

Absurd Diet Sweetener Scare

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September 2008

Bottom Line At the Top: Next time you read a media story about a diet study in rats, tune it out and wait a few years for the rest of the story. For now, unless you use diet sodas as an excuse to pig out on mounds of food, non-caloric sweeteners do not cause weight gain.

Early this year the media created a hullabaloo over zero-calorie sugar substitutes, inciting fear among dieters. The reason? A rat study, concluding that replacing sugar with non-caloric sweeteners may make weight control harder. Purdue University scientists found that rats fed rat chow plus saccharin-sweetened yogurt ate more calories and gained more weight than rats fed chow and regular yogurt.

"If this is the case in rats, there is little reason to think that humans don't have this same response," said scientist Susan Swithers, PhD. **Actually there is a lot of reason to think that humans may not react the same – humans are not rats, don't live in a cage and usually have a more complex brain.** (I can think of some politicians who are exceptions, though.)

She speculated that, over time, reduced-calorie sweeteners like saccharin, aspartame, and sucralose interfere with weight regulation, conditioning the body to no longer associate sweetness with calories. This would, she postulates, disrupt the ability to accurately assess caloric intake, leading to overeating...

She got all that from 27 saccharin-fed rats???

This study at best adds a micro-chip of information to the burgeoning and complex field of appetite regulation. We know that at least 10 different peptide hormones from our brain, stomach, gut and pancreas interact to regulate appetite. Some increase, others decrease food intake. We know that knocking out one or boosting levels of another changes things for a while, but eventually the system compensates, returning food intake to the prior status quo.

In addition, humans respond to considerable social pressure and environmental cues that perpetuate eating in the absence of hunger. People eat or binge to cope with feelings that rats might not experience. People rationalize eating when not hungry for such compelling reasons as the food is there, someone else is eating or the TV told us to.

To extrapolate a study of saccharin in rats to all sweeteners in humans is irresponsible. Instead of spending time with the media, the Purdue investigators should have been moving on to test their hypothesis using other sweeteners, experimental conditions and species.

The study's authors shimmy even further out on the limb by correlating the timing of the obesity epidemic with skyrocketing non-caloric sweetener use. **Let's get real here: There has also been an increase in sun screen use, but nobody suggests that it causes obesity.**

Artificial sweetener use was almost negligible in the 1950s when the first diet soft drinks were introduced. Since then, with the growing popularity of diet beverages, per capita consumption of artificial sweeteners has jumped. In 1978, saccharin consumption (the only artificial sweetener then in use) was equivalent to the sweetening power of 7.1 pounds of sugar per person. That doubled to 15.8 pounds by 1984, slowly increased through the early 2000's and has since leveled off. Obesity prevalence has not.

Our waistlines expanded along with a lot of other gastronomic changes, mostly tied to the All-American notion that we must get the most food and least muscular effort for our money. Two liter high-fructose-corn-syrup sodas, food-addict cruises, 16 ounce steaks, all-you-can-eat buffets, obscenely large potato chip bags, Grand Slam breakfasts and 4 ounce candy bars appeared at the same time and might have contributed just a teensy bit.

Compound that with sedentary jobs, Internet addiction, TV and a national aversion to walk more than 20 feet for any purpose, and the equation equals weight gain every time. **It doesn't require subtle appetite regulation by zero-calorie sweeteners to explain the obesity epidemic.**

Swithers and the media should also have spent more time in the library reading existing studies of non-caloric sweeteners in humans. Quite a few have been done since the 1990's, mostly using aspartame. **No studies in humans have found weight gain or an increase in food intake from consuming sugar substitutes.**

The opposite has been found with sugar-sweetened beverages. Though sugar and high fructose corn syrup suppress appetite more than artificial sweeteners, they apparently do not suppress it enough to compensate for their own caloric load. In head-to-head comparisons, people gain weight when drinking sugar-sweetened drinks and either lose weight or experience no change with low-calorie sweeteners. ¶