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Patient education: Prostate cancer screening (Beyond the Basics)

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PROSTATE CANCER SCREENING OVERVIEW

Prostate cancer screening involves testing for prostate cancer in men who have no symptoms of the disease. This testing can find cancer at an early stage. However, medical experts agree that prostate cancer screening should not be routinely ordered for all men and that screening can lead to both benefits and harms.

This article is designed to review the advantages and disadvantages of prostate cancer screening. You should talk with your health care provider to decide what is best in your individual situation.

WHAT IS PROSTATE CANCER?

Prostate cancer is a cancer of the prostate, a small gland in men that is located below the bladder and above the rectum ([figure 1](#)). The prostate produces fluid that helps carry sperm during ejaculation.

Although many men are diagnosed with prostate cancer, most of them do not die from their cancer. Prostate cancer often grows so slowly that many men die of other causes before they even develop symptoms of prostate cancer.

PROSTATE CANCER RISK FACTORS

Age — All men are at risk for prostate cancer, but the risk greatly increases with older age. Prostate cancer is rarely found in men younger than 50 years old.

Ethnic background — African American men develop prostate cancer more often than white and Hispanic men. African American men also are more likely to die of prostate cancer than white or Hispanic men.

Family medical history — Men who have a first-degree relative (a father or brother) with prostate cancer are more likely to develop the disease. Men with female relatives with breast cancer related to the breast cancer gene (*BRCA*) may also be more likely to develop prostate cancer.

Diet — A diet high in animal fat or low in vegetables may increase a man's risk of prostate cancer.

PROSTATE CANCER SCREENING TESTS

Prostate cancer screening involves blood test that measures prostate-specific antigen (PSA).

Prostate-specific antigen (PSA) — PSA is a protein produced by the prostate. The PSA test measures the amount of PSA in a sample of blood. Although many men with prostate cancer have an elevated PSA concentration, a high level does not necessarily mean there is a cancer.

The most common cause for an elevated PSA is benign prostatic hyperplasia (BPH), a noncancerous enlargement of the prostate. Other causes include prostate infection (prostatitis), trauma (bicycle riding), and sexual activity. You should avoid ejaculating or riding a bike for at least 48 hours before having a PSA test. (See "[Patient education: Benign prostatic hyperplasia \(BPH\)\(Beyond the Basics\)](#)".)

Rectal examination — A rectal examination is sometimes recommended, along with measurement of the PSA, to screen for prostate cancer. However, studies have not shown that rectal examination is an effective screening test for prostate cancer.

If the PSA test is positive — A positive PSA test is not a reason to panic; noncancerous conditions are the most common causes for an abnormal test, particularly for PSA tests. On the other hand, a positive test should not be ignored.

The first step in evaluating an elevated PSA is usually to repeat the test. In some cases, you may be treated for a prostate infection before repeating the test. Even if you are not treated for infection, you should avoid ejaculating and riding a bike for at least 48 hours before repeating the test. If the PSA remains elevated, a prostate biopsy or other testing is usually recommended.

Prostate biopsy — A prostate biopsy involves having a rectal ultrasound and use of a needle to obtain tissue samples from the prostate gland. The biopsy is usually performed in the office by a urologist (a doctor who specializes in treatment of urinary, bladder, and prostate issues). After the procedure, most men feel sore and you may see some blood in the urine or semen. Biopsies can rarely cause serious infections. Sometimes biopsies are guided by magnetic resonance imaging (MRI).

PROS AND CONS OF PROSTATE CANCER SCREENING

There are a number of arguments for and against prostate cancer screening.

Arguments for screening — Experts in favor of prostate cancer screening cite the following arguments:

- Results from a large European study of prostate cancer screening found that men who had prostate-specific antigen (PSA) testing had a 20 percent lower chance of dying from prostate cancer after 13 years compared with men who did not have prostate cancer screening. Men who had PSA testing also had a 30 percent lower chance of developing metastatic disease (cancer that has spread to other parts of the body).
- A substantial number of men die from prostate cancer every year and many more suffer from the complications of advanced disease.
- For men with an aggressive prostate cancer, the best chance for curing it is by finding it at an early stage and then treating it with surgery or radiation. Studies have shown that men who have prostate cancer detected by PSA screening tend to have earlier-stage cancer than men who have a cancer detected by other means. (See "[Patient education: Treatment for advanced prostate cancer \(Beyond the Basics\)](#)" and "[Patient education: Prostate cancer treatment; stage I to III cancer \(Beyond the Basics\)](#)".)

- The five-year survival for men who have prostate cancer confined to the prostate gland (early stage) is nearly 100 percent; this drops to 30 percent for men whose cancer has spread to other areas of the body. However, many early-stage cancers are not aggressive, and the five-year survival for those will be nearly 100 percent even without any treatment.
- The available screening tests are not perfect, but they are easy to perform and have fair accuracy.

Arguments against screening — Other arguments have also been made against screening:

- Even though the European study found a benefit of prostate cancer screening, PSA testing prevented only about one prostate cancer death for every 1000 screened men after 13 years. Furthermore, 75 percent of men with an abnormal PSA who had a prostate biopsy did not have prostate cancer.
- Many prostate cancers detected with screening are unlikely to cause death or disability. Thus, a number of men will be diagnosed with cancer and potentially suffer the side effects of cancer treatment for cancers that never would have been found without prostate cancer screening. In other words, even if screening finds a cancer early, it is not clear in all cases that the cancer must be treated.

IS PROSTATE CANCER SCREENING RIGHT FOR ME?

The answer to this question is not the same for everyone. The table includes some questions you can ask yourself when weighing the potential risk and benefits of screening ([table 1](#)).

Professional organizations — Major medical associations and societies, including the US Preventive Services Task Force, American Cancer Society, American Urological Association, and many European cancer societies, agree that men should discuss screening with their health care providers. Men should be informed about the benefits and risks of prostate cancer screening and treatment and make decisions that best reflect their personal values and preferences.

Age to first consider screening — Screening discussions should begin at age 50 years for men at average risk for developing prostate cancer. Men with risk factors for prostate cancer (such as black men or men with a father or brother who had prostate cancer) may want to begin screening discussions at age 40 to 45 years.

How often to perform screening — Once screening begins, it should occur every two years (if continued testing is desired) with a PSA blood test.

Age to stop screening — Guidelines suggest stopping screening after age 69, though some experts would continue offering screening to very healthy men beyond that age.

Screening not recommended — Screening is generally not recommended for men whose life expectancy, or ability to undergo curative treatment, is limited by serious health problems. In these situations, the potential benefits of screening are outweighed by the likely harms.

WHERE TO GET MORE INFORMATION

Your healthcare provider is the best source of information for questions and concerns related to your medical problem.

This article will be updated as needed on our web site (www.uptodate.com/patients). Related topics for patients, as well as selected articles written for healthcare professionals, are also available. Some of the most relevant are listed below.

Patient level information — UpToDate offers two types of patient education materials.

The Basics — The Basics patient education pieces answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials.

[Patient education: Prostate cancer screening \(PSA tests\) \(The Basics\)](#)

[Patient education: Prostate cancer \(The Basics\)](#)

[Patient education: Cancer screening \(The Basics\)](#)

[Patient education: Choosing treatment for low-risk localized prostate cancer \(The Basics\)](#)

Beyond the Basics — Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are best for patients who want in-depth information and are comfortable with some medical jargon.

[Patient education: Treatment for advanced prostate cancer \(Beyond the Basics\)](#)

[Patient education: Prostate cancer treatment; stage I to III cancer \(Beyond the Basics\)](#)

[Patient education: Benign prostatic hyperplasia \(BPH\) \(Beyond the Basics\)](#)

Professional level information — Professional level articles are designed to keep doctors and other health professionals up-to-date on the latest medical findings. These articles are thorough, long, and complex, and they contain multiple references to the research on which they are based. Professional level articles are best for people who are comfortable with a lot of medical terminology and who want to read the same materials their doctors are reading.

[Measurement of prostate-specific antigen](#)

[Screening for prostate cancer](#)

The following organizations also provide reliable health information.

- National Cancer Institute
1-800-4-CANCER
(www.cancer.gov/types/prostate)
- American Society for Clinical Oncology (patient information website)
(<https://www.cancer.net/cancer-types/prostate-cancer/screening>)
- American Cancer Society
1-800-ACS-2345
(www.cancer.org)
- National Library of Medicine
(<https://medlineplus.gov/prostatecancerscreening.html>)
- US TOO! Prostate Cancer Education and Support
(www.ustoo.org/Detection-PSA-And-DRE)

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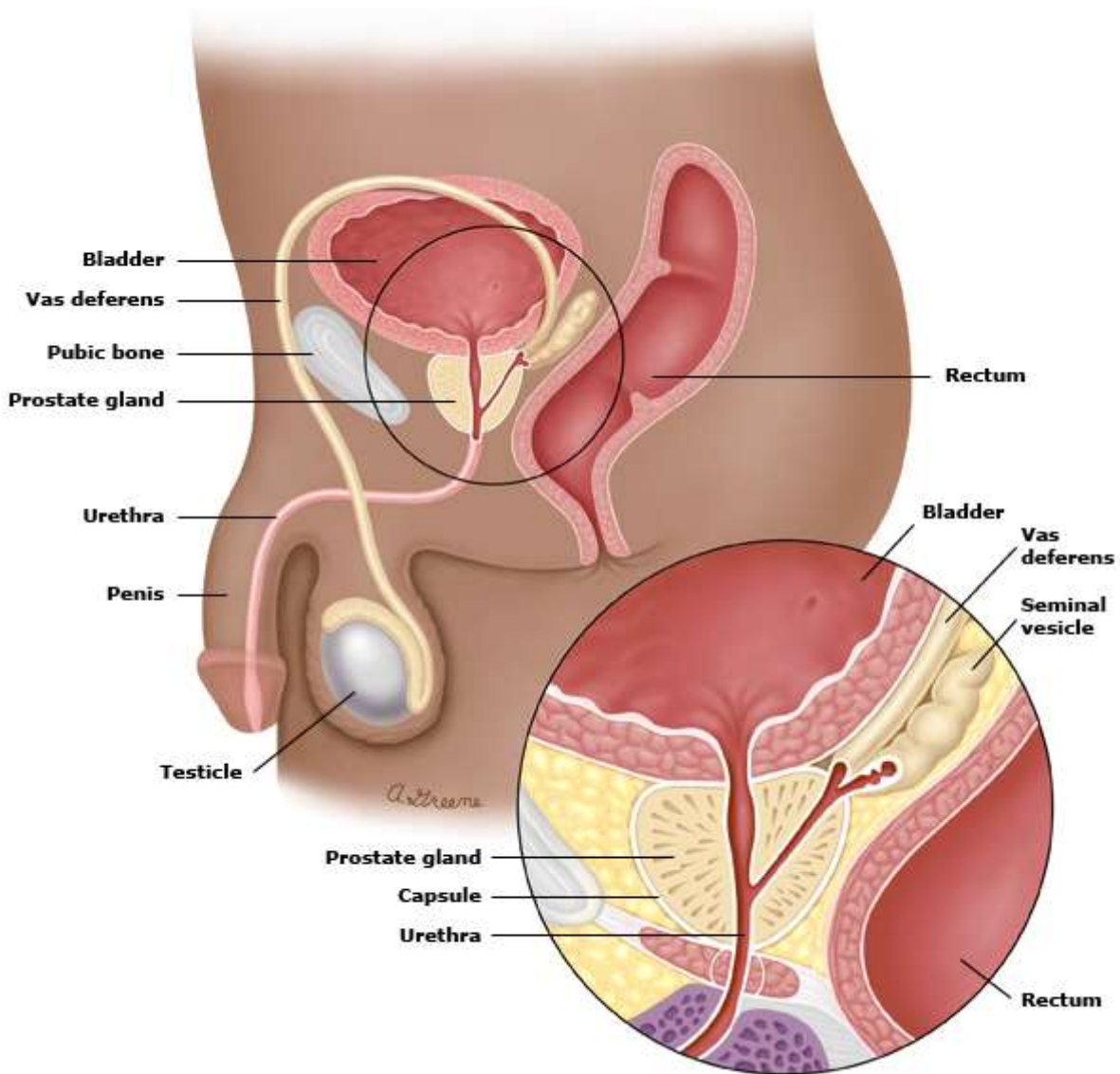
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Topic 883 Version 32.0

GRAPHICS

Prostate gland



This drawing shows male internal organs and a close-up of the prostate gland.

Graphic 65675 Version 5.0

Should I be screened for prostate cancer?

The answer to this question is not the same for everyone. Your doctor can help you decide based on your values and preferences. The main test used to screen for prostate cancer is a blood test called a "PSA test." Doctors offer screening in the hopes of catching prostate cancer early – before it has a chance to grow, spread, or cause symptoms. But it is not clear if getting screened for prostate cancer can extend a man's life or help him avoid any symptoms or problems.

It might help to ask yourself the following questions when deciding whether or not to be screened:

Am I at high risk for prostate cancer?

- On average, 1 in 6 men will get prostate cancer. But some men are at higher risk, including black men and men with a close relative who had the disease. If you're not sure, your doctor can help you figure out if you are at high risk.

Do I want to know if I have prostate cancer?

- Some cancers found by screening tests are slow growing, and would not cause harm for many years or might never cause harm. That means you could go through treatment for a cancer that would not have caused you harm.
- Some people feel better having as much information as possible. Other people prefer to take a "wait and see" approach. Think about which bothers you more – the possibility of not catching cancer as early as possible, or the risks that come with tests and treatments you might not otherwise have needed.

How do I feel about the possibility of getting a "false positive" result?

- 2 out of every 3 positive PSA tests end up being "false positives." This means the test suggests cancer when there is actually no cancer. This can lead to unneeded worry and extra tests, including a biopsy (see next question).
- Other things besides cancer can cause a PSA test to be positive. These include an enlarged prostate, riding a bicycle, or ejaculating (having an orgasm) within a few days before the test.

Am I willing to have a prostate biopsy to check for cancer?

- If your PSA test comes back positive, you might then need another test called a "biopsy" to look for cancer. This test can be painful and comes with some risk of infection.

Would I want to be treated if I learned I had prostate cancer?

- For some men, "active surveillance" might be an option. Men who choose this option do not have treatment right away. But they do have routine tests to check whether the cancer starts to grow. If so, they can start active treatment then.
- Some men wish to get treatment right away, or their doctors suggest treatment (rather than active surveillance) based on their cancer. Possible options include radiation and surgery.

How do I feel about the risks of being treated for prostate cancer?

- The risks of treatments like radiation and surgery include problems with urinating, erectile function, and having bowel movements.

How would I feel about getting a serious (or even deadly) form of prostate cancer if I had decided not to get screened?

- Although this is rare, it might help to think about whether you would regret not having done everything possible to find cancer early.

PSA: prostate-specific antigen.

Graphic 110294 Version 3.0

Contributor Disclosures

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