Inconsistent sugar recommendations raise questions

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Sugar has been a part of the human diet since sugarcane was domesticated in 8000 B.C., but today myths and misunderstandings about sugar and the role it plays in health abound. In the media, sugar has been linked to obesity, toxicity, addiction, and fatty liver disease, among a host of other health outcomes, but with little, no or poor research to back up such claims, according to a June 24 panel discussion at the 2014 Institute of Food Technologists (IFT) Annual Meeting & Food Expo in New Orleans.

Confusion exists not only among consumers, but among experts as well, with regard to the role sugar plays in the diet and what the dietary recommendations for sugar intake should be. Government and health organizations' recommendations for sugar intake have varied significantly based on different studies and different methodologies to evaluate those studies. "Sugars" include honey, sucrose (table sugar), high-fructose corn syrup, fruit juice concentrate and agave nectar.

For example, in 2002, the National Academy of Sciences recommended that added sugars provide no more than 25 percent of daily calories—the highest of recommended limitations on sugar. In 2009, the American Heart Association recommended that, on average, women should consume no more than 100 calories a day as sugar; for men 150 calories a day. In 2010, the European Food Safety Agency determined that there was not enough data to set a recommendation for sugar intake. And now, in 2014, the World Health Organization is recommending that sugars not exceed 10 percent of daily calories and suggested a further reduction to

less than 5 percent. While sugar intakes in the U.S. have decreased over the past 10–15 years, obesity has continued to increase.

However, according to Roger Clemens, DrPH, CFS, Chief Scientific Officer of E.T. Horn and part-time faculty within the University of Southern California Regulatory Science Program, "The latest WHO recommendations are based mainly on efforts to reduce dental caries, not reduce weight. Moreover, efforts to reduce exposure to added sugar through taxation and production elimination have yielded inconsistent results."

"Moving forward, it will be important to determine how we can get to the bottom of some of these issues surrounding sugar and health and develop dietary recommendations and policies that are evidence based and meaningful in terms of public health outcomes," said Courtney Gaine, Ph.D. Senior Science Program Manger for the North American branch of the International Life Sciences Institute (ILSI), a nonprofit organization in Washington, DC.

ILSI North America has undertaken a project with the goal of reaching a better understanding of the interplay between sugar in the diet and health outcomes and to identify research gaps.

The questions ILSI plans to address with respect to sugar and health are:

- What is the long-term effect of a reduction in sugars intake on body weight and/or fatness in overweight/obese adults or in children?
- Do dietary sugars impact how the body accumulates fat differently than other energy-yielding nutrients?
- What is the effect of sugars intake on satiety and hunger mechanisms? Does intake of sugars affect hormones that control appetite and fullness? Is there a difference in satiety and appetite

among different types of sugar (fructose, sucrose, high-fructose corn syrup, added sugar vs sugar found naturally in foods)?
- Does the food source (food vs beverage) modify the effect of sugars intake a total calorie intake, and body weight and body composition?
- What are the mechanisms in the brain linking sugars consumption to a reward system/insulin and glycemic levels ("addictive behavior" or "sugar addiction")? Does taste play a role in the process?

"Sugar intake has become a dominant health issue, but we should be cautious when making dietary recommendations when data are not available," said Clemens.

Provided by Institute of Food Technologists