

Five new genes affecting the risk of coronary artery disease identified

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An international consortium of scientists reports the discovery of five new genes that affect the risk of developing coronary artery disease (CAD) and heart attacks in a study to be published in the open-access journal *PLoS Genetics* on September 22nd.

Coronary artery disease is the most common cause of premature death and disability in the world and has a strong but incompletely characterised [genetic contribution](#). The identification of the roles of various genes in the onset of heart disease could help in the development of new treatments and improve prediction of CAD. The study also demonstrated that some associations between genes and CAD, suggested by other, smaller studies, are spurious, according to Dr Adam Butterworth, who co-ordinated the analysis.

The consortium examined 49,094 genetic variants in ~2,100 genes of cardiovascular relevance in 15,596 CAD cases and 34,992 controls (11,202 cases and 30,733 controls of European descent, and 4,394 cases and 4,259 controls of South Asian origin) and replicated their principal findings in an additional 17,121 CAD cases and 40,473 controls.

"This is one of the first genetic studies of CAD to include a significant proportion of subjects of South Asian origin, an ethnic group that has a higher risk of CAD," says Professor John Danesh, co-principal investigator. "Our study shows that many of the genes that affect risk of CAD do so similarly in European Caucasians as in [South Asians](#)."

The study adds to the growing list of genes, now over 30, that affect risk of CAD and heart attacks. Co-principal investigator Professor Nilesh Samani (British Heart Foundation Professor of Cardiology University of Leicester, UK) says: "The findings provide new insights into and understanding of the causal biological pathways that cause heart disease, and particularly highlight the role of lipids and inflammation."

"Although the effects of the new genetic variants that we have identified are individually small, in the order of 5-10% per copy, new treatments that are developed on the basis of the findings could have a much broader effect, as we have learnt, for example, with statins," adds Professor Hugh Watkins (British Heart Foundation Professor of Cardiovascular Medicine, University of Oxford), also a co-principal investigator.

More information: The IBC 50K CAD Consortium (2011) Large-Scale Gene-Centric Analysis Identifies Novel Variants for Coronary Artery Disease. *PLoS Genet* 7(9): e1002260.

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