

## Effects of taurine intake on serum lipids in young women

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Submission date: April 27, 2015; Acceptance date: May 27, 2015; Publication date: May 29, 2015

### ABSTRACT

**Background:** Taurine is an abundant amino acid in human cells, promoting ocular and biliary health, which is also used to treat congestive heart failure, hypertension, and hepatitis. Recently, the consumption of taurine-enriched energy drinks has become popular with young adults, but taurine effects on serum lipids in young adults are unknown.

**Objective:** We studied the influence of oral administration of taurine on serum lipid levels in healthy young women.

**Methods:** Ten healthy young women with a mean body mass index of 20.0kg/m<sup>2</sup>, apolipoprotein E (apoE) phenotype 3/3 and normal menstrual cycles participated. Each subject was instructed to orally ingest 1g of taurine powder after each meal (3g/day) in addition to their usual diets during one menstrual cycle. Before and at the end of taurine intake, physical measurements and blood collection were performed in the morning after a 12-h fast, and 3-day weighted dietary records were obtained. Concentrations of serum lipids, apolipoproteins, and fatty acids in the serum phospholipid fraction were measured.

**Results:** The subjects showed good compliance with taurine intake and none reported adverse effects during the experimental period. After taurine intake, concentrations of total cholesterol, low density lipoprotein cholesterol (LDL-C), free cholesterol, and apolipoprotein B (apoB) were increased ( $p < 0.05$ ), while phospholipids tended to be increased ( $p = 0.051$ ). Fatty acids in the serum phospholipid fraction were also significantly increased ( $p < 0.05$ ). However, triglyceride, remnant-like particle cholesterol, remnant-like particle triglyceride, apoE, the apolipoprotein A-1 (apoA-1)/apoB ratio and the LDL-C/apoB ratio were unchanged. Furthermore, body weight was significantly increased ( $p < 0.01$ ), but did not correlate with either the changes in serum lipids or

nutrient intakes.

**Conclusion:** These results suggest that high taurine intake affects lipoprotein metabolism and increases serum lipids in slightly lean young women.

**Key words:** Taurine, slightly lean young women, serum lipids, remnant lipoprotein, fatty acids of the serum phospholipid fraction