

Scientist plans to test for blood pressure genes affected by age

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A geneticist at The University of Texas Health Science Center at Houston plans to scan the genomes of about 4,000 people in the hopes of finding out why blood pressure often increases as young adults age.

The two-year study by principal investigator Myriam Fornage, Ph.D., is funded with a new \$1.1 million grant from the Genes, Environment and Health Initiative (GEI) of the National Institutes of Health. The grant was one of six announced today during the second round of funding from the program aimed at finding genetic factors that influence common disorders.

"High blood pressure is the single most important predisposing factor to cardiovascular disease," said C. Thomas Caskey, M.D, director/chief executive officer of The Brown Foundation Institute of Molecular Medicine for the Prevention of Human Diseases (IMM), a part of the UT Health Science Center. "This research could lead to the identification of genes through which environmental factors such as aging act to accelerate disease. Knowledge of these genes opens new opportunities for therapeutic targets."

The GEI researchers receiving grants will use genome-wide association studies. In such studies, researchers rapidly scan markers across the complete sets of DNA, or genomes, of large groups of people to find genetic variants associated with a particular disease, condition or trait.

According to Peter Doris, Ph.D., an IMM professor, "Age is clearly the

most important environmental risk factor for high blood pressure. What is novel and potentially powerful about Dr. Fornage's project is the focus on age and blood pressure interaction."

Fornage said little is known about the genetic cause of high blood pressure and that her study is among the first to look at blood pressure genes in the context of age. "We're trying to determine how genes influence the gradual rise in blood pressure experienced by many people as they move from being a young adult to a middle-aged person," she said.

The study will begin by examining the genomes of about 4,000 people who were recruited into a research project in the mid-1980s and who have had their blood pressure checked periodically. The project is called the Coronary Artery Risk Development in Young Adults (CARDIA) Study and participants were between 18 and 30 when it began.

To confirm the findings, scientists from the Human Genetics Center at The University of Texas School of Public Health will attempt to replicate the results with participants in: the Bogalusa (La.) Heart Study; the Atherosclerosis Risk in Communities Study (ARIC); and the Rochester (Minn.) Family Heart Study.

D. Michael Hallman, Ph.D., an assistant professor at the UT School of Public Health, will coordinate tests with the Bogalusa (La.) Heart Study. Alanna Morrison, Ph.D., an associate professor at the UT School of Public Health, will coordinate tests with the Rochester (Minn.) Family Heart Study.

"Our ultimate goal is to discover pathways that could be targeted for therapeutic intervention," Fornage said.

Source: University of Texas Health Science Center at Houston

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