancer. Some examples are listed in Figure 3.

**Figure 3: Cancer-Free Rates at 5 Years***

<table>
<thead>
<tr>
<th>Study/Year Published</th>
<th>Low Risk</th>
<th>Intermediate Risk</th>
<th>High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016 University of Florida Study²</td>
<td>99%</td>
<td>94%</td>
<td>74%</td>
</tr>
<tr>
<td>2017 Northwestern University - Medicare SEER Database Study³</td>
<td>--</td>
<td>93.7%</td>
<td>--</td>
</tr>
<tr>
<td>2018 Japanese Radiation Oncology Study Group - Multi-institutional Study⁴</td>
<td>97%</td>
<td>91.1%</td>
<td>83.1%</td>
</tr>
</tbody>
</table>

*Biochemical control; ASTRO definition

**How do you know if proton therapy is right for you?**

Your doctor can refer you for a consultation appointment at Provision CARES Proton Therapy, where you’ll meet with a radiation oncologist experienced in proton beam therapy to discuss your diagnosis. For more information, call (855) 566-1600.
REFERENCES


