

Study confirms that low-calorie sweeteners are helpful in weight control

February 8 2008

A recent review of the scientific literature concluded that low-calorie (or no-calorie) sweeteners may be of help in resolving the obesity problem. Although they are not magic bullets, low-calorie sweeteners in beverages and foods can help people reduce their calorie (energy) intakes.

“Low-calorie sweeteners reduce the energy of most beverages to zero and lower the energy density of many foods,” said study co-author, Dr. Adam Drewnowski, Director, Center for Public Health Nutrition at the University of Washington. “Every dietary guideline these days tells us to bulk up, hydrate, and consume foods with fewer calories but more volume.”

The study by Bellisle and Drewnowski, published in the European Journal of Clinical Nutrition, evaluated a variety of laboratory, clinical and epidemiological studies on low-calorie sweeteners, energy density and satiety. Their findings, based on extensive studies with humans, are completely at odds with a new study on 27 Sprague-Dawley rats eating yogurt, published in the February issue of Behavioral Neuroscience.

The February study, “A Role for Sweet Taste: Caloric Predictive Relations in Energy Regulation by Rats,” alleges a link between low-calorie sweeteners and weight gain. However, previous studies in humans have shown that low-calorie sweeteners can be helpful in weight control. “Everything old is new again: similar studies on the uncoupling of sweetness and calories in humans were conducted back in 1989 – and to no great effect,” noted Drewnowski. Among criticisms of the study

identified by nutrition experts were:

-- Small sample size. The original clinical study by Rogers and Blundell (1989), not cited in this report, used 24 humans. The present study is based on 27 rats.

-- Preabsorptive (“cephalic phase”) insulin release, the body’s supposed reaction to non-caloric sweet taste, is cited as the potential mechanism for overeating. The problem is that there is no cephalic phase insulin release in humans following the ingestion of aspartame, as demonstrated by Abdallah et al (1997) and not referenced here.

-- A recent study, also based on rats, showed that any flavor associated with a lack of calories led to overeating – even salt. However, that effect was observed only in very young rats (4 weeks) and disappeared 4 weeks later.

-- Findings in animal (e.g., rat) studies are not necessarily applicable to humans. Generally, clinical studies with humans follow animal studies. The present study went backwards.

-- Some have blamed “sweet tooth” and sugar calories for rising obesity rates. Others now blame “sweet tooth” and the absence of sugar calories for rising obesity rates. The human desire for sweet taste is an innate reflex that is present at birth: it is not learned, it is not acquired, it is not conditioned – and it is not going away anytime soon.

“This study oversimplifies the causes of obesity,” said Beth Hubrich, a dietitian with the Calorie Control Council, an association representing low- and reduced-calorie foods and beverages. “The causes of obesity are multi-factorial. Although surveys have shown that there has been an increase in the use of ‘sugar-free’ foods over the years, portion sizes of foods have also increased, physical activity has decreased and overall

calorie intake has increased,” she added.

Several studies conducted in humans have shown that low-calorie sweeteners and the products that contain them can be useful tools in weight control. For example, a study conducted by Dr. George Blackburn and published in the *American Journal of Clinical Nutrition* investigated whether the addition of aspartame to a multidisciplinary weight control program would improve weight loss and long-term control of body weight in obese women. One hundred sixty-eight obese women aged 20 to 60 years were studied over a two-year period. The researchers found that participation in this multidisciplinary weight control program including the use of aspartame-sweetened foods and beverages not only facilitated weight loss, but long-term maintenance of a reduced body weight.

A 2007 study published in *Pediatrics* found that using sucralose or sucralose sweetened beverages as well as increasing activity helped maintain and lower body mass index for children participating in the “Families on the Move” program. Additionally, a study published in the *Journal of Food Science* found that people who use reduced-calorie products (containing low-calorie sweeteners) not only had a better quality diet but also were more likely to consume fewer calories than those who did not use reduced-calorie products.

“Rising obesity rates have now been linked to the presence of sugars in the food supply and to the absence of sugars from the food supply,” noted Drewnowski. “Consumers find it difficult to know who to believe. In the final analysis, all health experts agree that weight loss is best achieved by a combination of reducing caloric intake, lowering energy density of the diet, and increasing physical activity. By all accounts, low-calorie sweeteners do help. Suggesting that low-calorie sweeteners actually cause people to gain weight is an irresponsible direct application of rat models to dietary counseling and to public health.”

Citation: Bellisle, F. and Drewnowski, A. (2007). Intense sweeteners, energy intake and the control of body weight. *European Journal of Clinical Nutrition*. 61, 691-700. (Available at: [www.nature.com/ejcn/journal/v6 ... n6/abs/1602649a.html](http://www.nature.com/ejcn/journal/v6...n6/abs/1602649a.html))

Source: Kellen Communications

Citation: Study confirms that low-calorie sweeteners are helpful in weight control (2008, February 8) retrieved 20 April 2024 from <https://medicalxpress.com/news/2008-02-low-calorie-sweeteners-weight.html>

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