

High-cholesterol diet, eating eggs do not increase risk of heart attack, not even in persons genetically predisposed

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A new study from the University of Eastern Finland shows that a relatively high intake of dietary cholesterol, or eating one egg every day, are not associated with an elevated risk of incident coronary heart disease. Furthermore, no association was found among those with the APOE4 phenotype, which affects cholesterol metabolism and is common among the Finnish population. The findings were published in the *American Journal of Clinical Nutrition*.

In the majority of population, dietary cholesterol affects serum cholesterol levels only a little, and few studies have linked the intake of dietary cholesterol to an elevated risk of cardiovascular diseases.

Globally, many nutrition recommendations no longer set limitations to the intake of dietary cholesterol. However, in carriers of the apolipoprotein E type 4 allele - which significantly impacts cholesterol metabolism - the effect of dietary cholesterol on serum cholesterol levels is greater. In Finland, the prevalence of the APOE4 allele, which is a hereditary variant, is exceptionally high and approximately one third of the population are carriers. Research data on the association between a high intake of dietary cholesterol and the risk of cardiovascular diseases in this population group hasn't been available until now.

The [dietary habits](#) of 1,032 men aged between 42 and 60 years and with no baseline diagnosis of a cardiovascular disease were assessed at the onset the Kuopio Ischaemic Heart Disease Risk Factor Study, KIID, in 1984-1989 at the University of Eastern Finland. During a follow-up of 21 years, 230 men had a myocardial infarction, and 32.5 per cent of the study participants were carriers of APOE4.

The study found that a high intake of dietary cholesterol was not associated with the risk of incident [coronary heart disease](#) - not in the entire study population nor in those with the APOE4 phenotype. Moreover, the consumption of eggs, which are a significant source of dietary cholesterol, was not associated with the risk of incident [coronary heart disease](#). The study did not establish a link between dietary cholesterol or eating eggs with thickening of the common carotid artery walls, either.

The findings suggest that a high-cholesterol diet or frequent consumption of eggs do not increase the risk of cardiovascular diseases even in persons who are genetically predisposed to a greater effect of dietary cholesterol on serum [cholesterol levels](#). In the highest control group, the study participants had an average daily [dietary cholesterol](#) intake of 520 mg and they consumed an average of one egg per day, which means that the findings cannot be generalised beyond these levels.

More information: Associations of egg and cholesterol intakes with carotid intima-media thickness and risk of incident coronary heart disease according to apolipoprotein E phenotype in men: The Kuopio Ischaemic Heart Disease Risk Factor Study. *American Journal of Clinical Nutrition* ajcn122317; First published online February 10, 2016. [DOI: 10.3945/ajcn.115.122317](https://doi.org/10.3945/ajcn.115.122317)

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