

Summary Statement About All AHA/ACC CVD Prevention Guidelines

2013 AHA/ACC Heart Attack Risk Assessment

On November 12, 2013, the American Academy of Cardiology (ACC) and the American Heart Association (AHA) released a new cardiovascular risk assessment as part of a set of national guidelines that address prevention of cardiovascular disease (CVD).¹ The 2013 Cholesterol Guideline replaced the ATP III Cholesterol Guideline originally published in 2001 and updated in 2004. The ATP III Guideline contained a risk assessment called the Framingham Risk Score for heart attack, based on algorithms from the original Framingham Heart Study (FHS).

The 2013 Guideline includes a risk calculation also derived from the Framingham Heart Study that factors in data from the Atherosclerosis Risk in Communities (ARIC) study, the Coronary Artery Risk Development in Young Adults (CARDIA) study, and the Cardiovascular Health Study (CHS). The older Framingham Risk Score used in the ATP III only calculates heart attack risk. The 2013 algorithm calculates:

- 10-year risk of CVD (heart attack, stroke)
- 30-year risk of CVD (heart attack, stroke) for those ages 60 and younger

2017 AHA/ACC Hypertension Treatment Guidelines

The American Heart Association and American College of Cardiology, which took over responsibility for consensus guidelines on hypertension from the NHLBI's Joint National Commission in 2013, released the 2017 guidelines with endorsement from nine other groups with key changes to the threshold, treatment algorithm, and blood pressure (BP) measurement.

In the 2017 guidelines, normal blood pressure remains below 120 mm Hg, but hypertension has been split into stage 1 (130/80 to 139/89 mm Hg) and stage 2 (140/90 mm Hg and higher) with different implications for treatment. The table below summarizes the new blood pressure categories.

The HeartAware HRA uses the global cardiovascular disease risk assessment algorithms from the Framingham Heart Study and the follow-up Framingham Offspring Study published in 2008 and 2009.

One of the risk factors is systolic blood pressure. The Framingham cut-points and corresponding HeartAware HRA categories align with the 2017 AHA/ACC Guidelines⁶ with exception of the 130-139/80-89 range, defined in the 2017 guidelines as “high-stage 1.” The clinical nomenclature of “stage 1” and “stage 2” was avoided in the HeartAware HRA. Instead, the terms “moderate risk” and “high risk” were deemed more user-friendly and sufficiently descriptive names for those categories.

2018 AHA/ACC Guideline on the Management of Blood Cholesterol

On November 10, 2018, the American Heart Association and American College of Cardiology, together with 10 other national professional medical associations, released an update to their 2013 Cholesterol Management Guidelines.⁷ This includes a recalibrated risk assessment that factors in other population groups. It continues to promote the use of risk estimates and provides a modified risk assessment⁸ that includes cholesterol levels in the algorithm. It also gives doctors more guidance for cholesterol management that considers other factors besides the risk estimates. This guideline, like the one from 2013, is to be used by doctors for decision-making regarding treatment to manage blood cholesterol.

2019 AHA/ACC 2019 Guideline on the Primary Prevention of CVD²

In March of 2019 the American Heart Association/American College of Cardiology (AHA/ACC) released online guidelines on the primary prevention of cardiovascular disease:

As in previous guidelines, the purpose of these guidelines is to provide guidance with regard to lipid management and blood pressure management. The AHA/ACC continues to advocate using the risk algorithm, called the ASCVD, developed to help clinicians decide when to provide medications to help manage these risk factors.

“The 10-year ASCVD risk estimate is used to guide decision-making for many preventive interventions, including lipid management (S2.2-4, S2.2-36) and BP management (S2.2-37); it should be the start of a conversation with the patient about risk-reducing strategies (the “clinician–patient discussion”) and not the sole decision factor for the initiation of pharmacotherapy (S2.2-4, S2.2-36, S2.2-38). All risk estimation tools have inherent limitations, and population-based risk scores must be interpreted in light of specific circumstances for individual patients.” p143

It goes on to say that other risk algorithms may also be used and that there are advantages and disadvantages to each one.

“All risk estimation tools have inherent limitations, and population-based risk scores must be interpreted in light of specific circumstances for individual patients. The PCE have been shown to overestimate (S2.2-15, S2.2-39–S2.2-47) or underestimate (S2.2-12, S2.2-48–S2.2-51) ASCVD risk for certain subgroups....” p143

“Therefore, clinicians may consider the use of another risk prediction tool as an alternative to the PCE if the tool was validated in a population with characteristics similar to those of the evaluated patient. Examples include the general Framingham CVD risk score (S2.2-55), the Reynolds risk scores (S2.2-56, S2.2-57), SCORE (Systematic Coronary Risk Evaluation) (S2.2-58), and the QRISK/JBS3 (S2.2-59) tools. Other professional societies have incorporated some of these alternative validated risk scores into their lipid management guidelines or have considered different risk thresholds for preventive interventions (S2.2-58–S2.2-63). Although slight differences exist across organizational guidelines, they are all very similar in their overarching goal of matching the intensity of preventive therapies to the absolute (generally 10-year) risk of the patient.” p153

Table Comparing AHA/ACC ASCVD to HeartAware HRA

	AHA/ACC ASCVD⁷	HeartAware HRA
Purpose	Cholesterol/BP treatment algorithm	Education about overall CVD risk
Risk conditions	Heart disease Stroke	Heart disease Stroke Heart failure Peripheral vascular disease
Risk projections	10-year Lifetime	10-year 30-year Heart age

References

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2. Whelton PK, Carey RM, et al. AHA/ACC guideline for the prevention, detection, evaluation, and management of high blood pressure in adults. *Hypertension*. 2017;00:e000-e000.
3. Grundy SM, Stone NJ, Bailey AL, Beam C, Birtcher KK, Blumenthal RS, Braun LT, de Ferranti S, Faiella-Tommasino J, Forman DE, Goldberg R, Heidenreich PA, Hlatky MA, Jones DW, Lloyd-Jones D, Lopez-Pajares N, Ndumele CE, Orringer CE, Peralta CA, Saseen JJ, Smith SC Jr, Sperling L, Virani SS, Yeboah J. 2018 AHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA guideline on the management of blood cholesterol: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Circulation*. 2018; doi: 10.1161/CIR.0000000000000625
4. American Heart Association. 2018 Prevention Guidelines Tool CV Risk Calculator. <http://static.heart.org/riskcalc/app/index.html#!/baseline-risk>
5. Grundy SM, Stone NJ, Bailey AL, Beam C, Birtcher KK, Blumenthal RS, Braun LT, de Ferranti S, Faiella-Tommasino J, Forman DE, Goldberg R, Heidenreich PA, Hlatky MA, Jones DW, Lloyd-Jones D, Lopez-Pajares N, Ndumele CE, Orringer CE, Peralta CA, Saseen JJ, Smith SC Jr, Sperling L, Virani SS, Yeboah J. 2018 ZHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA guideline on the management of blood cholesterol: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Circulation*. 2018; doi: 10.1161/CIR.0000000000000625
6. American Heart Association. 2018 Prevention Guidelines Tool CV Risk Calculator. <http://static.heart.org/riskcalc/app/index.html#!/baseline-risk>