Serum uric acid, inorganic phosphorus, and glutamic-oxalacetic transaminase and blood pressure in carbohydrate-sensitive adults consuming three different levels of sucrose.

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Abstract

12 men and 12 women, classified as carbohydrate-sensitive on the basis of an exaggerated insulin response to a sucrose load, consumed diets containing either 5, 18, or 33% sucrose in a crossover design. The diets simulated the average American diet and consisted of identical natural and processed foods with the exception of a patty. The patty provided the experimental levels of sucrose; the difference was made up by starch. Each level of sucrose was consumed for a 6-week period. Subject body weights were maintained. Fasting serum uric acid and inorganic phosphorus increased as the level of dietary sucrose increased. Diastolic blood pressure was significantly higher when subjects were on the 33% sucrose diet as compared to the 5 and 18% diets. Serum glutamic-oxalacetic transaminase was not affected by diet. In tolerance tests after a sucrose load (2 g/kg body weight), the uric acid response was higher after the 18 and 33% sucrose diets than after the 5% sucrose diet. Serum inorganic phosphorus, which increased significantly with each level of dietary sucrose, decreased following the sucrose load. These results indicate that carbohydrate-sensitive individuals may be affected adversely by the level of sucrose commonly found in the Westernized diet. Since elevated serum uric acid and blood pressure have been identified as risk factors in degenerative diseases, this study suggests that carbohydrate-sensitive individuals should limit their sucrose consumption.

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