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Hot Topics

High Fructose Corn Syrup and Weight Status December 2008

CLAIM OF TOPIC: High fructose corn syrup and its relationship to weight status.
DISCUSSION OF TOPIC: High fructose corn syrup is frequently mentioned in the media as a major culprit in the increased incidence of obesity among Americans. Many of the claims against high fructose corn syrup have suggested that this corn sweetener is metabolized differently than sucrose. The American Medical Association (AMA) recently concluded that high fructose corn syrup "does not appear to contribute more to obesity than other caloric sweeteners." The AMA called for further independent research, and recommends that consumers "limit the amount of all added caloric sweeteners to no more than 32 grams of sugar (8 teaspoons of sugar) daily based on a 2,000 calorie diet…". Most scientific experts now agree that high fructose corn syrup and sucrose produce similar effects on human metabolic responses. Studies comparing high fructose corn syrup and sucrose have found no significant differences in fasting blood glucose, insulin, leptin and ghrelin. Satiety studies of the two sweeteners have found no differences in appetite, feelings of fullness or short-term energy intakes.

Studies conducted with abnormally high levels of pure fructose (which are not found in the human diet) that are misinterpreted as being representative of high fructose corn syrup may have led to confusion about the relationship between high fructose corn syrup and obesity. However, high fructose corn syrup and sucrose both contain about 50 percent fructose and 50 percent glucose. When these two monosaccharides are consumed together in roughly these proportions, glucose appears to moderate or 'balance' fructose.

BOTTOM LINE: High fructose corn syrup may be used as a sweetener in processed foods and beverages and is nutritionally equivalent to sucrose. Both sweeteners contain the same number of calories (4 per gram) and consist of about equal parts of fructose and glucose. Once absorbed into the blood stream, the two sweeteners are indistinguishable. No persuasive evidence supports the claim that high fructose corn syrup is a unique contributor to obesity, however, like all nutritive sweeteners, it does contribute calories. This is where moderation and portion size become important. The greater the consumption of foods and beverages containing large amounts of added sugars of any kind, the more calories are consumed, influencing weight gain. The *source* of the added sugar – whether sucrose, high fructose corn syrup, honey or fruit juice concentrate – should not be of concern; rather it is the *amount of total calories* that is important. Overall, carbohydrates and sugars in foods and beverages can be enjoyed in moderation as part of a balanced diet and active lifestyle. HFCS is a controversial topic and although not all nutrition professionals will readily accept the scientific evidence, this paper represents an evidenced-based, balanced perspective.

OPPORTUNITIES FOR THE RD/DTR:
RDs and DTRs can help correct common misperceptions about high fructose corn syrup and help consumers make better informed choices related to sweeteners, including making the conversion of grams of sweetener to teaspoons of sugar. This information can be communicated through various practice settings as well as in community education and the media.

Resources/References:

1. American Medical Association. "AMA finds high fructose syrup unlikely to be more harmful to health than other caloric sweeteners," American Medical Association Press Release; www.ama-assn.org/ama/pub/category/18691.html
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3. Melanson KJ et al. Effects of high-fructose corn syrup and sucrose consumption on circulating glucose, insulin, leptin, and ghrelin and on appetite in normal-weight women. *Nutr.* 2007; 23:103-112.
4. Monsivais P et al. Sugars and satiety: does the type of sweetener make a difference? *Am J Clin Nutr.* 2007; 86: 116-123.
5. Fulgoni, Victor III. High-fructose corn syrup: Everything you wanted to know, but were afraid to ask. *Am J Clin Nutr* 2008:88; 1715S.

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revised 1-7-09

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