The dark side of artificial sweeteners

July 10 2013

More and more Americans are consuming artificial sweeteners as an alternative to sugar, but whether this translates into better health has been heavily debated. An opinion article published by Cell Press on July 10th in the journal *Trends in Endocrinology & Metabolism* reviews surprising evidence on the negative impact of artificial sweeteners on health, raising red flags about all sweeteners—even those that don't have any calories.

"It is not uncommon for people to be given messages that artificially-sweetened products are healthy, will help them lose weight or will help prevent weight gain," says author Susan E. Swithers of Purdue University. "The data to support those claims are not very strong, and although it seems like common sense that diet sodas would not be as problematic as regular sodas, common sense is not always right."

Consumption of sugar-sweetened drinks has been linked to obesity, type 2 diabetes, and metabolic syndrome—a group of risk factors that raises the risk for heart disease and stroke. As a result, many Americans have turned to artificial sweeteners, which are hundreds of times sweeter than sugar but contain few, if any, calories. However, studies in humans have shown that consumption of artificially sweetened beverages is also associated with obesity, type 2 diabetes, and metabolic syndrome as well as cardiovascular disease. As few as one of these drinks per day is enough to significantly increase the risk for health problems.

Moreover, people who regularly consume artificial sweeteners show altered activation patterns in the brain's pleasure centers in response to

sweet taste, suggesting that these products may not satisfy the desire for sweets. Similarly, studies in mice and rats have shown that consumption of noncaloric sweeteners dampens physiological responses to sweet taste, causing the animals to overindulge in calorie-rich, sweet-tasting food and pack on extra pounds.

Taken together, the findings suggest that artificial sweeteners increase the risk for health problems to an extent similar to that of sugar and may also exacerbate the negative effects of sugar. "These studies suggest that telling people to drink diet sodas could backfire as a public health message," Swithers says. "So the current public health message to limit the intake of sugars needs to be expanded to limit intake of all sweeteners, not just sugars."

More information: *Trends in Endocrinology & Metabolism*, Swithers et al.: "Artificial sweeteners produce the counterintuitive effect of inducing metabolic derangements."

Provided by Cell Press