

New evidence raises questions about the link between fatty acids and heart disease

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A new study raises questions about current guidelines which generally restrict the consumption of saturated fats and encourage consumption of polyunsaturated fats to prevent heart disease. The research was published today, 18 March, in the journal *Annals of Internal Medicine*.

An international research collaboration led by the University of Cambridge analysed existing cohort studies and randomised trials on coronary risk and fatty acid intake. They showed that current evidence does not support guidelines which restrict the consumption of saturated fats in order to prevent heart disease. The researchers also found insufficient support for guidelines which advocate the high consumption of polyunsaturated fats (such as omega 3 and omega 6) to reduce the risk of [coronary disease](#).

Furthermore, when specific fatty acid subtypes (such as different types of omega 3) were examined, the effects of the fatty acids on [cardiovascular risk](#) varied even within the same broad 'family' – questioning the existing dietary guidelines that focus principally on the total amount of fat from saturated or unsaturated rather than the food sources of the fatty acid subtypes.

Dr Rajiv Chowdhury, the lead author of the research at the University of Cambridge, said: "These are interesting results that potentially stimulate new lines of scientific inquiry and encourage careful reappraisal of our current nutritional guidelines."

"Cardiovascular disease, in which the principal manifestation is coronary [heart disease](#), remains the single leading cause of death and disability worldwide. In 2008, more than 17 million people died from a cardiovascular cause globally. With so many affected by this illness, it is critical to have appropriate prevention guidelines which are informed by the best available scientific evidence."

For the meta-analysis, the researchers analysed data from 72 unique studies with over 600,000 participants from 18 nations. The investigators found that total saturated fatty acid, whether measured in the diet or in the bloodstream as a biomarker, was not associated with coronary disease risk in the observational studies. Similarly, when analysing the studies that involved assessments of the consumption of total [monounsaturated fatty acids](#), long-chain omega-3 and omega-6 [polyunsaturated fatty acids](#), there were no significant associations between consumption and cardiovascular risk.

Interestingly, the investigators found that different subtypes of circulating long-chain omega-3 and omega-6 fatty acids had different associations with coronary risk, with some evidence that circulating levels of eicosapentaenoic and docosahexaenoic acids (two main types of long-chain omega-3 polyunsaturated [fatty acids](#)), and arachidonic acid (an omega-6 fat) are each associated with lower coronary risk.

Similarly, within saturated fatty acid, the researchers found weak positive associations between circulating palmitic and stearic acids (found largely in palm oil and animal fats, respectively) and cardiovascular disease, whereas circulating margaric acid (a dairy fat) significantly reduced the risk of cardiovascular disease.

Additionally, when the authors investigated the effects of omega-3 and omega-6 fatty acid supplementations on reducing coronary disease in the randomised controlled trials, they did not find any significant effects –

indicating a lack of benefit from these nutrients.

Professor Jeremy Pearson, Associate Medical Director at the British Heart Foundation, which helped fund the study, said: "This analysis of existing data suggests there isn't enough evidence to say that a diet rich in [polyunsaturated fats](#) but low in saturated fats reduces the risk of [cardiovascular disease](#). But large scale clinical studies are needed, as these researchers recommend, before making a conclusive judgement.

"Alongside taking any necessary medication, the best way to stay heart healthy is to stop smoking, stay active, and ensure our whole diet is healthy – and this means considering not only the fats in our diet but also our intake of salt, sugar and fruit and vegetables."

More information: The paper 'Association of Dietary, Circulating, and Supplement Fatty Acids With Coronary Risk' will be published in the 18 March edition of *Annals of Internal Medicine*.

Provided by University of Cambridge

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