

Abstract

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n-3 long-chain FA decrease serum levels of TG and remnant-like particle-cholesterol in humans.

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BACKGROUND: A large number of papers have reported that administration of n-3 FA reduced serum TG concentrations in hypertriglyceridemic patients. However, few studies have examined the effect of n-3 FA on serum concentrations of remnant-like particle (RLP) cholesterol.

METHODS: Volunteers (n = 41) whose serum TG concentrations were 100-300 mg/dL were recruited and randomly assigned to either an n-3 FA group or a control group with stratification by sex, age, and serum TG level in a double-blind manner. The subjects in the n-3 FA group were administered 125 mL of fermented soybean milk with fish oil containing 600 mg of EPA and 260 mg of DHA/d for 12 wk. The controls consumed control soybean milk with olive oil. Fasting blood samples were obtained before the start of administration and at 4, 8, and 12 wk.

RESULTS: EPA concentrations in red blood cells increased significantly in all but one subject in the n-3 FA group, with no significant changes in the control group. TG levels decreased more in the n-3 FA group than in the control group at weeks 4 (P < 0.05), 8 (P < 0.01), and 12 (P < 0.05) with their baseline as covariate. RLP cholesterol levels decreased more in the n-3 FA group than in the control at weeks 8 (P < 0.01) and 12 (P < 0.05) with their baseline as covariate. The groups did not differ in the other lipid levels.

CONCLUSION: It is likely that n-3 long-chain FA may exert anti-atherosclerotic effects by lowering serum TG and RLP-cholesterol levels even at the dose of 860 mg/d.

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