OBESITY, INSULIN RESISTANCE AND THE RICE YOU EAT: ANY LINK?

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Type 2 diabetes is a metabolic disorder with established, well-defined precursors. Obesity and insulin resistance are amongst most important factors in predisposition to diabetes. Rice is a staple food for about half the global population and its consumption has been strongly linked with diabetogenesis. We assert that tackling the prevalence of predisposing factors by modifying certain rice cultivars could reduce the global burden of obesity and insulin resistance and by extension of type 2 diabetes. Several rice cultivars with various properties were fed to nulliparous rats (five weeks old at the start of the experiment) for 90 days. They were then returned to a diet of standard pellets and mated with males raised on a standard diet. The resulting pups and dams were investigated for obesity and insulin resistance markers. We found that germination did more to reduce predisposition to obesity and insulin resistance than high amylose content. The combined reducing effect of germination and high amylose content on predisposition to obesity and insulin resistance was greater than the sum of their independent effects. Polished (white) rice with a low amylose content predisposed dams on a high-fat diet to markers of insulin resistance and obesity and this predisposition was inherited by their F1 offspring. Overall, the results suggest that harnessing the beneficial properties of germination and amylose in rice would reduce the burden of obesity and insulin resistance, which are known to be key risk factors for development of type 2 diabetes.

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