

High Intensity Focused Ultrasound (HIFU) for Prostate Cancer

What is High Intensity Focused Ultrasound?

High Intensity Focused Ultrasound (HIFU) is a non-invasive and effective option for prostate ablation with a low occurrence of side effects. HIFU uses an ultrasound probe to scan the prostate and deliver high-intensity sound waves directed at the target area—similar to how a magnifying glass can focus light rays to burn a leaf. The probe is inserted into the rectum and does not require any incision.

The magnitude of ultrasound energy delivered rapidly raises the temperature at the focal point, causing coagulation necrosis (cell damage and death), without damaging healthy tissue and structures outside the targeted area.

- Quality of life preservation
- Low risk of side effects such as incontinence and erectile dysfunction
- Less time away from work and leisure activities

In the past 20 years, over 50,000 patients have benefited from HIFU in 300+ centers worldwide. HIFU is FDA cleared in the U.S. for prostate tissue ablation since 2015.

How does HIFU work?

Robotic HIFU is a state-of-the-art procedure that precisely destroys targeted tissue while sparing health surrounding structures. It uses a high performance, high intensity focused ultrasound (HIFU) technology that allows the ablation of prostate tissue with minimal morbidity. This unique technology makes it possible to target and destroy a part of the prostate, sparing the rest of the organ and therefore minimizing side effects.

Instead of using radiation, high intensity sound waves are used to heat up and burn the targeted tissue, choking off the blood supply and causing cell death. This procedure is in no way a therapy roadblock, as it is repeatable and can be followed, like for a prostatectomy, by external radiotherapy. It preserves the erectile nerves and urinary sphincter thanks to the precise targeting of lesions.

What to expect on the day of your procedure?

1. The patient arrives the morning of the procedure. The patient will have completed a bowel prep the night before or the morning of the procedure.
2. The patient is positioned on his side, under general or spinal anesthesia.
3. An ultrasound scan with a 3D reconstruction of the prostate is performed at the beginning of the treatment.
4. The urologist chooses the most appropriate treatment strategy based on the clinical situation and plans the procedure millimeter by millimeter.
5. The robot executes the treatment plan ablating only the targeted tissue. The real-time ultrasound image provides constant monitoring of the procedure.
6. The patient is typically discharged shortly after the procedure.

At the end of the procedure, a temporary urinary catheter will be placed in order to limit the risk of urinary retention due to the temporary swelling. This catheter can be removed at the first follow-up visit. Typical follow-up will include PSA testing at three months, six months, and one year, to evaluate the result.



For more information, visit Erlanger.org/HIFU or call 423-778-5910.