β-glucan from barley and its lipid-lowering capacity: a meta-analysis of randomized, controlled trials

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Abstract

**Background/Objectives**
To more precisely quantify the effect of barley β-glucan on blood lipid concentrations in humans and to examine the factors that could affect its efficacy.

**Subjects/Methods**
Eleven eligible randomized clinical trials published from 1989 to 2008 were identified from nine databases. Weighted mean effect sizes were calculated for net differences in lipid profile using a random effect model (RevMan 4.2).

**Results**
Overall, barley and β-glucan isolated from barley lowered total and low-density lipoprotein (LDL) cholesterol concentrations by 0.30mmol/l (95% confidence interval (CI): -0.39 to -0.21, \( P<0.00001 \)) and 0.27mmol/l (95% CI: -0.34 to -0.20, \( P<0.00001 \)), respectively, compared with control. The pattern of cholesterol-lowering action of barley in this analysis could not be viewed as a dose-dependent response. There were no significant subgroup differences by type of intervention and food matrix.

**Conclusions**
Increased consumption of barley products should be considered as a dietary approach to reduce LDL cholesterol concentrations.