EDUCATION

Enlarged Prostate

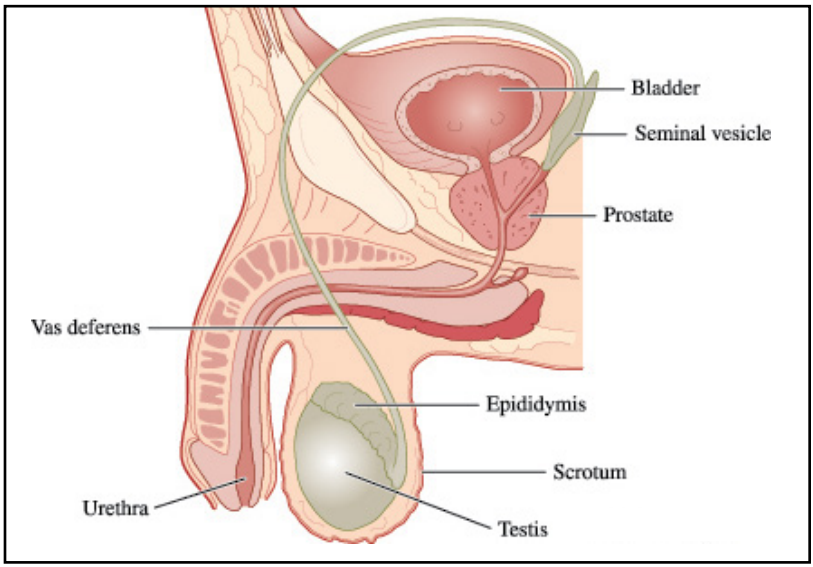
Benign Prostatic Hyperplasia (BPH)

Allina Health

The Prostate Gland

Your prostate is a walnut-size gland made up of two lobes encased in a layer of tissue. It is located in front of your rectum, just below your bladder, and surrounds your urethra, the canal that allows urine to pass from your bladder to outside your body.

Your prostate is part of your reproductive system. One of its main functions is to squeeze fluid into your urethra during sexual climax to produce semen. The fluid gives energy to sperm and lowers a vagina's acidic level.



The prostate gland is located just below your bladder.

Enlarged Prostate

As men reach their 50s and 60s it is common for them to notice changes in the way they urinate. The changes are normally due to an enlarged prostate, a condition called benign prostatic hyperplasia or BPH. (Benign means the condition is not cancer).

If an enlarged prostate causes urination problems there are treatments available to provide relief. Treatments range from drugs to non-surgical procedures to surgery, depending on the severity of BPH symptoms.

Prostate Growth Leading to BPH

Your prostate continues to grow during most of your life, but there are two main growth periods. One is early in puberty, when the gland doubles in size, and the other is around age 25. Prostate enlargement normally doesn't cause urination problems before age 40.

The story is different, however, for men in their 60s, 70s and beyond:

- more than 50 percent of men older than age 60 have BPH symptoms
- up to 90 percent of men older than age 70 have BPH symptoms.

As your prostate enlarges the tissue encasing it stops expanding. This causes a number of problems.

- Your prostate presses against your urethra, causing it to become narrower.
- Your bladder wall becomes thicker and easily irritated.
- Your bladder contracts and empties for even small amounts of urine, causing more frequent urination.

- Your bladder weakens over time and becomes unable to empty itself completely, leaving some urine in the bladder.

Many of the problems of BPH are related to a narrowed urethra and only partial emptying of the bladder.

Possible Causes of BPH

The cause of BPH has never been determined with certainty. What has been known for centuries is that BPH does occur mostly in older men and that it doesn't occur in men whose testes were removed before puberty.

For these reasons, some researchers believe that BPH is related to aging and the testes and suggest some possible causes of BPH.

- There may be a higher ratio of the female hormone estrogen to the male hormone testosterone in older men. Men produce both testosterone and a small amount of estrogen during their lives. As they age, the amount of testosterone decreases, leaving a higher percentage of estrogen. Animal studies have suggested that the higher percentage of estrogen within a prostate promotes cell growth.
- The presence of dihydrotes-tosterone (DHT), derived from testosterone in the prostate, may encourage cell growth. Studies show that men who do not produce DHT do not develop BPH.
- "Instructions" in cells in one section of a prostate direct those cells to "reawaken" in later life and deliver signals to other cells to either grow or be more sensitive to growth hormones.

Signs and Symptoms of BPH

Common symptoms

- a urine stream that is weak, hesitant or interrupted
- a feeling of urgency along with leaking or dribbling urine
- more frequent urination, especially during the night.

Sudden urinary retention

You may not realize you have BPH until you are suddenly not able to urinate at all — a condition called acute urinary retention. It may be triggered by over-the-counter products containing the decongestant sympathomimetic, alcohol, cold temperatures or being immobile for a long time.

Severe BPH

There are complications related to severe BPH. Over time, urine retention and strain on your bladder can lead to:

- urinary tract infections
- bladder or kidney damage
- bladder stones
- incontinence (not being able to control your urine).

If your bladder should become damaged from BPH, treatment for the condition may not be effective. The earlier BPH is diagnosed and treated, the lower your chance for complications.

Reporting urinary changes to your health care provider

It is important to tell your provider about any urination changes or problems that develop. In most cases, the symptoms indicate BPH, but they could also signal more serious problems, including prostate cancer.

Diagnosing BPH

You may notice symptoms yourself or your provider may find during an exam that your prostate is enlarged. If your provider suspects BPH, you may be referred to a urologist, a doctor who is a specialist in the urinary tract and the male reproductive system.

There are a number of tests that can help diagnose BPH and determine whether or not surgery is needed.

- **Digital rectal exam**: normally the first test done. The provider inserts a gloved finger into your rectum and feels the prostate located right next to the rectum. This exam gives them a general idea of the size and condition of your prostate gland.
- **Prostate specific antigen (PSA) blood test**: used to rule out prostate cancer. There are still many questions that need to be answered related to the use of a PSA test. The current approved use is for men age 50 and older along with a digital rectal exam.
- **Rectal ultrasound**: used to check for prostate cancer. A probe inserted into your rectum sends sound waves to your prostate that form an image of the gland on a display screen.
- **Urine flow study**: measures how quickly your urine flows. You will be asked to urinate into a special device. A reduced flow suggests BPH.

- **Intravenous pyelogram**: an X-ray of your urinary tract. You will have a dye injected into a vein. The dye makes your urine visible on the X-ray film and shows any blockage in your urinary tract.
- **Cystoscopy**: a view inside of your urethra and bladder through a small lighted tube inserted into your penis. After numbing the inside of your penis and inserting the tube, the provider can see your prostate to determine its size and see the location and degree of obstruction.

If your prostate gland is only mildly enlarged, you may not need treatment right away. Studies show that symptoms of BPH clear up without treatment in up to one-third of all mild cases. Your provider may recommend that you have regular checkups to monitor your condition. If BPH becomes a health risk, or if symptoms cause major problems, then treatment will likely be recommended.

Treating BPH

There are different kinds of treatment for BPH. Here are descriptions of the most common ones.

Medicine

Medicine can help shrink or at least stop the growth of your prostate without surgery. They also relieve symptoms. U.S. Food and Drug Administration (FDA) approved drugs for treating BPH:

- finasteride (Proscar®) — inhibits production of the hormone DHT (involved with prostate enlargement) and shrinks the prostate in some men
- terazosin (Hytrin®), doxazosin (Cardura®), tamsulosin (Flomax®) — relaxes the muscle of the prostate and bladder neck to improve urine flow and reduce obstruction. All three drugs are alpha blockers.

Nonsurgery Treatments

If approved medicines do not relieve BPH symptoms, your provider may suggest one of the following types of noninvasive procedures:

- **Transurethral microwave procedures**: Microwave devices are used to heat and destroy excess prostate tissue. Cooling systems protect the urinary tract during the procedure. Both procedures take about an hour and can be done on an outpatient basis (no hospital admission) without general anesthesia.

  There have been no stay of impotence or incontinence linked to microwave procedures. Any long-term effects from microwave therapy are not known at this time.

  — TUMT (transurethral microwave thermotherapy): uses the Prostaton device to direct computer-regulated microwaves through a catheter to heat specific areas of your prostate and destroy tissue.

  — Targis System: similar to TUMT; includes a rectal heat-sensing device to monitor the procedure.

  Microwave therapy does not cure BPH but it does relieve symptoms by reducing urinary frequency, urgency, straining and intermittent flow. It does not correct the problem of your bladder not emptying completely.
  Ongoing studies will help determine who might benefit most from this type of treatment.

- **Transurethral needle ablation (TUNA)**: Twin needles deliver low-level radiofrequency energy to burn away a specific area of your prostate. Shields protect your urethra. The procedure improves urine flow and relieves symptoms. No impotence or incontinence has been linked to a TUNA procedure.

Surgeries

Surgery to remove only the enlarged part of the prostate is considered to be the best long-term solution for BPH. During surgery only the enlarged tissue that is pressing against the urethra is removed. The rest of the inside tissue and the outer covering is left intact. Surgery will reduce the obstruction that is causing incomplete emptying of your bladder.

There are different types of surgery available. All types require anesthesia and a hospital stay.

- **Transurethral surgeries**: the surgeon reaches your prostate through the urethra without an external incision
  - — TURP (transurethral resection of the prostate), used 90 percent of time. The surgeon uses a resectoscope inserted through your numbed penis to cut out enlarged tissue and flush it out.
  - — TUIP (transurethral incision of the prostate). The surgeon widens your urethra by making a few small cuts in the bladder neck and prostate. This is a newer procedure and long-term side effects have not been yet been determined.
- **Open surgery**: requires an external incision through which the surgeon removes enlarged tissue from the prostate. Your surgeon may use open surgery instead of a transurethral procedure if:
  - — your prostate is greatly enlarged
  - — there are complicating factors
  - — your bladder is damaged and needs repair.

- **Laser surgery**: a laser fiber inserted through your urethra into the prostate delivers short bursts of energy that destroys prostate tissue and causes shrinkage. Laser surgery may not be useful on larger prostates. This is a newer procedure so long-term effectiveness has not yet been determined.

What to Expect if You Have Surgery for BPH

In the hospital

You will most likely be in the hospital for three to 10 days following BPH surgery, depending on the type of surgery and how quickly you heal. You will have a catheter in place to drain urine from your bladder into a bag. You will have some blood or blood clots in your urine. You may receive an antibiotic to prevent or clear up an infection. Drinking a lot of water will help you heal.

At home

- Continue drinking a lot of water to flush your bladder.
- Avoid straining when you have bowel movements. Eat a balanced diet to prevent constipation. Check with your doctor before taking a laxative.
- Avoid heavy lifting and don't drive or operate machinery until your doctor says it is OK to do these things.

Short-term problems

It will most likely take a couple of months before you heal completely from surgery. During that time you may notice minor problems urinating or bloody urine, or be incontinent on a temporary basis.

Sexual function

How quickly you regain complete sexual function depends on how long you had BPH symptoms before surgery and what type of surgery you had. Complete recovery of your ability to enjoy sex again may take up to a year. Ask your health care provider how the different types of surgery could affect you sexually.

Will you need treatment again?

Most of your prostate gland is left intact during surgical treatment for BPH. That makes it possible to develop problems again. However, BPH surgery normally offers relief for at least 15 years. Men who need surgery again for an enlarged prostate usually had their first surgery at an early age.

Information adapted from the National Institute of Diabetes and Digestive and Kidney Diseases.

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