

# Abstract

J Nutr. 2010 Jan;140(1):81-7.

## Higher selenium status is associated with adverse blood lipid profile in British adults.

Stranges S, Laclaustra M, JC, Cappuccio FP, NavasAcien A, Ordovas JM, Rayman M, Guallar E

Health Sciences Research Institute, University of Warwick Medical School, Coventry CV47AL, UK.

**BACKGROUND:** Recent findings have raised concern about possible associations of high selenium exposure with diabetes and hyperlipidemia in the US, a population with high selenium status. In the UK, a population with lower selenium status, there is little data on the association of selenium status with cardio-metabolic risk factors in the general population.

**OBJECTIVE:** We examined the association of plasma selenium concentration with blood lipids in a nationally representative sample of British adults.

**METHODS:** A cross-sectional study was conducted among 1042 white participants (aged 19-64 y) in the 2000-2001 UK National Diet and Nutrition Survey. Plasma selenium was measured by inductively coupled-plasma mass spectrometry. Total and HDL cholesterol were measured in nonfasting plasma samples.

**RESULTS:** Mean plasma selenium concentration was 1.10 +/- 0.19 micromol/L. The multivariate adjusted differences between the highest (> or =1.20 micromol/L) and lowest (<0.98 micromol/L) quartiles of plasma selenium were 0.39 (95% CI 0.18, 0.60) mmol/L for total cholesterol, 0.38 (0.17, 0.59) for non-HDL cholesterol, and 0.01 (-0.05, 0.07) for HDL cholesterol. Higher plasma selenium (i.e., > or =1.20 micromol/L) was associated with increased total and non-HDL cholesterol levels but not with HDL in the UK adult population.

**CONCLUSIONS:** These findings raise additional concern about potential adverse cardio-metabolic effects of high selenium status. Randomized and mechanistic evidence is necessary to assess causality and to evaluate the impact of this association on cardiovascular risk.

PMID: 19906812

