

How does genetic testing for inherited mutations work?

Most commonly, a multigene panel is used to check a saliva or blood sample for mutations in several different genes at the same time. In prostate cancer, these genes may include BRCA1, BRCA2, ATM, CHEK2, MLH1, MSH2, PMS2, TP53, and HOXB13.¹⁻³ All these genes have unique and important effects on prostate cancer risk, disease behavior, and/or response to certain treatments, such as PARP inhibitors.

Several different multigene tests are now available. Your doctor needs to order these tests. Tests you can order yourself do not test for all the important mutations in prostate cancer.

Does insurance cover these tests?

Most insurance plans now cover genetic testing for inherited mutations in patients with prostate cancer, especially if you have advanced disease. Your healthcare provider should be able to check if your plan provides coverage.



Additional resources

- Prostate Cancer Foundation® (PCF™): Genetic Testing for Prostate Cancer
- PCF Webinar on Genetic Testing for Inherited Mutations
- National Society of Genetic Counselors: Directory of Genetic Counselors in the US and Canada

References

- 1 Khan H, et al. Prostate. 2022 Aug;82 Suppl 1 (Suppl 1):S3-S12.
- 2 National Cancer Institute. Genetics of Prostate Cancer (PDQ®)—Health Professional Version. https://www.cancer.gov/types/prostate/hp/prostate-genetics-pdq#_1874 Updated June 27, 2024. Accessed November 18, 2024.
- 3 NCCN Clinical Practice Guidelines. Genetic/Familial High-Risk Assessment: Breast, Ovarian, and Prostate (Version 2.2025). https://www.nccn.org/professionals/physician_gls/pdf/genetics_bopp.pdf Accessed Nov 18, 2024.

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The Prostate Cancer Foundation® (PCF™) funds the world's most promising research on prostate cancer biology and treatment, accelerating those discoveries into therapies and strategies designed to improve quality of life and survival. PCF is committed to the mission of ending death and suffering from this disease.



PROSTATE CANCER FOUNDATION



Prostate Cancer & Testing for Inherited Mutations— What You Should Know



What are inherited mutations?

DNA is the genetic code that tells our bodies how to grow and work. An inherited mutation (also known as an inherited cancer risk gene) is a change in a parent's DNA that is passed down to a child. When present, these mutations are found in nearly every cell in the body. In prostate cancer, different types of inherited mutations may impact:

- Someone's risk of getting the disease
- How fast it is likely to spread
- How it responds to specific (targeted) treatments

Most prostate cancers happen by chance. But inherited mutations are found in about 10-15% of people with metastatic prostate cancer, and in a smaller number of patients with earlier-stage or lower-risk disease.¹

What does genetic testing for inherited mutations tell us?

Testing is valuable for several reasons. For patients with metastatic castration-resistant prostate cancer (mCRPC), testing helps predict if certain drugs will work.^{1,2} For example, PARP inhibitors like olaparib and rucaparib work best if patients have inherited mutations in genes involved in DNA repair.

In addition, these tests give information about a patient's risk for other cancers, such as female or male breast cancer, ovarian cancer, and pancreatic cancer. This can help guide decisions about how to tailor cancer screening and other

preventive steps, such as lifestyle changes.

Also, because inherited mutations can run in families, sharing test results can help other family members think about their cancer risk and make informed choices about genetic testing, cancer screening and prevention, and family planning.

A licensed genetic counselor or experienced healthcare provider can help patients with prostate cancer understand their test results and what information to share with relatives.

Testing for inherited mutations looks for specific changes in genes passed down from your parents.



Who should get tested?

Current guidelines recommend testing for inherited mutations if someone with prostate cancer has:³

- Advanced or metastatic prostate cancer (ie, cancer that has spread outside the prostate gland, to the lymph nodes or other places in the body)
- A high or very high risk of cancer spreading outside the prostate gland
- Ashkenazi Jewish ancestry
- At least one close blood relative with breast cancer by age 50, or ovarian cancer, pancreatic cancer, male breast cancer, advanced or metastatic prostate cancer, or high or very high-risk prostate cancer
- At least two close blood relatives with prostate or breast cancer on the same side of the family

Testing may be useful in other cases, too. Your healthcare provider or a licensed genetic counselor can help you decide if you should get tested.