Median Intake of Fructose Does Not Increase Cardiovascular Disease Risk Factors

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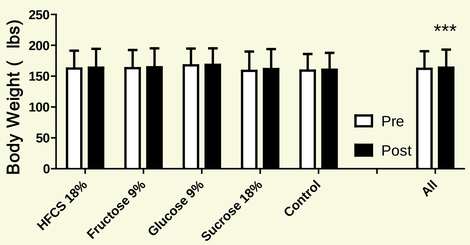
Introduction

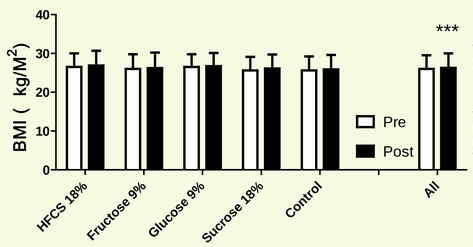
- Fructose is metabolized differently than other monosaccharides and recent research has focused on how this difference may contribute to obesity and increasing cardiovascular disease risk.
- However, studies that have shown such an effect have used experimental models that are drastically different than how fructose is typically consumed by humans – either using amounts far in excess of even the highest consumers and/or supplying it in isolation from other sugars or macronutrients.
- Further complicating matters, fructose is primarily consumed as added sugars and so discussions about the effects of fructose often get conflated with discussions on the effects of added sugars.
- Therefore, a more real world investigation of how fructose is typically consumed is needed to understand the impact of fructose per se and, more generally, the impact of typical levels of added sugar consumption. levels.

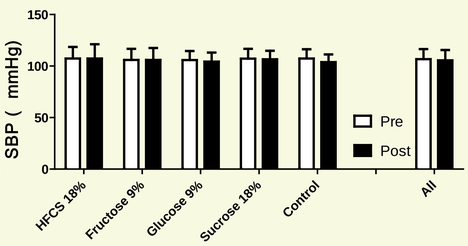
Methods

- This was a study with a ten week intervention that included 156 normotensive, normoglycemic, apparently healthy individuals who were weight stable (no change in weight greater than 3% over the past three months) prior to enrollment.
  - Male=69, Female=87,
  - Mean age 35.7 ± 11.4.
- Participants were randomly assigned to one of five groups - four that contained low fat milk with added sugar in amounts equivalent to the 50th percentile of fructose consumption in the US, and one unsweetened low-fat milk control group.
- Milk was consumed in amounts so that the added sugar contributed a target percentage of the calories required for weight maintenance.
- The groups were as follows:
  - Fructose 9%, Glucose 9%, High fructose corn syrup (HFCS)18%, sucrose 18% and an unsweetened milk control in which milk contributed 18% of the weight-maintenance calories.
- The energy intake required for weight maintenance was estimated for each participant using the Miflin St Joer equation and using an appropriate activity factor determined by responses to a physical activity questionnaire.
- All measurements were obtained in the fasting state using standard procedures, both prior to and after the intervention.
- Data were analyzed using ANOVA with repeated measures and are presented as mean ± S.D.

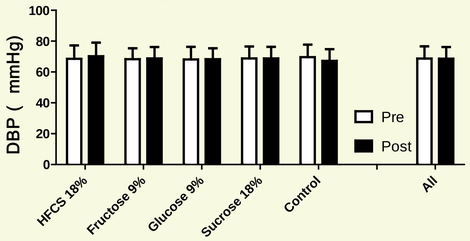
Results







Time p<0.001
Time X group interaction p>0.05



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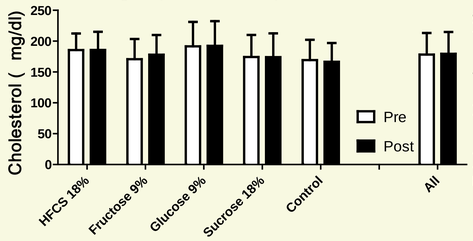

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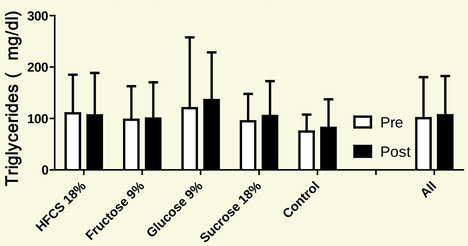

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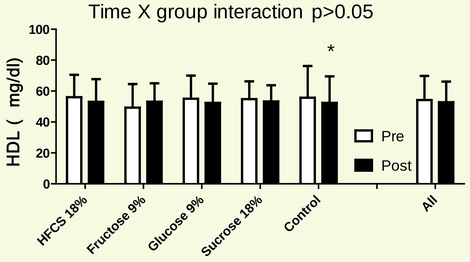

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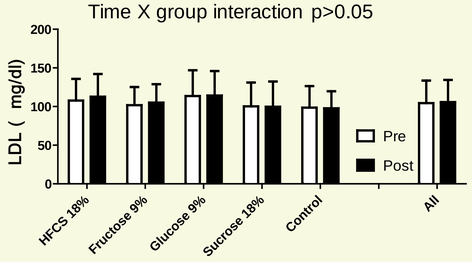

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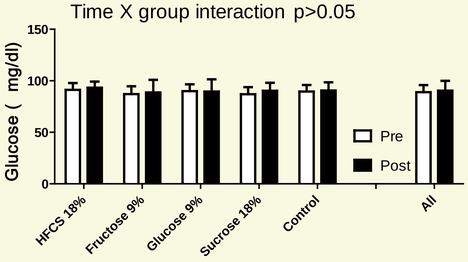

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* Different than baseline within group, p<0.05

Discussion & Conclusion

- These data suggest that the majority factors are unaffected by the consumption of the U.S. population average intake of fructose
- Furthermore, this is evident whether consumed as fructose or as more typically consumed forms of sugar that contain fructose.

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