

Omega -6 fatty acids do not promote low-grade inflammation

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The higher the serum linoleic acid level, the lower the CRP, according to a new study from the University of Eastern Finland. Linoleic acid is the most common polyunsaturated omega-6 fatty acid. The findings were published in the *European Journal of Clinical Nutrition*.

It has been speculated that a high intake of omega-6 polyunsaturated fatty acids 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.

C-reactive protein, or CRP, levels were measured from 1,287 healthy, 42–60 year-old men at the onset of the Kuopio Ischaemic Heart Disease Risk Factor Study in 1984–1989 at the University of Eastern Finland.

The study found that a low [serum](#) linoleic acid level was associated with higher serum CRP levels. When the study participants were divided into four groups based on their serum linoleic acid levels, the probability for an elevated CRP was 53% lower in the highest quarter compared to the lowest one. Other serum [omega-6 fatty acids](#), such as arachidonic acid, gamma-linolenic acid or dihomo- γ -linolenic acid, were not associated with CRP levels.

This research supports earlier findings. Clinical trials have shown that even a very high intake of linoleic acid does not increase inflammatory responses, nor has a significant impact on arachidonic acid levels. In the human body, linoleic acid is converted into various compounds that alleviate inflammation. It is worth noting that arachidonic acid, too, is converted into inflammation-alleviating compounds, and not just into inflammation-promoting ones. In the light of

these facts, it can be concluded that the theory according to which linoleic acid promotes low-grade inflammation by increasing the body's arachidonic acid levels, is too simplified.

Linoleic acid, which is an essential omega-6 fatty acid, has been linked with a lower risk of chronic diseases in which low-grade inflammation is a significant risk factor. Examples of such diseases include cardiovascular diseases and type 2 diabetes. The serum linoleic acid level is mainly determined by a person's diet, and the main sources of linoleic [acid](#) are vegetable oils, plant-based spreads, nuts and seeds.

More information: Jyrki K. Virtanen et al. The associations of serum n-6 polyunsaturated fatty acids with serum C-reactive protein in men: the Kuopio Ischaemic Heart Disease Risk Factor Study, *European Journal of Clinical Nutrition* (2017). [DOI: 10.1038/s41430-017-0009-6](https://doi.org/10.1038/s41430-017-0009-6)

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