

Diabetes Risk: White Rice Joins White Bread

By Kristina Fiore, Staff Writer, MedPage Today

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Reviewed by [Dori F. Zaleznik, MD](#); Associate Clinical Professor of Medicine, Harvard Medical School, Boston.

1 comment(s)

Eating more white rice may up the risk of type 2 diabetes, especially for Asian populations, researchers said.

Patients who ate the greatest amounts of the grain had a 27% greater risk of developing the disease than those who ate the least, and the relative risk was higher among Asian patients, Qi Sun, PhD, of Harvard, and colleagues, reported in *BMJ*.

"Although rice has been a staple food in Asian populations for thousands of years, this transition [to more sedentary lifestyles and greater availability of food] may render Asian populations more susceptible to the adverse effects of high intakes of white rice, as well as other sources of refined carbohydrates, such as pastries, white bread, and sugar sweetened beverages," they wrote.

The glycemic index of white rice is higher than that of other whole grains, largely due to processing. It's also the primary contributor to dietary glycemic load for populations that consume rice as a staple food, such as Asians.

Sun and colleagues conducted a meta-analysis of four prospective cohort analyses in Asian and Western populations, totaling 352,384 patients with follow-up ranging from 4 to 22 years.

During that time, there were 13,284 incident cases of type 2 diabetes.

Asians generally had a higher level of white rice consumption than Western populations.

Overall, Sun and colleagues found a positive association between white rice intake and type 2 diabetes (RR 1.27, 95% CI 1.04 to 1.54, $P=0.001$), which was stronger in Asian populations.

Asians with the highest intake had a 55% greater risk of diabetes than Asian patients who ate the least rice (RR 1.55, 95% CI 1.20 to 2.01).

The risk was also heightened in Western populations, but the confidence interval straddled 0 and wasn't significant (RR 1.12, 95% CI 0.94 to 1.33).

The researchers noted that study heterogeneity in these analyses was low.

They also found a dose-response effect -- with each increase in rice serving per day, risk of type 2 diabetes rose by 11% (95% CI 1.08 to 1.14, $P<0.001$).

In secondary analyses, the association appeared to be more pronounced in women than in men, they added.

They cautioned, however, that the meta-analysis was limited by the observational nature of the included studies and by their reliance on food frequency questionnaires to assess dietary intake. Also, they did not analyze consumption of brown rice, since only one of the four studies examined



Action Points

A meta-analysis of four cohort studies found that consumption of higher amounts of white rice was associated with an increased risk of type 2 diabetes compared to eating the lowest amounts.

Note that the association was highest for the Asian population.

this food.

Still, they concluded that the dose-response relationship may indicate that "even for Western populations with typically low intake levels, relatively high white rice consumption may still modestly increase risk of diabetes."

In an accompanying editorial, Bruce Neal, MD, of the University of Sydney in Australia, cautioned that the "interpretation of the observed association, and, in particular, determination of the likelihood of causality, are problematic."

Neal warned that the highest and lowest levels of rice intake varied greatly between studies, and that what's really needed is a "more sophisticated analysis based on primary rather than summary data."

He continued that there are "few immediate clinical implications," since "further research is needed to develop and substantiate the research hypothesis" -- even though funding is likely a challenge.

"Public health nutrition awaits the discovery of the model that will secure the investment needed to answer questions about the role of nutrition in health using large randomised studies," Neal wrote. "Until then, the effect of the consumption of white rice on the development of type 2 diabetes will remain unclear."

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Neither the researchers nor the editorialist reported any conflicts of interest.

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Hu EA, et al "White rice consumption and risk of type 2 diabetes: meta-analysis and systematic review" *BMJ* 2012; DOI: 10.1136/bmj.e1454.

Additional source: BMJ

Source reference:

Neal B "White rice and risk of type 2 diabetes" *BMJ* 2012; DOI: 10.1136/bmj.e2021.

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