Blood glucose/lactate responses from ingesting high fructose corn syrup and sucrose beverages

Fructose has been the focus of many researchers. High fructose corn syrup has replaced sucrose in food products and has gained notoriety concerning possible negative effects on metabolism. Purpose: To examine whether a HFCS beverage alters glucose and lactate responses compared to a sucrose beverage. METHODS: Seven (3 male, 4 female: Mean±SD; 23.7±2.4yrs, 71.5±16.2kg, 173.9±9.6cm) adults volunteered. Subjects participated in two experimental trials after a 12 hour fast. A 10% beverage sweetened with HFCS or sucrose (30 g/300mL) was ingested. Blood samples were taken at -5, 30, 60, 90 and 120 minutes, coagulated for 20 minutes and centrifuged for 10 minutes. An ANOVA with repeated measures was used for statistical analysis. T-tests were used to differentiate means with Bonferroni adjustment (alpha level < 0.05). RESULTS: No interaction effect was observed between time and treatments. No treatment main effect was found for glucose (Mean±SD: sucrose 4.0±0.92 mM/L; HFCS 4.28±1.06mM/L) or lactate (Mean±SD: sucrose 2.10±0.67mM/L; HFCS 2.15±0.68mMol/L). There was a significant time effect within blood glucose levels. Mean glucose concentration at 30 minutes was increased over baseline (Mean±SD: 5.6±0.98mM/L), and 60, 90, and 120 minutes. CONCLUSIONS: Glucose and lactate responses were not different from one another after ingestion of HFCS and sucrose.