Reference:

Associations of Very High Intakes of Eicosapentaenoic and Docosahexaenoic Acids with Biomarkers of Chronic Disease Risk among Yupík Eskimos


Summary:

Numerous controlled clinical trials using higher intakes of EPA/DHA via supplementation have consistently shown significant effects on blood-triglyceride lowering as well as favorable attenuations of other risk factors for cardiovascular disease. However, very few population studies have been reported where very high intakes of EPA/DHA have been correlated to multiple risk factors. One of the reasons for such lies in the fact that few populations in the world regularly ingest such high levels on a regular basis. The subjects selected for monitoring were Yupík Eskimos from communities in southwest Alaska. They have a mean intake of EPA plus DHA averaging 2400 mg/day in women and 3700 mg/day in men. In this population-based research on 357 study participants (median age of 45 yrs, 59% female, 70% overweight or obese), the authors measured the levels of EPA/DHA in their red blood cells (as a biomarker of EPA/DHA intakes) in relation to various risk factors (measured in blood samples) as well as blood pressures.

Higher levels of both EPA and DHA in the red blood cells (indicative of higher intakes of EPA and DHA from fish/marine foods in their traditional diet) were associated with significantly lower levels of blood triglyceride levels, higher HDL-cholesterol levels, higher apo A-I levels, moderately higher LDL-cholesterol levels, and lower levels of circulating IGF-I (insulin-like growth factor). From their overall findings, the authors conclude that ‘increasing EPA and DHA intakes to amounts well above those consumed by the general US population may have strong beneficial effects on chronic disease risk.’
Dr. Holub's Comments:

Increasing EPA/DHA intakes in the US population as suggested by the authors would require a dramatic 15- to 25-fold average increase from current levels. It needs to be recalled that the North American dietitians have advised 500 mg/day for healthy individuals while the American Heart Association have recommended 900-1000 mg/day for those with coronary heart disease. The latter organization has recognized that 2000-4000 mg/day may be needed for much more effective blood triglyceride control in their statements to health professionals.

It is noted that apo A-I (found to be elevated with higher intakes in this study) promotes cholesterol efflux from tissues for disposal by the liver. This effect and the elevations in HDL-cholesterol (but not LDL-cholesterol) as well as the blood triglyceride-lowering would be considered as favorable. Further population studies on the IGF-I observations with higher intakes of EPA/DHA and their implications for disease risk are needed. Finally, it is noted that the Yup'ik Eskimos have been reported to have a relatively low prevalence of cardiovascular disease and diabetes.