

Body Fat and Central Adiposity are Similarly Affected by Four Types of Sugars When Consumed as Part of a Usual Diet

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Introduction

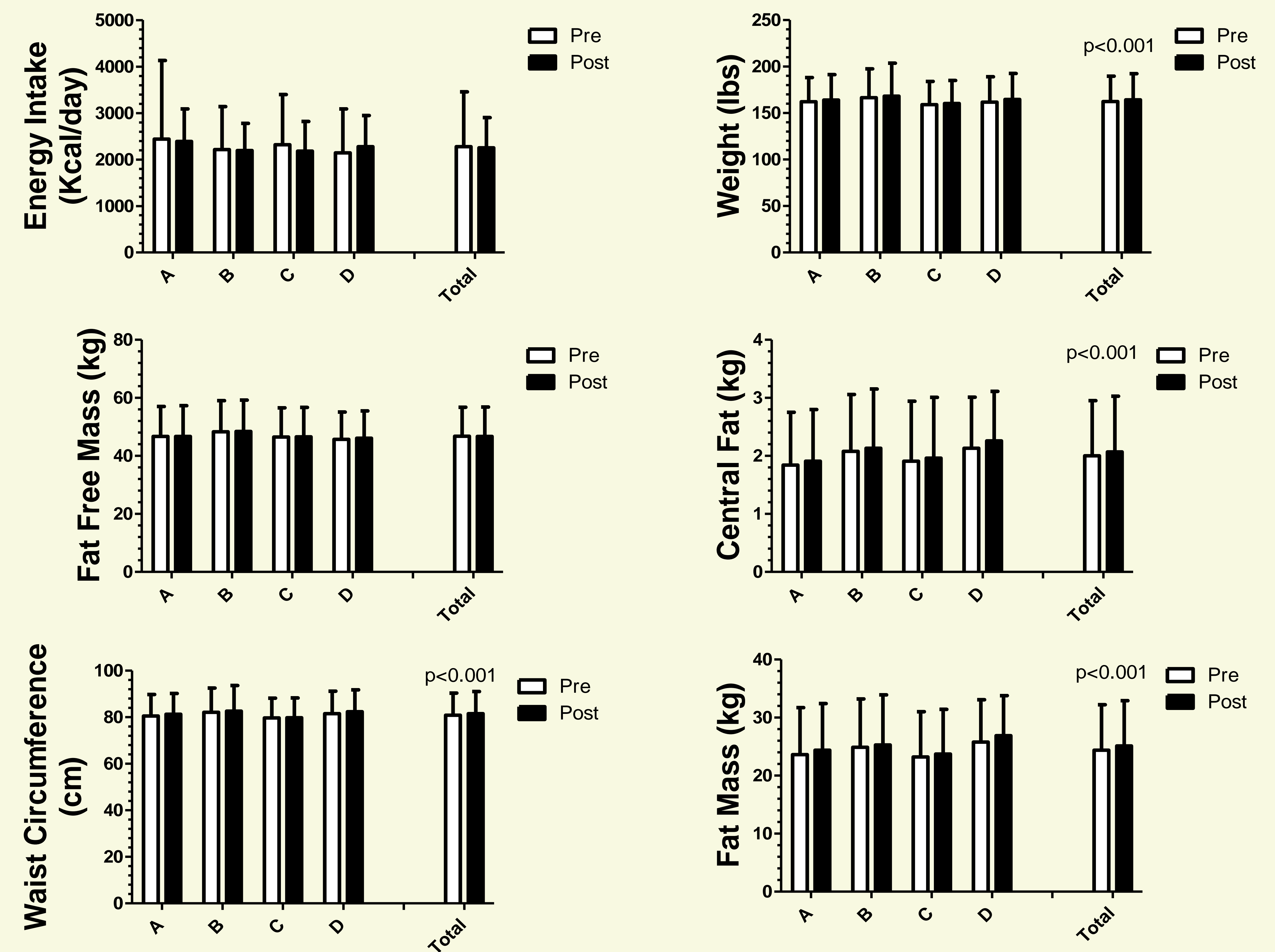
- Our studies, and those of others, have shown there to be no meaningful difference in the effects on metabolism, appetite or potential for promoting obesity between the two most commonly consumed forms of fructose, high fructose corn syrup (HFCS) and sucrose.
- However, due to the unique metabolic fate of fructose, theories persist that the fructose moiety may be particularly pernicious, and may be exacerbated by the presence of glucose.
- However, there is a lack of data to support or refute such theories.
- The purpose of the present study was to compare the effects of HFCS, sucrose, glucose and fructose on weight, and total and central body fat when consumed daily for ten weeks

Methods

- The study included one-hundred twenty-three weight-stable individuals (no change in weight >3% for 3 months) who 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.
- Three-day food diaries and NDSR were used to evaluate dietary intake at baseline and after ten-weeks.
- Subjects and research staff were blinded to which sugar was consumed.
- Due to ongoing investigation the blind has still not been broken.

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Results



Discussion & Conclusion

- Despite food records revealing no change in energy intake there was a small, but consistent increase in weight in the entire cohort. This may reveal some preferential adipogenic quality of sugar sweetened milk, but may also be a result of a shortcoming of 3-day food diaries.
- Importantly, when consumed at 50th percentile population, there was no sugar specific response.



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