

High Fructose Corn Syrup and Sucrose Are Nutritionally Equivalent and May Help Improve Dietary Quality

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Learning Outcome: The reader will understand how commonly consumed components of the diet can be incorporated into a healthy diet.

Background: This study evaluated the effects of consuming either 10% or 20% of calories from either high fructose corn syrup (HFCS) or sucrose (SUC) sweetened 1% milk as part of a eucaloric (weight stable) diet on the metabolism and health effects of different sugars. This report describes the effects of two sweeteners at two levels of consumption on dietary quality.

Methods: For 10 weeks each of 115 participants followed the above referenced diet. Study participants were taught how to complete 3 day food records which were reviewed by study dietitians prior to, and at the end of, the 10 week intervention to assess compliance with the study diet and dietary quality.

Results: Intervention compliance was high, at over 96%. No significant weight gain occurred in any of the intervention groups. No significant increase in calories or differences in calorie consumption occurred in any group. The increase in percentage of calories for the entire cohort from carbohydrate (49.2 ± 7.8 vs. $53.9 \pm 6.2\%$, $p < 0.001$) was offset by a reduction in the % of calories from fat (33.1 ± 6.8 vs. $26.9 \pm 5.1\%$, $p < 0.001$) with no change in protein (19.6 ± 3.7 vs. 18.8 ± 3.4 , $p > 0.05$). Significant increases in dietary calcium (954.6 ± 762.3 vs. 1992.2 ± 841.8 mg, $p < 0.001$), vitamin D (5.3 ± 5.6 vs. 17.0 ± 7.7 mg, $p < 0.001$) and potassium (2660 ± 1203.3 vs. 3826 ± 1381.3 mg, $p < 0.001$) occurred.

Conclusion: These data show that HFCS and Sucrose are nutritionally equivalent, can be consumed at 10-20% of calories (5-10% of calories as fructose) without weight gain and may improve dietary quality by improving palatability and compliance with nutrient dense foods.

Funding Disclosure: Corn Refiners Association

Using Visual Plate Waste to Measure the Impact of Reorganization of a Hospital Food Delivery System

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Learning Outcome: Participants will see how changes in food delivery system in an acute care hospital setting can impact food consumption/plate waste.

This quantitative study sought to determine the impact of converting the food delivery system in an acute care hospital from traditional service to hotel-style room service. The study took place in a 132-bed facility in southern Utah. Trained researchers collected data on 42 meals (breakfast, lunch and dinner, totaling 1103 patient trays). Visual plate waste data was gathered over two one-week periods, one prior to the change to hotel-style service and one after. The amount of food remaining on each tray was recorded on the original menu slip as patient trays were returned to the hospital dish room. Food consumption for each food was ranked on a 5-point scale from 0 (0% consumed) to 4 (100% consumed). For analysis, foods were grouped into six categories: main dish, fruit, vegetable, bread, beverage, and dessert. Food consumption pre- and post-hotel style service was analyzed using independent sample t-tests. Plate waste for every food category was significantly lower ($p < 0.001$) after the change to hotel-style room service. Reorganization of the hospital food delivery system, which allowed patients to select foods immediately prior to eating, resulted in an increase in food consumption, and a substantial reduction in plate waste.

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Increase in Tomato Consumption May Be Achieved without Affecting Consumption Level of Other Fruits and Vegetables

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Learning Outcome: Readers will learn information on how focus on one type of food in a food group affects overall consumption of that food group.

Background: The Dietary Guidelines for Americans 2010 moved tomatoes into a newly created "orange/red" category as a strategy to enhance fruit and vegetable consumption. The purpose of the present study is to investigate the effects of increased consumption of tomatoes on consumption levels of other sources of fruit and vegetables.

Methods: Participants (n=132) were randomized into one of two groups requiring them to follow a specific dietary intervention for 10 weeks 1) two servings of tomatoes/day as part of a 500Kcal deficit (HT) or 2) two servings of tomatoes/day while maintaining usual diet (UT). 3-day food diaries were used to collect data on dietary intake and frequency of food group servings for both before and after the 10 week study period.

Results: The hypocaloric group decreased energy intake to a greater degree than the usual diet group (HT: 1987.4 ± 727.5 vs 1541.9 ± 414.7 , UT: 1809.1 ± 552 vs 1730.6 ± 556.6 kcal/day, $p < 0.001$). Tomato consumption increased in both groups (0.47 ± 0.44 vs 2.16 ± 0.99 servings/day, $p < 0.001$) during the course of the study. This was coupled with an increase in total vegetable consumption (3.21 ± 2.06 vs 4.52 ± 1.83 servings/day, $p < 0.001$), but no change in the level of fruit consumption.

Conclusion: These data suggest that even in the face of a reduction in energy intake, a conscious focus on increasing the number of servings per day of tomatoes can improve dietary quality by increasing the number of total servings per day of vegetables.

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Predicting Young Adults at Risk for Eating Disorders: Development of a Novel Disturbed Eating Severity Score

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Learning Outcome: To describe the development of a Disturbed Eating Severity (DES) score that may improve identification of patients with disturbed eating patterns that may progress to eating disorders.

The purpose of this study was to develop a DES score for young adults that incorporates factors typically used to assess eating disorders as well as other behaviors, such as night-, emotional-, and disinhibited eating, that are often identified as precursors to eating disorders. The DES is derived from scores from these 9 eating behavior scales: Eating Disorder Examination Questionnaire's Eating-, Shape-, and Weight-Concerns, Restraint, Binge Eating, and Inappropriate Compensatory Behaviors scales; Three-Factor Eating Questionnaire's Emotional- and Disinhibited-Eating scales; and Night Eating Questionnaire. DES score was calculated by scoring each eating behavior scale, then determining the scores at the 75th and 90th percentiles for each of the 9 scales in a diverse sample of 2526 young adults (63% female). Next, for each scale, scores < 75 th, ≥ 75 th to < 90 th, and ≥ 90 th percentiles were assigned 0, 1, or 2 points, respectively, and then summed. The total possible DES score ranges from 0 (not disturbed) to 18 (highly disturbed). Females were significantly ($p < 0.001$) more likely to have higher DES scores than males (3.98 ± 4.08 SD vs. 2.57 ± 3.21 SD). Further analyses indicated the DES score differed significantly ($p < 0.05$) on a wide array of psychographic and demographic characteristics known to be associated with disturbed eating and eating disorders (e.g., sociocultural attitudes towards appearance, depression, anxiety, weight teasing history, self-esteem, health status, eating disorder history). Thus, the DES score may be a valid diagnostic and research tool that can be used to identify patients with disturbed eating patterns that may progress to eating disorders.

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