Breast Cancer (Powered by 23andMe Research)

POWERED BY 23ANDME RESEARCH

Breast cancer is a disease in which cells in the breast grow and divide in an uncontrolled way. If it's not found and treated early, breast 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 breast cancer.

An estimated **20%** of people with genetics like yours develop breast 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 breast cancer, such as variants in the BRCA1 and BRCA2 genes. 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 breast 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 breast cancer risk, it's important to continue any cancer screening and prevention plans your clinician recommends.

Ways to take action

Experts recommend getting regular screening for breast cancer starting at age 49, or earlier for people with certain risk factors, such as a personal or family history of cancer. This screening is typically done through a type of imaging called a mammogram, although other imaging types are also commonly used.

Experts also recommend becoming familiar with how your breasts look and feel, and reporting any changes to a healthcare professional right away.

Since your overall likelihood of developing breast cancer depends on many factors, including lifestyle, experts also agree that healthy lifestyle habits can help lower the chances of developing the condition.

- Limit your alcohol consumption. Even one drink per day may increase the chances of developing breast cancer, and heavier drinking increases the chances even more.
- Include physical activity in your daily routine. Light, moderate, and vigorous exercise can all reduce the chances of developing breast cancer.
- Avoid smoking. If you smoke, get help quitting.
- Do your best to maintain a healthy weight. After menopause, being overweight increases the chances of developing breast cancer.

Learn more from the American Cancer Society

About breast cancer

What is breast cancer?

Breast cancer occurs when cells in the breast 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 everyone has a chance of developing breast cancer, and why the likelihood increases with age.

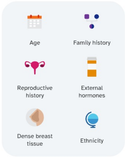
There are several different types of breast cancer, depending on the specific cells in the breast that become cancerous and the proteins that are present on the surface of the cancer cells. Early signs of breast cancer can include a lump in the breast, a change in breast size or shape, or a change to the skin on the breast or nipple — including puckering, dimpling, redness, or flaking. As breast cancer progresses, it can invade nearby tissues and spread to other places in the body (a process called metastasis).

Breast cancer is one of the most common types of cancers. It impacts about 1 in 8 females in their lifetimes. When caught early, breast cancer is usually treatable.

Other factors that can impact your chances of developing breast cancer

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

- Age (most breast cancers are diagnosed after age 55, but the condition is becoming more common in younger age groups)
- Family history (people with a first-degree family member with breast cancer are about twice as likely to develop the condition themselves)
- Reproductive history (people who start menstruating at a younger age or experience menopause at an older age are more likely to develop breast cancer)
- External hormone exposure (currently using hormonal contraceptives can slightly increase the chances of developing breast cancer, and menopausal hormone therapy may also increase the chances)
- Dense breast tissue (which also makes cancers harder to detect with a mammogram)
- Ethnicity (in the U.S., white females are most likely to be diagnosed with breast cancer during their lifetime, but Black, Hispanic, Asian/Pacific Islander, and American Indian/Alaska Native individuals tend to develop breast cancer at a younger age)

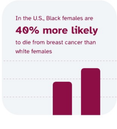


Racial and ethnic disparities in breast cancer

In the U.S., Black females are **49%** more likely to die from breast cancer than white females, despite being slightly less likely to develop the condition. The mortality gap grows even larger among younger age groups.

This disparity may be due to many different factors. For example, Black females are more likely to develop a form of breast cancer called triple-negative breast cancer, which is more aggressive, more difficult to treat, and tends to develop at earlier ages, before routine screening may be recommended. In addition, Black females are often diagnosed with breast cancer at a later stage, when it can be harder to treat. They are also more likely to have other health conditions — like high blood pressure and diabetes — that can impact the course of their breast cancer.

Scientists agree that social determinants of health, such as lower rates of health insurance and less access to high-quality healthcare, are the cause of most of these disparities.



How birth sex and gender identity can impact breast cancer

Most research on breast cancer has focused on cisgender women and men. In those groups, women are about **199** times more likely than men to develop breast cancer during their lifetime (~1 in 8 vs. ~1 in **859** chance).

Scientists are starting to learn more about breast cancer in transgender and non-binary people. For example, studies have found that transgender men who undergo top surgery have a lower chance of developing breast cancer than cisgender women, although the chance is not reduced to zero. And transgender women who take hormone therapy have a higher chance of developing breast cancer than cisgender men. However, more research is needed to better understand breast cancer in these communities.

Keep in mind

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

If you have already been diagnosed with breast 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 breast cancer. Non-genetic and other genetic factors, such as rare variants in the BRCA1 and BRCA2 genes that have a large impact, 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. It takes into account your genetic results at many genetic markers, your genetic ancestry, and the birth sex you reported in your account settings to estimate the likelihood of developing breast 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 breast cancer, such as variants in the BRCA1 and BRCA2 genes.

About the result

People whose result is associated with odds of developing breast cancer that are at least 1.5 times higher than average 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 breast cancer. For people whose estimate is 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 or Sub-Saharan African/African American ancestry.

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

Change log

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

Read more:

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