



**Title: Effect of High  $\beta$ -Glucan Barley on Serum Cholesterol Concentrations and Visceral Fat Area in Japanese Men—A Randomized, Double-blinded, Placebo-Controlled Trial**

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**Abstract**

This study investigated whether the consumption of a diet in which high- $\beta$ -glucan barley replaced rice would reduce the visceral fat area as well as the serum low-density lipoprotein cholesterol (LDL-C) and total cholesterol (TC) in hypercholesterolemic Japanese men. A randomized, double-blinded, placebo-controlled intervention study was conducted in 44 hypercholesterolemic Japanese men with a body mass index (BMI)  $>22 \text{ kg/m}^2$ . The subjects were randomly assigned to groups consuming either rice (placebo group) or a mixture of rice and pearl barley with a high  $\beta$ -glucan content (test group, 7.0 g  $\beta$ -glucan per day) for 12 weeks. Blood samples were taken, and CT scan obtained before the trial and every four weeks during the trial. The pearl barley intake significantly reduced serum concentrations of LDL-C ( $P=0.041$ ) and TC ( $P=0.037$ ) during the trial. Significant differences between the test and placebo groups were found for the visceral fat ( $P=0.039$ ), BMI ( $P=0.015$ ), and waist circumference ( $P=0.011$ ) at the end point. The consumption of pearl barley with a high  $\beta$ -glucan content reduces not only LDL-C but also visceral fat area.