

Overcoming Enlarged Prostate/BPH

A PATIENT'S GUIDE



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OVERCOMING ENLARGED PROSTATE/BPH



Benign Prostatic Hyperplasia (BPH), also known as enlarged prostate, is a common, benign (not cancerous) condition in older men in which the prostate gland enlarges. The prostate is a walnut-sized gland that produces semen, the fluid that transports sperm. Located below the bladder and surrounding the urethra (the tube carrying urine out of the body), an enlarged prostate can squeeze the urethra and cause difficulty with urination.

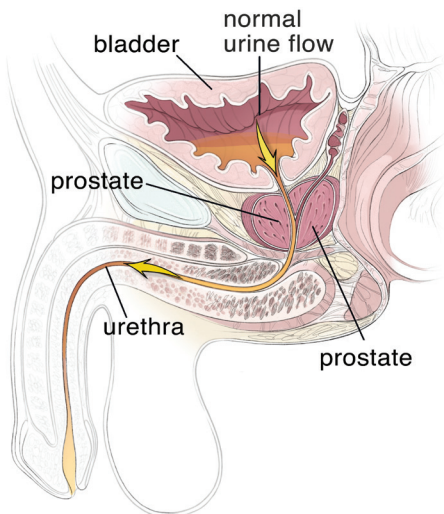
Our specialists have the experience and the results that men want and need to restore quality of life and alleviate the symptoms of an enlarged prostate. From more conservative, non-surgical measures to innovative minimally invasive procedures, our urologists provide the most advanced care for men living with enlarged prostate.

While an enlarged prostate is not life-threatening, the discomfort it brings is enough reason for one to seek treatment. Ignoring its early symptoms could also lead to the development of serious conditions such as irreversible damage to the kidneys and bladder, as well as bladder stone formation.

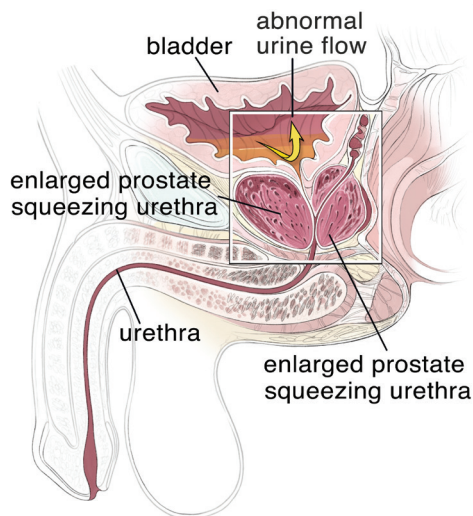
WHAT CAUSES AN ENLARGED PROSTATE?

Benign Prostatic Hyperplasia (BPH) is related to the normal aging process and is influenced by changes in the body's levels of the male hormone testosterone. In some cases, an enlarged prostate may also be genetic. More than half of men age 50 and older and 90 percent of men age 80 and older have enlarged prostate.

Normal Prostate



Enlarged Prostate / BPH



SYMPTOMS OF AN ENLARGED PROSTATE/BPH

While some men with an enlarged prostate experience no symptoms, many others may experience a variety of urinary symptoms that can range from mild and barely noticeable to severe and life-altering.

Some of the more common symptoms men with enlarged prostate experience include:

- Recurring, sudden need to urinate
- Increasingly frequent urination, especially at night
- Weak or interrupted urine stream
- Difficulty starting urination
- Urine leakage (urinary incontinence)
- Inability to completely empty the bladder.

Caffeine, alcohol, spicy or acidic foods, certain cold and pain medications, and constipation can make symptoms worse. Left untreated, symptoms may worsen over time and can cause complications that may include the inability to urinate (urinary retention), bladder or kidney damage, bladder stones, or urinary tract infections.

Men experiencing any of these urinary symptoms should have a thorough evaluation performed by a urologist as other conditions such as a urinary tract infection, prostatitis (inflammation of the prostate), overactive bladder, prostate cancer, and diabetes can cause similar symptoms.

A man is most likely to develop an enlarged prostate when he has the following risk factors: lack of physical activity, obesity, increasing age, and family history of the same condition.

DIAGNOSING ENLARGED PROSTATE/BPH

The first step to diagnosing an enlarged prostate is to see a urologist experienced in treating enlarged prostate. Your doctor will take a complete medical history and perform a physical exam, urinalysis, as well as a digital rectal exam (DRE). Your urologist may order blood work that includes a prostate specific antigen (PSA) test. Elevated levels of PSA can indicate enlarged prostate, prostatitis (prostate inflammation) or prostate cancer. Through this comprehensive evaluation, your urologist will determine whether your urinary symptoms are indeed caused by an enlarged prostate and the next steps to treating your urinary symptoms.

Additional tests to make the most accurate diagnosis may include:

- **Pelvic ultrasound:** Ultrasound to assess prostate size. This test is also useful to assess bladder emptying and thickness.
- **Uroflow:** Measures the flow of your urine stream and is often performed in patients who have an obstruction or other problems with urination.
- **Bladder Scan (post void residual):** A non-invasive ultrasound test that assesses the bladder's ability to empty.
- **Cystoscopy:** A small telescope is gently inserted through the penis and into the bladder to assess prostate shape and anatomy as well as look for bladder stones, tumors, and signs of obstruction or other abnormalities.
- **Urocuff:** A non-invasive pressure flow test that is critical to assessing bladder function and identifying a possible obstruction.
- **Urodynamics:** A procedure that helps determine whether a blockage of the prostate is the cause of your urinary symptoms. This test is also useful to assess bladder function.

TREATING ENLARGED PROSTATE/BPH

Treatment for an enlarged prostate focuses on alleviating bothersome symptoms and will depend on the severity of your symptoms, how much they interfere with your lifestyle and initial test results. Men with minimal urinary issues may only need to make lifestyle changes; those with more pronounced symptoms or complications from an enlarged prostate may require medication or a minimally invasive procedure to restore urinary function and quality of life.

Your doctor can help you determine which treatment is most appropriate for you.

Lifestyle Changes

- Avoid caffeine, acidic drinks such as sodas, tomato and orange juices, and alcohol. Cold medications containing antihistamines or pseudoephedrine can cause urinary problems. Constipation can also make it more difficult to urinate.
- Limit evening beverages and urinate when you first feel the urge.



MEDICATIONS FOR TREATING BPH

Your doctor may prescribe one, or a combination of, medications that can help alleviate many of your urinary symptoms caused by your enlarged prostate. Medications often have some side effects, so talk to your urologist about which medication is right for you.

Medications for enlarged prostate may include:

- **Alpha blockers** such as tamsulosin (Flomax) to relax the smooth muscle tissue in the bladder and prostate, making it easier to urinate.

Potential side effects:

- Headaches
 - Dizziness
 - Light-headedness
 - Fatigue
 - Ejaculatory dysfunction
 - Possible increased risk of stroke or dementia
- **Enzyme (5-alpha reductase) inhibitors**, such as Avodart and Finasteride (Proscar), shrink the prostate by preventing the conversion of testosterone to dihydrotestosterone, a key ingredient in prostate enlargement. These medications are only indicated for men with significantly enlarged prostates. Typically, these medications work by reducing the size of the prostate to help alleviate symptoms such as difficulty beginning urine flow, weak stream, and urinary urgency, and may take several months to work.

Potential side effects:

- Erectile dysfunction
- Decreased libido
- Reduced semen release during ejaculation
- Depression
- Occasional breast tenderness

- **Tadalafil (Cialis)** once a day may help with frequency and urgency and can be used to treat erectile dysfunction as well as BPH symptoms.

Potential side effects:

- Flushing
 - Headache
 - Upset stomach
 - Nausea
 - Low blood pressure
 - Dizziness
 - Vision changes
 - Prolonged erection
- **Anticholinergics** to relax the bladder muscle and reduce frequency and urgency.

Potential side effects:

- Dry mouth
- Constipation
- Blurry vision
- Drowsiness
- Memory impairment



MINIMALLY INVASIVE TREATMENTS FOR BPH

Specialized procedures to treat enlarged prostate are excellent and effective alternatives to long-term medication therapy, often with quick results, fewer side effects and improved quality of life.

The UroLift® System

The UroLift System treatment is an excellent alternative to long-term medications and traditional surgery to treat BPH.

This minimally invasive approach to treating BPH lifts or holds the enlarged prostate tissue out of the way so it no longer blocks the urethra, relieving urinary symptoms. Permanent implants are inserted utilizing a special delivery device and act like “window curtain tie-backs,” holding the lobes of the enlarged prostate open to relieve obstruction of the urethra. Unlike other prostate procedures, there is no cutting, heating, or removal of prostate tissue involved in this minimally invasive procedure, which minimizes recovery time.

How UroLift Works

Step 1: The UroLift delivery device is placed through the urethra to access the enlarged prostate.

Step 2: UroLift implants are permanently placed to hold the enlarged prostate tissue out of the way and increase the opening of the urethra.

Step 3: The UroLift delivery device is removed.

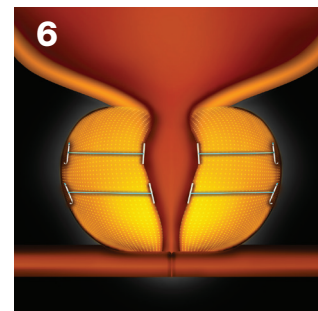
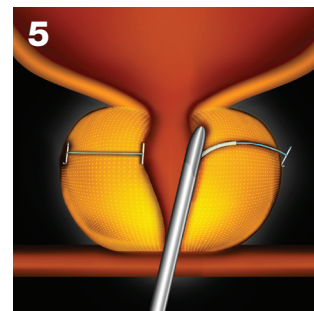
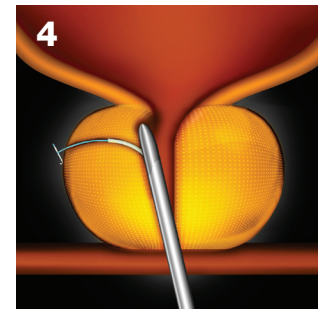
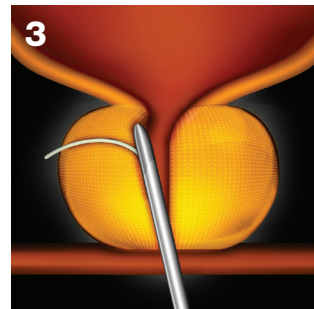
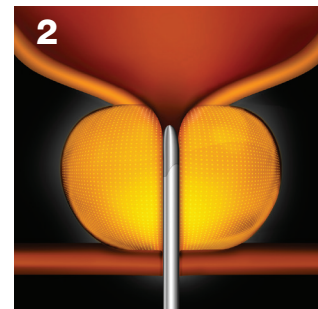
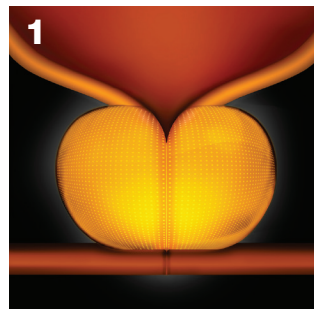
Benefits of the UroLift System

- Minimally invasive procedure with minimal downtime in normal daily activities
- Outpatient procedure can be done in your urologist’s office, or an ambulatory surgery center
- Typically, catheter placement is not needed

- Treatment can preserve sexual function – typically, no sexual side effects such as erectile dysfunction or ejaculatory dysfunction
- Lower urinary tract symptom relief in as early as two weeks after treatment

Side effects may include:

- Hematuria (blood in urine)
- Temporary urinary urgency
- Temporary pelvic pain

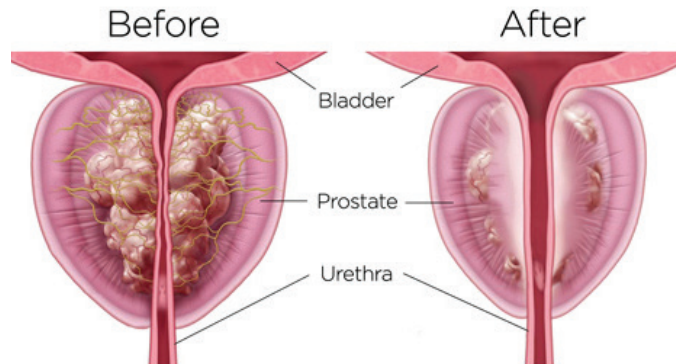


The REZŪM® System

Rezūm is a simple and effective treatment that uses thermal energy in water vapor to reduce and shrink obstructive tissue surrounding the prostate. This minimally invasive outpatient procedure reduces the obstruction from the prostate and minimizes unwanted sexual side effects sometimes experienced with medications or other more invasive procedures.

How Rezūm Works

- A thin device, similar in shape and size to a cystoscope, is inserted into the urethra. A small amount of sterile water is then heated within this device's inductive coil to create stored thermal energy in the form of water vapor.
- Using sterile water vapor (steam), targeted and controlled doses of stored thermal energy are delivered directly to the region of the prostate gland with the obstructive tissue that causes BPH.
- Water vapor is delivered directly into the enlarged tissue that is causing the obstruction, and dispersed through the spaces in the tissue, causing the obstructive tissue to die.
- The tissue that was causing compression of the urethra is reduced, enabling improved urine flow.
- The procedure takes less than a half hour and can be done awake with local anesthesia.



Benefits of Rezūm

- Rezūm is minimally invasive
- Significant improvement in BPH symptoms including frequency, urgency, weak stream, straining to urinate, and nocturia (frequent nighttime urination)
- Preserves erectile function and urinary continence
- Symptom improvement in as early as two weeks, with maximum benefit in three months

Side effects may include:

- Hematuria (blood in the urine)
- Temporary discomfort during urination
- Temporary increase in urinary frequency
- Retrograde ejaculation

As many as 50% of men experience symptoms of an enlarged prostate by age 60, and 90% of men will report symptoms by age 85.

Source: National Association for Continence

iTind

iTind (Temporarily Implanted Nitinol Device) is an outpatient minimally invasive procedure that places a temporary device into the prostate that exerts outward pressure on the prostate. This gentle pressure causes enduring atrophy of parts of the prostate so that urine can flow more easily from the bladder.

How iTind Works

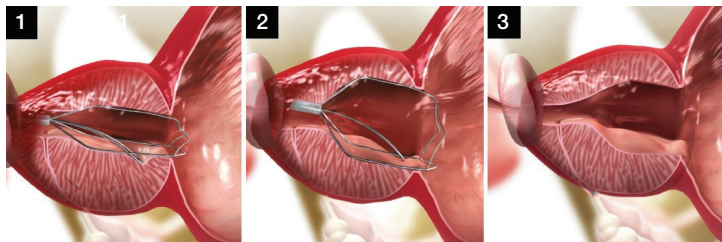
The iTind device is placed in your prostate using a cystoscope. Over the next 5-7 days, the device reshapes your prostate to improve urine flow. At the end of the treatment period, iTind is completely removed. You should go home without the need for a catheter and see results right away.

Benefits of iTind

- Minimal downtime
- Almost immediate improvement in urine flow and emptying
- Preserves sexual function
- Rapid symptom relief
- In-office, outpatient procedure
- No catheter is required

Side effects may include:

- Hematuria (blood in the urine)
- Frequent urination or burning sensation
- Difficult or an urgent need to urinate
- Urinary tract infection



The Insertion of iTind

The Implantation Period

The Removal of iTind

Prostate Artery Embolization (PAE)

PAE is a minimally invasive outpatient procedure performed by an interventional radiologist.

How Prostate Artery Embolization Works

During the procedure, the arterial blood supply is accessed through a catheter. X-ray is used to identify the blood vessels that supply the prostate. Tiny microspheres (particles) are then placed into these blood vessels to decrease the blood flow to the prostate. The prostate will shrink over time and the urinary symptoms should gradually improve in the following weeks.

Benefits of PAE

- No surgical incision or device inserted into the urethra
- Minimal downtime
- Less risk of sexual side effects when compared with some other therapies used to treat BPH
- Almost immediate improvement in urine flow and emptying
- Very low complication rate and no reports of impotence or incontinence after PAE

Side effects may include:

- Hematuria (blood in the urine)
- Frequent urination or burning sensation

SURGICAL TREATMENTS FOR BPH

Specialized procedures to treat enlarged prostate are excellent and effective alternatives to long-term medication therapy, often with quick results, fewer side effects and improved quality of life.

Aquablation Therapy

Colorado Urology was the first in Colorado to utilize the innovative treatment called Aquablation Therapy. This hospital-based robotic procedure removes prostate tissue using a heat-free water jet controlled by robotic technology.

How Aquablation Therapy Works

Aquablation combines a camera (cystoscope) with ultrasound imaging to provide your surgeon the ability to see the entire prostate in real-time. Ultrasound imaging allows the surgeon to map out the portion of the prostate tissue to be removed.

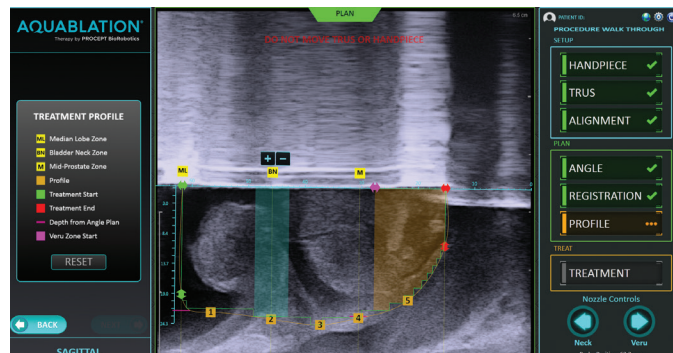
Once the prostate gland is mapped, your surgeon utilizes a robotically controlled heat-free water jet to remove the designated prostate tissue. Robotic technology ensures precise removal of the mapped prostate tissue while leaving healthy tissue intact.

Most patients will stay overnight in the hospital following the procedure. A temporary catheter will be placed.

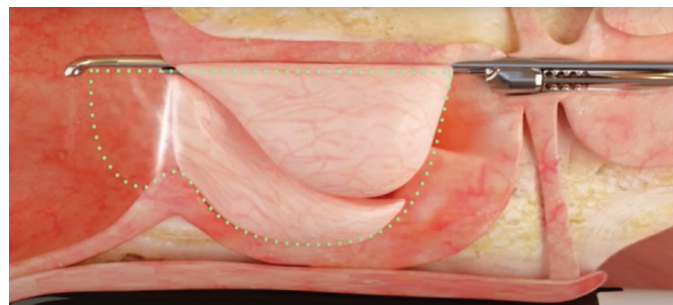
Benefits of Aquablation

- Very low rate of complications and sexual side effects such as erectile dysfunction, ejaculatory dysfunction, and urinary incontinence
- The only heat-free BPH procedure to remove prostate tissue
- Robotic technology ensures that prostate tissue is removed precisely
- Long-term relief of BPH symptoms (in clinical studies)

STEP 1. CREATING A SURGICAL MAP



STEP 2. REMOVING THE PROSTATE TISSUE



Side effects may include:

- Hematuria (blood in the urine)
- Mild burning during urination for a couple of weeks



Transurethral Resection of the Prostate (TURP)

In this surgical procedure, obstructing prostate tissue is removed using an instrument called a resectoscope, which is inserted through the urethra.

How TURP Works

Using the resectoscope, your doctor can remove the prostate tissue that is blocking the flow of urine. This technique is effective at resolving urinary symptoms caused by an enlarged prostate. TURP is typically performed in an ambulatory surgery center (ASC), although in some cases, it may be performed in a hospital.

Benefits of TURP

- Effective at resolving urinary symptoms
- Used for decades with significant recent advances in safety and effectiveness
- Great durability - Less than six percent of men who have had a TURP will need to return to the operating room for a repeat procedure

Side effects may include:

- Blood clots
- Retrograde ejaculation
- Erectile dysfunction
- Hematuria (blood in the urine)
- Urinary tract infection (UTI)
- Difficult or an urgent need to urinate

Laser Vaporization of the Prostate

Laser vaporization of the prostate is a technique that uses a special laser to heat and vaporize the prostate tissue that is obstructing part of the urethra.

How Laser Vaporization Works

Most men are good candidates for laser vaporization therapy, which is an outpatient procedure performed in an ambulatory surgery center. In this procedure, a small fiber is inserted into the urethra through a cystoscope. Laser energy is delivered through the fiber to remove the enlarged prostate tissue, restoring natural urine flow and relieving symptoms of enlarged prostate quickly.

Benefits of Laser Vaporization Therapy

- Minimally invasive, outpatient procedure
- Most men return home only a few hours after the procedure
- Quick recovery and return to normal activities
- Normal urine flow is restored quickly
- Very few long-term side effects
- Long-lasting relief from bothersome urinary symptoms

Side effects may include:

- Urinary tract infection (UTI)
- Hematuria (blood in the urine)
- Temporary discomfort during urination
- Retrograde ejaculation

Robotic Suprapubic Prostatectomy

Typically used for extremely large prostate glands, this is a hospital-based laparoscopic surgical procedure to remove the obstructing prostate. The daVinci Robot is used to remove obstructing prostate tissue through the abdomen. Patients will require a brief stay in the hospital as well as a postoperative indwelling catheter for three to 10 days.

Benefits of Suprapubic Prostatectomy

- Very effective in removing large amounts of prostate tissue
- Excellent outcomes with few side effects
- Excellent durability

Side effects may include:

- Hematuria (blood in urine)
- Erectile and Ejaculatory dysfunction



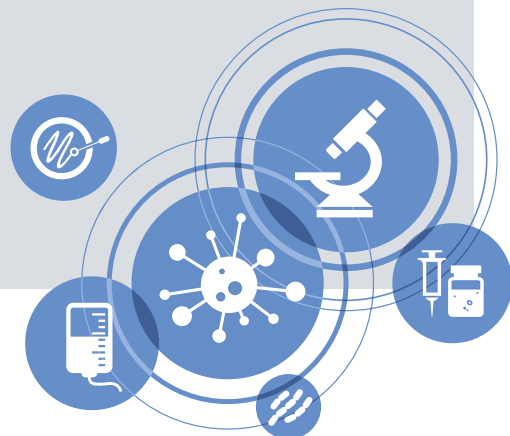
CLINICAL TRIALS FOR BPH

A clinical trial is a carefully designed research study that investigates the effectiveness and safety of new and experimental drugs and specific treatments for a particular disease. Well-designed clinical trials are the fastest way to find treatments for a variety of diseases and conditions.

A clinical trial follows a specific protocol of tests, medications and procedures for a specified duration of time. One trial may take place in multiple locations throughout a region or even throughout the country, but they all follow the same protocol in each location to ensure uniform results. Participants are closely monitored by knowledgeable, experienced physicians (investigators) and clinical research coordinators.

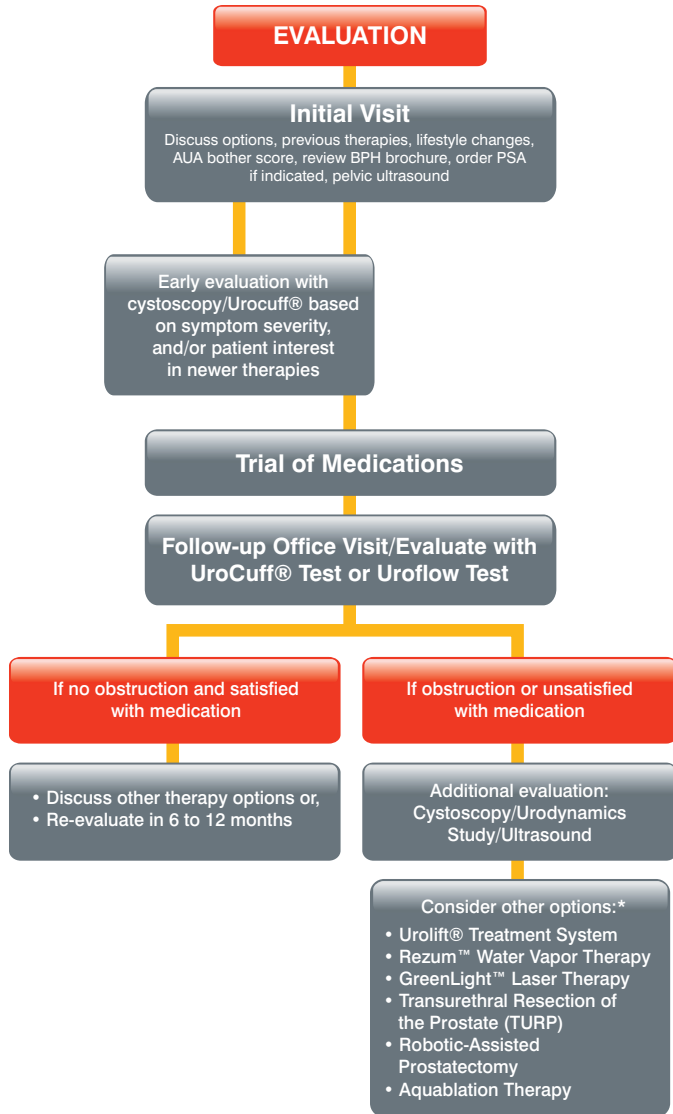
Patients enrolled in a research study must meet a standard set of criteria to be eligible for the trial.

To learn more about clinical trials for enlarged prostate/BPH visit our website at coloradouro.com.



BPH PATHWAY CHART

Once you have been evaluated and diagnosed with BPH, your physician will develop a personalized treatment plan that is right for you and the symptoms you are experiencing.



*Dependent upon prostate anatomy and discussion with physician.

