International Sweeteners Association

FACTSHEET

Sweet taste, the "Sweet Tooth" hypothesis, and Low/no Calorie Sweeteners

Humans are born with a natural preference for sweetness. While limiting excess sugar intake is important for health, cutting back on sweet taste can be challenging. Low/no calorie sweeteners can help reduce sugar and calorie intake while satisfying our desire for sweetness.

Why we like sweet taste

Humans have an innate preference for sweet taste from birth. 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 bitter substances. This biological trait evolved to help our ancestors identify safe, high-energy foods such as fruits in environments where food was scarce.[1]

Today, however, food environments are very different. Sugars are widely available and often overconsumed, leading to increased calorie intake, which, alongside a sedentary lifestyle, contributes to a higher risk of obesity and weight-related health problems. For this reason, health organisations globally recommend reducing added/ free sugars intake to less than 5-10% of total energy intake.[2]

Health organisations worldwide have recommended lower consumption of free sugars to

5-10 %

of total calorie intake.

The "sweet tooth" hypothesis: myth or reality?

A common belief and prevailing narrative in nutrition policy is that eating sweet-tasting foods increases our preference for sweetness, leading to higher sugar and calorie intake. This concept is often referred to as the "sweet tooth" hypothesis. **However, current scientific evidence does not support this idea.**[3]

- Reviews of human studies show no link between exposure to sweet taste and increased liking for sweetness.[3,4]
- Long-term clinical trials demonstrate that diets low or high in sweetness do not change people's preference for sweet taste.[5-7]
- In the short term, consuming sweet foods can reduce the immediate desire for sweetness - a phenomenon known as *sensory-specific satiety*.[4]

These findings are consistent across studies in adults and children, and apply to both sugars and low/no calorie sweeteners.

The challenge of reducing sugar

While reducing sugar intake is important, it can be difficult to sustain. Many people find it hard to give up sweet-tasting foods, which can lead to cycles of restriction and relapse.

Low/no calorie sweeteners provide sweetness with little or no calories. They can help reduce added sugar intake and lower overall calorie consumption, which, in turn, can support weight control.[8] Maintaining some level of sweetness in the diet may make healthy eating patterns more realistic and sustainable.

Low/no calorie sweeteners have no effect on appetite

There is ongoing debate about whether low/no calorie sweeteners might increase appetite, cravings, or reinforce a preference for sweetness. However, current evidence does not support these concerns.[8,9]

Long-term clinical trials show that they do not increase appetite or energy intake, and in fact, when low/no calorie sweeteners are used instead of sugar, they are associated with reduced calorie intake helping with weight control over time.[10]

Low/no calorie sweeteners can be a practical tool to help reduce sugar and calorie intake without increasing preference for sweetness or appetite.

The SWEET TOOTH trial

The Sweet Tooth trial, a large six-month randomised controlled trial in 180 adults, showed that changing dietary exposure to sweet-tasting foods - whether low or high - does not affect sweet taste preferences, taste perception, food choices, energy intake, or body weight. Participants naturally returned to their baseline level of sweet food intake after the intervention, suggesting no lasting behavioural changes.[5]

Further long-term trials in both adults and children show similar results: reducing sugar consumption does not lower preference for sweetness.[6,7] Even when sugar intake decreases over several months, people tend to maintain the same level of sweetness preference over time.

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