Genetic Testing
for Prostate Cancer

Urology Care FOUNDATION™
The Official Foundation of the American Urological Association

What is Prostate Cancer and How Common Is It?

Prostate cancer is a tumor that grows in the prostate gland. This gland is part of the male reproductive system. It sits just under the bladder and in front of the rectum. It makes fluid for semen. Not all growths in the prostate are malignant (cancerous), some are benign (not cancerous). Women do not have prostate glands and are not at risk of developing prostate cancer.

For all men, prostate cancer risk increases with age. African American men are more likely to be diagnosed with prostate cancer, often at a younger age. Men whose fathers or brothers had prostate cancer have a much higher risk of prostate cancer compared to men with no family history. Age matters with this as well. If two or more close family members have been diagnosed with prostate cancer, and they were younger than age 55 at the time of diagnosis, the risk is even higher. The good news is, the earlier that prostate cancer is found the simpler it is to treat.

Learning how to find prostate cancer early and how to treat it is very valuable information. With testing, 78 out of 100 men can find prostate cancer early before it spreads.

Testing for Prostate Cancer

For a prostate cancer evaluation, your doctor will likely ask you if anyone in your family has had cancer, do a prostate-specific antigen (PSA) test (simple blood test) and a digital rectal exam (DRE). If prostate cancer is suspected based on results from these tests, the next step may be a prostate ultrasound and biopsy. For a biopsy, your doctor will remove a small piece of prostate tissue so a pathologist can look for tiny cancer cells with a microscope. This biopsy may also be tested for gene mutations. A Magnetic Resonance Imaging (MRI) test may be used to see if cancer has spread.

Testing for prostate cancer has come a long way over the years. Your doctor can do tests on cancer cells and link DNA mutations with treatments. As genetic links to prostate cancer are better understood, new cancer treatments in clinical trials that target certain genetic markers are giving more hope for life-saving care.

What is Genetic Testing?

You may hear a lot about genetics or genomics. Both terms are related to genes and cell DNA, but they are different. These tests are being used to learn more about the DNA of cancer cells, and link DNA mutations (abnormalities) with treatments. In the future, genetic testing may be the first step doctors take when diagnosing this disease. It can be done by testing the blood, saliva or tissues.

Genetic testing is done to learn about a single gene and its role. It tells us about health problems that can pass from parents to their children. Men with certain genes have a higher risk of cancer. As a diagnostic tool, genetic tests can show if a person has mutations in the BRCA 1, BRCA 2, or HOXB13 genes, which are linked to prostate cancer risk (as well as breast and ovarian cancer risk in women). If a person has any of these mutations, they should be screened earlier or more often for prostate cancer. As a health care tool, genetic test results can help determine whether a certain

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treatment would be helpful. For example, men with an inherited PARP mutation in the DNA of cancer cells could be helped with a PARP inhibitor. This targeted therapy blocks the PARP mutation and stops it from repairing cancer cells.

People often wonder if genetic testing is the same as genomic testing. **Genomic testing** looks at all parts of genes and how they act or interact. Results offer insight into their role in cancer. Genomic testing can help your doctor know if your cancer is more likely to spread, how quickly it is growing and if it is best to treat now or wait.

If your doctor suggests genetic or genomic testing, they may also ask you to talk with a genetic counselor to talk about the role of genes within cancer cells and your choices.

Who Should Think About Getting a Genetic Test?

- Men with localized prostate cancer that has not spread AND a family member who's had breast, colon, ovarian, pancreatic or prostate cancer.
- Men with a Gleason score of seven or higher AND EITHER a close blood family member with breast or ovarian cancer diagnosed at age 50 or younger, or more than one family member with these cancers at any age.
- Men with advanced cancer who may be helped with a targeted therapy, like a PARP inhibitor.

Can Genetic Test Results Lead to Better Health?

Many men are surprised to hear that genes can play a major role in prostate cancer. If you have an inherited prostate cancer risk because a close family member had it, or because genetic tests results show you have BRCA 1 or 2 (for example), it helps to consider life changes. These changes may include adding workouts, quitting smoking, keeping a healthy weight to lower your risk of cancer and being tested. These can also include more frequent testing to catch a problem early before it's too hard to treat.

The good news is that the more you learn about your level of cancer risk or about cancer itself, the more choices you may have for prevention or treatment.

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 health changes. Our information is based on the American Urological Association resources and is reviewed by medical experts. To learn more, visit the Urology Care Foundation's website, **UrologyHealth.org/UrologicConditions** or go to **UrologyHealth.org/FindAUrologist** to find a doctor near you.

Disclaimer

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. For copies of printed and other urologic conditions, visit **UrologyHealth.org/Order** or call 800-828-7866.

This patient educational resource is made possible through educational grants from AstraZeneca, Merck & Pfizer Inc.

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