



Benign Prostatic Hyperplasia (BPH): A Patient's Guide



**American
Urological
Association**

Education and Research, Inc.

Developed by the AUA based on
*The Management of Benign Prostatic
Hyperplasia Guideline*

Glossary

Acute urinary retention – a sudden inability to urinate. Usually requires a visit to the emergency room or doctor's office for placement of a catheter. In many cases, surgery is needed at a later date.

Alpha blockers – medications taken to help relax the muscles of the prostate causing an increase in urine flow and symptom improvement.

Anesthesia – medication that is used before a surgical or other procedure to prevent the feeling of pain. It can be taken by mouth, inhalation or injection.

Benign – not cancerous or malignant.

BPH Symptom Score – a self-administered questionnaire to help your physician determine how bad your symptoms are (See page 7).

Catheter – a flexible tube inserted into the bladder through the penis/urethra to drain the urine. Limits ability to do certain activities.

Combination therapy – taking alpha blockers and inhibitors of the 5 alpha-reductase enzyme at the same time.

Cystoscopy – a procedure that allows the physician to view the inside of the urinary tract by using a small telescope that is inserted through the urethra. Can be done during an office visit with local anesthesia, or in the operating room with general anesthesia.

Glucose – a sugar that is normally found in the blood and generally only found in the urine in patients with diabetes.

Hyperplasia – excessive growth of normal cells of a tissue (e.g., the prostate) causing enlargement.

Inhibitors of 5 alpha-reductase – drugs that help the prostate to shrink resulting in an increase in urine flow and symptom improvement.

Laser therapy – surgical procedures that use a laser beam to destroy prostate tissue. A small telescope is inserted through the urethra to direct the laser energy.

Lower urinary tract symptoms – refers to bothersome symptoms typically found in men with BPH. Examples include the feeling that you have not completely emptied your bladder, or the feeling that you need to urinate often.

Minimally invasive treatments – treatments performed as outpatient procedures but require the use of an anesthetic to relieve pain and discomfort.

Open prostatectomy – surgical removal of the inner part of the prostate. Requires an incision in the lower abdomen.

Phytotherapeutics – treatments that use plant-based substances such as botanicals, herbal therapies and food and dietary supplements.

Pressure-flow study – measures the pressure in the bladder and the flow of urine at the same time. This test allows the physician to determine whether the

prostate has caused blockage. It requires a small catheter in the bladder and a measuring balloon in the rectum.

Progression (of BPH) – begins with worsening of symptoms and growth of the prostate and can lead to acute urinary retention and finally, the need for surgery.

PSA test – the prostate-specific antigen (PSA) test is a simple blood test for prostate cancer. It is also used to help to provide information about BPH.

Residual urine measurement – a test used to determine how much urine is left in your bladder after you urinate. It is usually measured by ultrasound.

Side effects – undesirable effects that can be associated with taking medications or with surgical treatment.

Transurethral – entering the urethra and penis using a telescope.

Transurethral electrovaporization of the prostate – a surgical procedure to destroy excess prostate tissue using electrocautery energy. A rigid telescope is inserted through the urethra to direct the energy.

Transurethral incision of the prostate – a small incision (cut) in the prostate and bladder outlet to reduce the tightness. The procedure involves inserting a rigid telescope through the urethra to direct the cut.

Transurethral microwave heat treatment – a surgical procedure using a device that destroys prostate tissue with microwave energy. The device is inserted through the urethra using a flexible tube.

Transurethral needle ablation – a surgical procedure in which prostate tissue is destroyed by radiofrequency energy. The procedure uses a rigid telescope inserted through the urethra to direct the energy.

Transurethral resection of the prostate – a surgical procedure that involves removing the inner portion of the prostate by electrocautery energy. A rigid telescope is inserted through the urethra to perform the surgery.

Ultrasound – a device that uses sound waves to produce an image of a structure inside the body.

Urinalysis – careful examination of the urine under the microscope.

Urine cytology – studying cells from the urine using a microscope. Certain types of cells indicate the presence of cancer.

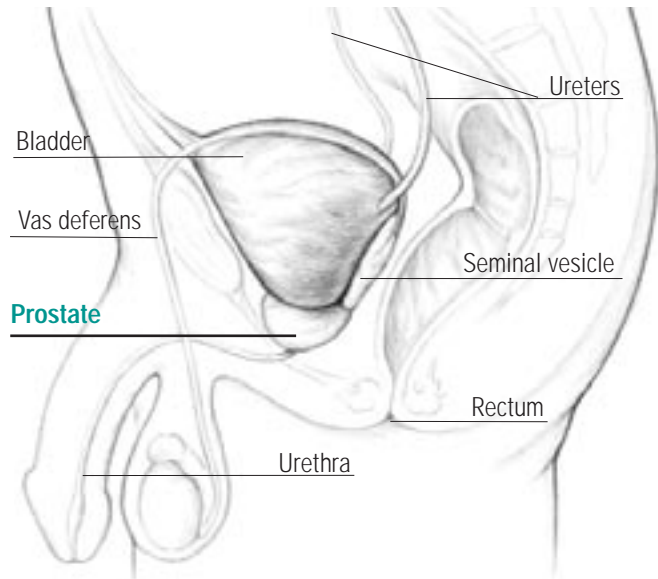
Urgency – a sudden, strong need to urinate that may lead to incontinence (inability to hold your urine).

Uroflowmetry – a noninvasive test to measure how fast your urine flows. The test involves urinating into a large cone while a device records your urination pattern on a paper strip.

Watchful waiting – when your symptoms are not bothersome, management of your condition without using either medication or surgery.

What is the prostate?

The prostate gland is part of the male reproductive system. It is about the same size and shape as a walnut and weighs about an ounce. As pictured in the diagram, the prostate is located below the bladder and in front of the rectum. The prostate surrounds a tube called the urethra that carries urine from the bladder out through the penis. The main function of the prostate is to produce fluid for semen.



What is benign prostatic hyperplasia (BPH)?

Benign prostatic hyperplasia, or BPH, refers to a noncancerous (benign) growth process (hyperplasia) within the prostate. The normal prostate grows quickly at puberty and then maintains its size. The abnormal growth of BPH usually takes place after the age of 40. BPH is very common in older men. It is found in 60% of men over 60 years of age, and in up to 80% of men over 80 years of age. At present, BPH cannot be prevented. BPH is not cancer, nor does it lead to cancer.

Although BPH may cause no problems at all, some men will eventually have lower urinary tract symptoms. Examples of symptoms are the feeling that you have not completely emptied your bladder or need to urinate often, have a weak urine stream, or frequently wake up at night to urinate. These symptoms can be bothersome to you and interfere with your normal daily activities and also with sleep at night. (See the BPH Symptom Score on page 7 for more information on symptoms.)

About one third of men with BPH eventually will be bothered by their symptoms or develop other related problems that need treatment. As you get older, these problems may become more bothersome. Some patients may have symptoms without having a large prostate. It is important for you to realize that these symptoms are not unavoidable effects of aging, but instead, they are treatable conditions found in many older men. The treatments for BPH described in this brochure will help relieve your symptoms whether there is an enlargement of your prostate or not.

What causes the urinary tract symptoms of BPH?

Urinary tract symptoms are not always caused by the prostate, but may be the effect of conditions in other organs, such as the bladder. While the exact cause of symptoms cannot always be found, symptoms may be due to a combination of both prostate growth and increased muscle tightness in the neck of the bladder and in the prostate.

As the prostate grows, it squeezes the urethra (urinary tube). This gradual squeezing of the urethra sometimes causes difficulty in urinating and other urinary problems. In the early stages of BPH, the bladder muscle can force urine through the narrowed urethra. But if the narrowing continues, the bladder muscle gets stronger, thicker and more sensitive. The result is a stronger need to urinate also called urgency. In some cases, you may have trouble forcing urine through the urethra. Some men may find that they suddenly cannot urinate (a condition called acute urinary retention). If this occurs, you should see your doctor immediately. Over time, some men may develop bladder or kidney problems, or both, as a result of BPH, urinary tract infections, bleeding or stone formation.

When should you see a doctor?

If you have symptoms that bother you, you should see a doctor. It is important for a doctor to find out if your symptoms are due to BPH or if there is another disease causing your symptoms. And, if you do have BPH, your doctor will be able to see if it has affected other organs. If you have blood in your urine or have burning or pain upon urination you should see your doctor immediately.

How is BPH diagnosed?

During your visit, the doctor will most likely:

- take your medical history (ask about your past and current medical problems)
- examine your prostate gland by inserting a gloved, lubricated finger into your rectum
- do a physical exam to see if other medical problems may be causing your symptoms
- check your urine for blood, glucose (sugar), or signs of infection (a urinalysis). Some patients may be asked to keep a record of urine volume and frequency.

- *give you a list of specific questions (called a BPH Symptom Score) about your symptoms and how much they bother you. See page 7 for a copy of the BPH Symptom Score.*

In addition, your blood may be tested to see if the BPH has affected your kidneys and also to make sure that your symptoms are not caused by prostate cancer (PSA test). A more extensive evaluation using the tests described below will be needed in some men to make sure that symptoms are related to BPH and, if so, that BPH has not affected other organs such as the bladder or kidneys:

- *uroflowmetry to measure how fast your urine flows and how much you urinate*
- *a residual urine measurement to determine how much urine is left in your bladder after you urinate*
- *pressure-flow studies to measure the pressure in your bladder as you urinate*
- *urine cytology, if you have severe symptoms, to confirm that your symptoms are not due to bladder cancer*
- *other tests, such as X-rays, cystoscopy, or ultrasound, for problems such as blood in the urine*

When should you be treated for BPH?

In many cases, an enlarged prostate alone does not need to be treated. Your prostate may not get bigger, and your symptoms may not get worse. Deciding on whether or not to have treatment depends on how bothersome your symptoms are. Your answers to questions about your symptoms (BPH Symptom Score) can help you and your doctor decide if treatment is necessary and to choose the best treatment for you. If you have mild symptoms that are not particularly bothersome, you may not need any treatment right now. If you have symptoms that are severe enough to bother you and have an effect on your quality of life, or if the results of your tests show that your urinary tract is seriously affected, you should discuss the various treatments with your doctor.

How do you assess treatment options?

There are several types of treatments for BPH. Each type of treatment may relieve your symptoms to a lesser or greater degree. However, none of the treatments will return your urinary tract to the way it was when you were a young man. The following factors should be considered when choosing a treatment with your doctor:

- *the severity of your symptoms (how much you are bothered)*
- *the likelihood that the treatment will cause noticeable relief of your symptoms*
- *how long the effects of treatment will last*
- *the disadvantages, risks and inconveniences of the treatment*

Some men may be bothered by symptoms more than others. The best treatment from your point of view may differ from treatment that had produced good results for another man with BPH. Knowing how much you are bothered by your symptoms and the results of your medical evaluation will help your doctor assist you in choosing the type of treatment that will be best for you. For example, a surgical treatment may relieve your symptoms to a greater degree than a medical treatment, and for a longer period of time, but surgery also has a greater risk of complications, and requires a hospital stay, an anesthetic and several weeks of recovery time.

If you complete the BPH Symptom Score on the next page, you will find that your score will be between 0 and 35 points (from none to severe symptoms). Once you have had treatment, your score should be reduced because the treatment should have partially relieved your symptoms. Studies have shown that some treatments reduce the score (and relieve your symptoms) better than others.

- Treatment that can reduce your score by less than 5 points will give you “modest” relief of your symptoms.
- Treatments that can reduce your score by 5 to 10 points will give you “moderate” relief of your symptoms.
- Treatments that can reduce your score by more than 10 points will give you “large” relief of your symptoms.

The amount by which each treatment may reduce your score is discussed and shown in a graph on page 12. Remember that these numbers refer to the average benefit that you can expect, while each individual patient may have a different response. This information is also listed in the chart in the back of this brochure. You can use these numbers to help you choose the treatment that is best for you.

Most treatments will have side effects. Side effects usually affect a few patients. For example, a side effect may occur in a small amount of people, such as 5% of people or (another way to look at it) in 1 of 20 people. Information on common side effects or complications of these treatments and how likely you are to have them is discussed on the following pages and also is listed in the chart in the back of this brochure. You can also use these numbers to help you choose the treatment that is best for you.

AUA BPH Symptom Score

	Not at all	Less than 1 time in 5	Less than half the time	About half the time	More than half the time	Almost always
1. Over the past month, how often have you had a sensation of not emptying your bladder completely after you finished urinating?	0	1	2	3	4	5
2. Over the past month, how often have you had to urinate again less than two hours after you finished urinating?	0	1	2	3	4	5
3. Over the past month, how often have you found you stopped and started again several times when you urinated?	0	1	2	3	4	5
4. Over the past month, how often have you found it difficult to postpone urination?	0	1	2	3	4	5
5. Over the past month, how often have you had a weak urinary stream?	0	1	2	3	4	5
6. Over the past month, how often have you had to push or strain to begin urination?	0	1	2	3	4	5
	None	1 time	2 times	3 times	4 times	5 or more times
7. Over the past month, how many times did you most typically get up to urinate from the time you went to bed at night until the time you got up in the morning?	0	1	2	3	4	5
Total Symptom Score						

To use this symptom score: Circle one number in each line and add up all the circled numbers to get the total score. The total runs from 0 to 35 points with higher scores indicating more severe symptoms. Scores less than seven are considered mild and generally do not warrant treatment.

What are your treatment choices?

The treatment choices for BPH — watchful waiting (no treatment), medical treatments (drugs), minimally invasive treatments (procedures which heat the prostate causing part of it to shrink away) and surgical treatments (procedures which remove part of the prostate) are discussed below.

Watchful Waiting

If you have no symptoms, are not bothered by your symptoms, or have moderate or severe symptoms but have not yet developed other urinary tract problems, you may choose to visit your doctor once a year or sooner if your condition changes (watchful waiting). If your symptoms become worse, talk to your doctor about other treatments.

Medical Treatment

Two types of medications may help relieve the symptoms of BPH. In some cases, these medications may be taken in combination (together). These drugs have side effects that affect some patients, but will generally go away when you stop taking them.

1. **Drugs that help relax the muscles of the prostate.** These drugs are called alpha blockers. They include alfuzosin, doxazosin, tamsulosin and terazosin. Although all four drugs work equally well, there are slight differences in the side effects of each one. Talk to your doctor about which one is best for you. After you start the drug treatment, your doctor will monitor you for the first few weeks, and will check your BPH symptoms to make sure that the dosage of medicine is correct for you.

Advantages: These drugs usually will provide moderate relief of your symptoms.



Disadvantages: You may have side effects that can be different depending on the drug used. Common side effects are stomach or intestinal problems, a stuffy nose, headache, dizziness and tiredness. A smaller number of patients may have low blood pressure.

2. **Drugs that help the prostate to shrink.** These drugs are inhibitors of the 5 alpha-reductase enzyme, and include finasteride and dutasteride. Your doctor may recommend this type of drug if you have an enlarged prostate. You will need to see your doctor on a regular basis if you take this drug. Because these drugs change the result of your PSA test by lowering it about 50% (for example, from 4 to about 2 or from 6 to about 3), this test may need to be repeated while you are taking this drug.

Advantages: Taking finasteride or dutasteride may prevent you from having difficulties in urinating at a later time (acute urinary retention) and needing future surgery for BPH. These drugs block future growth of the prostate. They usually will provide modest relief of your symptoms.

Disadvantages: Your BPH symptoms may not begin to be relieved until you have taken the medication for 3 to 6 months. You may have a few side effects from taking these drugs such as an inability to achieve an erection, decreased sexual desire and a reduced amount of semen.

3. **Combination therapy.** If you have an enlarged prostate and bothersome symptoms of BPH, you may be treated with a combination of both alpha blockers and drugs that shrink the prostate.

Advantages: Taking both drugs in combination usually provides moderate relief of your symptoms and decreases the chance for your condition to become worse. In men with larger prostates, the combination of drugs is very successful at preventing sudden problems with urinating (acute urinary retention) and at reducing the need for surgery in the future.

Disadvantages: You may experience the combined side effects of both drugs.

Minimally Invasive Treatments

These treatments are performed as outpatient procedures and may cause pain and discomfort that are relieved with the administration of an anesthetic. After the treatment, a catheter (tube for urine) is placed in the bladder and remains for a few days while you are at home. In general, these treatments are better at relieving symptoms than medical therapies but are less effective than surgical procedures.

1. **Transurethral microwave heat treatment** treats the prostate with microwave heat. A small microwave antenna attached to the end of a flexible tube is inserted into the bladder through the urethra and prostate.
2. **Transurethral needle ablation (TUNA)** uses heat to treat the prostate. A small needle attached to the end of a rigid telescope is inserted into the prostate through the urethra. Radio waves are used to heat the needle.

Advantages: One-time treatments with a low rate of serious problems after the procedure is completed. Your symptoms may be moderately to largely relieved by these treatments.

Disadvantages: Often requires a catheter to be placed in the bladder for 3 days to several weeks after the procedure. Symptoms are not relieved immediately. Within 2 to 3 years after the treatment, 10% to 20% of patients need additional therapy. TUNA may also be more uncomfortable than transurethral microwave heat treatment.

You may have complications or side effects from these procedures but their occurrence can be different depending on the procedure. Many patients will have urgent and frequent urination for some period after these procedures.



Surgery

Surgery may be selected as an initial treatment if your symptoms are particularly bothersome or you have developed other serious problems because of the BPH. You may also select surgery if you have tried medical or minimally invasive treatments and they have not been successful. The choice of surgery should be decided based on your level of discomfort, your medical test results, and your doctor's suggestions.

Transurethral resection of the prostate (TURP). This is the most common surgical procedure to treat symptoms of BPH. The procedure involves surgically removing the inner portion of the prostate. Under anesthesia, the surgeon uses a scope through the urethra, so there is no external scar.

Advantages: You may experience a large improvement in your symptoms by TURP. Symptom relief will be quick and lasts for a long time.

Disadvantages: There is an occasional risk of serious complications with TURP and 10% of patients need another procedure within 5 years. The common complications or side effects are urgency and frequency of urination for some period after surgery, difficulty in achieving an erection, blood in your urine, inability to hold your urine (incontinence) or a narrowing of the urethra (scarring).

Other surgical procedures. Other less common surgical procedures are available and will also relieve your symptoms to a large extent.

Talk to your doctor about whether one of these procedures is right for you:

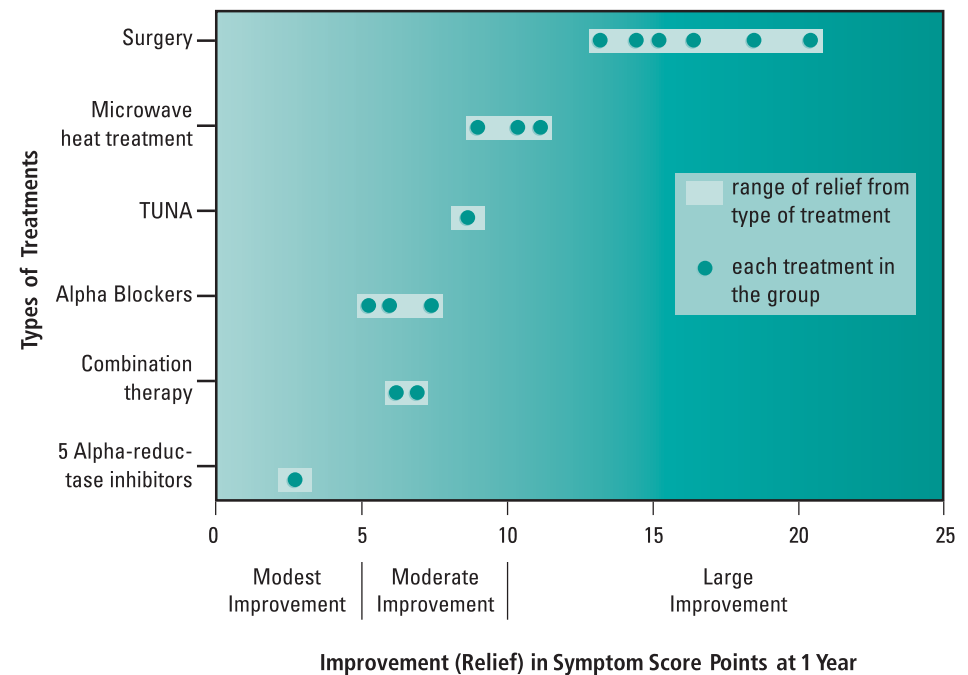
1. transurethral electrovaporization of the prostate
2. transurethral incision of the prostate
3. laser therapy which includes the following procedures: transurethral laser coagulation; transurethral laser vaporization; transurethral holmium laser resection/enucleation
4. surgery of the prostate requiring incision of the skin (open prostatectomy); for patients with very large prostates

Depending on the surgery performed, some patients may need a second procedure. Complications or side effects from these procedures can differ from procedure to procedure. Some patients will have urgency and frequency of urination for some period of time after the surgery, difficulty in achieving an erection or an inability to urinate following the procedure. A small number of patients will have problems with blood in their urine, inability to hold their urine (incontinence) or a narrowing of their urethra.



Usual Symptom Relief by Treatment

(Individual treatments may vary)



Phytotherapeutics

Phytotherapies are plant-based or herbal substances that are found in certain foods and dietary supplements. Examples are saw palmetto or *Pygeum africanum*. Many of these agents have been used in other parts of the world to treat symptoms of BPH. The potency and safety of these agents have not been well studied and they have not been approved by the Food and Drug Administration for the treatment of BPH. Before using any of these products you should speak with your doctor.

Making the Decision About Treatment

Before choosing a treatment, ask yourself these important questions:

- *Do I really want any treatment? Am I bothered by my urinary tract symptoms? Do my symptoms prevent me from doing things I like to do (going out, social events, travel, etc.)?*
- *If I do want treatment, which is the best for me? Remember, you may not be a good patient for all listed treatments, and your doctor will advise you about the choices that are appropriate for you.*
- *Do the advantages of this treatment (relief of my symptoms, prevention of symptom worsening, better quality of life, etc.) mean more to me than the disadvantages such as the potential side effects, costs, need for daily therapy (in the case of medical therapy), and effect on my quality of life during and shortly after the procedures and surgery?*

BPH Treatment Benefits and Their Risks*

Treatment	Usual range of symptom relief (points on BPH Symptom Score)	Adverse events (most common)	Days lost from work	Days in hospital	Anesthesia	Pain and discomfort
Watchful waiting	Symptoms will come and go	Small risk of worsening symptoms, acute urinary retention	1 day each year for office follow-up	None	None	None
Medical Treatment						
Alpha blockers	Moderate 6 to 8	Stomach/intestinal -11% Stuffy nose -11% Headache - 12% Dizziness -15%	First year, 1 day every 3 to 4 months for office follow-up	None	None	None
5 Alpha-reductase inhibitors	Modest 3 to 4	Erection problems - 8% Decreased sexual desire - 5% Reduced amount of semen - 4%	After 1 year, 1 day each year for office follow-up			
Combination therapy	Moderate 6 to 7	Combination of above				
Minimally Invasive Treatments						
Transurethral microwave heat treatment [†]	Moderate to large 9 to 11	Urgency/frequency - 28% to 74% Infection - 9% Second procedure needed - 10% to 16%	1 day for treatment Up to 1 week for recovery	None; an outpatient procedure	Oral or injected sedatives or pain killers	During procedure: mild/mod. with use of anesthesia.
TUNA	Moderate 9	Urgency/frequency - 31% Infection - 17% Second procedure needed - 23%	First year, 1 day every 6 months for office follow-up		Oral or injected sedatives and pain killers; spinal or general	After treatment: mild (urinary symptoms)
Surgical Treatments						
TURP, laser and similar surgeries [†]	Large 14 to 20	Need for retreatment - 1% to 14% Urinary retention -1% to 21% Urgent and frequent urination - 6% to 99% Erection difficulty - 3% to 13%	2 to 4 weeks	1 to 2 days	Spinal or general	Moderate
Open surgery for large glands	Large	Incontinence - 6%	3 to 6 weeks	3 to 7 days	General	

TUNA = transurethral needle ablation; TURP = transurethral resection of the prostate

* Many of these factors differ greatly between geographic areas and doctors, and will change over time with the availability of new treatments. The information is meant to give an estimate of what you might expect when choosing a treatment.

[†] Adverse event rates reflect different procedures. Ask your doctor about the rates for specific procedures.

This patient's guide is intended to stimulate and facilitate discussion between the patient and doctor regarding the types of evaluation and treatment described in summary fashion in this brochure. The brochure was developed by the Benign Prostatic Hyperplasia Guideline Update Panel of the American Urological Association (AUA). It is based on *The Management of Benign Prostatic Hyperplasia Guideline*, a document developed by the AUA. For additional information, please refer to the full text, located at www.auanet.org.

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