

Changes In Risk Factors For The Metabolic Syndrome As A Result Of Ten Weeks Of High Sugar Intake Are Not Impacted By The Type Or Amount Of **Fructose Containing Sugar Consumed**

Introduction

Animal studies have suggested the linkage between the consumption of fructose and some features of metabolic syndrome. In human subjects, fructose induced triglyceride synthesis has been postulated to be augmented when accompanied by glucose. The objective of this study was to investigate the dose response effect of fructose containing dietary sugars on risk factors for metabolic syndrome, i.e. waist circumference, blood pressure, triglyceride, glucose and HDL

Methods

- •Participants in this ten-week study (n=355) were men and women between 20-60 years, with a BMI between 21 and 35 kg/m².
 - •Mean age 38.3 ± 11.3 years
 - •Male=165, Female=190

•All participants were weight stable at the time of enrollment •No change in weight >3% of current weight within the past 30 days. •The energy intake required to maintain weight was calculated for each participant and a prescription for the daily consumption of sugar sweetened, 1% fat milk set so that the added sugar contributed a certain percentage of the calories required for weight stability: •Groups 1 & 2 – Energy balanced containing 8% calories from HFCS

- or sucrose
- •Groups 3 & 4 Energy balanced containing 18% calories from HFCS or sucrose
- •Groups 5 & 6 Energy balanced containing 30% calories from HFCS or sucrose
 - •25^{th,} 50th, and 90th percentile of the population consumption levels for fructose respectively.

Discussion & Conclusions

These data show that these levels of high sugar intake can lead to small increases in some risk factors for the metabolic syndrome. However there were no differences between the two most common types of fructose containing sugars at any level of intake.

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Systolic blood pressure did not change between baseline and week 10 (109.4 ±10.9 vs 108.3 ± 10.9). •N=352



Fasting glucose did not change between baseline and week 10 $(89.4 \pm 6.4 \text{ vs } 90.0 \pm 8.5).$ •N=345

Triglycerides



vs 114.1 ± 64.7). •N=342 Interaction effect (Time x Group) p>0.05; Time effect, p<0.001

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Results





Waist Circumference



vs 51.6 ± 13.6). •N=342

Interaction effect (Time x Group) p>0.05; Time effect, p<0.05

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Diastolic blood pressure did not change between baseline and week 10 (72.1 \pm 8.0 vs 71.3 \pm 8.0).

•Interaction effect (Time x Group) p>0.05; Time effect, p>0.05



Waist circumference slightly increased from baseline to week 10



