American Heart Association PREVENT™ Frequently Asked Questions for Patients

What are the American Heart Association PREVENT™ equations?

The American Heart Association developed the PREVENT equations in 2023 to estimate a person's chance of developing heart disease, specifically heart attack, stroke, or heart failure. These equations use health information, such as cholesterol, blood pressure, and kidney function to help inform discussions with your health care professional about treatments that may be considered to lower your risk.

They were built using data from more than 6.5 million U.S. adults and are the first tool that focuses on risk due to poor cardiovascular-kidney-metabolic health. Learn more about cardiovascular-kidney-metabolic health here.

How does the PREVENT calculator work?

The PREVENT calculator, based on the PREVENT equations, uses common health information (such as blood pressure, cholesterol, body mass index, kidney function, and whether someone has diabetes or smokes tobacco) to estimate risk of heart disease.

The risk calculator can be further personalized. For example, if you have had an HbA1c measured (e.g., to monitor your diabetes or to screen for diabetes), this can be added into the calculator to refine the risk estimate. If you have hypertension, diabetes, or kidney disease, testing your urine for protein levels (UACR) is recommended and can be added. Since health is also influenced by the neighborhoods in which we live, there is also a zip code input (to estimate social factors that can affect health).

Who should use the PREVENT calculator?

The PREVENT calculator is designed for clinicians to use with patients between the ages 30 and 79 years and who do not already have heart disease. They are not meant for people who already have had a heart attack, stroke, or heart failure.

What do the results mean?

The calculator estimates your chance of developing heart disease, stroke, or heart failure over the next 10 or 30 years. These results can help you and your health care professional decide on the best steps to lower your risk.

What is PREVENT-Age?

The PREVENT calculator now provides an estimated heart age (PREVENT-Age). PREVENT-Age translates your estimated risk for heart disease into an equivalent "heart age." If your PREVENT-Age is higher than your actual age, it suggests your chance of developing heart disease may be higher than expected for someone your age. If it is lower than your actual age, it suggests a lower risk.

PREVENT-Age is meant to complement your overall risk estimate and may help guide conversations with your health care professional about ways to lower your risk.

What do PREVENT percentiles mean?

The PREVENT calculator also provides 30-year PREVENT percentiles. Percentiles compare your estimated long-term risk for heart disease with other people of the same age and sex. Percentiles are meant to complement your overall risk estimate and may help guide conversations with your health care professional about ways to lower your risk.

When might the PREVENT equations suggest starting blood pressure medication?

If you have high blood pressure (blood pressure 130-139/80-89 mm Hg), your health care professional may recommend starting medication if you already have heart disease, diabetes, kidney disease, or based on your PREVENT risk score. Specifically, if your PREVENT risk score shows a higher chance (7.5% or more over 10 years) of developing cardiovascular disease, you may be recommended blood pressure-lowering medication. The PREVENT equations help identify people who are most likely to benefit from treatment while avoiding medication for those at lower risk. However, if your blood pressure remains high even if your PREVENT risk score is low, you may still be recommended medication.

When might your health care professional suggest starting cholesterol-lowering medication based on the PREVENT equations?

Your health care professional may use the PREVENT-ASCVD equations to estimate your chance of having a heart attack or stroke over the next 10 years (and, for some adults, over 30 years).

Cholesterol-lowering medication (such as a statin) may be recommended if your estimated 10-year risk is borderline (3% to <5%), intermediate (5% to <10%), or high (≥10%). Medication is more strongly recommended at higher risk levels.

For some adults ages 30–59 with a low 10-year risk, a higher 30-year risk or higher LDL-cholesterol may also support starting medication to reduce long-term risk. The PREVENT equations help identify people most likely to benefit from treatment.