

WEIGHT LOSS E-NEWSLETTER

March 9, 2009

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Duke Study Not Sweet on Splenda

Study finds Splenda contributes to weight gain, may cause other health problems

This article was taken from consumer affair.com

A new Duke University study finds that the artificial sweetener Splenda contributes to obesity, destroys beneficial intestinal bacteria and may interfere with absorption of prescription drugs.

It's the latest in a continuing round of studies, claims and counter-claims pitting artificial sweeteners against the powerful Sugar Association, the lobbying group for the sugar industry, which financed the Duke study.

McNeil Nutritionals, which manufactures Splenda, said the study's findings were "unsupported by the data presented" and said Splenda may be safely used "as part of a healthy diet." The study is

scheduled to be published in a forthcoming issue of The Journal of Toxicology and Environmental Health. An advance copy appears on its Web site.

A Minneapolis-based group called Citizens for Health said the Duke study demonstrates that Splenda is a health threat. The group, headed by attorney Jim Turner, has been collecting consumer reports of side effects supposedly caused by Splenda.

"The report makes it clear that the artificial sweetener Splenda and its key component sucralose pose a threat to the people who consume the product. Hundreds of consumers have complained to us about side effects from using Splenda and this study ... confirms that the

chemicals in the little yellow package should carry a big red warning label," said Turner.

Turner's group has filed a petition with the U.S. Food and Drug Administration (FDA) calling on it to review its approval of sucralose and to require a warning label on Splenda packaging cautioning that people who take medications or have gastrointestinal problems avoid using Splenda.

"The new study makes it clear that Splenda can cause you to gain weight and lose the benefits of medications designed to improve and protect your health. The FDA should not continue to turn a blind eye to this health threat," Turner said.

Duke Study Not Sweet on Splenda (cont.)

Study finds Splenda contributes to weight gain, may cause other health problems



In February, a study published in *Behavioral Neuroscience* cites laboratory evidence that the widespread use of no-calorie sweeteners may actually make it harder for people to control their intake and body weight.

McNeil and the Sugar Association have been waging war in the courts and the public arena for years. In 2004, the association sued McNeil, claiming it had misled consumers by claiming that Splenda was "made like sugar, so it tastes like sugar."

Splenda's main ingredient -- sucralose -- is manufactured. The process involves the use of a sugar molecule but there is no sugar in the finished product.

The Duke study was conducted on rats over a 12-week period. A lead researcher, Dr. Mohamed B. Abou-Donia, said the Sugar Association had no input into the study's findings.

Earlier study

In the February study, psychologists at Purdue University's Ingestive Behavior Research Center reported that compared with rats that ate yogurt sweetened with sugar, those given yogurt sweetened with zero-calorie saccharin later consumed more calories, gained more weight, put on more body fat, and didn't make up for it by cutting back later.

Authors Susan Swithers, PhD, and Terry Davidson, PhD, theorize that by breaking the connection between a sweet sensation and high-calorie food, the use of saccharin changes the body's ability to regulate intake. That change depends on experience.

Problems with self-regulation might explain in part why obesity has risen in parallel with the use of artificial sweeteners. It also might explain why, says Swithers, scientific consensus on human use of artificial sweeteners is inconclusive, with various studies finding evidence of weight loss, weight gain or little effect.

Because people may have different experiences with artificial and natural sweeteners, human studies that don't take into account prior consumption may produce a variety of outcomes.

Three different experiments explored whether saccharin changed lab animals' ability to regulate their intake, using different assessments -- the most obvious being caloric intake, weight gain, and compensating by cutting back.

Body temperature

The experimenters also measured changes in core body temperature, a physiological assessment.

Normally when we prepare to eat, the metabolic engine revs up. However, rats that had been trained to respond using saccharin (which

broke the link between sweetness and calories), relative to rats trained on glucose, showed a smaller rise in core body temperature after eating a novel, sweet-tasting, high-calorie meal. The authors think this blunted response both led to overeating and made it harder to burn off sweet-tasting calories.

"The data clearly indicate that consuming a food sweetened with no-calorie saccharin can lead to greater body-weight gain and adiposity (fat) than would consuming the same food sweetened with a higher-calorie sugar," the authors wrote.

The authors acknowledge that this outcome may seem counterintuitive and might not come as welcome news to human clinical researchers and health-care practitioners, who have long recommended low- or no-calorie sweeteners. What's more, the data come from rats, not humans.

However, they noted that their findings match emerging evidence that people who drink more diet drinks are at higher risk for obesity and metabolic syndrome, a collection of medical problems such as abdominal fat, high blood pressure and insulin resistance that put people at risk for heart disease and diabetes.

But why?

Why would a sugar substitute backfire?

Duke Study Not Sweet on Splenda (cont.)

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Swithers and Davidson wrote that sweet foods provide a “salient orosensory stimulus” that strongly predicts someone is about to take in a lot of calories. Ingestive and digestive reflexes gear up for that intake but when false sweetness isn’t followed by lots of calories, the system gets confused. Thus, people may eat more or expend less

energy than they otherwise would.

The good news, Swithers says, is that people can still count calories to regulate intake and body weight. However, she sympathizes with the dieter’s lament that counting calories requires more conscious effort than consuming low-calorie foods.

Swithers adds that based on the lab’s hypothesis, other artificial sweeteners such as aspartame, sucralose and acesulfame K, which also taste sweet but do not predict the delivery of calories, could have similar effects.

Finally, although the results are consistent with the idea that humans would show similar effects, human

Opinions & Comments

On one hand we ask that post weight loss surgery the sugar intake be limited. Patient drink a lot of crystal light. Then here is this entire newsletter that tells us that the artificial sweeteners are probably unhealthy for us.

Some of you may have already heard this from me: my recommendations are that natural sweet, with its caloric content, is healthier than anything artificial. You are better off with some Calorie intake from natural sources than possible with much more calorie sources from other sources because of lack of sugar craving suppression that is possibly suggested from the Study noted above. To ward off any craving for sweets, consider fruits in moderation.

A role for sweet taste: Calorie predictive relations in energy regulation by rats.

Susan E.; Davidson, Terry L. Behavioral Neuroscience, Vol 122(1), Feb 2008, 161-173.

Animals may use sweet taste to predict the caloric contents of food. Eating sweet noncaloric substances may degrade this predictive relationship, leading to positive energy balance through increased food intake and/or diminished energy expenditure. These experiments were designed to test the hypothesis that experiences that reduce the validity of sweet taste as a predictor of the caloric or nutritive

consequences of eating may contribute to deficits in the regulation of energy by reducing the ability of sweet-tasting foods that contain calories to evoke physiological responses that underlie tight regulation. Adult male Sprague-Dawley rats were given differential experience with a sweet taste that either predicted increased caloric content (glucose) or did not predict increased calories (saccharin). We found that reducing the correlation between sweet taste and the

caloric content of foods using artificial sweeteners in rats resulted in increased caloric intake, increased body weight, and increased adiposity, as well as diminished caloric compensation and blunted thermic responses to sweet-tasting diets. These results suggest that consumption of products containing artificial sweeteners may lead to increased body weight and obesity by interfering with fundamental homeostatic, physiological processes.