

Artificial Sweeteners Make Calorie Counting Hard

By Merritt McKinney

NEW YORK (Reuters Health) - Using artificial sweeteners may throw off our ability to monitor how many calories we consume, new animal research suggests.

Rats that had been fed an artificially sweetened diet tended to overeat when given naturally sweetened high-calorie food compared with rats that had never consumed artificial sweeteners.

Researchers also found that the thickness of a sweetened drink seems to interfere with rats' abilities to keep their calorie consumption under control.

The results are preliminary, but they raise the possibility that artificially sweetened foods and high-calorie beverages may interfere with the ability to keep calorie consumption under control, one of the study's authors told Reuters Health.

"We propose that humans and other animals use sweetness and viscosity to help estimate the caloric content of the foods they eat, with sweeter and thicker foods signaling more calories and less sweet and thinner foods signaling fewer calories," said Dr. Terry L. Davidson of Purdue University in West Lafayette, Indiana.

Along with Purdue co-author Dr. Susan E. Swithers, Davidson hypothesized that consuming foods and beverages that are either low-calorie but very sweet or high-calorie but very thin may interfere with the ability to rely on taste and thickness to regulate caloric intake.

"The data presented in our paper suggest that such interference increases the tendency to overeat and gain weight in rats," Davidson said.

Davidson explained that one way that people and other animals are thought to control their weight is by reducing the amount of food they eat on some occasions to compensate for pigging out at other times.

"I think many people who now struggle to keep off extra pounds remember a time when they could perform this type of compensation almost effortlessly, without consciously trying to watch and control their caloric intake," Davidson said.

The Purdue researcher said he doubts that there is a single explanation for the diminished ability to control calories without much conscious reckoning. But it is possible that certain foods that have become popular in recent years may play at least some part, he said.

For instance, the number of Americans who consume sugar-free products has risen from less than 70 million in 1987 to more than 160 million in 2000, Davidson and Swithers note in a report in the *International Journal of Obesity*. Consumption of high-calorie soft drinks has also surged during the past few decades.

The researchers conducted two rat studies to evaluate the impact of artificial sweeteners and high-calorie drinks on calorie consumption.

In the first, one group of rats was fed a naturally sweetened liquid while another group was given an artificially sweetened liquid. After consuming the sweet drink for more than a week, the rats were offered a high-calorie, sweet chocolate treat before having a meal of normal rat chow.

Rats that were used to drinking the naturally sweetened liquid compensated for the pre-meal snack by eating less rat chow. But the rats accustomed to the artificially sweetened liquid ate more rat chow, suggesting that they were less adept at figuring out how many calories they should eat.

In the second study, rats were given a high-calorie dietary supplement that had the consistency of either chocolate milk or chocolate pudding. Even though the thick and thin supplements had the same amount of calories, rats given the thin one consumed more and gained more weight during the study.

"Our preliminary research indicates that the effects of consuming certain types of processed foods on longer-term caloric intake and body weight deserve additional study," Davidson said. Future studies should try to determine to what extent people normally use taste and viscosity to gauge calories, he said.

SOURCE: *International Journal of Obesity*, July 2004.