$2M Grant to Address Disparities in Heart Disease

The grantee will study changes in DNA that impact heart health.

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The National Institute on Aging has awarded $2.17 million to a University of Albany professor to study how racial disparities and social determinants fuel underlying cardiovascular disease in Black Americans, who are 30% more likely to die of heart conditions than those who identify as non-Hispanic white, according to the Department of Health and Human Services. The National Institute on Aging is a division of the National Institutes of Health.

Kai Zhang, PhD, an associate professor in the Department of Environmental Sciences, will study genetics, specifically how DNA methylation—a process in which molecules attach to DNA, altering the way genes are expressed—influences cardiovascular health.

“We know that socioeconomic status—things like income, education and occupation—affects cardiovascular health, but little is known about how these effects are expressed at the genetic level,” said Zhang in a University of Albany news release. “In this study, we will connect individual and neighborhood factors—things like education, income, employment, health care and neighborhood safety—with genetic markers and clinical outcomes to explore links between processes playing out in DNA and social determinants that impact cardiovascular disease.”

Zhang and his team will utilize data from the Coronary Artery Risk Development in Young Adults (CARDIA) study, which since 1983 has followed 5,115 Black and white participants to observe the effect of social factors on cardiovascular health.

Run by the National Heart, Lung, and Blood Institute, CARDIA will provide blood samples that Zhang and colleagues will use “to analyze participants’ DNA methylation and identify markers associated with social and environmental factors that either promote or harm health,” Zhang said. “Thanks to the remarkable longevity of this data set, we will be able to track long-term trends and changes in participants’ DNA alongside external factors and clinical outcomes.”

“With this refined understanding, we will be better equipped to tailor interventions and allocate resources—at both the individual and neighborhood level—to help mitigate social disadvantages underlying poor cardiovascular health in the U.S. and worldwide,” Zhang said.

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