

# Benign Prostatic Hyperplasia (BPH) Patient Guide



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## Jerry's Story



A few years ago, Jerry\* noticed that it was getting harder to urinate. This wasn't a sudden thing. It came on gradually. He decided to make an appointment with a urologist nearby to learn what was going on. The doctor said that his prostate had enlarged, but felt that they could "wait and see" before starting treatment. Jerry was told to return in one year.

A year later, Jerry learned that his prostate had grown from 60cc to 80cc with a large median lobe. This was about the size of large lemon. His symptoms were getting worse.

Jerry's doctor gave him some pills. The drugs made him feel loopy and they weren't helping. That's when Jerry began to do his own research online to find better options.

Through a BPH patient chat group, Jerry learned about a doctor in Chicago and a new treatment that uses steam to shrink the prostate. The treatment sounded promising, with very few downsides. His New York doctor had only done it twice. Jerry felt he should find a doctor with more experience. After talking with a few urologists in New York, Jerry decided to fly to Chicago to work directly with a more experienced doctor.

That was a great decision for him. About one year ago, Jerry had the steam procedure done quickly and easily. There have been no negative side effects and now he proudly "pees like a 20 year-old!" He was told the large median lobe has all but disappeared.

If Jerry were to meet a man recently diagnosed with BPH, here's what he would advise:

- First: it's important to talk about the pros and cons of each treatment option before choosing one.
- Next: be careful of what you read online. You can learn a lot about new treatments this way, but you can also find a lot of bad information. If you find something you're curious about, ask your doctor.
- Finally: find a doctor who's had a lot of experience with whatever procedure you're interested in. Different opinions always help. Experience and expertise always matters.

Jerry feels great now and expects to continue feeling good in the years ahead.

*\*Name has been changed.*

## Introduction: Benign Prostatic Hyperplasia

If you've been diagnosed with Benign Prostatic Hyperplasia (BPH), which is better known as an enlarged prostate, you're not alone. It's a common condition for men as they age. In fact, about 60 percent of men will have BPH by the age of 60. Over 80 percent will go through it as they reach age 80.

BPH means that prostate tissue has grown and enlarged. While the prostate is mainly the size of a walnut or golf ball in adult men, it can grow to be as large as an orange. As the gland enlarges, it can squeeze the urethra. This can cause symptoms like a weak urine stream or the need to push or strain to pass urine. In more serious cases, it can

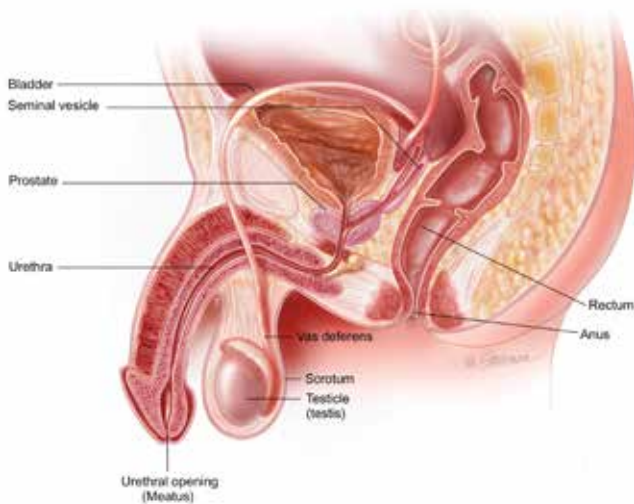
stop urination and lead to worse problems like renal failure. These require immediate treatment.

BPH itself may not require any treatment, but if it begins to cause symptoms, treatment helps.

Fortunately, BPH is benign. It is not cancer, nor does it lead to cancer. Still, BPH and cancer can happen at the same time. If you have symptoms, it's important to get a complete diagnosis and learn what you can do to get relief. In this patient guide, we tell you about the many treatments available if you need them.

## How Does the Prostate Work?

The **prostate\*** is part of the male reproductive system. The prostate's main job is to make fluid for **semen**. It is about the size of a walnut and weighs an ounce or so. It sits below the **bladder** and in front of the **rectum**. It goes around a tube called the **urethra**. The urethra carries **urine** from the bladder and out through the **penis**.



## What is BPH?

**BPH** is when the prostate and surrounding tissue expands. The prostate goes through two main growth periods as a man ages. The first is early in puberty, when the prostate doubles in size. The second begins around age 25 and continues during most of a man's life. As you age, your prostate may get larger. BPH is when it gets large enough to cause problems.

**NORMAL PROSTATE**



**ENLARGED PROSTATE**



As the prostate enlarges, it squeezes the urethra. The bladder wall becomes thicker. Eventually, the bladder may weaken and lose the ability to empty completely. Urine then remains in the bladder. These problems cause many of the lower urinary tract symptoms (LUTS) of BPH. How BPH causes symptoms will determine if and what type of treatment can help.

When learning about the prostate, there are many new terms. Some common terms used for this condition are:

- BPH is a term that describes when the smooth muscles and cells of the prostate enlarge. This term is used for any prostate enlargement.
- BPE, benign prostatic enlargement, a term that means the prostate gland itself has enlarged. This is a condition of BPH. Not all men with BPH will develop BPE. About 50 percent will.
- BPO, benign prostatic obstruction, a term that means the enlarged gland and surrounding tissue causes a blockage. About 50 percent of men with BPE have a problem with obstruction.

## What are the Symptoms of BPH?

There are several symptoms of BPH as listed below:

- Incomplete emptying: the feeling your bladder is full, even after passing urine
- Frequency: the need to pass urine often, about every one to two hours
- Intermittency: the need to stop and start several times when passing urine
- Urgency: feeling the urgent need to pass urine as if you can't wait
- Weak stream: a weak urine flow
- Straining: trouble starting to pass urine or the need to push or strain to pass urine
- Nocturia: the need to wake up at night more than two times to pass urine

## What are the Causes of BPH?

The causes of BPH are not clear. It mainly occurs in older men. Hormone changes are thought to play a role.

Hormones from the testis may be the main factor. For



example, as men age, the amount of active testosterone in the blood declines. Estrogen levels stay the same. BPH may occur when these hormone changes trigger prostate cell growth. Another theory is about the role of dihydrotestosterone (DHT). This male hormone supports prostate development. Some studies show that older men have higher levels of DHT. Testosterone levels go down. The extra DHT may cause prostate cell growth.

### Who gets BPH?

- Men, over the age of 50: the risk for BPH rises with age
- Men whose fathers had BPH
- Men who are overweight or obese
- Men who don't do enough physical activity
- Some men with **erectile dysfunction (ED)**

## GET DIAGNOSED

There are many tests for BPH. The following tests are used to diagnose and track BPH.

### Symptom Score Index

If you have any urinary changes or symptoms, your doctor may ask you to take the BPH Symptom Score Index

questionnaire. The American Urological Association (AUA) developed this test to assess urinary symptoms.

This is often the first step to diagnose BPH. The score can rate BPH as being mild to severe. You and your health care provider should talk about your results and your medical history. This is sometimes also called the International Prostate Symptom Score (IPSS).

### BPH Symptom Score Index

	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	Your score
<b>Incomplete emptying</b> — It does not feel like I empty my bladder all the way.	0	1	2	3	4	5	
<b>Frequency</b> — I have to go again less than two hours after I finish urinating.	0	1	2	3	4	5	
<b>Intermittency</b> — I stop and start again several times when I urinate.	0	1	2	3	4	5	
<b>Urgency</b> — It is hard to wait when I have to urinate.	0	1	2	3	4	5	
<b>Weak stream</b> — I have a weak urine stream.	0	1	2	3	4	5	
<b>Straining</b> — I have to push or strain to begin urination.	0	1	2	3	4	5	
	None	1 time	2 times	3 times	4 times	5 times or more	Your score
<b>Nocturia</b> — I get up to urinate after I go to bed until the time I get up in the morning.	0	1	2	3	4	5	
Total AUA Symptom Score							
Total score: 0–7 mildly symptomatic; 8–19 moderately symptomatic; 20–35 severely symptomatic.							
Quality of life due to urinary symptoms	Delighted	Pleased	Mostly satisfied	Mixed: about equally satisfied and dissatisfied	Mostly dissatisfied	Unhappy	Terrible
If you were to spend the rest of your life with your urinary condition just the way it is now, how would you feel about that?	0	1	2	3	4	5	6

## Physical Exam

A **digital rectal exam (DRE)** is often the next step. During a DRE, you would lie on your side or bend over. The doctor inserts a gloved, lubricated finger into your rectum to feel the back wall of the prostate gland. The health care provider is looking for enlargement, tenderness, lumps or hard spots. This 10-15 second exam is an important way to find problems.

## Urine tests

These tests are done to measure how well you release urine. This shows the doctor if the urethra is blocked or obstructed. There are several types:

- **Urinalysis** tests your urine sample to check for important things such as blood, signs of infection, glucose, protein and other factors that can tell your urologist the cause of your symptoms.
- **Post-void residual volume (PVR)** measures urine left in the bladder after urinating. This is done to diagnose the problem. It may also be done before surgery.
- **Uroflowmetry** measures how fast urine flows. This is done to diagnose the problem. It may also be done before surgery.
- **Urodynamic pressure flow study** tests pressure in the bladder during urination.

## Scans

These tests are done to see the size and shape of the prostate. Some BPH scans include:

- **Ultrasounds** look inside the body and see the size and shape of the prostate.
- **Cystoscopy** is an exam used to look at the urethra or bladder with a scope.
- **Magnetic resonance imaging (MRI)** and **computed tomography (CT)** for more detailed scans. These are done if surgery is necessary to reopen the flow of urine. These scans provide a very clear image of the prostate and surrounding area. It shows exactly how and where the prostate is enlarged.

## Blood Tests

If cancer is suspected, blood tests may be done.

- **Prostate-specific antigen (PSA)** blood tests are used to screen for prostate cancer. The PSA blood test checks the level of PSA, a protein made only by the prostate gland. This blood test can be done in a lab, hospital or a provider's office. There is no special preparation. When the prostate is healthy, very little PSA is found in the blood. A rapid rise in PSA may be a sign that something's wrong. A benign (non-cancer) enlargement of the prostate can cause a rise in PSA levels, as can inflammation of the prostate (**prostatitis**). The most serious cause of a rise in PSA is cancer.
- **Urinary blood tests** are used to screen for bladder cancer. If you have blood in your urine, pain or burning when you urinate, or you cannot urinate, it's important to see your doctor right away.

## GET TREATED

There are many treatments for BPH. You and your health care provider will decide together which option to use. Mild cases may need no treatment at all. In some cases, minimally invasive procedures (surgery without **anesthesia**) are good choices. And sometimes a combination of treatments works best.

The main treatments for BPH are:

- Active Surveillance
- Prescription Drugs
- Surgery

## Active Surveillance

Often, BPH will only require **active surveillance**. This means that BPH is monitored with regular visits to your urologist. A yearly exam is common. Your health care provider will look for worse or new issues before suggesting anything else. Diet and exercise are often recommended as a way to prevent or manage symptoms.

Active surveillance is best for men with mild to moderate symptoms. It is also an option for men who are not bothered by the effects of BPH.

## Prescription Drugs

**Alpha Blockers** are pills that relax the muscles of the prostate and bladder to reduce BPH symptoms. They do not shrink the prostate but they can improve urine flow if there's a blockage. One benefit of alpha blockers is that they work right away. Side effects include dizziness, lightheadedness, fatigue and difficulty ejaculating. This treatment is good for men with symptoms from moderate to severe. Do not take these if you plan to have cataract surgery soon.

Your urologist may suggest one of the following Alpha blockers: alfuzosin, doxazosin, prazosin, silodosin, tamsulosin, terazosin.

**5-Alpha Reductase Inhibitors** are pills that can increase urine flow and shrink the prostate by blocking DHT. DHT is a male hormone that plays a role in prostate development and growth. It may lead to BPH. These drugs lower the risk of BPH problems and the need for surgery. Side effects are sexual, such as ED and lower libido (sex drive). These are best for men with very large prostate glands. Older men are good candidates.

Your urologist may suggest one of the following 5-Alpha Reductase Inhibitors: finasteride and dutasteride, dutasteride/tamsulosin, finasteride.

**Combined Therapy** uses both an alpha blocker and a 5-alpha reductase inhibitor. They work better together than alone to stop BPH from getting worse. On the other hand, there may be more side effects. Men with larger prostates are good candidates for this treatment.

*Combinations include:*

- Finasteride and doxazosin
- Dutasteride and tamsulosin, a combination of both medications that is available in a single tablet
- Alpha blockers and antimuscarinics

A urologist may add antimuscarinics for patients with overactive bladder symptoms. Overactive bladder is when

the bladder muscles squeeze uncontrollably. It leads to frequent and urgent urination. It can lead to **incontinence** (leaking). Antimuscarinics relax the bladder muscles.

**Phytotherapy** or herbal therapies are not recommended by health care providers. One popular herb is saw palmetto. Several important studies show they don't work. Also, the quality and purity of supplements vary.

## Less Invasive Surgery

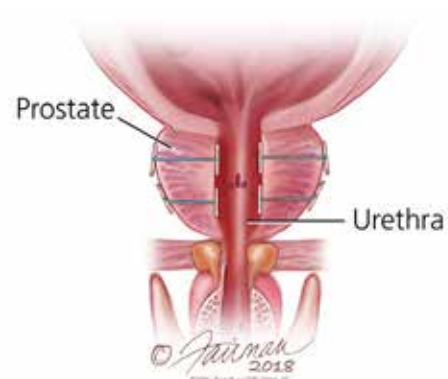
Minimally invasive or less **invasive surgeries** require only tiny cuts or no cuts to the body. They can often be done as an outpatient, without a stay in the hospital. Recovery time is usually quicker. They can offer relief from symptoms, including urine control problems. On the other hand, they do not reduce your risk for another surgery.

Good candidates include men who have taken BPH medication that didn't work or men with the following symptoms:

- Weak stream of urine
- Straining to start to pass urine
- Urinary tract obstruction, bladder stones and/or blood in your urine
- Incomplete emptying
- Bleeding from the prostate

There are several types to choose from. The option will depend on the size of your prostate, your health, your doctor's expertise and your personal choice. Options are:

**Prostatic Urethral Lift (PUL)** is a way to compress the enlarged prostate to move it out of the way. Small implants are delivered through a needle. The goal is to relieve symptoms. With this treatment, there are no cuts in the body and tissue isn't destroyed or removed. Many men with enlarged prostates and urinary symptoms are good candidates. If needed, men who have this can have other treatments later. There are fewer sexual side effects with this, compared to other minimally invasive surgeries. This is a newer treatment, so it's not clear if future treatment would be needed. There are concerns this may not be a durable treatment.



**Water Vapor Thermal Therapy** uses water vapor (steam) to destroy prostate cells squeezing the urethra. This treatment can be done in a doctor's office. It uses a special handheld device with a needle at the end. It combines radiofrequency energy and water to create steam. The needle and steam is gently used to vaporize excess prostate tissue. This therapy relieves urinary problems and improves urine flow. It does not require anesthesia. It can also improve sexual function (better erection and ejaculation). This is a newer treatment, so it's not clear if future treatment would be needed.

**Prostatic Stent** is a spring-like device. It is placed in the urethra to hold it open. There are many kinds. This treatment does not require anesthesia. It is a good treatment for men who should not have invasive surgery or those who have many medical problems. It is not good for men who have a narrow urethra, a urinary infection, bladder stones, weak bladder or cancer. It can cause a few unwanted side effects like incontinence. It can become dislodged or stones can form. It can be hard to remove. Minor side effects include having to pass urine often, dribbling, discomfort and light bleeding.

**Transurethral Microwave Thermotherapy (TUMT)** uses microwaves to destroy prostate tissue. A urologist inserts a catheter through the urethra to the prostate. An "antenna" then sends microwaves through the catheter to heat parts of the prostate. This destroys enlarged tissue. Meanwhile, a cooling system protects the urinary tract from heat damage. TUMT is a low-risk procedure that only takes one hour. Pain medication is used, but no anesthesia. It can relieve bladder obstruction. Men with many medical problems or weak hearts are good candidates for this surgery. There is no blood loss, men can go home the same day and outcomes are good. Still, there are risks for side effects. Urinary tract symptoms occur in about 25 percent of men.

**Catheterization** uses a tube called a catheter in the bladder to drain urine. Catheters can be placed through the urethra or via a small puncture in the bladder above the pubic bone. This option is helpful for men with bladder control problems and a blocked prostate. Still, catheters' benefits are temporary. Infection is a risk. This treatment is best for men who are waiting for medication to work, or waiting for surgery. They also help when there is an infection, or for men toward the end of their lives, when surgery is not advised. There are two types:

- Clean: where the catheter is placed and removed every six to eight hours. This can be done by yourself or by a caregiver. For this, the catheter is removed when the urine flow stops.
- Indwelling: where the catheter stays in the bladder for longer periods of time.

## More Invasive Surgery

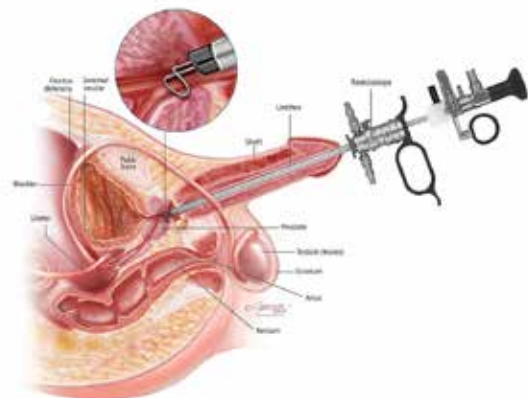
In severe cases of BPH, or when other options fail, more invasive surgery is recommended. Surgery is best if you:

- Are unable to urinate
- Have kidney damage
- Have frequent urinary tract infections
- Have a lot of bleeding
- Have stones in the bladder
- Prefer this type of surgery to less-invasive options

There are several types to choose from. The best option will depend on your health, your doctor's expertise and your personal choice. Options are:

**Photoselective Vaporization (PVP)** is a way to vaporize prostate tissue with a high-powered laser. Most men can have a PVP without problems. The procedure is done as an outpatient or sometimes one day. Good candidates include men with many other medical problems or weak hearts. There are few side effects. After PVP, most men can stop medical therapy.

**Transurethral Resection of the Prostate (TURP)** is a common surgery for BPH and the standard to which all others are compared. TURP uses electric current or laser light to cut and remove tissue. This is done with anesthesia and a tool called a resectoscope inserted through the penis. The resectoscope provides light, irrigating fluid and an electrical loop. The loop cuts tissue and seals blood vessels. The removed tissue flushes into the bladder and out of the body with a catheter. Transurethral vaporization of the prostate (TUVAP) is a newer version of TURP. Instead of the loop, a TUEVAP uses a roller ball to heat and vaporize tissue. This treatment is often successful for a long time. There are no cuts. The procedure is done as an outpatient or sometimes an overnight stay. The catheter may be removed before you go home or at home. As with any surgery, anesthesia poses a risk.



*TURP procedure.*



**Transurethral Incision of the Prostate (TUIP)** is used to widen the urethra if the prostate gland is small but causes a major blockage. For TUIP, the surgeon makes small cuts in the bladder neck, where the urethra joins the bladder and in the prostate. This reduces the pressure of the prostate on the urethra. It improves urination. The procedure is done as an outpatient or sometimes an overnight stay. A catheter is left in your bladder for one to three days after surgery. Some men need follow-up treatment. Men who do not want a complete **prostatectomy** (removal of the prostate) but need surgery are good candidates.

**Transurethral Electro vaporization of the Prostate (TUVP)** is a way to “vaporize” prostate tissue by moving an electrode across the prostate surface. The vaporizing effect goes below the prostate surface. Blood vessels are sealed. With TUVP, the surgeon uses a resectoscope. This treatment requires anesthesia. The resectoscope enters through the penis to the prostate. Men with larger prostates are good candidates. Side effects are minor, with very little bleeding. Often, a one-night stay in the hospital is needed and you go home without a catheter. As with any surgery, anesthesia poses risks.

**Holmium Laser Enucleation of Prostate (HoLEP) or Thulium Laser Enucleation of the Prostate (ThuLEP).** These techniques use a resectoscope to vaporize prostate tissue. Men with larger prostates may be good candidates. After anesthesia, this tool is moved through the urethra to reach the prostate. There is very little bleeding and quick recovery. You will only stay one night in the hospital. A catheter is used, but usually for just one day. As with any surgery, anesthesia poses a risk.

**Aquablation Surgery** uses a computer programmed robotic tool, with multi-level imaging to remove prostate tissue. Patients use anesthesia. The tissue is washed away with a water jet (no heat is involved). Before treatment, an ultrasound is used to map out the specific part of the prostate to be removed. This type of surgery takes about an hour, with at least one-night stay in the hospital. Men may feel rectal or urethral soreness for a few days. It is a good option for men with BPH causing lower-urinary tract symptoms. This is a newer treatment, so it’s not clear if future treatment would be needed.

**Simple Prostatectomy** removes the entire prostate gland with **laparoscopic** or robotic-assisted surgery. It’s important for the surgeon to be skilled at this surgery. This is only offered to men with severe symptoms, who have not had success with other options. This is a long-term cure. You will probably stay in the hospital for a few days after surgery and your activities will be limited for several weeks. A catheter will usually be needed for 1 to 2 weeks while you heal.

### What to Expect After Surgery

For most men, symptoms improve after treatment. Side effects vary with the type of treatment you choose. Most side effects are temporary. It’s important to tell your doctor about any side effect you may experience to get help.

As with any surgery, there are risks for infection and bleeding. Learn what you can do to avoid or manage these problems. Rarely, some men experience incontinence, and/or erectile dysfunction. You should ask about treatments to help with these issues. In some cases, scar tissue may form. Some men need further or new treatment for their BPH symptoms after initial treatment.

After surgery, it can take time for sexual function to return fully. Most experts believe that if you were able to have an erection shortly before surgery, you will be fine after surgery. Your orgasm is not expected to change. In some cases, men can experience an issue where semen enters the bladder rather than out the penis (retrograde ejaculation). Other long-term side effects may also occur.

Again, it’s important to ask your doctor about side effects before you have surgery. If you experience any problems after treatment, tell your doctor and ask for the help you need.

## QUESTIONS TO ASK YOUR DOCTOR

### Frequently Asked Questions & Answers

#### How can BPH affect your life?

In most men, BPH gets worse as you age. If left untreated, it can lead to bladder damage and infection. It can cause blood in the urine. It can even cause kidney damage. Men with BPH should get treated.

#### Can BPH be prevented?

There is no sure way to prevent BPH. Still, losing weight and eating a more plant-based diet (more fruits, vegetables and grains) may prevent or delay symptoms. If you have excess body fat, this can affect hormone levels and cell growth so it helps to improve your diet. Staying active also helps to maintain weight and hormone levels. A simple thing to remember is if it's good for your heart (diet, exercise) then it's good for your prostate. A heart-healthy lifestyle is a prostate healthy lifestyle!

#### How can you prevent a recurrence of BPH?

Once you have been treated, taking medicine continually can prevent BPH symptoms from returning or getting worse. In some men, a different treatment may help. In older men, it may be possible to control the symptoms of BPH until the end of life.

### Questions to Ask Your Doctor about BPH

- Are my symptoms caused by an enlarged prostate gland or something else?
- Should I also get screened for prostate cancer?
- If I decide not to have treatment, will my symptoms get worse?
- What are the risks and benefits of each treatment you recommend for me?
- Why do you recommend one type of surgery over another?
- Do you have a lot of experience with the surgery you recommend? If not, can you recommend someone who does?
- What side effects should I expect from treatment – and how do I manage them?
- What should I do if I experience incontinence?
- What should I do if I experience ED?
- What should I expect over time, after treatment?
- Can you recommend a specialist for a second opinion?

## GLOSSARY

### ACTIVE SURVEILLANCE

Watching with regular physical exams, blood tests and imaging tests on a set schedule. If symptoms begin or problems arise, more treatment will be offered.

### ANESTHESIA

General anesthesia makes you unconscious to feel no pain. You do not remember the procedure later. Local anesthesia numbs an area so you feel no pain while you are awake.

### BENIGN PROSTATIC HYPERPLASIA (BPH)

Enlarged prostate not caused by cancer; symptoms include problems urinating because as the prostate grows, it squeezes the urethra.

### BLADDER

The balloon-shaped pouch of thin, flexible muscle that holds urine in the body.

### COMPUTED TOMOGRAPHY (CT) SCAN

X-rays and computer calculations used to see and measure internal tissue and organs.

### CYSTOSCOPY

Passing a narrow, tube-like device through the urethra to see the inside of the bladder and urinary tract.

### DIGITAL RECTAL EXAMINATION (DRE)

The insertion of a gloved, lubricated finger into the rectum to feel the prostate and check for anything abnormal.

### EJACULATION

The release of semen from the penis during sexual climax (ejaculate).

### ERECTILE DYSFUNCTION (ED)

Problems getting or keeping an erection.

### INCONTINENCE

Loss of bladder control. This may be about urine leakage (urinary) or loss of control with stool (fecal).

### INVASIVE SURGERY

Surgery that involves larger cuts into the body to complete the task. Minimally invasive or non-invasive surgery uses tools to make tiny cuts in the skin — or no cuts at all.

### LAPAROSCOPIC SURGERY

Surgery done with thin, tube-like instruments that allow several small incisions to be made, rather than one large incision.

### MAGNETIC RESONANCE IMAGING (MRI)

Radio waves and a strong magnetic field used to make highly detailed pictures of organs and tissue in the body.

### PENIS

The male organ used for sex and going to the bathroom.

### PROSTATE

In men, a walnut-shaped gland below the bladder that surrounds the urethra and makes fluid for semen.

### PROSTATECTOMY

Removes the entire prostate gland with laparoscopic or robotic assisted surgery.

### PROSTATITIS

Inflammation or infection of the prostate.

### RECTUM

The lower part of the bowel ending in the anal opening.

### SEMEN

The fluid that protects and energizes the sperm; also known as seminal fluid or ejaculate fluid.

### URETHRA

A narrow tube through which urine leaves the body. In males, semen travels through this tube during ejaculation. It extends from the bladder to the tip of the penis.

### URINE

A liquid, usually yellow in color, made by the kidneys. It contains wastes and water.

## About the Urology Care Foundation

The Urology Care Foundation is the world's leading urologic Foundation—and the official Foundation of the American Urological Association. We provide information for those actively managing their urologic health and those ready to make healthy changes in their lives. Our information is based on the American Urological Association resources and is reviewed by medical experts.

To learn more about different urologic issues, visit **UrologyHealth.org/UrologicConditions**. Go to **UrologyHealth.org/FindAUrologist** to find a doctor near you.

This information is not a tool for self-diagnosis or a substitute for professional medical advice. It is not to be used or relied on for that purpose. Please talk to your urologist or health care provider about your health concerns. Always consult a health care provider before you start or stop any treatments, including medications.

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