

Cholesterol Research

Yeast Beta 1,3/1,6 Glucan	
Citation	Abstract
<p>Nicolosi R, Bell SJ, Bistrrian BR, Greenberg I, Forse RA, Blackburn GL.</p> <p>Plasma lipid changes after supplementation with beta-glucan fiber from yeast.</p> <p>Am J Clin Nutr. 1999 Aug;70(2):208-12.</p> <p>PMID: 10426696 [PubMed - indexed for MEDLINE]</p>	<p>BACKGROUND: Dietary fiber has been shown to improve blood lipids.</p> <p>OBJECTIVE: The purpose of this study was to evaluate the effect on serum lipids of a yeast-derived beta-glucan fiber in 15 free-living, obese, hypercholesterolemic men.</p> <p>DESIGN: After a 3-wk period in which subjects ate their usual diet, 15 g fiber/d was added to the diet for 8 wk and then stopped for 4 wk. Plasma lipids were measured weekly during baseline and at week 7 and 8 of fiber consumption, and again at week 12.</p> <p>RESULTS: Compared with baseline, fiber consumption significantly reduced plasma total cholesterol (by 8% at week 7 and 6% at week 8; $P < 0.05$ using Bonferroni correction); week 12 values did not differ from baseline. No significant differences were noted between baseline LDL cholesterol and values at weeks 7, 8, or 12 when comparing individual groups by using Bonferroni correction, even though the overall one-way analysis of variance with repeated measures was highly significant ($P < 0.001$). LDL-cholesterol concentrations did decline by 8% at week 8 compared with baseline. There was a significant effect of diet on plasma HDL-cholesterol concentrations ($P < 0.005$ by one-way ANOVA with repeated measures). However, a group difference was observed only between baseline and week 12 (16% increase; $P < 0.05$ by Bonferroni correction). Triacylglycerol concentrations did not change.</p> <p>CONCLUSIONS: The yeast-derived beta-glucan fiber significantly lowered total cholesterol concentrations and was well tolerated; HDL-cholesterol concentrations rose, but only 4 wk after the fiber was stopped.</p>
<p>Brennan FX Jr, Fleshner M, Watkins LR, Maier SF.</p> <p>Macrophage stimulation reduces the cholesterol levels of stressed and unstressed rats.</p> <p>Life Sci. 1996;58(20):1771-6.</p> <p>PMID: 8637401 [PubMed - indexed for MEDLINE]</p>	<p>Male, Sprague-Dawley rats were either treated with zymosan, a nonspecific macrophage stimulator, or saline vehicle. Half of each group were then subjected to a stress procedure, the other half remained in their home cage. Results indicate that zymosan-treated animals had lower levels of total, low-density/very-low-density, and high-density lipoprotein than vehicle controls. Stressed animals had higher levels of the cholesterol parameters than did home cage controls. Manipulation of macrophage levels may be a prophylactic manipulation to combat stress-induced increases in cholesterol.</p>
<p>Bell S, Goldman VM, Bistrrian BR, Arnold AH, Ostroff G, Forse RA.</p> <p>Effect of beta-glucan from oats and yeast on serum lipids.</p> <p>Crit Rev Food Sci Nutr. 1999 Mar;39(2):189-202. Review.</p> <p>PMID: 10198754 [PubMed - indexed for MEDLINE]</p>	<p>Heart disease is the leading cause of death in the U.S. One way to reduce the risk of developing the disease is to lower serum cholesterol levels by making dietary changes. In addition to reducing intake of total fat, saturated fat, and dietary cholesterol, serum cholesterol can be further reduced by added fiber, especially from sources rich in beta-glucan. In this review, two sources of beta-glucan are described; one source is oats and the other yeast. Their chemical structures and physical properties are compared, and their effect on serum lipid levels is described. Oat beta-glucans are found in various breakfast cereals and snacks. Usually, several servings of these products are required to meet the Food and Drug Administration's claim of reducing the risk of heart disease. The yeast-derived fiber is a more concentrated source of beta-glucan than the oat product. It is currently being tested in a wide variety of food products.</p>