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*Sex-gene interactions for cardiometabolic phenotypes*

Dr. Dhananjay Vaidya is an epidemiologist with training in genetic epidemiology and statistical modeling. He has particular interest in models that improve our ability to examine sex differences in risk and in genetics. Dr. Vaidya is a principal investigator and co-investigator on several National Heart, Lung, and Blood Institute (NHLBI) grants. He is a current awardee of the American Heart Association (AHA) Cardiovascular Genome- Phenome Study (CVGPS) Discovery grant. The AHA CVGPS Discovery Grants are supported by AstraZeneca.

**Project Overview**

Women and men differ in the risk factors for heart disease, such as body weight and shape, cholesterol levels and blood glucose. However, the causes of this difference are not known. The aim is to discover the genes that are expressed differently in men and women that result in sex differences in these risk factors utilizing the Jackson Heart Study and Framingham Heart Study data.

We are asking what genes may produce different and opposite biochemical effects on the metabolism in men and women. We are also studying if variation in some genes may be beneficial only in men or only in women during evolution. Our analyses will use new methods that are able to distinguish such genes.

In the long term, discovering genes and genetic variants that underlie the different cardiovascular risk in men and women will help us understand biological differences between the sexes. This understanding will help us develop tailored prevention and treatment methods that will work best in women and men.