Reference:

DHA Supplementation Decreases Serum C-Reactive Protein and Other Markers of Inflammation in Hypertriglyceridemic Men


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Summary:

Although the blood triglyceride-lowering effects of DHA omega-3 supplementation in normo- and hyper-triglyceridemic individuals has been reported in numerous studies, little information is available on the potential beneficial effects of DHA omega-3 supplementation on various markers of inflammation in such subjects. Since hypertriglyceridemic individuals have been shown to have increased inflammation as well as being at an increased risk for cardiovascular disease (CVD), it was of interest in the present study to evaluate the potential effect of DHA omega-3 supplementation on key inflammatory markers since inflammatory processes do contribute to the development of atherogenesis and to the tendency of atherosclerotic lesions to rupture.

In the present study, hypertriglyceridemic men (ages 39-66 years) with high fasting serum triglyceride concentration (150-400 mg%) were randomized to receive a placebo (control) supplement or supplementation with 3 grams of algal-derived DHA omega-3 per day for a 90 day period. Blood samples were taken at entry and at various times thereafter until the end of the study for the measurement of various inflammatory markers. DHA supplementation was found to significantly decrease the number of circulating neutrophils by 11-12% at days 45 and 91. DHA also reduced the concentrations of C-reactive protein (CRP) by 15%, interleukin-6 by 23%, and granulocyte monocyte-colony stimulating factor by 21% at 91 days whereas no significant differences were seen in these three parameters after 45 days of DHA supplementation. The authors suggest that their findings of a significant reduction in CRP with
DHA supplementation may have clinical relevance and that a more extended intake of DHA may possibly have generated a larger reduction in CRP.

**Dr. Holub's Comments:**

The present results showing a significant reduction in inflammatory markers (particularly CRP) with DHA omega-3 supplementation in hypertriglyceridemic men is of considerable interest. It is of relevance to note that a previously-published study (Stark and Holub, Am. J. Clin. Nutr., 79:765-773 (2004)) used an almost identical daily dose of DHA omega-3 daily (2.8 grams) over a 28-day duration in postmenopausal women (receiving and not receiving hormone replacement therapy) and found no significant effect on circulating CRP levels. The longer duration of the present study (90 days) as compared to 28 days in the aforementioned study may explain the differing findings in these two studies. As pointed out by the current authors, no significant reduction in CRP levels was found within the shorter interval of 45 days. Furthermore, hypertriglyceridemic subjects as used in the present study as compared to those with less pronounced elevations in fasting triglyceride levels as used in the research by Stark and Holub may also have accounted for the differing findings between these two clinical trials.