

New research can improve heart health

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Danish researchers from the University of Copenhagen and Rigshospitalet have shown that people with variation in a gene that inhibits a specific protein in the blood – the so-called apolipoprotein C3 – have a significantly lower level of normal blood lipids than people without this gene variation. Furthermore, the same individuals also have a 41 per cent lower risk of arteriosclerosis.

The research is highly relevant as at least one pharmaceutical company has a drug in the pipeline which inhibits precisely apolipoprotein C3, says Anne Tybjærg-Hansen, Chief Physician at Rigshospitalet and Clinical Professor at the Faculty of Health and Medical Sciences, University of Copenhagen.

The scientific results are based on two of the world's largest population studies, the Copenhagen City Heart Study and the Copenhagen General Population Study, with a total 75,725 participants who were followed for 34 years. The results have just been published in the renowned *New England Journal of Medicine*.

By using genetic studies that mimic medical inhibition of apolipoprotein C3, we have demonstrated that the protein plays an important role in lowering the level of normal [blood lipids](#) and thus the risk of cardiovascular disease. People with lifelong hereditary inhibition of the protein have very low [blood lipid levels](#) (less than 1 mmol per litre of [blood](#)) as well as a significantly reduced risk of cardiovascular disease, says Anne Tybjærg-Hansen.

Need for better treatment

The primary objective of drugs which prevent [cardiovascular disease](#) is to lower [blood cholesterol levels](#). But even among patients whose cholesterol levels are treated to target, there is still a residual cardiovascular risk. Triglycerides are lipids that are carried in the blood, the majority of which come from the food we eat. Triglycerides primarily serve as energy reserves for the body. However, high triglyceride levels in the blood, increase the risk of heart attack and arteriosclerosis.

Medical inhibition of proteins which increase the level of triglycerides is therefore an obvious target for new drugs, concludes Anne Tybjærg-Hansen.

Provided by University of Copenhagen

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