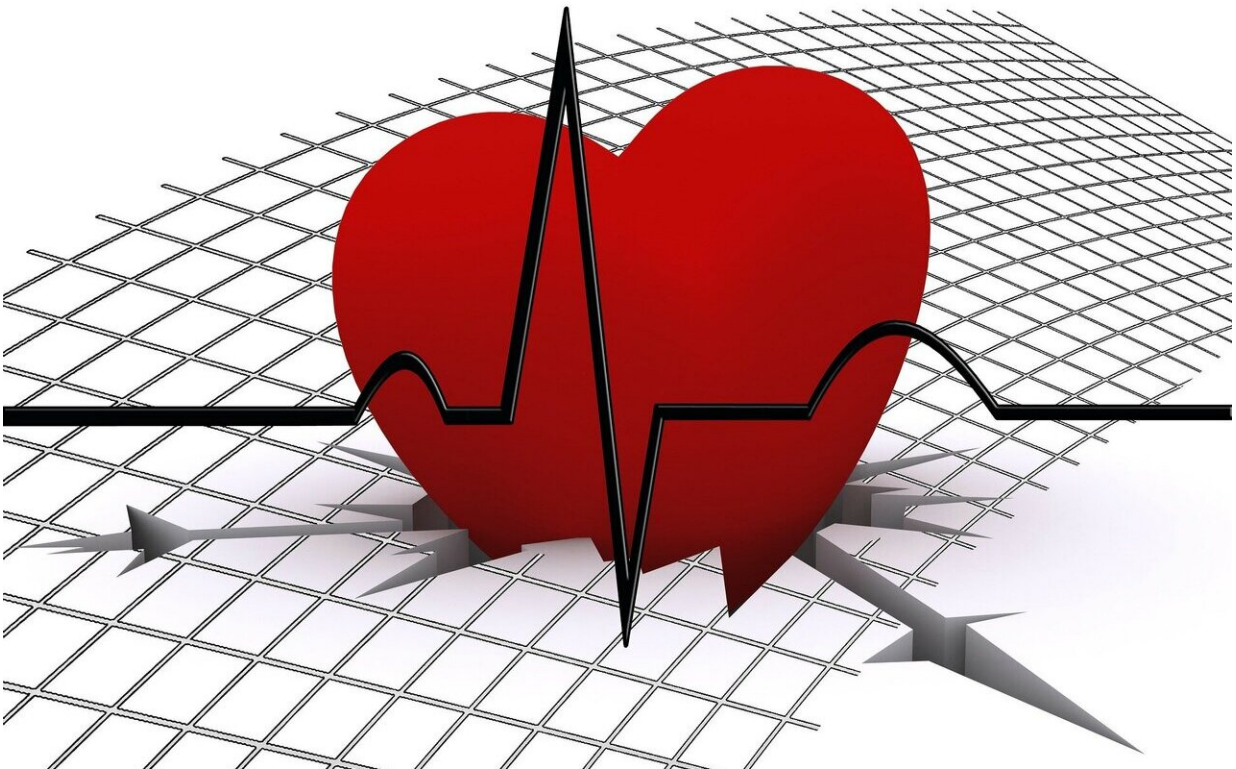


Scientists find predictors of heart disease among Black Americans that are shared across ethnicities

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Coronary heart disease, which is a major cause of heart attack, develops when damaged or clogged arteries cannot deliver enough oxygen-rich

blood to the heart. Black Americans are at greater risk of coronary heart disease than non-Hispanic white individuals; however, because Black Americans are underrepresented in clinical research, established risk prediction models do not fully capture their risk.

To identify novel biomarkers that signal coronary heart disease among Black Americans, physician-scientists from Beth Israel Deaconess Medical Center (BIDMC) analyzed blood plasma samples from 2346 participants of the Jackson Heart Study, a population-based study of cardiovascular disease and its risk factors among Black Americans living near Jackson, Miss. The scientists found 46 different metabolites—[small molecules](#) in the blood that are the products of the body's myriad metabolic processes—that were consistently linked with coronary heart disease among Black individuals. They published their findings in *JAMA Cardiology*.

"The 46 metabolites we found were a marker of coronary heart disease up to 16 years before patients experienced cardiac symptoms or events," said co-corresponding author Robert E. Gerszten, MD, chief of Cardiovascular Medicine at BIDMC. Further, the findings highlighted new chemical pathways that have not been previously linked to coronary heart disease.

Next, the researchers looked at these 46 metabolites in a multi-ethnic population, and turned to data from 1,588 participants of the Women's Health Initiative, a population-based study of postmenopausal women to validate their findings. They found that 13 of the metabolites identified among Black Americans were also linked to coronary heart disease in the multi-ethnic population, suggesting these particular metabolites may serve as better markers of disease for the general population than some traditional risk factors.

"Although our analysis can be considered preliminary, our findings add

to the predictive value of traditional [risk factors](#) and established markers, especially given the high risk of coronary heart disease among Black Americans," said Gerszten, who is also a professor of medicine at Harvard Medical School and director of the Personal Genomics & Cardiometabolomics Disease Research program at BIDMC. "Further work is warranted to identify potential mechanistic differences in the development of coronary heart disease in Black Americans compared with individuals from other [racial groups](#)." Ultimately, the new chemical pathways identified by this work might serve as targets for therapeutic interventions.

Benson reported receiving grants from Amgen and personal fees from Boehringer Ingelheim outside the submitted work. Wang reported being named as a co-inventor on other [patent applications](#) related to biomarkers of [heart](#) failure and other diseases, but none related to metabolomic markers of [coronary heart disease](#). No other disclosures were reported.

More information: Daniel E. Cruz et al, Metabolomic Analysis of Coronary Heart Disease in an African American Cohort From the Jackson Heart Study, *JAMA Cardiology* (2021). [DOI: 10.1001/jamacardio.2021.4925](#)

Provided by Beth Israel Deaconess Medical Center

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