

New study proves double trouble of high genetic risk and poor lifestyle for the development of cardiovascular disease

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A new study by researchers at the University Medical Center Groningen (UMCG) finds that irrespective of the genetic makeup, a poor lifestyle is linked to development of cardiovascular disease and diabetes.

The study published in the journal *JAMA Cardiology* was conducted using 339,003 unrelated individuals from UK Biobank.

The findings show that the risk to develop [cardiovascular disease](#) is simply a summation of both genetic and lifestyle risks, no evidence was found for a multiplier effect as was hypothesized previously.

Lead researcher Pim van der Harst, Professor of Cardiology at the UMCG said: "This is very powerful data demonstrating that a [healthy lifestyle](#) is important for all of us. Favorable genetics are good, you have a low risk to start, but a poor lifestyle can undo this luck and put you right up there with those unlucky of having a high genetic risk for heart [disease](#). If you have a high genetic risk, than you really should adhere to an ideal lifestyle or you are in double trouble."

The researchers investigated 5 cardiovascular conditions; [coronary heart disease](#), atrial fibrillation, stroke, hypertension and type 2 diabetes. For all individuals, the genetic risk was calculated and a healthy lifestyle was defined by smoking, [body mass index](#), and physical activity.

Co-investigator Abdullah Said, Ph.D. student at the UMCG said: "The findings can be used to improve the identification of people at high risk and to further personalize their risk prediction. Now you can see which part of your risk you cannot change, your genes, and which part you can change, your lifestyle."

The results have implications as behavioral lifestyle changes should be encouraged for all, although high-risk individuals may be selected based on their genetics.

More information: M. Abdullah Said et al. Associations of Combined Genetic and Lifestyle Risks With Incident Cardiovascular Disease and Diabetes in the UK Biobank Study, *JAMA Cardiology* (2018). [DOI: 10.1001/jamacardio.2018.1717](https://doi.org/10.1001/jamacardio.2018.1717)

Provided by University Medical Center Groningen

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