

Omega-3 Alpha Linolenic Acid Does Not Reflect the Entire Omega-3 Fatty Acid Family

To the Editor:

We read with interest the work by Perez et al. (1), concluding that omega-3 fatty acids may have an effect on the development of neuropathic pain in a sciatic nerve ligation model. The methodology may be compromised because a thorough analysis of key constituents of fatty acid emulsions was not performed.

To be able to clearly attribute the observed effects to the entire omega-3 fatty acid family, the investigators should have studied a group receiving fish oil with a high content of omega-3 eicosapentaenoic acid and omega-3 docosahexaenoic acid. The published results only suggest that omega-3 α linolenic acid, not the entire omega-3 fatty acid family, can be considered to produce an increase of neuropathic pain (2).

Further, the omega-6 arachidonic acid content is not reported, nor are the proinflammatory and algescic metabolites, such as leukotriene B₄, thromboxane A₂, and prostaglandin E₂. Nor are the effects of these substances on primary endpoints calculated or discussed. Such effects may have a greater impact on hyperalgesia than the content of omega-3 α linolenic acid (2). To give clear evidence for the responsibility of any fatty acid a multivariable model including the respective amounts of both, key proinflammatory and key antiinflammatory constituents or their respective precursors would clearly show the individual degree of contribution to the development of hyperalgesia.

The theory of increase in neuropathic pain is reflected only by one of the three tests for neuropathic pain, namely the effect on "response duration," not on tactile allodynia and "time to reaction." Here a significant effect was found for corn and soy in comparison with canola and hemp. No significant difference of either intervention in comparison to controls was found. Therefore, we do not think that the conclusion that corn and soy decrease and canola and hemp increase neuropathic pain is justified.

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References

1. Perez J, Ware MA, Chevalier S, et al. Dietary omega-3 fatty acids may be associated with increased neuropathic pain in nerve-injured rats. *Anesth Analg*. 2005;101:444–8.
2. Heller AR, Stehr SN, Koch T. Omega 3 fatty acids in clinical nutrition, 1st ed. New York: Nova Science, 2006.