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Effects of a whole rice diet on metabolic parameters and inflammatory markers in prediabetes

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Summary

Background and aims

Epidemiological studies have shown an association between consumption of white rice and prevalence of insulin resistance. We wanted to test the effect of substituting brown rice for white rice on insulin resistance.

Methods

A group of Chinese American ($n = 100$) with screening pre-diabetes in the area of Flushing, New York City, were randomized to either continue their usual white rice intake ($n = 51$) or change to brown rice ($n = 49$) for 3 months. Fasting blood was obtained at baseline and end of study in both groups for measurement of circulating and cellular (peripheral mononuclear cells) metabolic and inflammatory markers.

Results

Only 58 subjects (white rice = 28 and brown rice = 30) finished the study. Their analysis shows significant weight loss and fall of systolic and diastolic blood pressure only in those ingesting brown rice. Insulin and HOMA, serum AGEs and 8-isoprostane decreased, while SIRT1 mRNA increased in the brown rice group as compared to the white rice group.

Conclusions

Substituting brown rice for white rice in a pre-diabetes population with high daily consumption of rice has a very beneficial effect in improving their metabolic risk factors. Further studies are needed to confirm these findings.

Keywords:

[Oxidative stress](#), [Insulin resistance](#), [Metabolic syndrome](#), [Dietary fiber](#), [AGEs](#)

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