



International
Sweeteners
Association

FACTSHEET

Appetite Control, Sweet Taste and Low/no Calorie Sweeteners

Enjoyment of sweet taste is innate. Babies are born with a liking for sweetness, most likely because breast milk is sweet, and a rejection of bitterness as protection against potentially toxic substances.^{1,2}

However, changes in food, drink and lifestyle over recent decades have resulted in more free sugars in food and drink, and a sedentary lifestyle, which are both contributing to global obesity and weight-related health problems. Free sugars are those added to food by cooks, manufacturers or at the table, plus those naturally present in honey, syrups and fruit juices.

Health organisations worldwide have therefore recommended lower consumption of free sugars: from 5-10% of total calorie intake recommended by the World Health Organization (WHO), to 5% advised by the UK's Scientific Advisory Committee on Nutrition (SACN). In the UK consumption is more than double this amount ranging from 10-14% across all age groups.³

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Low/no calorie sweeteners can help manage the innate preference for sweetness and allow enjoyment of a variety of food and drink with fewer or no calories helping to meet current public health recommendations to reduce excess sugar consumption, as part of a balanced diet.

Low/no calorie sweeteners have no effect on appetite

By reducing the calorie content of food while retaining sweetness, low/no calorie sweeteners can satiate desire for sweet food and drink while helping control weight.

Studies in humans confirm that low/no calorie sweeteners have no impact on appetite.^{4,5} They do not increase or suppress hunger or the desire to eat.

Suggestions that low/no calorie sweeteners might encourage overconsumption of sweet foods, or stimulate appetite to increase food consumption and contribute to weight gain, were examined by recent reviews.⁵ No evidence to support suggested negative effects was found.

In fact, some studies suggest the opposite: repeated exposure to sweet taste, and food or drink sweetened with low/no calorie sweeteners, leads to reduction in momentary pleasure and less likelihood of consuming more, at least in the short-term.^{4,6} This phenomenon is known as 'sensory specific satiety'.⁷

A recent study also found that for some frequent consumers of low/no calorie sweetened drinks, low/no calorie sweeteners helped with reduction of calorie intake by controlling food cravings, possibly by helping satiate the desire for sweetness.⁸

This study, and reviews of other published studies, does not support the hypothesis that low/no calorie sweeteners encourage greater exposure to sweet taste thereby increasing the appetite for sweetness and consumption of sugary sweet food and drink.^{4,5,6}



References

1. Drewnowski A, Mennella JA, Johnson SL, Bellisle F. Sweetness and Food Preference. *J. Nutr.* 2012; 142: 1142S–1148S.
2. Mennella JA. Ontogeny of taste preferences: basic biology and implications for health. *Am J Clin Nutr* 2014; 99(Suppl): 704S-711S.
3. Statistics on Obesity, Physical Activity and Diet, England, National Statistics, May 2019.
4. Bellisle F. Intense Sweeteners, Appetite for the Sweet Taste, and Relationship to Weight Management. *Curr Obes Rep* 2015; 4(1): 106-110.
5. Rogers, P. J. The role of low-calorie sweeteners in the prevention and management of overweight and obesity: evidence v. conjecture. *Proc Nutr Soc*, 2017 Nov 23; 1-9.
6. Appleton KM, Tuorila H, Bertenshaw EJ, de Graaf C, Mela DJ. Sweet taste exposure and the subsequent acceptance and preference for sweet taste in the diet: systematic review of the published literature. *Am J Clin Nutr* 2018; 107: 405–419
7. Rolls BJ. Sensory-specific satiety. *Nutr Rev* 1986; 44: 93–101.
8. Maloney NG, Christiansen P, Harrold JA, Halford JCG, Hardman CA. Do low-calorie sweetened beverages help to control food cravings? Two experimental studies. *Physiology & Behavior* 2019; 208: 112500.