

# Surgical Procedures for Enlarged Prostate

Benign prostate Hyperplasia is an enlargement of the prostate gland that happens naturally as men age. As the prostate enlarges it causes obstruction of the urine flow at the prostate. Obstruction causes symptoms such as a slow urine flow, straining to urinate. Incomplete emptying, getting up at night to urinate and a feeling of urgency and frequency of urination.

Most men have mild symptoms initially that progress over many years. As symptoms progress most men will first begin to take medication, an alpha blocker medication—e.g. tamsulosin (Flomax)—or a 5-AR medication—e.g. finasteride.

For many men, however, the time will come when medication will no longer be effective. Then that man will be faced with a surgical procedure to relieve the obstruction.

Many options exist for treating the enlarged prostate surgically. Most options are effective when used correctly, that is, when chosen appropriately for the size and shape of the individual man's prostate.

Let's first look at the size of a man's prostate. A "normal" prostate is about the size of a walnut, about an inch and a half in length and width and an inch in height. The normal prostate volume in young men is 10-20 cc. An enlarged prostate begins to cause problems at sizes around 30-40 cc, with more difficult to treat prostate sizes growing to 80cc or more. An extra-large prostate volume can exceed 300cc.

Size matters. The larger prostate requires more tissue to be removed to successfully relieve obstruction. Because procedures vary widely as to how much tissue can be removed, the choice of surgery will depend on prostate size.

The size of a man's prostate can be estimated by prostate exam but can be estimated much more accurately by prostate ultrasound, MRI, or CT scan.

The shape of a man's prostate also matters. Prostates do not enlarge uniformly. Most all BPH will grow asymmetrically and lobular. This means that the left and right sides of the prostate will not be the same size. More importantly some prostates have growth at the base of the prostate gland, growing into the bladder lumen as a lobe of tissue that can obstruct the bladder opening. Care must be taken regarding choice of procedure based on prostate shape.

The shape of a man's prostate, and its growth into the bladder, is best evaluated by a cystoscopy, a scope procedure through the urethra.

Listed below are options that are available as of this writing at the end of 2023.

Todd D Brandt MD

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## **UROLIFT**

The UroLift treatment uses tiny implants to hold open the obstructed prostate. This procedure is often performed in the doctor's office as an outpatient procedure. This procedure typically is used for men with smaller, symmetric prostates without central lobe growth into the bladder. You can easily find more information at [Urolift.com](http://Urolift.com).

## **ReZUM**

Rezūm Therapy uses injections of steam into the enlarged prostate tissue to destroy the BPH and relieve obstruction. The procedure is typically performed in the office as an outpatient procedure.

During each treatment, sterile water vapor is released throughout the targeted prostate tissue. Over time, your body's natural healing response absorbs the treated tissue, shrinking the prostate. With the extra tissue removed, the urethra opens, reducing BPH symptoms. Unlike other less invasive therapies, this therapy can treat men who have a middle lobe of the prostate.

You can find more information at [ReZum.com](http://ReZum.com).

## **PROSTATE ARTERY EMBOLIZATION (PAE)**

PAE is performed by an interventional radiologist as an outpatient procedure. The arteries to the prostate are obstructed reducing blood flow to the prostate and shrinking the gland.

This procedure is best used for men with larger prostate glands who do not want a surgical procedure done under anesthesia in the hospital.

## **TRANSURETHRAL INCISION OF THE PROSTATE (TUIP)**

TUIP is not commonly done but may be used if you have a smaller prostate but still have major blockage of the urethra at the bladder neck. The surgeon uses a laser beam or an electrical current to make small cuts in the bladder neck, where the urethra joins the bladder, and in the prostate.

Men who have a smaller prostate or do not want a more complete prostate resection but need surgery are good candidates for TUIP. The procedure is less likely to interfere with ejaculation than the more substantial TURP.

## **PHOTOSELECTIVE VAPORIZATION (PVP)**

PVP is a very common surgery for BPH. In PVP, the surgeon uses a laser to destroy obstructing prostate tissue. Several types of lasers can be used for this procedure. The Greenlight and Quanta lasers are used most. The laser has the advantage of both removing tissue as well as stopping bleeding by the hemostatic effect of heating the blood vessels.

PVP is done as an outpatient procedure at the hospital or surgery center.

Good candidates for PVP include men with small- to moderate-sized prostates.

## **TRANSURETHRAL RESECTION OF THE PROSTATE (TURP)**

Transurethral resection of the prostate (TURP) is still considered the "gold standard" for surgery for BPH. Under full anesthesia the surgeon uses the electric resection loop to cut away prostate tissue that is

Todd D Brandt MD  
December 2023

blocking the urethra. The resected tissue is flushed and removed from the bladder during the procedure. The resection loop also can cauterize bleeding vessels. The procedure usually requires one night stay in the hospital and a catheter for 3-5 days.

The TURP procedure has quite a reputation because of bleeding risk is higher during and after surgery and there are well known side effects of TURP that may include retrograde ejaculation, erectile dysfunction, urinary tract infections right after surgery and urinary incontinence.

But the TURP continues to be the treatment of choice for many men because it adapts easiest to a wide variety of prostate sizes and shapes. It also has well known long-term success. As I said, it is still considered the gold standard. Symptoms generally improve markedly. The effects of treatment last for many years in most cases.

### **HOLMIUM LASER ENUCLEATION OF PROSTATE (HoLEP)**

In HoLEP, the surgeon removes the enlarged BPH tissue through enucleation, a process of pushing the obstructing tissue back into the bladder and then removing it through a process of morcellation.

Men usually need to spend one night in the hospital after this procedure.

This procedure is used for men with large prostate glands, typically over 80 cc

Men having HoLEP have more post-operative stress urinary incontinence compared to the other surgeries.

### **TRANSURETHRAL WATER-JET ABLATION (TWJA)**

This procedure uses high-pressure water jets to destroy excess prostate tissue. The surgeon first uses ultrasound to precisely map the location of the excess tissue and enters coordinates into a treatment plan for aiming high-pressure water jets directed to that area. Following the destruction of the excess BPH, the surgeon inserts another instrument to seal small blood vessels to reduce the risk of bleeding.

This procedure is performed in the hospital and usually requires one night hospitalization.

### **DAVINCI ROBOTIC SIMPLE PROSTATECTOMY**

For very large prostate the da Vinci robot can be employed to remove the obstructing tissue. Under full anesthesia the robotic instruments and camera are placed laparoscopically, and the central obstructing prostate tissue is dissection from the rest of the prostate, relieving obstruction.

Although this is the most invasive treatment, outcomes are typically very successful because of the complete removal of the obstructing tissue. Risk of incontinence is minimal.

Men who require a robotic simple prostatectomy may also be candidates for a HoLEP procedure.

### **WHAT HAPPENS AFTER TREATMENTS?**

For most men, symptoms of BPH improve after treatment. Infection, bleeding, incontinence, and erectile dysfunction may occur after some treatments. In some cases, scar tissue may form. Most all treatments carry some risk of catheterization following the treatment, including the least invasive treatment performed in the office.

Todd D Brandt MD  
December 2023

Healing typically takes 4-6 weeks after any of the treatments listed above. Procedures that are done under general anesthesia carry additional post-anesthesia risk.

### **WHAT ARE THE LONG-TERM SIDE EFFECTS OF TREATMENT?**

Side effects vary with the type of treatment you choose. Most side effects are temporary, but there are potential long term issues that can occur after any of these procedures.

Most men will have drastically improved urination after surgery. But some men will have scar tissue after surgery that may cause obstruction and may require additional treatment or surgery to relieve obstruction.

Sexual activity can be affected. If a man can have an erection before BPH surgery, he will probably be able to do so after surgery. That is different than treatment for prostate cancer. It may take a while for sexual function to fully return after some procedure. The incidence of erection problems after surgery increases with the more invasive procedures.

Most men will experience a difference in ejaculation after the procedure. Retrograde or absent ejaculation (when semen enters the bladder rather than being sent out through the penis) is the most common ejaculation issue. Men still orgasm during sexual activity, but there is no semen production. The incidence of ejaculation changes increases with increasing invasiveness of procedure.

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I hope this list is helpful to begin to sort through the treatment options. The information above is not exhaustive regarding risks and benefits and choices of options. Please contact me with questions and concerns.

Dr Brandt