

The Effects of Typical levels of Consumption of Dietary Sugars on Traditional Risk Factors for Cardiovascular Disease and Triglycerides

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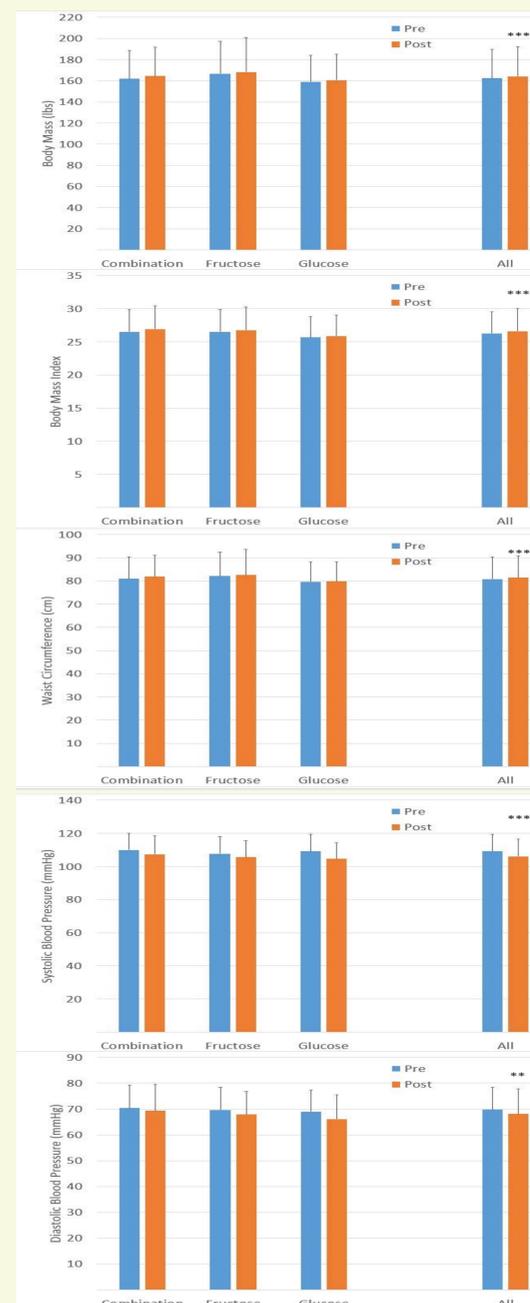
Introduction

- Dietary sugars have been suggested by many as a uniquely detrimental cause of metabolic disruptions that increase the risk of cardiovascular disease (CVD).
- The American Heart Association has recommended that women and men should not consume more than 100 or 150Kcal/day from added sugars respectively.
- However, the focus of recent research on the dangers of sugars has been on fructose, typically providing the sugar in isolation and in amounts very rarely consumed by humans.
- As such, there is a lack of evidence suggesting negative effects when fructose is consumed in typical doses or in ways more typical to the American diet, such as with glucose as high fructose corn syrup (HFCS) or as sucrose.

Methods

- All participants (n=267) were weight-stable individuals (no change in weight >3% for 3 months) were either normal weight or over weight overweight, normotensive, normoglycemic and with no other overt health problems.
- Individuals were required to consume sugar-sweetened low-fat milk every day for ten weeks as part of their usual diet.
- The added sugar in the milk represented the 50th percentile for sugar consumption in the United States:
 - Fructose - added fructose providing 9% of calories required for weight maintenance
 - Glucose - added glucose providing 9% of calories required for weight maintenance
 - HFCS - added HFCS providing 18% of calories required for weight maintenance
 - Sucrose - added sucrose providing 18% of calories required for weight maintenance.
- Energy intake required for weight maintenance was estimated from the Mifflin St Joer prediction including an individualized activity factor based on responses to a physical activity questionnaire.
- Other than milk consumption participants followed no structured dietary program. They were counseled on how to account for the calories in the sweetened milk, but were told to continue to eat to the same level of fullness as prior to enrollment.
- Measurements were taken prior to and after the intervention, both times in the morning after a 12 hour fast
- Subjects and research staff were blinded to which sugar was consumed.

Results



Different from Baseline:
 $p < 0.001$ ***
 $p < 0.01$ **

Greater change than Glucose:
 $p < 0.05$ †

Discussion & Conclusion

- These data show an expected increase in triglycerides at higher levels of sugar consumption in the combination sugar group.
- However, it is unclear whether this was due to the higher sugar content per se (30% vs 18%) or due to the combination of sugars.
- Importantly no negative effects on any traditional CVD risk factor were observed. However, studies longer than ten weeks are warranted.

