

## Advances in Treatment for Prostate Cancer



Medically Reviewed by [Jabeen Begum, MD](#) on March 05, 2025



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### Hormone Therapy

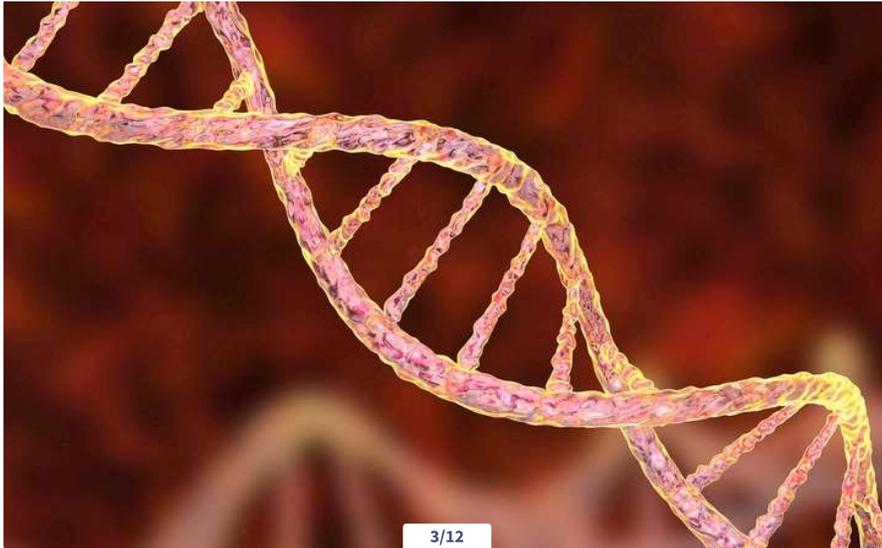
In the past, hormone therapy for [prostate cancer](#) worked ... until it didn't. The cancer became immune to it, causing castrate-resistant prostate cancer (CRPC), or cancer that keeps growing even without [testosterone](#). Three new drugs – abiraterone (Zytiga), darolutamide (Nubeqa), and enzalutamide (Xtandi) – block that resistance and increase survival rates. Enzalutamide and darolutamide also make it less likely that your cancer will spread.



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### Vaccines

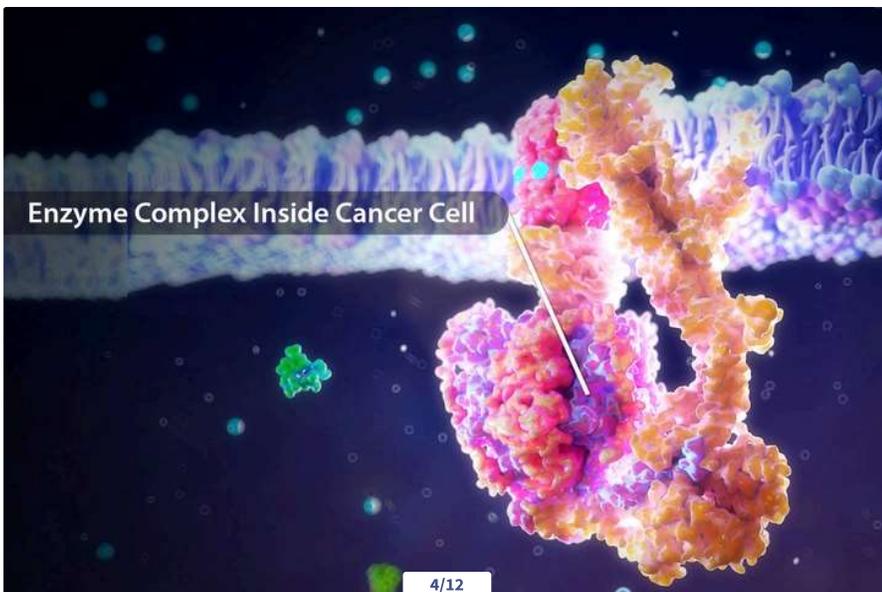
Treatment vaccines are a growing area of prostate cancer testing and research. Like other forms of [immunotherapy](#), they train your [immune system](#) to identify and destroy tumors. Sipuleucel-T (Provenge) is approved for men with metastatic castrate-resistant prostate cancer (CRPC) and few to no symptoms.



### Checkpoint Inhibitors

Used successfully with many other types of cancer, checkpoint inhibitors make your immune system better at destroying cancer cells by blocking proteins.

Approved versions like pembrolizumab (Keytruda) work best on tumors that have spread and have a lot of genetic mutations. This is rarely the case with prostate cancer, which has been resistant to checkpoint inhibitors. Research is being done on combining this form of treatment with others for better results.



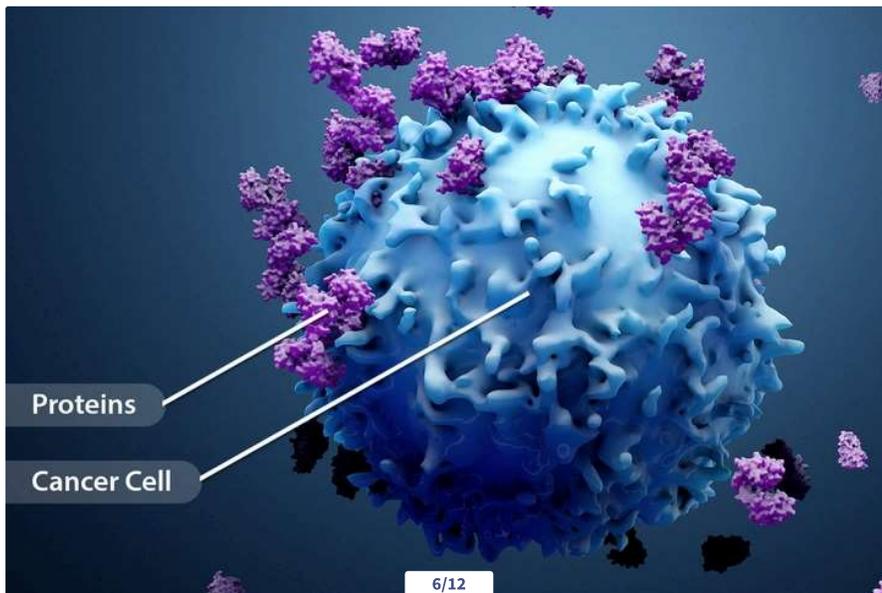
### PARP Inhibitors

Cells have a built-in enzyme called poly-ADP-ribose polymerase, or PARP, that repairs damaged DNA. But damaged cancer cells that can't heal themselves die, and that's the goal. PARP inhibitors like olaparib (Lynparza) and rucaparib (Rubraca) stop PARP from repairing cancer cells in cases where your prostate cancer has spread and hormone treatments have stopped working.



### Targeted Radiation Therapy and PSMA

A prostate-specific membrane antigen, or PSMA, is a protein on the surface of a prostate cancer cell. Targeted radiation therapy connects a radioactive compound with the molecule that hunts down PSMA, and attaches to and kills cancer cells. Recent trials have prolonged the lives of men with advanced prostate cancer. More research is needed for men with earlier stages of the disease.



### **<sup>177</sup>Lu-PSMA-617**

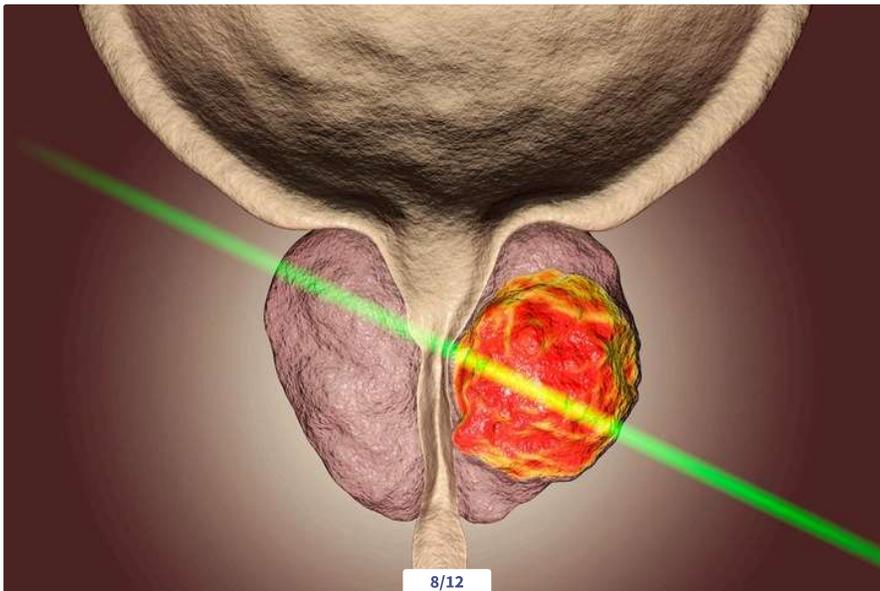
Where PSMA and targeted radiation therapy fall short with men at various stages of prostate cancer, <sup>177</sup>Lu-PSMA-617 covers more ground. The process is the same: A molecule finds and attaches to a protein on the surface of the cancer cell, then radiation kills the cancer cell and its DNA so it can't grow [back](#). When other treatments haven't worked, <sup>177</sup>Lu-PSMA-617 has successfully killed cancer cells.



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### Robot-Assisted Radical Prostatectomy

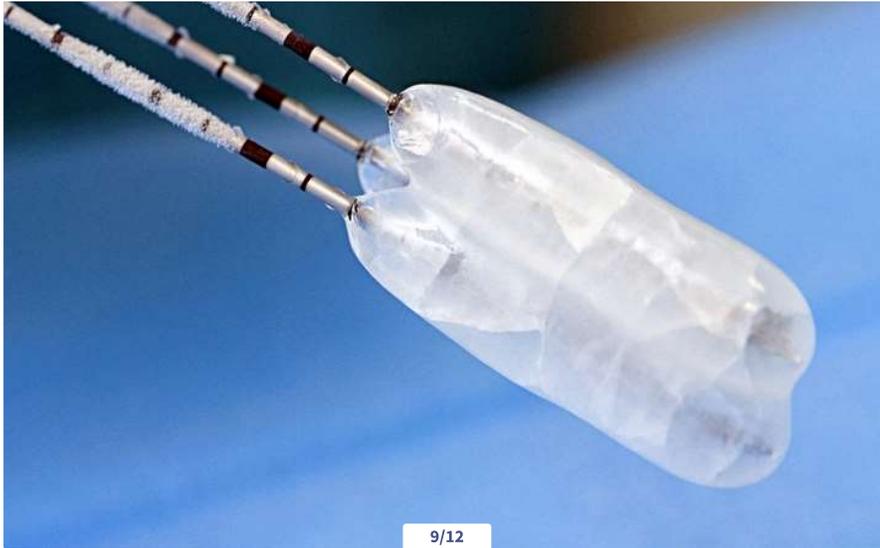
Compared to a surgeon-led prostate removal, this method involves smaller cuts, more accurate prostate removal, and less [nerve damage](#). That means fewer negative side effects like [erectile dysfunction](#) and urinary problems. Other benefits include less blood loss, less post-op pain, and a quicker recovery.



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### Focal Laser Ablation

A common breast cancer treatment that's still new to prostate cancer, focal laser ablation is a quick procedure that uses a laser to remove a tumor on the prostate instead of removing the entire prostate.



### **Cryotherapy**

When prostate cancer cells are frozen, they die. Cryotherapy is often used when other treatments don't work, or if cancer comes back after a different treatment. To avoid damaging healthy tissue, doctors use an [ultrasound](#) to find and isolate the cancerous tissue, then insert metal gas-filled probes to freeze it. New technology has helped sidestep some of the side effects men had after treatments in the past, but sexual dysfunction remains an issue.



### **High-Intensity Focused Ultrasound (HIFU)**

In this noninvasive treatment, an ultrasound transducer uses high-energy sound waves to create heat and kill cancerous prostate tissue found by MRIs. Also called MRI-guided focused ultrasound (MRgFUS) and focused ultrasound (FUS), it earns the high-intensity title because it can heat cancerous tissue to 200 F in just 20 seconds.



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### Chemo

When prostate cancer spreads – for example, to the bones – or hormone therapy doesn't work, chemo has been successful in killing cancer cells on its own or combined with other therapies. The side effects can be rough, and chemo can kill healthy cells too. New forms of treatment like radium Ra 223 dichloride (Xofigo) destroy cancer cells with reduced alpha particle radiation and don't harm healthy bone tissue as much.



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### Xofigo

This medication is an alpha particle-emitting radioactive therapeutic agent. It's classified as a radiopharmaceutical. If your prostate cancer is resistant to medical or surgical treatments that lower testosterone and has spread to bones with symptoms, but not to other parts of the body, doctors may suggest this treatment option.

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