

High omega-6 levels can protect against premature death

March 19 2018



Credit: University of Eastern Finland (UEF Viestintä)

Could omega-6 fatty acids protect you against premature death? The answer is yes, according to a new University of Eastern Finland study. While protecting against death, omega-6 fatty acids also keep cardiovascular diseases at bay.

"Linoleic acid is the most common polyunsaturated omega-6 fatty acid. We discovered that the higher the blood linoleic acid level, the smaller

the risk of premature death," says Adjunct Professor Jyrki Virtanen from the University of Eastern Finland, reporting the findings in the *American Journal of Clinical Nutrition*.

Although omega-6 [polyunsaturated fatty acids](#) are known for their beneficial effect on blood cholesterol levels, it has been speculated that they may increase the risk of several chronic diseases by promoting low-grade inflammation, among other things. The reasoning behind this speculation is that in the human body, linoleic acid is converted into [arachidonic acid](#) (also an omega-6 fatty acid) which, in turn, is converted into various inflammation-promoting compounds. However, omega-6 [fatty acids](#) also increase the production of anti-inflammatory compounds, and this is why it is challenging to determine the associations of dietary factors with the risk of developing disease merely by focusing on their effects on disease risk factors.

Ongoing at the University of Eastern Finland, the Kuopio Ischaemic Heart Disease Risk Factor Study, KIHDS, determined the blood fatty acid levels of 2,480 men between 42 and 60 years of age at the onset of the study, in 1984–1989. During an average follow-up of 22 years, 1,143 men died of [disease](#)-related causes, and deaths due to an accident or other reasons were excluded from the study.

When the researchers divided the study participants into five different groups based on their blood linoleic acid level, they discovered that the risk of [premature death](#) was 43% lower in the group with the highest level, when compared to the group with the lowest level. A more detailed analysis of the causes of death showed that a similar association exists for death due to cardiovascular diseases, as well as for death due to some other reason than cardiovascular diseases or cancer. However, no association was observed for death due to cancer. Similar, although slightly weaker, associations were also observed for the blood arachidonic acid level. Another significant finding of the study is that

the outcome is very similar regardless of whether the study participants suffered from cardiovascular diseases, cancer or diabetes at the onset of the study.

The study backs up findings from earlier population-based studies which have linked a higher dietary intake of linoleic acid and a higher blood linoleic acid level to a smaller risk of cardiovascular diseases and type 2 diabetes, without increasing the risk of cancer, for example. The observed association of arachidonic acid with a reduced risk of [death](#) is a new finding.

The blood linoleic acid level is determined by a person's diet, and the main sources of [linoleic acid](#) are vegetable oils, plant-based spreads, nuts and seeds. However, a person's diet will affect his or her blood arachidonic [acid](#) level only a little.

More information: Jyrki K Virtanen et al. Serum n-6 polyunsaturated fatty acids and risk of death: the Kuopio Ischaemic Heart Disease Risk Factor Study, *The American Journal of Clinical Nutrition* (2018). [DOI: 10.1093/ajcn/nqx063](#)

Provided by University of Eastern Finland

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