Benign Prostatic Hyperplasia (BPH)

TREATMENT CHOICES

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Your doctor has told you that you have benign prostatic hyperplasia (BPH). In other words, you have a benign (non-cancerous) enlargement of your prostate. You wonder if you should be concerned,

test your knowledge about

1. The main function of the prostate is to:
   a. produce sperm
   b. produce fluid in which sperm travel
   c. store urine

2. BPH is:
   a. a noncancerous enlargement of the prostate gland
   b. a form of cancer
   c. an infection

3. BPH is most common in:
   a. men between the ages of 20 and 40 years
   b. men between the ages of 40 and 60 years
   c. men 60 years and older

4. BPH most commonly causes:
   a. urinary symptoms
   b. sexual difficulties
   c. death

what your treatment choices are, or whether your condition even needs treatment at this time. This booklet will explain what BPH is, and should also help you make an informed decision about treatment for your condition.

benign prostatic hyperplasia

5. BPH needs treatment when:
   a. the first signs of urinary difficulty develop
   b. the doctor finds an enlarged prostate
   c. symptoms are bothersome and reduce the quality of your life

6. Compared to surgery, medical treatment for BPH is:
   a. as effective, but higher risk
   b. as effective, but lower risk
   c. less effective, but lower risk

7. A yearly prostate checkup is recommended:
   a. to detect early, curable prostate cancer
   b. to detect BPH
   c. both of the above

Answers on page 23.

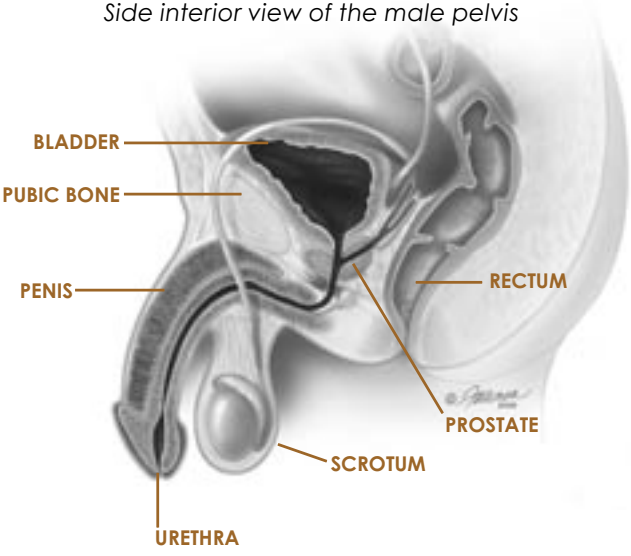
There also is a glossary of terms you may not be familiar with at the end of this booklet.

WHAT IS THE PROSTATE?

The prostate is a small gland that is part of the male reproductive system. A normal, healthy prostate is about the size and shape of a walnut. Its position in the body is just between the bladder and the base of the penis. The urethra—the tube that carries both urine and semen out through the penis—runs through the center of the prostate. The function of the prostate is to produce some of the seminal fluid that nourishes and carries sperm from the testicles and out of the penis during ejaculation. Because of its position, an enlarged prostate can squeeze the urethra, causing urinary problems.

BPH: Enlarged prostate squeezes urethra and bladder wall is thickened

Side interior view of the male pelvis



BPH enlarged prostate

WHAT IS BPH?

BPH is a noncancerous (benign) growth of the cells within the prostate gland. BPH is common in older men. By age 60, more than half of men have BPH. By age 85, about 90 percent of men have BPH, but only 30 percent of men will be bothered by their symptoms.

BPH affects the inside part of the prostate first. Enlargement frequently causes a gradual squeezing of the urethra where it runs through the prostate. Sometimes this causes difficulty in urinating or other urinary problems. BPH is not cancer nor does it lead to cancer. However, it is possible for a man to have both BPH and prostate cancer.

WHAT ARE THE SYMPTOMS OF BPH?

Many men with BPH have no significant symptoms. However, symptoms begin by interfering with urinary function. Some symptoms can include:

- a weak or slow urinary stream
- a feeling of incomplete bladder emptying
- a delay in starting urination
- frequent urination
- urinary urgency
- awakening frequently at night to urinate
- a urinary stream that starts and stops
- the need to strain to urinate

These symptoms are caused by the way in which BPH affects the urethra and, later on, the bladder. In the early phase of prostate enlargement, the bladder muscle is able to force urine through the narrowed urethra by contracting more forcefully. Over time, the bladder muscle gradually becomes stronger, thicker, and overly sensitive, causing a need to urinate frequently.

In some cases, as prostate enlargement progresses and the urethra is squeezed more tightly, the bladder cannot overcome the problems created by the greatly narrowed urethra. When this happens, the bladder cannot empty completely.

If a urinary tract infection develops, there may also be burning or pain during urination. In a small percentage of men, blockage from BPH may lead to repeated urinary tract infections, formation of bladder stones, sudden and complete inability to urinate at all (acute urinary retention—a medical emergency), or gradual bladder and/or kidney damage. If this happens to you, see your doctor immediately. Fortunately, kidney damage from BPH is quite rare. At present, BPH cannot be prevented.

AUA BPH SYMPTOM SCORE INDEX

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.

	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 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	2 times	2 times	2 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						

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WHEN SHOULD BPH BE TREATED?

A man and his doctor should talk about the benefits and risks of treatment when a diagnosis of BPH has been determined. The best treatment is not the same for every man. Your doctor may decide that your BPH symptoms should be treated by a **urologist**. A urologist is a doctor who specializes in diseases of the male and female urinary tracts and the male reproductive system.

BPH needs to be treated only if the symptoms are severe enough to bother you or complications of BPH develop including loss of kidney function, sexual function, recurrent urinary tract infections or the inability to urinate. An enlarged prostate alone is not reason enough to get treatment. Your prostate may not get bigger than it is now, and your symptoms may not get worse.

Ask yourself how much your symptoms really bother you:

- Do they keep you from doing the things you enjoy?
- Would you be much happier or do more if the symptoms went away?
- Do you want treatment now?
- Are you willing to accept some small risks to try to get rid of your symptoms?
- Do you understand the risks?

Your answers to these questions can help you choose a treatment that is right for you. To answer

some of these questions, you need the information that follows.

WHAT ARE YOUR TREATMENT CHOICES?

Currently, the main ways of dealing with BPH are:

- watchful waiting (no treatment)
- medical treatments (drugs)
- minimally-invasive treatments
- surgical treatments

Surgery often does the best job of relieving symptoms, but it also has more risk than the other treatments. Unless you have a serious problem due to BPH that makes surgery the only choice, you can choose from a range of treatments. Which one, if any, you choose depends on how much your symptoms bother you. Your choice also depends on how much risk you are willing to take to improve your symptoms and whether some of your treatment options are limited by other medical conditions. You and your doctor should decide together which treatment is best for you.

WATCHFUL WAITING

This option is recommended as an important option for men who have mild symptoms and do not find them particularly bothersome. This means that you will be examined one or more times a year to make certain that you are not developing complications from BPH. It is the least invasive

treatment and avoids the risks, inconvenience and costs of medical and surgical treatments. In some men, symptoms improve over time as long as there are no high-risk symptoms like urinary retention, recurrent urinary tract infection, recurrent blood in the urine, bladder stones, kidney failure or bladder diverticula.

MEDICAL TREATMENTS

BPH is a condition for which good treatment options exist. Several medications for BPH are available and are the most common method for controlling moderate symptoms of BPH.

Alpha-blockers. These drugs, originally used to treat high blood pressure, work by relaxing the smooth muscle of the prostate and bladder neck to improve urine flow and reduce bladder outlet obstruction. Although alpha blockers may relieve the symptoms of BPH, they usually do not reduce the size of the prostate. They are usually taken orally, once or twice a day just before bedtime and they work almost immediately. Commonly prescribed alpha blockers include: tamsulosin (Flomax®), alfuzosin (Uroxatral®), terazosin (Hytrin®) and doxazosin (Cardura®). Side effects can include headaches, dizziness, light-headiness, fatigue and difficulty breathing.

Talk to your doctor about which one is right for you. If your symptoms do not improve and are

sufficiently bothersome, you may want to consider other options, including surgery.

5-Alpha Reductase Inhibitors. A second type of medication partially shrinks the enlarged prostate by lowering the level of the major male hormone inside the prostate. Drugs, such as finasteride (Proscar®) and dutasteride (Avodart®), can reduce symptoms in some, but not all men with BPH. 5-alpha reductase inhibitors are taken by mouth once a day. These drugs are approved by the U.S. Food and Drug Administration (FDA) and work slowly, so you may have to take them for six to 12 months to see if they will work for you. You will need to see your doctor regularly if you take these drugs. Side effects can include erectile dysfunction, decreased libido and reduced semen release during ejaculation. These drugs may also reduce the chance of developing acute retention, that is, not being able to urinate at all, as well as the need for prostate surgery in the future. This preventive benefit is greater for men with a larger prostate. If you continue to have bothersome symptoms after six months on these drugs, talk to a urologist about surgical options.

5-alpha reductase inhibitors do lower the blood level of prostate-specific antigen (PSA), a substance measured to help detect prostate cancer. The PSA level drop occurs in a predictable manner and does not affect the ability to detect prostate cancer.

Researchers are seeking new treatments that may provide more options for managing BPH in the future.

Combination Therapy. If your BPH symptoms are bothersome and you have an enlarged prostate, your doctor may determine that you should take both alpha-blockers and drugs that will shrink your prostate. This combination treatment may prevent progression of symptoms, prevent acute urinary retention and reduce your need for surgery.

Herbal Therapies. Over-the-counter agents, such as saw palmetto, have not been well studied for effectiveness or safety and they have not been approved by the FDA. Some herbal remedies can interact with prescription medication or distort the results of diagnostic tests. Talk to your doctor about these agents before you take any to try to relieve your BPH symptoms.

MINIMALLY-INVASIVE TREATMENTS

Catheterization: Placement of a catheter into the penis and into the bladder will temporarily drain urine. Catheters can be placed intermittently every six hours—a process known as clean intermittent catheterization—or left in place for one to three months at a time—known as indwelling. Catheters can be placed either through the urethra or by making a small puncture into the bladder above the pubic bone (called a suprapubic tube).

Infection is the biggest risk of having a catheter in place for long periods, as bacteria can stick to the surface of the catheter, making it difficult for the body's immune system or antibiotics to clear the organisms. Another risk is that after a few years there is a higher risk of bladder stones due probably to the long-term irritation caused by the catheter. Catheterization, performed by the individual or a caregiver every six hours, minimizes the risk of infection and bladder stones compared with an indwelling catheter. Catheters are most useful as a treatment of choice for temporary drainage while waiting for medication to start working, surgical treatments or clearing of infection. They also might be the most appropriate choice for a patient with multiple medical problems and a short life expectancy, where the risk and discomfort of surgery outweigh the risk of infection or cancer. Catheterization is the treatment of choice over medications or surgery for patients who have neurogenic bladder in addition to prostatic obstruction.

Holmium Laser Enucleation of Prostate (HoLEP): After the patient receives anesthesia, the surgeon inserts an instrument called a resectoscope through the penis into the urethra. A visual lens and laser are passed through the hollow center of the instrument. The prostate tissue is vaporized using the holium: YAG laser. There is very little bleeding and recovery time is cut significantly. Typically, the patient is in the hospital 1 to 2 days.

Interstitial Laser Coagulation: Anesthesia is usually required for this procedure, but patients can usually go home the same day. The technology involves placing a cystoscope (a metal tube through which the visual lens and laser can be passed). A laser is used to pierce through into the prostate and the laser energy burns the tissue. Complications and need for further treatment have been minimal so far, but more sophisticated studies must be performed.

Prostatic Stent (stenting): This procedure is used on patients that cannot tolerate anesthesia. The technology involves placing a spring-like device inside the prostatic part of the urethra to hold it open. There are many different kinds of stents. This is usually best suited for patients who have many medical problems or who are at high-risk for surgery. Serious complications include urinary incontinence, dislodgement of stent position, stone formation on the stent with blockage and difficulty removing the stent. Minor complications include urinary frequency and urgency, dribbling of urine, discomfort and light bleeding. Patients with certain conditions are often advised against stent placement including those with strictures (narrowing) in the urethra, urinary infection, bladder stones, weak bladder and cancer, and patients who will be undergoing other procedures performed through the urethra soon after stent placement (e.g., treatment of kidney stones). Generally,

prostatic stents are used for the same patients who would otherwise use an indwelling catheter or transurethral microwave thermotherapy (TUMT).

Transurethral Microwave Thermotherapy of the Prostate (TUMT): This is an office-based procedure performed with topical and oral pain medication and does not require anesthesia. Computer-regulated microwaves are sent through a catheter to heat portions of the prostate. A cooling system works simultaneously to protect the urinary tract during the procedure. Traditionally, the best use of this procedure has been for patients who have too many medical problems for more invasive surgery or for patients who truly wish to avoid any type of anesthesia. Benefits are that there is no need for anesthesia and there is no blood loss or fluid absorption (these would be significant benefits in a person with a weak heart). Patients usually go home the same day. Many urologists have the technology available in their office or ambulatory surgical center and results are generally reliable. The use of TUMT has been expanding to a broader patient population.

Transurethral Radio Frequency Needle Ablation of the Prostate (TUNA): This procedure involves anesthesia and medications to make the patient sleepy. The technology involves heating tissue using radio frequency energy transmitted by needles inserted directly into the prostate. High frequency radiowaves heat the prostate up to very high temperatures. The heated prostate tissue is destroyed and initially swells but then shrinks. Most men require a catheter for a period of time after this procedure. Advantages of TUNA include the limited anesthesia requirement, the ability to perform the procedure in an office setting and avoidance of serious complications sometimes associated with other procedures.

SURGERY

Transurethral Resection of the Prostate (TURP). This is the most common surgical procedure in which the prostate's innermost core is removed. This procedure is used to relieve urinary voiding symptoms by reducing pressure on the urethra, which is being "pinched" by the enlargement of the surrounding prostate. TURP is performed under a spinal or general anesthesia. The urologist inserts an instrument with a wire-cutting loop into the urethra. No external incision is necessary. The doctor then removes pieces of prostate tissue. After TURP, a catheter is usually needed for one to three days. The hospital stay for this procedure is one to two days.

Transurethral Incision of the Prostate (TUIP). A more limited surgical procedure which may be an option in some cases (e.g. patients with small prostates.) In this procedure, an instrument is passed through the urethra to make cuts in the prostate instead of removing prostate tissue. These cuts reduce prostate pressure on the urethra, making urination easier. This procedure typically requires a hospital stay of one to three days.

Open Prostatectomy. In other cases, particularly if the prostate is very large, an open prostatectomy may be necessary. In this procedure, an incision is made in the skin of the lower abdomen so that the doctor can reach and remove the inner core of the prostate. Postoperative pain is mild to moderate. Patients usually stay in the hospital for several days and go home with a urinary catheter.

Your doctor will recommend the type of procedure to best help with your symptoms after a careful assessment of your problem and your general medical condition.

Although surgery for BPH reduces symptoms in the great majority of patients, it may not entirely relieve your symptoms. If the bladder has become weak because of blockage, for example, there still could be problems urinating even after prostate tissue is removed, although this is rare.

Surgery for BPH does not usually interfere with a man's sexual functioning. Although some men notice trouble achieving erections after surgery, recent research suggests that this problem is uncommon in men with normal erections before surgery. After TURP, most men do get retrograde ejaculation (ejaculation of semen backward into the bladder instead of through the urethra to the outside).

Occasionally after surgery, some men have a worsening of urinary symptoms involving urgency, frequency or an inability to urinate. Complete incontinence is a rare complication of surgery for BPH. It occurs in about one out of 100 men. Other complications or side effects include blood in the urine, incontinence or a narrowing of the urethra. Some men may need a second surgical procedure.

If you have questions about any of the potential risks or benefits of watchful waiting, medication or surgery, talk with your doctor.

It is important to be aware that surgery for BPH does not eliminate your risk of prostate cancer. Prostate cancer usually begins in the outer layer of the prostate, which is not the portion removed during surgery for BPH. Yearly examinations are just as important for both men who have had surgery for BPH and for men who have not had surgery.

WHAT ARE THE TREATMENT BENEFITS AND RISKS?

Each treatment may improve your symptoms, but each has different chances of success. All treatments, even watchful waiting, have some risks. Ask your doctor these questions about each treatment:

- What is my chance of getting better?
- How much better will I get?
- What are the chances that the treatment will cause problems?
- How long will the treatment work?

Both benefits and risks for each category of treatment are summarized in the table on page 18-19. This information can help you and your doctor make the best choice for you. The major treatment choices are watchful waiting, medical treatment, minimally-invasive treatment and surgery. Thermal treatments are included under minimally-invasive treatments.

BPH TREATMENT BENEFITS AND THEIR RISKS*

Treatment	Usual range of symptom relief (points on BPH symptom index)	Adverse events (most common)
Watchful Waiting	Symptoms will come and go	Small risk of worsening symptoms, acute urinary retention
Medical Treatments		
Alpha Blockers	Moderate 6 to 8	Stomach/intestinal – 11% Stuffy nose – 11% Headache – 12% Dizziness – 15%
5 Alpha-reductase Inhibitors	Modest 3 to 4	Erection problems – 8% Decreased sexual desire – 5% Reduced amount of semen–4%
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%
TUNA	Moderate 9	Urgency/frequency – 31% Infection – 17% Second procedure needed – 23%
Surgical Treatments		
TURP, Laser and Similar Surgeries†	Larger 14 to 20	Need for pretreatment – 1% to 14% Urinary retention – 1% to 21% Urgent and frequent urination – 6% to 99% Erection difficulty – 3% to 13%
Open Surgery	Large	Incontinence – 6%

TUNA = transurethral need 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. This information is meant to give an estimate of what you might expect when choosing a treatment.

	Days lost from work	Days in hospital	Anesthesia	Pain and discomfort
	1 day each year for office follow-up	None	None	None
	First year, 1 day every 3 to 4 months for office follow-up After 1 year, 1 day each year for office follow up	None	None	None
	1 day for treatment Up to 1 week for recovery First year, 1 day every 6 months for office follow up	None; an outpatient procedure	Oral or injected sedatives or pain killers	During procedure: mild/mod. with use of anesthesia After treatment; mild (urinary symptoms)
			Oral or injected sedatives and pain killers; spinal or general	
	2 to 4 weeks	1 to 2 days	Spinal or general	Moderate
	3 to 6 weeks	3 to 7 days	General	

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

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WHAT IS THE NEXT STEP?

Before choosing a treatment, ask yourself these two important questions:

- If my BPH is not likely to cause me serious harm, do I want any treatment other than watchful waiting?
- If I do want treatment, which is best for me based on the benefits and risks of each?

No matter what you decide, talk it over with your doctor. Take this booklet with you to your visits. Ask questions. Together, you and your doctor can choose the treatment best for you.

GLOSSARY

benign prostatic hyperplasia (BPH): a noncancerous (benign) growth of the cells within the prostate gland.

biopsy: removal of a small tissue sample is taken for microscopic examination.

bladder: organ that stores urine before it is discharged through the urethra.

bladder diverticula: pouches in the bladder wall that a person is born with or later acquires.

cancer: an abnormal growth that can invade nearby organs and spread to other parts of the body; a cancer is also called a malignant tumor.

catheter: a thin tube that is inserted through the urethra into the bladder to allow urine to drain or for performance of a procedure or test, such as insertion of a substance during a bladder X-ray.

cystoscope: a thin, telescope-like instrument fitted with lenses and a light source; it allows the doctor to inspect the bladder and prostate in a procedure called cystoscopy.

digital rectal examination (DRE): insertion of a gloved, lubricated finger into the rectum to check for any abnormalities of the prostate.

ejaculation: release of semen from the penis during sexual climax.

erectile dysfunction (ED): the persistent inability to achieve and/or maintain an erection sufficient for satisfactory sexual intercourse.

frequency: need to urinate more often than is normal.

incontinence: loss of bladder or bowel control.

kidneys: two large bean-shaped organs that remove waste from the blood.

neurogenic bladder: also called neuropathic bladder, this is loss of blader control caused by damage to the nerves controlling the bladder.

open prostatectomy: procedure whereby an incision is made through the skin above the bladder to remove the central part of the prostate that causes the blockage.

prostate: a small gland, about the size of a walnut located between the bladder and the base of the penis; the prostate's main function is to produce fluid that forms the semen.

prostatectomy: surgical procedure for the partial or complete removal of the prostate.

prostate-specific antigen (PSA): a protein produced by the prostate gland; the PSA test, a blood test, is commonly used to screen for prostate cancer.

retrograde ejaculation: caused by the failure of the bladder neck to close during ejaculation allowing the ejaculate to be propelled into the bladder instead of out the penis.

semen: fluid containing sperm and secretions from glands of the male reproductive tract.

testicles: male sex glands located inside the scrotum; they produce sperm, male hormones and semen.

thermal therapies: outpatient procedure that pulses microwaves or radiowaves through a catheter to destroy excess prostate tissue by heat.

transurethral incision of the prostate (TUIP):

limited form of surgery in which an instrument passed through the urethra makes cuts in the prostate but does not remove prostate tissue.

transurethral resection of the prostate (TURP): surgical removal of the inner core of the prostate by an approach through the urethra, with no external skin incision.

urethra: the tube that carries urine from the bladder out of the body; in men it also carries sperm, and it exits through the end of the penis.

urgency: the feeling of needing to urinate immediately.

urinalysis: microscopic and chemical examination of a fresh urine sample.

urinary cytology: inspection under a microscope of cells found in the urine.

urine: liquid waste product filtered from the blood by the kidneys, stored in the bladder and expelled from the body through the urethra; about 96 percent of urine is water and the rest waste products.

urologist: doctor who specializes in diseases of the male and female urinary tracts and the male reproductive system.

watchful waiting: way of handling mild symptoms of BPH by having regular checkups instead of immediate treatment.

Answers to quiz:
1) b 2) a 3) c 4) a 5) c 6) c 7) a

NOTES

BPH
enlarged prostate

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1000 Corporate Blvd., Suite 410
Linthicum, MD 21090

Toll-free number: 1-800-828-7866

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