The Effects of Various Consumption Levels of High Fructose Corn Syrup and Sucrose on **Circulating Glucose, Insulin, Leptin, Active Ghrelin and Triglycerides** Zhiping Yu, Joshua Lowndes, Stephanie Sinnett, James Rippe Rippe Lifestyle Institute, Celebration, FL

Introduction

•Excess sugar consumption has been singled out as a potential primary factor in the development of obesity and associated metabolic disorders, with fructose containing sugars being particularly strongly implicated. •Pure fructose is rarely consumed in isolation. Instead it is typically commonly consumed along with other sugars, most commonly in the form of sucrose or high fructose corn syrup (HFCS)

•Acute studies have shown them to have equivalent metabolic effects, but few data exist on the longer-term metabolic effects of these two sugars when consumed at levels typical of the general population.

Methods

•This study consisted of 138 normoglycemic, normotensive individuals

•Mean age 38.3 ± 11.3 years

•Mean BMI 27.4 ± 3.5

•Participants consumed low-fat, sweetened milk for ten weeks according to the following random group assignments:

•8% total caloric intake provided by added HFCS or Sucrose (25th percentile level of fructose in the American diet)

•18% total caloric intake provided by HFCS or sucrose (50th percentile)

•30% total caloric intake provided by HFCS or sucrose (95th percentile)

•No structured diet was provided. Instead participants were asked to self regulate eating behavior based on their perception of hunger.

•Data were analyzed using a multivariate analysis of variance with repeated measures.





There is no difference of metabolic effect of HFCS and sucrose at low, medium, and high levels of consumption. The impact of HFCS and sucrose on energy regulating hormones at these three doses is the same.

3000

1500

1000

Entire Cohor

bg/ * pg/

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Results

•Body mass increased by 1.1kg (76.9 ± 13.9 vs 78.0 ± 14.5kg), which while small was statistically significant (p<0.001). However, group assignment did not influence this response (time X Group interaction p>0.05)

Discussion & Conclusion

8% Suc 8% HECS 18% HECS 18% Suc 30% HECS 30% Suc



p<0.05 †, p<0.01 ††, p<0.001 †††

