



Prostate Cancer

What causes prostate cancer?

No one knows for sure what causes prostate cancer. Advancing age seems to be a factor. Prostate cancer usually starts to appear in men after age 55, and the average age at diagnosis is 70. If a man's father or brother has a history of prostate cancer, he is at increased risk to develop the disease. Prostate cancer is more common in African Americans, and less common in men of Asian or Native American ancestry. Some evidence suggests that a diet high in fat may be a contributing factor. Conversely, a diet rich in fruits and vegetables seems to have a protective effect.

How is prostate cancer diagnosed?

During a physical examination, your doctor will perform a digital-rectal examination (DRE), where the gloved finger is used to feel the prostate gland through the wall of the rectum. Your doctor may suspect prostate disease as a result of a DRE if the prostate gland feels irregular or hard to the examining finger. A blood test that measures a protein produced by the cells of the prostate gland, called prostate-specific antigen (PSA), also can be used to screen men for evidence of prostate cancer. An elevated PSA can be caused by cancer, but inflammation of the gland or age-related enlargement of the gland can cause increased PSA in the absence of cancer.

If an abnormal DRE, elevated PSA, or both are found, your doctor will usually advise additional testing. If your doctor suspects that inflammation of the prostate gland is causing an elevated PSA, he may recommend a course of antibiotics and a repeat PSA test. If the PSA returns to normal, the most likely cause of the increased PSA is inflammation. If the PSA does not return to normal or if the DRE is abnormal in spite of the PSA becoming normal, your doctor will probably order additional tests. The following are additional tests that may be performed:

- Trans-rectal ultrasound uses a probe inserted into the rectum. The probe generates sound waves to produce a computerized image of the prostate gland.
- Cystoscopy direct visual examination of the urinary bladder and prostate by a thin-lighted tube passed through the penis.
- Biopsy obtaining a small piece of tissue from the prostate using a small needle that samples tissue from the prostate gland through the rectal wall. An anatomic pathologist—a specially trained physician—will examine your biopsy with a microscope to determine whether or not cancer or some other abnormality is present in your tissue sample(s).



How serious is my cancer?

Every patient is unique. Your doctor will discuss your particular situation with you in detail. In general, when an interpretation of cancer is made from a biopsy, your doctor will consider the grade and stage of the tumor. The grade is determined by the pathologist's examination. Tumor grading is an evaluation of how much the cancer cells differ from normal prostate cells. A grading system, called the Gleason score, is used. The Gleason score can range from 2-10. The higher the Gleason score, the greater the likelihood that the tumor will spread beyond the prostate gland.

Tumor staging evaluates the extent of your tumor. For example, is it confined to the prostate gland or has it spread to other parts of the body? In order to stage the tumor, your doctor may order additional tests such as an MRI or CAT scan noninvasive imaging techniques that allow visualization of other parts of the body. Once your doctor has evaluated the grade and stage of your tumor, he will discuss your prognosis how the tumor will be predicted to act and the treatment options available to you.

What are my treatment options?

Treatment options take into account the grade and stage of your tumor, your age, physical health, and personal desires. Your doctor will discuss the options in detail, allowing both of you to understand what mutual decisions and next steps need to be taken. Treatment options vary depending on the factors noted above. In general, the options include the following:

- **Watchful waiting.** Close, periodic follow-up with physical examination, DRE, and PSA determinations. This course may be recommended if you are 70 years of age or older and have a low-grade and low-stage tumor. Your doctor will explain the risks and benefits of this option.
- **Prostatectomy.** Surgical removal of the entire prostate gland.
- **Radiation therapy.** This is an approach that uses X-rays in an attempt to destroy the tumor cells. This can be done with external radiation, a series of non-surgical treatments where X-rays are directed to your tumor under the supervision of a specially trained physician, called a radiation oncologist. Alternately, radioactive "seeds" can be implanted directly into your prostate gland during a surgical procedure.



- **Hormonal therapy.** The male hormones, called androgens, are needed for a prostate cancer to grow. Testosterone is the most important male hormone. Hormonal therapy may be used after surgery or radiation to prevent the tumor from coming back. Hormonal therapy also may be used if the tumor has spread beyond the prostate gland. Reducing testosterone levels can be accomplished by medication that can either block or suppress secretion of the hormone. In addition, surgically removing the testicles, which are the main source of testosterone, can significantly reduce testosterone levels.

What are the side effects of treatment?

The possible side effects will vary depending on the type and extent of your treatment. Some possible side effects include impotence, loss of sexual desire, difficulty controlling urination, inflammation of the rectum, fatigue, and hot flashes. Your doctor will discuss the possible side effects of your treatment with you in detail.

Where can I get more information about prostate cancer?

Your doctor is the best source of information about prostate cancer and your treatment options. Other sources of information include the following:

- National Cancer Institute Booklets and Cancer Information Service-Available by calling 1-800-4 CANCEER (1-800-422-6237) or online at <http://cancer.gov/publications>
- American Urological Association Patient Information Resources <http://www.urologyhealth.org/>
- National Institute on Aging <http://www.nia.nih.gov/health>
- Quest Diagnostics Patient Health Library <http://www.questdiagnostics.com/kbase/default.htm>

This information is provided to patients and the medical community as a service by Quest Diagnostics.

Quest, Quest Diagnostics, the associated logo and all associated Quest Diagnostics marks are the trademarks of Quest Diagnostics.

© 2005 Quest Diagnostics Incorporated.
All rights reserved.
www.questdiagnostics.com

PS1398-2 03/2005

