

# Abstract

Am J Clin Nutr. 1999 Feb;69(2):213-9.

## **A vitamin E concentrate rich in tocotrienols had no effect on serum lipids, lipoproteins, or platelet function in men with mildly elevated serum lipid concentrations.**

Mensink RP, van Houwelingen AC, Kromhout D, Hornstra G.

Department of Human Biology, Maastricht University, Netherlands.

**BACKGROUND:** Tocotrienols, lipid-soluble antioxidants with vitamin E activity, have been reported to lower LDL-cholesterol concentrations and platelet aggregation in men, but results are contradictory.

**OBJECTIVE:** To examine in detail the effects of a vitamin E concentrate rich in tocotrienols on serum lipoproteins and on platelet function in men at risk for cardiovascular disease.

**DESIGN:** In this randomized, double-blind, placebo-controlled parallel trial, 20 men received daily for 6 wk 4 capsules, each containing 35 mg tocotrienols and 20 mg alpha-tocopherol; 20 other men received 4 capsules daily, each providing 20 mg alpha-tocopherol. All men had concentrations of serum total cholesterol between 6.5 and 8.0 mmol/L or lipoprotein(a) concentrations > 150 mg/L.

**RESULTS:** Compliance was confirmed by changes in serum tocopherol and tocotrienol concentrations. Serum LDL cholesterol in the tocotrienol group was 4.80 mmol/L before and 4.79 mmol/L after intervention, and increased from 4.70 to 4.86 mmol/L in the placebo group (95% CI for the difference: -0.54, 0.19 mmol/L;  $P = 0.333$ ). Also, changes in HDL cholesterol, triacylglycerol, lipoprotein(a), and lipid peroxide concentrations did not differ between the groups. After adjustment for differences in initial values, no effects were found on collagen-induced platelet aggregation velocity, maximum aggregation, or thromboxane B<sub>2</sub> formation in citrated whole blood. ATP release, however, was lower in the tocotrienol group. Urinary thromboxane B<sub>2</sub> and 11-keto-thromboxane B<sub>2</sub> concentrations and coagulation and fibrinolytic measures did not change.

**CONCLUSION:** The tocotrienol supplements used had no marked favorable effects on the serum lipoprotein profile or on platelet function in men with slightly elevated lipid concentrations.

PMID: 9989682

FREE FULL TEXT

