



Minimally Invasive Procedures in Bph (Benign Prostatic Hyperplasia)

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Annotation: Men may not need treatment for a mildly enlarged prostate unless their symptoms are bothersome and affecting their quality of life. In these cases, instead of treatment, a urologist may recommend regular checkups. If benign prostatic hyperplasia symptoms become bothersome or present a health risk, a urologist most often recommends treatment.

Key words: *transurethral needle ablation, transurethral microwave thermotherapy, high-intensity focused ultrasound, prostatic stent insertion, transurethral electrovaporization*

Researchers have developed a number of minimally invasive procedures that relieve benign prostatic hyperplasia symptoms when medications prove ineffective. These procedures include

- transurethral needle ablation
- transurethral microwave thermotherapy
- high-intensity focused ultrasound
- transurethral electrovaporization
- water-induced thermotherapy
- prostatic stent insertion

Minimally invasive procedures can destroy enlarged prostate tissue or widen the urethra, which can help relieve blockage and urinary retention caused by benign prostatic hyperplasia.

Urologists perform minimally invasive procedures using the transurethral method, which involves inserting a catheter—a thin, flexible tube—or cystoscope through the urethra to reach the prostate. These procedures may require local, regional, or general anesthesia. Although destroying troublesome prostate tissue relieves many benign prostatic hyperplasia symptoms, tissue destruction does not cure benign prostatic hyperplasia. A urologist will decide which procedure to perform based on the man's symptoms and overall health.

Transurethral needle ablation. This procedure uses heat generated by radiofrequency energy to destroy prostate tissue. A urologist inserts a cystoscope through the urethra to the prostate. A urologist then inserts small needles through the end of the cystoscope into the prostate. The needles send radiofrequency energy that heats and destroys selected portions of prostate tissue. Shields protect the urethra from heat damage.

Transurethral microwave thermotherapy. This procedure uses microwaves to destroy prostate tissue. A urologist inserts a catheter through the urethra to the prostate, and a device called an antenna sends microwaves through the catheter to heat selected portions of the prostate. The temperature becomes high enough inside the prostate to destroy enlarged tissue. A cooling system protects the urinary tract from heat damage during the procedure.

High-intensity focused ultrasound. For this procedure, a urologist inserts a special ultrasound probe into the rectum, near the prostate. Ultrasound waves from the probe heat and destroy enlarged prostate tissue.

Transurethral electrovaporization. For this procedure, a urologist inserts a tubelike instrument called a resectoscope through the urethra to reach the prostate. An electrode attached to the resectoscope moves across the surface of the prostate and transmits an electric current that vaporizes prostate tissue. The vaporizing effect penetrates below the surface area being treated and seals blood vessels, which reduces the risk of bleeding.



Water-induced thermotherapy. This procedure uses heated water to destroy prostate tissue. A urologist inserts a catheter into the urethra so that a treatment balloon rests in the middle of the prostate. Heated water flows through the catheter into the treatment balloon, which heats and destroys the surrounding prostate tissue. The treatment balloon can target a specific region of the prostate, while surrounding tissues in the urethra and bladder remain protected.

Prostatic stent insertion. This procedure involves a urologist inserting a small device called a prostatic stent through the urethra to the area narrowed by the enlarged prostate. Once in place, the stent expands like a spring, and it pushes back the prostate tissue, widening the urethra. Prostatic stents may be temporary or permanent. Urologists generally use prostatic stents in men who may not tolerate or be suitable for other procedures.

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