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## Low calorie sweetener consumption in beverages leads to a range of body weight responses

Richard D Mattes and Kelly Higgins  
Purdue University, USA

Beverages have been implicated in the rising prevalence of overweight and obesity as they reportedly contribute energy that is largely uncompensated. To address this issue, many turns to beverages sweetened with Low Calorie Sweeteners (LCS). Some argue this is beneficial while others claim it exacerbates the problem. Beverages are sweetened with a number of low-calorie sweeteners. Though they are often considered a uniform class of products that provide sweetness with little or no energy, they are actually a very diverse array of chemicals with different sensory properties, digestive fates, effects on endocrine function and possibly the balance of microbiota species in the colon with implications for energy harvesting. Consequently, they may not elicit the same physiological and behavioral responses. We conducted a three-month, randomized; controlled trial on the effects of four popular LCS and sucrose provided in fruit beverages on body weight. One hundred and fifty-four adults with overweight or obesity were randomized to consume sucrose, saccharin, aspartame, Rebaudioside A or sucralose matched to 8% sucrose for sweetness. No other dietary advice was provided. Participants consuming the sucrose and saccharin gained a significant amount of weight over the trial relative to baseline and did not differ from each other. Participants in the sucralose group tended to lose weight so that after 3-months, body weight had increased significantly for the sucrose and saccharin groups compared to the sucralose group. The findings indicate that LCS exerts effects that influence body weight by mechanisms aside from their dilution of the energy density of beverages. They also indicate that beverages can be consumed as part of a weight management dietary plan as long as they are sweetened with a suitable LCS.

mattes@purdue.edu