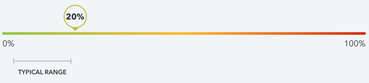
Coronary Artery Disease

POWERED BY 23ANDME RESEARCH

Coronary artery disease, sometimes called CAD, is a type of heart disease that is typically caused by the buildup of a waxy, cholesterol-containing substance called plaque inside the coronary arteries, which are the major blood vessels that supply the heart with oxygen-rich blood. When plaque builds up in the coronary arteries, the vessels narrow and blood flow to the heart is decreased.

Jamie, your genetic result is associated with an **increased likelihood** of developing coronary artery disease.

An estimated **20%** of males with genetic results like yours develop coronary artery disease **by their 70s**. This is based on data from 23andMe research participants of European descent.



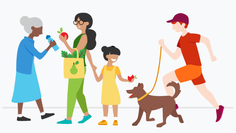
This estimate is based on currently available data and may be updated over time.

Ways to take action

Your overall likelihood of developing coronary artery disease also depends on other factors, including lifestyle. Experts agree that healthy lifestyle habits can help lower the chances of developing this condition.

- Maintain a healthy weight
- Eat a heart-healthy diet
- Exercise regularly
- Avoid smoking
- Limit alcohol consumption

Start taking action



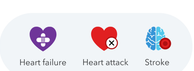
About coronary artery disease

How can coronary artery disease impact your health?

In people with coronary artery disease, plaque buildup in the coronary arteries causes the vessels to narrow and decreases blood flow to the heart. At first, this may not cause any symptoms. However, as more plaque builds up over time, people can experience chest pain (called angina), shortness of breath, and fatigue. The heart can also become weak and unable to pump blood effectively to the rest of the body (called heart failure).

If a piece of plaque inside an artery breaks off and a blood clot forms, blood flow to the heart may be blocked, causing a heart attack. If blood flow to the brain is blocked, this can cause a stroke.

Estimate your risk* for complications of heart disease, including things like heart attack and stroke. This tool from the American Heart Association uses non-genetic factors, and is for individuals who are at least 40 years old.



Other factors that can impact your chances of developing coronary artery disease

According to the Centers for Disease Control and Prevention, up to 16% of people in the U.S. are expected to develop coronary artery disease by their 70s. Besides genetics, weight, and lifestyle, some factors that can increase a person's chances of developing coronary artery disease include:

- Age (this condition becomes more common as people get older)
- Sex (more males than females are diagnosed with coronary artery disease, but females are likely under-diagnosed)
- Family history (especially if a parent had a heart attack at a young age)
- Certain health conditions (including high blood pressure, high cholesterol, and type 2 diabetes)

Keep in mind

This report **does not diagnose** coronary artery disease. It also does not provide information about or diagnose other forms of heart disease. **Consult with a healthcare professional** if you are concerned about your likelihood of developing coronary artery disease, have a personal or family history of coronary artery disease, or before making any major lifestyle changes.

If you have already been diagnosed with coronary artery disease by a healthcare professional, it is important to **continue any treatment plans**, including medications and lifestyle modifications, that they prescribe.

The likelihood of developing coronary artery disease also depends on **other factors**, including age, sex, family history, and lifestyle.

This report **does not account for every possible genetic variant** that could affect your likelihood of developing coronary artery disease, and it **does not include rare variants that individually have a large impact** on the likelihood of developing this condition.

This report is based on a genetic model **created using data from 23andMe research participants** and has not been clinically validated.

How we got your result

Methods

This report is based on a statistical model that takes into account your genetic results at more than 2,400 genetic markers, along with the ethnicity and sex you reported in your account settings, to estimate the likelihood of developing coronary artery disease. We used data from 23andMe research participants as well as data reported in the scientific literature to calculate this estimate. Results and estimates may be updated over time as the model or scientific understanding about this condition improves. Note that this report does not include genetic variants that have a large impact on the likelihood of developing coronary artery disease, such as variants linked to familial hypercholesterolemia (FH).

About the result

People whose result is associated with odds of developing coronary artery disease that are at least 1.5 times higher than average are considered to have an increased likelihood. Between 2% and 19% of individuals receive an "increased likelihood" result, depending on ethnicity. These results are based on thousands of 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 coronary artery disease. 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 ethnicities

We verified that the model meets our scientific standards for individuals of European, Hispanic/Latino, East/Southeast Asian, South Asian, Sub-Saharan African/African American, and Northern African/Central & Western Asian descent.

How we may use ethnicity and sex to customize this result

- If you indicated in your account settings that you are of European, Hispanic/Latino, East/Southeast Asian, South Asian, Sub-Saharan African/African American, or Northern African/Central & Western Asian (Middle Eastern) descent, your result is tailored based on data from individuals of that ancestry.
- Otherwise, your result may be based on data from individuals of European descent because there is not enough data from individuals of your ancestry at this time. Data from individuals of European descent is used because the most data is available for this population.
- Your Coronary Artery Disease result also takes into account the sex you indicated in your account settings.

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

Read More:

Arnett DK et al. (2019). "2019 ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease: Executive Summary: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines." J Am Coll Cardiol. 74(10):1376-1414. *

Benjamin EJ et al. (2019). "Heart Disease and Stroke Statistics-2019 Update: A Report From the American Heart Association." Circulation. 139(10):e56-e528. *

Centers for Disease Control and Prevention. (2017). "Behavioral Risk Factor Surveillance System (BRFSS) Prevalence & Trends Data." Retrieved May 4, 2020, from https://www.cdc.gov/brfss/brfssprevalence/. *

Khera AV et al. (2017). "Genetics of coronary artery disease: discovery, biology and clinical translation." Nat Rev Genet. 18(6):331-344. *

Lloyd-Jones DM et al. (2004). "Parental cardiovascular disease as a risk factor for cardiovascular disease in middle-aged adults: a prospective study of parents and offspring." JAMA. 291(18):2204-11. *

Mayo Clinic. "Coronary artery disease." Retrieved August 1, 2019, from https://www.mayoclinic.org/diseases-conditions/coronary-artery-disease/symptoms-causes/syc-20350613. *