



A rich source of Beta-Glucan

Title: Metabolic improvement of male prisoners with type 2 diabetes in Fukushima Prison, Japan

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Abstract

Imprisonment often improves metabolic control in prisoners with type 2 diabetes; however, the reasons for this remain unclear. Here, we investigated the metabolic control of male prisoners with type 2 diabetes in Japan. Retrospective analysis of 4385 medical charts of male prisoners in Fukushima Prison from 1998 to 2004 revealed 109 prisoners (all Asian) with type 2 diabetes (mean \pm S.D.: 51 \pm 10 years). All were followed up during their imprisonment (14 \pm 10 months). During imprisonment, mean fasting plasma glucose and hemoglobin Alc (HbA1c) levels dramatically decreased from 184 \pm 74 to 113 \pm 38 mg/dl ($p < 0.001$) and 8.4 \pm 2.1 to 5.9 \pm 1.2% ($p < 0.001$), respectively. In addition, 5 of 18 prisoners (28%) treated with insulin and 17 of 34 (50%) treated with oral hypoglycemic agents were able to discontinue their treatment and maintain good metabolic control. Most prisoners in Japanese prisons work 8 h a day 5 days a week, consuming a high dietary fiber diet including boiled rice with barley, “Mugimeshi”. These findings suggest that a well-regulated lifestyle and long-term intake of high dietary fiber may have beneficial effects on metabolic control in patients with type 2 diabetes.