

Effect of a fish-oil concentrate on serum lipids in postmenopausal women receiving and not receiving hormone replacement therapy in a placebo-controlled, double-blind trial

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Source: Am J Clin Nutr 2000 Aug;72(2):389-94

Abstract:

**BACKGROUND:** Omega-3 fatty acid supplementation lowered serum triacylglycerol concentrations in studies in which most of the subjects were male. The effects of omega-3 fatty acid supplementation in postmenopausal women receiving and not hormone replacement therapy (HRT) have received little attention. **OBJECTIVE:** We sought to determine the effects of a fish-oil-derived omega-3 fatty acid concentrate on serum lipid and lipoprotein risk factors for cardiovascular disease in postmenopausal women receiving and not receiving HRT, with an emphasis on serum triacylglycerol concentrations and the ratio of triacylglycerol to HDL cholesterol.

**DESIGN:** Postmenopausal women (n = 36) were grouped according to exogenous hormone use and were randomly allocated to receive 8 capsules/d of either placebo oil (control) or n-3 fatty acid-enriched oil (supplement). The supplement provided 2.4 g eicosapentaenoic acid (EPA) plus 1.6 g docosahexaenoic acid (DHA) daily. Serum lipids and the fatty acid composition of serum phospholipids were determined on days 0 and 28.

**RESULTS:** Supplementation with omega-3 fatty acids was associated with 26% lower serum triacylglycerol concentrations ( $P < 0.0001$ ), a 28% lower overall ratio of serum triacylglycerol to HDL cholesterol ( $P < 0.01$ ), and markedly greater EPA and DHA concentrations in serum phospholipids ( $P < 0.05$ ).

**CONCLUSIONS:** These results show that supplementation with a fish-oil-derived concentrate can favorably influence selected cardiovascular disease risk factors, particularly by achieving marked reductions in serum triacylglycerol concentrations and triacylglycerol: HDL cholesterol in postmenopausal women receiving and not receiving HRT. This approach could potentially reduce the risk of coronary heart disease by 27% in postmenopausal women.