Prostate Cancer (Powered by 23andMe Research)

POWERED BY 23ANDME RESEARCH

Prostate cancer is a disease in which cells in a male reproductive organ called the prostate grow and divide in an uncontrolled way. If it's not found and treated early, prostate cancer can invade nearby tissues and spread to other parts of the body.

Jamie, your genetic result is associated with an **increased likelihood** of developing prostate cancer.

An estimated **20%** of people with genetics like yours develop prostate cancer **by their 70s**. This result takes into account your birth sex and genetic ancestry.

This estimate is based on currently available data and may be updated over time.

An important limitation of this report

Keep in mind that this report **does not include** rare genetic variants that have a large impact on the likelihood of developing prostate cancer, such as variants in HOXB13, BRCA1, BRCA2, and genes linked to Lynch syndrome. Instead, this report looks at thousands of variants that individually have a very small effect, but combined can increase the likelihood of developing the condition.

If you have a personal or family history of prostate cancer, please talk to a healthcare professional to determine whether additional genetic testing may be right for you. If you already know you have a variant linked to increased prostate cancer risk, it's important to continue any cancer screening and prevention plans your clinician recommends.

Ways to take action

Your overall likelihood of developing prostate cancer also depends on other factors, including lifestyle. Experts agree that healthy lifestyle habits may lead to better health outcomes in people who develop prostate cancer:

- Maintain a healthy weight. Some studies have found that males who are overweight or obese are more likely to develop aggressive forms of prostate cancer.
- If you smoke, get help quitting. Smoking is associated with an increased risk of dying from prostate cancer.

In addition, experts recommend talking to a healthcare professional about the benefits and risks of screening for prostate cancer. Screening guidelines for prostate cancer vary, but screening may be recommended starting at age 59, or as early as 49 or 45 for males who are African American, have increased genetic risk, or have a family history of prostate cancer.

Learn more from the American Cancer Society*

About prostate cancer

What is prostate cancer?

Prostate cancer originates in a male reproductive organ called the prostate. The prostate is located just below the bladder and produces fluid that is a part of semen. Prostate cancer occurs when cells in prostate tissue grow and divide in an uncontrolled way. This is caused by DNA changes that accumulate over time as our cells divide. This is why the likelihood of developing prostate cancer increases with age.

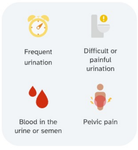
Prostate cancer is one of the most common types of cancers. It impacts about 1 in 8 males in their lifetimes. Many prostate cancers grow slowly and may not ever cause problems, but some can cause serious problems, including spreading to other tissues. When caught early, prostate cancer is often treatable.

Symptoms

Often, prostate cancer doesn't cause any symptoms. That's why regular screening can be beneficial. If symptoms do occur, they can include:

- Needing to urinate more often than usual, especially at night
- Difficulty urinating or a slow stream of urine
- Pain during urination or ejaculation
- Blood in the urine or semen
- Pain in the back, hips, or pelvis

These symptoms can also be due to problems with the prostate that are not cancer, like having an enlarged prostate (also called benign prostatic hyperplasia). It's important to talk to a healthcare professional to determine the cause.



Other factors that can increase the likelihood of developing prostate cancer

Besides genetics and lifestyle, some factors that can increase a person's chances of developing prostate cancer include:

- Age (prostate cancer is more common after age 59)
- Ethnicity (African American men have a higher risk of prostate cancer, are more likely to develop prostate cancer at an earlier age, and are more likely to develop more aggressive forms of prostate cancer)
- Having a family history of prostate cancer, and certain other types of cancers

How birth sex and gender identity can impact prostate cancer

Everyone with a prostate is at risk of developing prostate cancer. This includes cisgender men, transgender women, and non-binary and intersex individuals who have a prostate.

While most prostate cancer research has focused on cisgender men, some small studies have found that transgender women on gender-affirming hormone therapy (GAHT) or who have had gender-affirming surgery (GAS) may have a lower chance of developing prostate cancer. However, more research is needed to better understand prostate cancer in this community.

Keep in mind

This report **does not diagnose** prostate cancer. **Consult with a healthcare professional** if you are concerned about whether you may have prostate cancer, have a personal or family history of prostate cancer, or before making any major lifestyle changes.

If you have already been diagnosed with prostate cancer, it is important to **continue any management plan** that your clinician recommends.

This report **does not account for every possible factor** that could impact your likelihood of developing prostate cancer. Non-genetic and other genetic factors, such as rare variants in HOXB13, BRCA1, BRCA2, and genes linked to Lynch syndrome that have large impacts, are not included in this report.

This report has not been validated for individuals of certain ancestries, including some people with ancestry from multiple continents.

This report is based on a genetic model **created using data from 23andMe research participants**. It has not been clinically validated and should not be used to make medical decisions.

How we got your result

Methods

This report is based on a statistical model called a polygenic score that takes into account your genetic results at many genetic markers, along with your genetic ancestry and the birth sex you reported in your account settings, to estimate the likelihood of developing prostate cancer. We used data from 23andMe research participants to calculate this estimate. We may update results and estimates over time as the model, available data, or scientific understanding about this condition improves. Note that this report does not include rare genetic variants that have a large impact on the likelihood of developing prostate cancer, such as variants in HOXB13, BRCA1, BRCA2, and genes linked to Lynch syndrome.

About the result

People whose result is associated with 1.5 times higher than average odds of developing prostate cancer are considered to have an increased likelihood. These results are based on many genetic markers, and random test error at one or more of these markers can lead to a small margin of error in your estimated likelihood of developing prostate cancer. For people whose estimates are near the boundary between typical and increased likelihood, this margin of error may introduce some uncertainty about whether their estimated likelihood is considered "typical" or "increased." Your genetic result is associated with an increased likelihood. Based on the available genetic markers used to calculate your result, there is a less than 1% chance your genetic likelihood estimate could fall on the other side of the boundary and be in the range that is considered typical.

Scientific validity across ancestries

We verified that the model meets our scientific standards for individuals with predominantly East/Southeast Asian, European, Hispanic/Latino, Northern African/Central & Western Asian (Middle Eastern), South Asian, and Sub-Saharan African/African American ancestry.

See our **white paper** to learn more about the science behind this report.

Change log

- March 2024: Prostate Cancer (Powered by 23andMe Research) report created.

Read more:

American Cancer Society. "Prostate Cancer." Retrieved November 19, 2023 from https://www.cancer.org/cancer/types/prostate-cancer.html.*

Bergengren et al. (2023). "2022 Update on Prostate Cancer Epidemiology and Risk Factors-A Systematic Review." Eur Urol 84(2):191-206.*

Centers for Disease Control and Prevention. "Prostate Cancer." Retrieved November 19, 2023 from https://www.cdc.gov/cancer/prostate/index.htm.*

Fenton JJ et al. (2018). "Prostate-Specific Antigen-Based Screening for Prostate Cancer: Evidence Report and Systematic Review for the US Preventive Services Task Force." JAMA 319(18):1914-1931.*

Ilic D et al. (2013). "Screening for prostate cancer." Cochrane Database Syst Rev 2013(1):CD004720.*

Rawla P. (2019). "Epidemiology of Prostate Cancer." World J Oncol 10(2):63-89.*