

UNDERSTANDING PROSTATE CHANGES



A HEALTH GUIDE FOR MEN

PATIENT
&family
EDUCATION

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health
National Cancer Institute

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Introduction to the Prostate

You may be reading this booklet because you are having prostate problems. The booklet can help answer your questions about prostate changes that happen with age, such as:

- What are common prostate changes?
- How are these changes treated?
- What do I need to know about testing for prostate changes, including cancer?

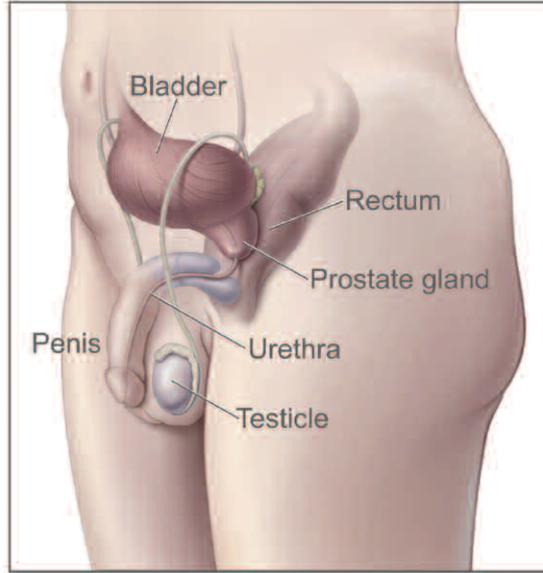
This booklet can give you basic information about common prostate changes. If you are making decisions about prostate cancer treatment, there are other resources available. See the *For More Information* section on page 29.

Important words are in bold, and their meanings are listed in the *Words to Know* section on page 31.

What is the prostate?

The **prostate** is a small gland in men. It is part of the male **reproductive system**.

The prostate is about the size and shape of a walnut. It sits low in the **pelvis**, below the **bladder** and just in front of the **rectum**. The prostate helps make **semen**, the milky fluid that carries **sperm** from the **testicles** through the **penis** when a man **ejaculates**.



The prostate surrounds part of the **urethra**, a tube that carries **urine** out of the bladder and through the penis.

How does the prostate change as you get older?

The prostate gland surrounds the tube (urethra) that passes urine. This can be a source of problems as a man ages because:

- The prostate tends to grow bigger with age and may squeeze the urethra (see drawing on page 10) or
- A **tumor** can make the prostate bigger

These changes, or an infection, can cause problems passing urine. Sometimes men in their 30s and 40s may begin to have these **urinary** symptoms and need medical attention. For others, symptoms aren't noticed until much later in life. Be sure to tell your doctor if you have any urinary symptoms.

Tell your doctor if you:

- Are passing urine more during the day
- Have an urgent need to pass urine
- Have less urine flow
- Feel burning when you pass urine
- Need to get up many times during the night to pass urine

What prostate changes should you be aware of?

Growing older raises your risk of prostate problems. The three most common prostate problems are:

- Infection (**prostatitis**)
- Enlarged prostate (**BPH, or benign prostatic hyperplasia**)
- Prostate cancer

One change does not lead to another. For example, having prostatitis or an enlarged prostate does not raise your chance of prostate cancer. It is also possible for you to have more than one condition at the same time.

Most men have prostate changes that are *not* cancer.

What are common tests for prostate changes?

Abnormal findings from any of these tests can help diagnose a problem and suggest the next steps to take:

- **DRE** (digital rectal exam)—a test to feel the prostate
- **PSA** (prostate-specific antigen) test—a blood test
- **Biopsy**—a test to check for cancer

See the *Types of Tests* section on page 23.

Prostate Changes That Are Not Cancer

What is prostatitis and how is it treated?

Prostatitis (*pronounced "PRAH-stuh-TYE-tis"*) is an inflammation or infection of the prostate gland. It affects at least half of all men at some time in their lives. Having this condition does not increase your risk of any other prostate disease.

Prostatitis Symptoms

- Trouble passing urine or pain when passing urine
- A burning or stinging feeling when passing urine
- Strong, frequent urge to pass urine, even when there is only a small amount of urine
- Chills and high fever
- Low back pain or body aches
- Pain low in the belly, groin, or behind the **scrotum**
- Rectal pressure or pain
- Urethral discharge with bowel movements
- **Genital** and rectal throbbing
- Sexual problems and loss of sex drive
- Blocked urine
- Painful ejaculation (sexual climax)

Prostatitis is not contagious. It is not spread through sexual contact. Your partner cannot catch this infection from you.

Several tests, such as DRE and a urine test, can be done to see if you have prostatitis. Getting the right diagnosis of your exact type of prostatitis is the key to getting the best treatment. Even if you have no symptoms, you should follow your doctor's suggestion to complete treatment.

There are four types of prostatitis:

■ Acute bacterial prostatitis

This infection comes on suddenly (**acute**) and is caused by bacteria. Symptoms include severe chills and fever. There is often blood in the urine. You must go to the doctor's office or emergency room for treatment. It's the least common of the four types, yet it's the easiest to diagnose and treat.

Treatment: Most cases can be cured with a high dose of **antibiotics**, taken for 7 to 14 days, and then lower doses for several weeks. You may also need drugs to help with pain or discomfort.

■ Chronic bacterial prostatitis

Also caused by bacteria, this condition doesn't come on suddenly, but it can be bothersome. The only symptom you may have is bladder infections that keep coming back. The cause may be a defect in the prostate that lets bacteria collect in the urinary tract.

Treatment: Antibiotic treatment over a longer period of time is best for this type. Treatment lasts from 4 to 12 weeks.

This type of treatment clears up about 60 percent of cases. Long-term, low-dose antibiotics may help relieve symptoms in cases that won't clear up.

■ Chronic prostatitis or chronic pelvic pain syndrome

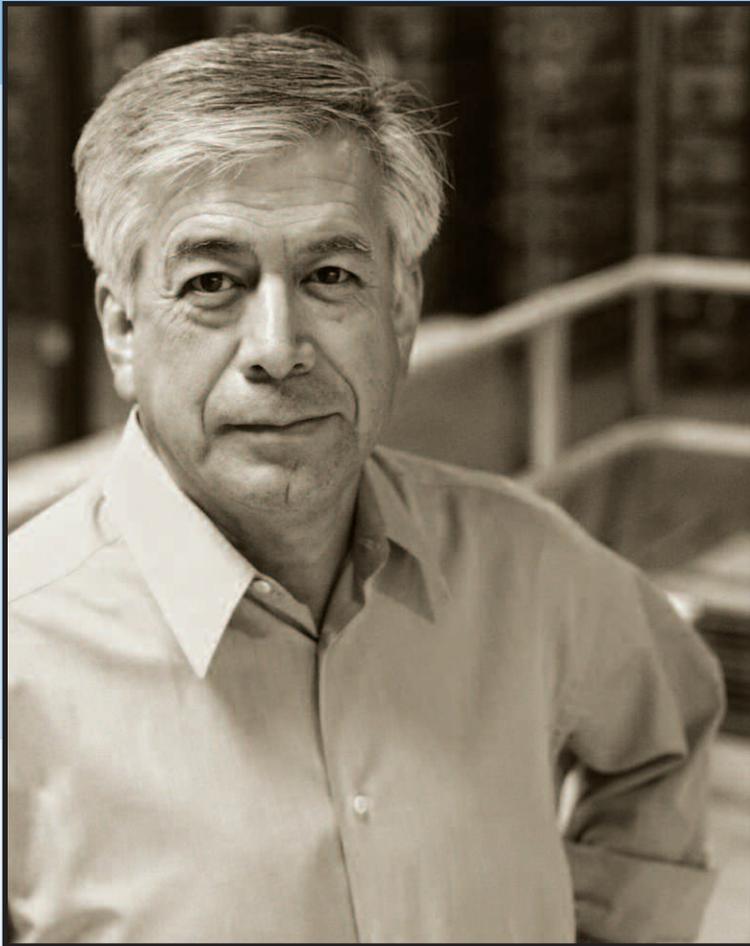
This disorder is the most common but least understood form of the disease. Found in men of any age from late teens to elderly, its symptoms go away and then return without warning. There can be pain or discomfort in the groin or bladder area.

Treatment: There are several different treatments for this problem, based on your symptoms. These include antibiotics and other medicines, such as **alpha-blockers**. Alpha-blockers relax muscle tissue in the prostate to make passing urine easier.

■ Asymptomatic inflammatory prostatitis

You usually don't have symptoms with this condition. It is often found when your doctor is looking for other conditions like **infertility** or prostate cancer. If you have this problem, often your PSA test (see page 24) will show a higher number than normal. It does not necessarily mean that you have cancer.

Treatment: Men with this condition are usually given antibiotics for 4 to 6 weeks, and then have another PSA test.



“Changes happen so slowly that you don’t even realize they’re happening.”

What is enlarged prostate or BPH?

BPH stands for benign prostatic hyperplasia (*pronounced "be-NINE prah-STAT-ik HY-per-PLAY-zha"*).

Benign means "not cancer," and **hyperplasia** means too much growth. The result is that the prostate becomes enlarged. BPH is *not* linked to cancer and does *not* raise your chances of getting prostate cancer—yet the symptoms for BPH and prostate cancer can be similar.

BPH Symptoms

BPH symptoms usually start after the age of 50. They can include:

- Trouble starting a urine stream or making more than a dribble
- Passing urine often, especially at night
- Feeling that the bladder has not fully emptied
- A strong or sudden urge to pass urine
- Weak or slow urine stream
- Stopping and starting again several times while passing urine
- Pushing or straining to begin passing urine

At its worst, BPH can lead to:

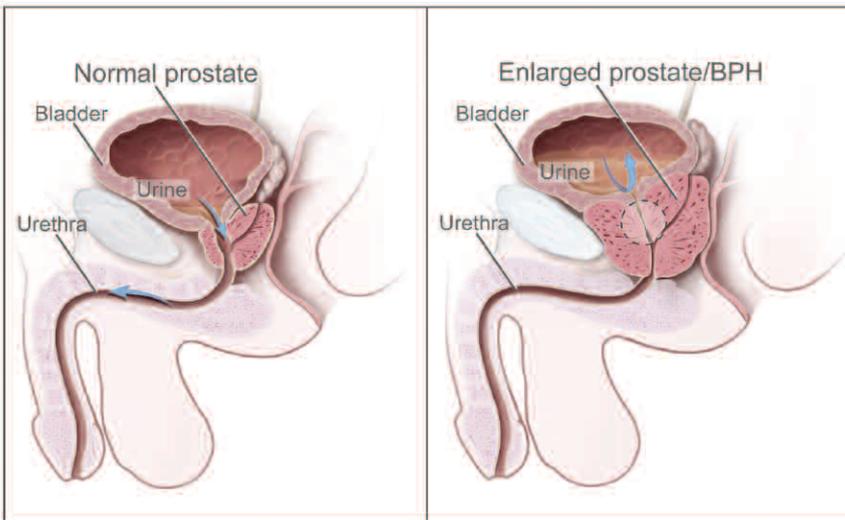
- A weak bladder
- Backflow of urine causing bladder or kidney infections
- Complete block in the flow of urine
- Kidney failure

BPH affects most men as they get older. It can lead to urinary problems like those with prostatitis. By age 60, many men have signs of BPH. By age 70, almost all men have some prostate enlargement.

The prostate starts out about the size of a walnut. By the time a man is 40, it may have grown slightly larger, to the size of an apricot. By age 60, it may be the size of a lemon.

As a normal part of aging, the prostate enlarges and can press against the bladder and the urethra. This can slow down or block urine flow. Some men might find it hard to start a urine stream, even though they feel the need to go. Once the urine stream has started, it may be hard to stop. Other men may feel like they need to pass urine all the time or are awakened during sleep with the sudden need to pass urine.

Early BPH symptoms take many years to turn into bothersome problems. These early symptoms are a cue to see your doctor.



Urine flow of normal (left) and enlarged prostate (right). In diagram on the left, urine flows freely. On the right, urine flow is affected because of the prostate pressing on the bladder and urethra.

How can BPH be treated?

About half the men with BPH eventually have symptoms that are bothersome enough to need treatment. BPH cannot be cured, but drugs or surgery can often relieve its symptoms. BPH symptoms do not always grow worse.

There are three ways to manage BPH:

- Watchful waiting (regular follow-up with your doctor)
- Drug therapy
- Surgery

Talk with your doctor about the best choice for you. Your symptoms may change over time, so be sure to tell your doctor about any new changes.

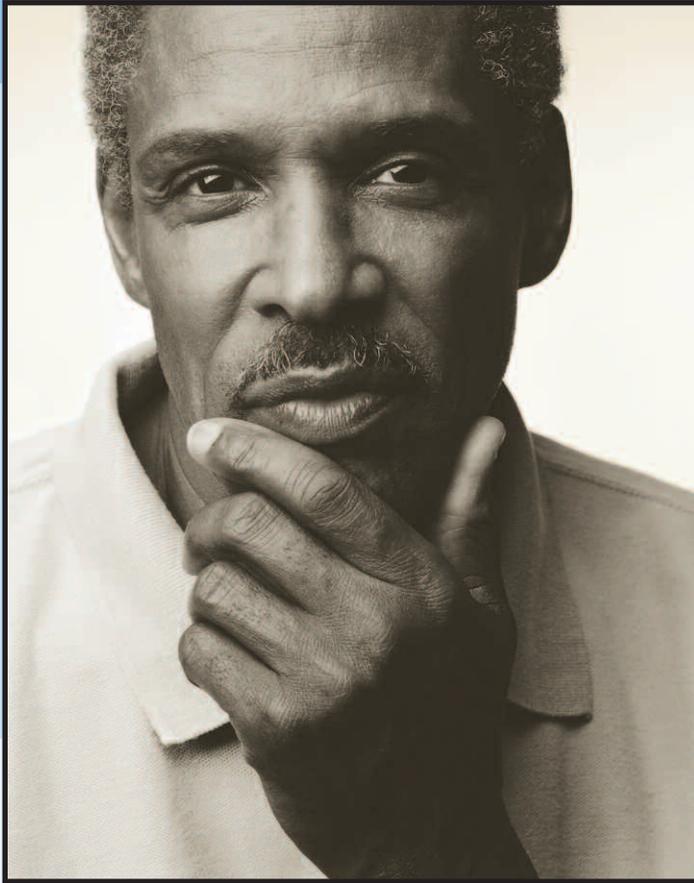
Watchful waiting

Men with mild symptoms of BPH who do not find them bothersome often choose this approach.

Watchful waiting means getting annual checkups. The checkups can include DREs and other tests (see page 23). Treatment is started only if symptoms become too much of a problem.

If you choose to live with symptoms, these simple steps can help:

- Limit drinking in the evening, especially drinks with alcohol or caffeine.
- Empty the bladder all the way when you pass urine.
- Use the restroom often. Don't wait for long periods without passing urine.



“My doctor and I decide visit by visit about how long I should stay on watchful waiting for my BPH.”

Some medications can make BPH symptoms worse, so talk with your doctor or pharmacist about any medicines you are taking such as:

- Over-the-counter cold and cough medicines (especially antihistamines)
- Tranquilizers
- **Antidepressants**
- Blood pressure medicine

Drug therapy

Millions of American men with mild-to-moderate BPH symptoms have chosen prescription drugs over surgery since the early 1990s.

There are two main types of drugs used. One type relaxes muscles near the prostate while the other type shrinks the prostate gland. There is evidence that shows that taking both drugs together may work best to keep BPH symptoms from getting worse.

Alpha-blockers

These drugs help relax muscles near the prostate to relieve pressure and let urine flow more freely, but they don't shrink the size of the prostate. For many men, the drug can improve urine flow and reduce symptoms within days. Possible side effects include dizziness, headache, and fatigue.

5 alpha-reductase inhibitor

This drug, known as **finasteride**, shrinks the prostate. It relieves symptoms by blocking an **enzyme** that acts on the male hormone, testosterone, to boost organ growth. When the enzyme is blocked, growth slows down. This helps shrink the prostate, reduce blockage, and limit the need for surgery.

Taking this drug for at least 6 months to 1 year can increase urine flow and reduce your symptoms. It seems to work best for men with very large prostates. You must continue to take the drug to prevent symptoms from coming back.

This drug is also used to treat baldness in men. It can cause these side effects in a small percentage of men:

- Decreased interest in sex
- Trouble getting or keeping an **erection**
- Smaller amount of semen with ejaculation

It's important to note that taking this drug can lower your PSA test levels. There is also evidence that finasteride lowers the risk of getting prostate cancer, but whether it lowers the risk of dying from prostate cancer is still unclear.

BPH Medications			
Category	Activity	Generic Name	Brand Name
Alpha-blockers	Relax muscles near prostate	doxazosin	Cardura
		tamsulosin	Flomax
		terazosin	Hytrin
		prazosin	Minipres
5 alpha-reductase inhibitor	Slows prostate growth, shrinks prostate	finasteride	Proscar or Propecia

BPH surgery

The number of prostate surgeries has gone down over the years. But operations for BPH are still one of the most common surgeries for American men. Surgery is used when symptoms are severe or drug therapy has not worked well.

Types of surgeries include:

- **TURP (transurethral resection of the prostate)** is the most common surgery for BPH. It accounts for 90 percent of all BPH surgeries. It takes about 90 minutes. The doctor passes an instrument through the urethra and trims away extra prostate tissue. A **spinal block** is used to numb the area. Tissue is sent to the laboratory to check for prostate cancer.

TURP generally avoids the two main dangers linked to other prostate surgeries:

- Incontinence (not being able to hold in urine)
- Impotence (not being able to have an erection)

The recovery period for TURP is much shorter as well.

- **TUIP (transurethral incision of the prostate)** is similar to TURP. It is used on slightly enlarged prostate glands. The surgeon places one or two small cuts in the prostate. This relieves pressure without trimming away tissue. It has a low risk of side effects. Like TURP, this treatment helps with urine flow by widening the urethra.
- **TUNA (transurethral needle ablation)** burns away excess prostate tissue using radio waves. It helps with urine flow, relieves symptoms, and may have fewer side effects than TURP. Most men need a **catheter** to drain urine for a period of time after the procedure.

- **TUMT (transurethral microwave thermotherapy)** uses microwaves sent through a catheter to destroy excess prostate tissue. This can be an option for men who should not have major surgery because they have other medical problems.
- **TUVP (transurethral electroevaporation of the prostate)** uses electrical current to vaporize prostate tissue.
- **Open prostatectomy** means the surgeon removes the prostate through a cut in the lower abdomen. This is done only in very rare cases when obstruction is severe, the prostate is very large, or other procedures can't be done. General or spinal anesthesia is used and a catheter remains for 3 to 7 days after the surgery. This surgery carries a higher risk of complications than medical treatment. Tissue is sent to the laboratory to check for prostate cancer.

Be sure to discuss options with your doctor and ask about the potential short- and long-term benefits and risks with each procedure. A list of questions to ask is on page 28.

Prostate Cancer

Things to know

Prostate cancer means that cancer cells form in the tissues of the prostate. It is the most common cancer in American men after skin cancer.

Prostate cancer tends to grow slowly compared with most other cancers. Cell changes may begin 10, 20, or 30 years before a tumor gets big enough to cause symptoms. Eventually, cancer cells may spread (**metastasize**) throughout the body. By the time symptoms appear, the cancer may be more advanced.

By age 50, very few men have symptoms of prostate cancer, yet some **precancerous** or cancerous cells are present. More than half of all American men have some cancer in their prostate glands by the age of 80.

Most of these cancers never pose a problem. They either give no signs or symptoms or never become a serious threat to health.

A much smaller percentage of men are actually treated for prostate cancer. Most men with prostate cancer do not die from this disease.

- About 16 percent of American men are diagnosed with prostate cancer at some point in their lives.
- Eight percent have serious symptoms.
- Three percent die of the disease.



“When I first learned I might have a prostate problem, I was afraid it was cancer.”

Symptoms

Prostate cancer can sit quietly for years. That means most men with the disease have no obvious symptoms. When symptoms finally appear, they may be a lot like the symptoms of BPH.

Prostate Cancer Symptoms

- Trouble passing urine
- Frequent urge to pass urine, especially at night
- Weak or interrupted urine stream
- Pain or burning when passing urine
- Blood in the urine or semen
- Painful ejaculation
- Nagging pain in the back, hips, or pelvis

Prostate cancer can spread to the **lymph nodes** of the pelvis. Or it may spread throughout the body. It tends to spread to the bones. So bone pain, especially in the back, can be another symptom.

Risk factors

There are some risk factors linked to prostate cancer. A risk factor is something that can raise your chances of having a problem or disease. Having one or more risk factors doesn't mean that you will get prostate cancer. It just means that your risk of disease is greater.

- **Age.** Being 50 or older increases risk of prostate cancer.
- **Race.** African-American men are at highest risk of prostate cancer—it tends to start at younger ages and grows faster than

in men of other races. After African-American men, it is most common among white men, followed by Hispanic and Native American men. Asian-American men have the lowest rates of prostate cancer. Aside from race, all men can have other prostate cancer risk factors (aging, family history, and diet). See the *For More Information* section to request the booklet about African-American men and prostate cancer screening.

- **Family history.** Prostate cancer risk is 2 to 3 times higher for men whose fathers or brothers have had the disease. For example, risk is about 10 times higher for a man who has 3 immediate family members with prostate cancer. The younger a man is when he has prostate cancer, the greater the risk for his male family members. Prostate cancer risk also appears to be slightly higher for men whose mothers or sisters have had breast cancer.
- **Diet.** The risk of prostate cancer seems to be higher for men eating high-fat diets with few fruits and vegetables.

Can prostate cancer be prevented?

National research studies are looking at how prostate cancer can be prevented. There is some proof that the drug finasteride lowers your risk of getting prostate cancer, but whether it decreases the risk of dying of prostate cancer is still unclear.

To find out more, see the *For More Information* section on page 29.

Prostate Cancer Screening

Screening means testing for cancer before you have any symptoms. A screening test can often help find cancer at an early stage. When found early, cancer is less likely to have spread and may be easier to treat. By the time symptoms appear, the cancer may have started to spread. Remember, even if your doctor suggests prostate cancer screening, this doesn't necessarily mean that you have cancer.

Screening tests are most useful when they have been proven to find cancer early and lower a person's chance of dying from cancer. For prostate cancer, doctors don't yet know these answers and more research is being done.

- Large research studies, with thousands of men, are going on now to study prostate cancer screening. The National Cancer Institute is studying the combination of PSA testing and DRE as a way to get more accurate results.
- Some cancers never cause symptoms or become life-threatening. If they are found by a screening test, the cancer may then be treated. For prostate cancer in its early stages, it isn't known whether treatment would help you live longer than if no treatment were given when a screening test detects prostate cancer.

Talk with your doctor about your risk of prostate cancer and your need for screening tests.

Talking to Your Doctor

Different kinds of doctors and other health care professionals manage prostate health. They can help you find the best care, answer your questions, and address your concerns. These health care professionals include:

- Family doctors and internists
- Physician assistants (PAs) and nurse practitioners (NPs)
- **Urologists**, who are experts in diseases of the male reproductive and urinary tract systems
- Urologic oncologists, who are experts in treating cancers of the male urinary and reproductive systems such as prostate cancer
- Radiation oncologists, who use radiation therapy to kill cancer cells
- Medical oncologists, who treat cancers with medications such as hormone treatments and chemotherapy
- **Pathologists**, who are doctors who find diseases by studying cells and tissues under a microscope

View these professionals as your partners—expert advisors and helpers in your health care. Talking openly with your doctors can help you learn more about your prostate changes and the tests to expect.

Types of Tests

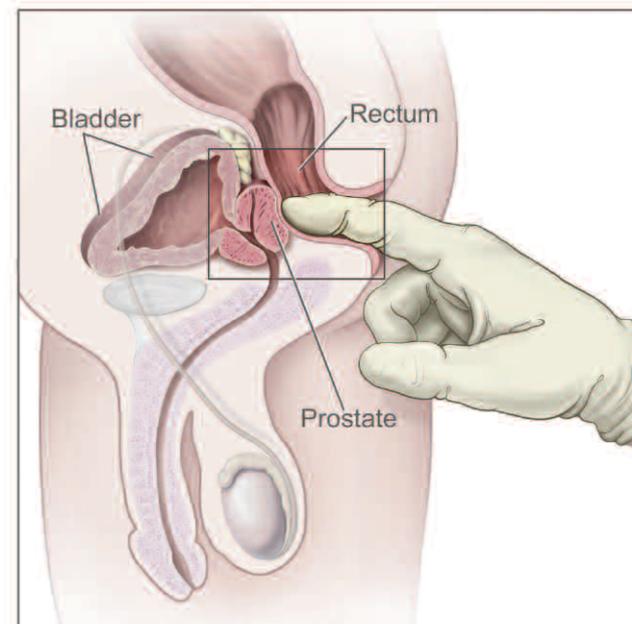
These types of tests are most often used to check the prostate:

Health history and current symptoms

This first step lets your doctor hear and understand the "story" of your prostate concerns. You'll be asked about whether you have symptoms, how long you've had them, and how much they affect your lifestyle. Your health history also includes any risk factors, pain, fever, or trouble passing urine. You may be asked to give a urine sample for testing.

Digital rectal exam

DRE is the standard way to check the prostate. With a gloved and lubricated finger, your doctor feels the prostate from the rectum. The test lasts about 10–15 seconds.



This exam checks for:

- The size, firmness, and texture of the prostate
- Any hard areas, lumps, or growth spreading beyond the prostate
- Any pain caused by touching or pressing the prostate

The DRE allows the doctor to feel only one side of the prostate. A PSA test is another way to help your doctor check your prostate.

PSA (Prostate-Specific Antigen) test

PSA is a protein made by normal cells and prostate cancer cells. It is found in the blood and can be measured with a blood test. PSA tests are often used to follow men *after* prostate cancer treatment. PSA testing is still being studied to see if finding cancer early lowers the risk of dying from prostate cancer.

PSA levels can rise if a man has prostate cancer, but a high PSA is not proof of cancer. Other things can also make PSA levels go up. These may give a **false positive** test result. These include having BPH or prostatitis, or if the prostate gland is disturbed in any way (riding a bicycle or motorcycle, a DRE, orgasm within the past 24 hours, and prostate biopsy or surgery can disturb the prostate). Also, some prostate glands naturally produce more PSA than others. PSA levels go up with age. African-American men tend to have higher PSA levels in general than men of other races.

Researchers are trying to find more answers about:

- The PSA test's ability to tell cancer from benign prostate problems
- The best thing to do if a man has a high PSA level

For now, men and their doctors use PSA readings over time as a guide to see if more follow-up is needed.

What do PSA results mean?

PSA levels are measured in terms of units per volume of fluid tested. Doctors often use a score of 4 **nanograms (ng)** or higher as the trigger for further tests, such as a prostate biopsy.

Your doctor may monitor your PSA velocity, which means looking at the rate of change in your PSA levels over time. Rapid increases in PSA readings can suggest cancer. If you have a mildly elevated PSA, you and your doctor may choose to check PSA levels on a scheduled basis and watch for any change in the PSA velocity.

Prostate biopsy

If your symptoms or test results suggest cancer, your doctor will refer you to a specialist (a urologist) for a prostate biopsy. A biopsy is usually done in the doctor's office.

For a biopsy, small tissue samples are taken directly from the prostate. Your doctor will take samples from several areas of the prostate gland. This can help lower the chance of missing any areas of the gland that may have cancer cells. Like other cancers, doctors can only diagnose prostate cancer by looking at tissue under a microscope.

Most men who have biopsies after routine exams do not have cancer.

“There is no magic PSA level below which a man can be assured of having no risk of prostate cancer nor above which a biopsy should automatically be performed. A man's decision to have a prostate biopsy requires a thoughtful discussion with his physician, considering not only the PSA level, but also his other risk factors, his overall health status, and how he perceives the risks and benefits of early detection.”

—Dr. Howard Parnes, Chief of the Prostate and Urologic Cancer Research Group, Division of Cancer Prevention, National Cancer Institute

Deciding about repeat biopsy

A test that can help your doctor decide if you need a repeat biopsy is called **free PSA**. This test is used for men who have higher PSA values. The test looks at a form of PSA in the blood. Free PSA is linked to BPH but not cancer.

Free PSA is figured as a percentage of the total PSA:

- If both *total* PSA and free PSA are higher than normal, this suggests BPH rather than cancer.
- If *regular* PSA is high but free PSA is *not*, cancer is more likely. More testing should be done.

Free PSA may help tell what kind of prostate problem you have. It can be a guide for you and your doctor to choose the right treatment. You and your doctor should talk about your personal risk and free PSA results. Then you can decide together whether to have follow-up biopsies and, if so, how often.

If a biopsy is positive

A positive biopsy means prostate cancer is present. A pathologist will check your biopsy sample for cancer cells and will give a **Gleason score**. The Gleason score ranges from 2 to 10 and describes how likely it is that a tumor will spread. The lower the number, the less likely the tumor is aggressive and may spread.

Treatment options depend on the stage (or extent) of the cancer (stages range from 1 to 4), Gleason score, PSA level, and your age and general health. These items will be available from your doctor and are listed on your pathology report.

Reaching a decision about treatment of your prostate cancer is a complex process. Many men find it helpful to talk with their doctors, family, friends, and other men who have faced similar decisions. There are many organizations that can provide more information and support to you, your partner, and family.



“While it’s important to make your own decision about cancer screening, everybody should consider getting a second opinion before getting something like a biopsy.”

It is a good idea to get a copy of your pathology report from your doctor and carry it with you as you talk with your health care providers.

Checklist of Questions for Your Doctor

- What type of prostate problem do I have?
- Is more testing needed and what will it tell me?
- If I decide on watchful waiting, what changes in my symptoms should I look for and how often should I be tested?
- What type of treatment do you recommend for my prostate problem?
- For men like me, has this treatment worked?
- How soon would I need to start treatment and how long would it last?
- Do I need medicine and how long would I need to take it before seeing improvement in my symptoms?
- What are the side effects of the medicine?
- Are there other medicines that could interfere with this medication?
- If I need surgery, what are the benefits and risks?
- Would I have any side effects from surgery that could affect my quality of life?
- Are these side effects temporary or permanent?
- How long is recovery time after surgery?
- Will I be able to fully return to normal?
- How will this affect my sex life?
- How often should I visit the doctor to monitor my condition?

For More Information

National Cancer Institute

You can find out more from these free NCI services.

Cancer Information Service (CIS)

Toll-free1-800-4-CANCER (1-800-422-6237)

TTY1-800-332-8615

NCI Onlinewww.cancer.gov

Chat Onlinewww.cancer.gov and click on “Need Help?”

Free booklets that are available include:

- *What You Need To Know About Prostate Cancer*
- *Know Your Options: Understanding Treatment Choices for Prostate Cancer*

Other Federal Resources

Centers for Disease Control and Prevention

Toll-free1-888-842-6355

FAX1-770-488-4760

E-mailcancerinfo@cdc.gov

Online.....www.cdc.gov/cancer/prostate

Free booklets that are available include:

- *Prostate Cancer Screening: A Decision Guide*
- *Prostate Cancer Screening: A Decision Guide for African Americans*

Medicare

For more information about Medicare benefits, contact:

Toll-free1-800-MEDICARE (1-800-633-4227)

Online.....www.medicare.gov

National Kidney and Urologic Diseases Information Clearinghouse

Toll-free1-800-891-5390

Online.....www.niddk.nih.gov

Words to Know

acute: Symptoms or signs that begin and get worse quickly. The opposite of acute is chronic.

alpha-blockers: Drugs that relax muscles in the prostate. Alpha-blockers are used to treat BPH.

alpha-reductase inhibitor (*al-fuh reh-DUK-tays in-HIH-buh-tur*): A drug that shrinks the prostate gland, used to treat BPH.

antibiotic (*an-tih-by-AH-tik*): A drug used to treat infections caused by bacteria and other microorganisms.

antidepressants: Drugs used to treat depression.

asymptomatic (*AY-simp-tum-AT-ik*): Having no signs or symptoms of disease.

benign (*beh-NINE*): Not cancerous. Benign tumors do not spread to tissues around them or to other parts of the body.

biopsy (*BY-ahp-see*): To remove cells or tissues from the body and examine them under a microscope. When doctors remove only a sample of tissue, it is called an incisional biopsy or core biopsy. When a whole tumor or lesion is removed, it is called an excisional biopsy. When doctors use a needle to remove a sample of tissue or fluid, it is called a needle biopsy or fine-needle biopsy.

bladder: The organ that stores urine.

BPH: BPH stands for benign prostatic hyperplasia (be-NINE prah-STAT-ik HY-per-PLAY-zha). BPH is when an overgrowth of prostate tissue pushes against the urethra and the bladder, blocking the flow of urine. BPH is a benign (not cancerous) condition. Also called benign prostatic hypertrophy.

catheter (*KATH-ih-ter*): A flexible tube used to deliver fluids into or withdraw fluids from the body.

chronic (*KRAH-nik*): A disease or condition that stays bad or gets worse over a long period of time.

DRE: DRE stands for digital rectal exam. An exam where a doctor puts a lubricated, gloved finger into the rectum to feel for abnormalities.

ejaculate (*ee-JAK-yuh-layt*): To release semen through the penis. This happens when a man has an orgasm.

enzyme (*EN-zym*): A protein that speeds up chemical reactions in the body.

erection: When the penis temporarily gets longer, thicker, and harder. This happens because the nervous system increases the blood flow to the veins and spongy tissues of the penis.

false positive: A test result that says a condition exists, when in fact it does not.

finasteride: A drug used to reduce the amount of male hormone (testosterone) produced by the body.

free PSA: Free PSA stands for prostate-specific antigen type II assay. This is a test that reports the percentage of free PSA to total PSA in a man's blood. PSA (prostate-specific antigen) is a chemical in all men's blood. Free PSA is PSA that is not attached to another chemical. Free PSA is linked to BPH, but not to cancer. So measuring free PSA helps to tell what kind of prostate problem a man has.

genital (*JEN-uh-tul*): The area around male and female sex organs.

Gleason score (*GLEE-sun*): A system of grading prostate cancer cells based on how they look under a microscope. Gleason scores range from 2 to 10 and indicate how likely it is that a tumor will spread. A low Gleason score means the cancer cells are similar to normal prostate cells and are less likely to spread; a high Gleason score means the cancer cells are very different from normal and are more likely to spread.

hyperplasia (*high-pur-PLAY-zha*): An abnormal increase in the number of cells in an organ or tissue.

infertility: The inability to produce children.

lymph (*limf*) **node:** Part of the lymphatic system. A lymph node is a rounded mass surrounded by a sac of connecting tissue. Lymph nodes are found along lymphatic vessels. Lymph nodes filter lymph and store white blood cells. Also called a lymph gland.

metastasis (*meh-TAS-tuh-size*): To spread from one part of the body to another. When cancer cells metastasize and form secondary tumors, the cells in the new tumor are like those in the original (primary) tumor.

nanogram (*NAN-uh-gram*): A measure of weight. One nanogram weighs a billion times less than one gram, and almost a trillion times less than a pound.

pathologist (*pa-THOL-o-jist*): A doctor who identifies diseases by studying cells and tissues under a microscope.

pelvis: The lower part of the belly, between the hip bones.

penis (*PEE-nus*): An external male reproductive organ. It contains a tube called the urethra, which carries semen and urine to the outside of the body.

precancerous (*PRE-KAN-ser-us*): Describes a condition that may (or is likely to) become cancer. Also called premalignant.

prostate (*PRAH-stayt*): A gland in the male reproductive system just below the bladder. It makes a fluid that forms part of semen. The prostate surrounds part of the urethra, the tube that empties the bladder.

prostatitis (*prah-stuh-TYE-tis*): Inflammation of the prostate gland.

PSA: PSA stands for prostate-specific antigen (*PRAH-stayt speh-SIH-fik AN-tih-gin*). A substance produced by the prostate that may be found in an increased amount in the blood of men who have prostate cancer, benign prostatic hyperplasia, or infection or inflammation of the prostate.

PSA test: A blood test to measure PSA, a substance produced by prostate gland cells. This level rises when there is a problem with the prostate gland. But the PSA test cannot tell whether the problem is cancer or another condition.

rectum: The last several inches of the large intestine, ending at the anus.

reproductive system: The reproductive system in men includes the prostate, the testicles, and the penis.

scrotum (*SKROH-tum*): In men, the external sac that contains the testicles.

semen: The fluid that is released through the penis during orgasm.

sperm: The male reproductive cell, formed in the testicle. A sperm joins with an egg to form an embryo.

spinal block: A type of anesthesia that numbs the lower half of the body.

testicles (*TES-tih-kuls*): The two egg-shaped glands found inside the scrotum. They produce sperm and male hormones. Also called testes.

tumor (*TOO-mer*): An abnormal mass of tissue that results from excessive cell division. Tumors may be benign (not cancerous) or malignant (cancerous). Also called neoplasm.

urethra (*yoo-REE-thra*): The tube through which urine leaves the body. It empties urine from the bladder.

urinary (*YOOR-in-air-ee*): Having to do with urine or the organs of the body that produce and get rid of urine.

urine (*YOOR-in*): Fluid containing water and waste products. Urine is made by the kidneys, stored in the bladder, and leaves the body through the urethra.

urologist (*yoo-RAH-luh-jist*): A doctor who specializes in diseases of the urinary organs in females and the urinary and sex organs in males.



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