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Substituting Whole Grains for White Rice May Lower Risk for Type 2 Diabetes

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June 14, 2010 — Substituting brown rice or other whole grains for white rice is associated with a lower risk for type 2 diabetes, according to results from the Health Professionals Follow-up Study and the Nurses' Health Study (NHS) I and II reported in the June 14 issue of *Archives of Internal Medicine*.

"Because of differences in processing and nutrients, brown rice and white rice may have different effects on risk of type 2 diabetes mellitus," write Qi Sun, MD, ScD, from the Harvard School of Public Health in Boston, Massachusetts, and colleagues. "We examined white and brown rice consumption in relation to type 2 diabetes risk prospectively in the Health Professionals Follow-up Study and the Nurses' Health Study I and II."

Diet, lifestyle habits, and disease status were prospectively determined and updated for 39,765 men and 157,463 women in these cohorts.

Higher intake of white rice (≥ 5 servings per week vs < 1 per month) was associated with a greater risk for type 2 diabetes, after multivariate adjustment for age, lifestyle, and other dietary risk factors. Pooled relative risk [RR] was 1.17 (95% confidence interval [CI], 1.02 - 1.36). In contrast, the risk for type 2 diabetes was lower with high intake of brown rice (≥ 2 servings per week vs < 1 per month; pooled RR, 0.89; 95% CI, 0.81 - 0.97).

The investigators estimated that replacing 50 g per day of uncooked white rice (one-third serving per day) with the equivalent amount of brown rice was associated with a 16% lower risk for type 2 diabetes (95% CI, 9% - 21%). For replacement with whole grains as a group, diabetes risk was 36% lower (95% CI, 30% - 42%).

"Substitution of whole grains, including brown rice, for white rice may lower risk of type 2 diabetes," the study authors write. "These data support the recommendation that most carbohydrate intake should come from whole grains rather than refined grains to help prevent type 2 diabetes."

Limitations of this study include study populations primarily consisting of working health professionals with European ancestry, measurement error of rice intake assessment related

to use of food frequency questionnaires, possible residual confounding, and lack of oral glucose tolerance test data to confirm diabetes diagnoses.

"The current Dietary Guidelines for Americans identifies grains, including rice, as one of the primary sources for carbohydrate intake and recommends that at least half of carbohydrate intake come from whole grains," the study authors conclude. "From a public health point of view, replacing refined grains such as white rice by whole grains, including brown rice, should be recommended to facilitate the prevention of T2D [type 2 diabetes]."

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