



A rich source of Beta-Glucan

Title: Diets containing barley significantly reduce lipids in mildly hypercholesterolemic men and women

Authors: Kay M. Behall, PhD, CNS, FACN, Daniel J. Scholfield, BS, Judith Hallfrisch, PhD, CNS, FACN

Journal: American Journal of Clinical Nutrition, 80(5), 1185-1193, 2004.

Abstract

Background: Barley has high amounts of soluble fiber but is not extensively consumed in the US diet.

Objective: This study investigated whether consumption of barley would reduce cardiovascular disease risk factors comparably with that of other sources of soluble fiber.

Design: Mildly hypercholesterolemic subjects (9 postmenopausal women, 9 premenopausal women, and 7 men) consumed controlled American Heart Association Step 1 diets for 17 wk. After a 2-wk adaptation period, whole-grain foods containing 0, 3, or 6 g β -glucan/d from barley were included in the Step 1 diet menus. Diets were consumed for 5 wk each and were fed in a Latin-square design. Fasting blood samples were collected twice weekly.

Results: Total cholesterol was significantly lower when the diet contained 3 or 6 g β -glucan/d from barley than when it contained no β -glucan; the greatest change occurred in the men and postmenopausal women. HDL and triacylglycerol concentrations did not differ with the 3 amounts of dietary β -glucan. Large LDL and small VLDL fractions and mean LDL particle size significantly decreased when whole grains were incorporated into the 3 diets. Large LDL and large and intermediate HDL fractions were significantly higher, mean LDL particle size was significantly greater, and intermediate VLDL fractions were significantly lower in the postmenopausal women than in the other 2 groups. A group-by-diet interaction effect was observed on LDL fractions and small LDL particle size.

Conclusion: The addition of barley to a healthy diet may be effective in lowering total and LDL cholesterol in both men and women.