



### **Breakfast Cereals and Risk of Type 2 Diabetes in the Physicians' Health Study I**

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#### **Abstract**

**Objective:** To examine the association between breakfast cereal consumption and the risk of type 2 diabetes (DM).

**Research Methods and Procedures:** We analyzed prospectively data from 21,152 male participants of the Physicians' Health Study I. Consumption of breakfast cereals was estimated using an abbreviated food questionnaire, and incident DM was ascertained through yearly follow-up questionnaires.

**Results:** The average age was 53.6 9.4 years (range, 39.7 to 85.9) during the initial assessment of cereal intake (1981 to 1983). During a mean follow-up of 19.1 years, 1958 cases of DM occurred. The crude incidence rates of DM were 57.7, 53.8, 43.5, and 35.4 cases/10,000 person-years for people reporting breakfast cereal intake of 0, 1, 2 to 6, and 7 servings/wk, respectively. In a Cox regression model adjusting for age, cigarette smoking, BMI, physical activity, vegetable consumption, and alcohol intake, hazard ratios (95% confidence interval) for DM were 1.0 (reference), 0.89 (0.79 to 1.00), 0.76 (0.67 to 0.86), and 0.63 (0.55 to 0.72) from the lowest to the highest category of cereal consumption, respectively ( $p$  for trend < 0.0001). In secondary analyses, the inverse association between cereal intake and DM was stronger with whole-grain than refined cereals.