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Effect of cinnamon on postprandial blood glucose, gastric emptying, and satiety in healthy subjects^{1,2,3}

Joanna Hlebowicz, Gassan Darwiche, Ola Björgell and Lars-Olof Almér

¹ From the Departments of Medicine (JH, GD, and L-OA) and Radiology (OB), Malmö University Hospital, University of Lund, Lund, Sweden

Background: Previous studies of patients with type 2 diabetes showed that cinnamon lowers fasting serum glucose, triacylglycerol, and LDL- and total cholesterol concentrations.

Objective: We aimed to study the effect of cinnamon on the rate of gastric emptying, the postprandial blood glucose response, and satiety in healthy subjects.

Design: The gastric emptying rate (GER) was measured by using standardized real-time ultrasonography. Fourteen healthy subjects were assessed by using a crossover trial. The subjects were examined after an 8-h fast if they had normal fasting blood glucose concentrations. GER was calculated as the percentage change in the antral cross-sectional area 15–90 min after ingestion of 300 g rice pudding (GER1) or 300 g rice pudding and 6 g cinnamon (GER2).

Results: The median value of GER1 was 37%, and that of GER2 was 34.5%. The addition of cinnamon to the rice pudding significantly delayed gastric emptying and lowered the postprandial glucose response ($P < 0.05$ for both). The reduction in the postprandial blood glucose concentration was much more noticeable and pronounced than was the lowering of the GER. The effect of cinnamon on satiety was not significant.

Conclusions: The intake of 6 g cinnamon with rice pudding reduces postprandial blood glucose and delays gastric emptying without affecting satiety. Inclusion of cinnamon in the diet lowers the postprandial glucose response, a change that is at least partially explained by a delayed GER.

Key Words: Gastric emptying • blood glucose • healthy subjects • cinnamon • diabetes • satiety

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