

Science Summary: The Role of Flavors in Nutritious Eating

Overview

Flavors can safely and effectively make foods and beverages taste delicious and help encourage nutritious eating choices. Flavors are what create the enjoyable sensations we experience when we eat a food or drink a beverage, such as taste and smell. Evidence suggests that eating pleasure, such as pleasure derived from flavors, can help foster healthy dietary choices. This summary provides an overview of the research supporting flavor's role in encouraging nutritious food choices and adherence to healthy dietary patterns.

Flavors guide consumption choices and can increase the likelihood of nutritious food selection

Taste is the most impactful factor that influences food and beverage selection.¹ Using added flavors to improve the taste of nutritious foods can improve the quality of our diets and therefore our health. In fact, research supports how flavors can help encourage consumption of nutritious foods, and the flavor of foods has been directly linked to nutritious food consumption.

- In an online dietary quality survey of nearly 146,000 adults, researchers calculated each participant's diet quality score and total sensory value, which measured characteristics including taste and flavor intensity. Results showed that overall flavor intensity increased with diet quality.²
- Dietary recall data from over 7,500 children and adolescents has shown that participants who consumed flavored milk reported higher intake of milk—which contains key nutrients such as protein and calcium—than those that drank only plain milk.³
- In a study of 110 adults, participants were asked to rate four different recipes with varying amounts of meat, legumes and spiciness levels. While participants preferred the meat-based recipes, they had a similar preference to the spicier legume-based recipe, suggesting flavor can help increase consumption of nutrient-dense plant foods like legumes.⁴

Flavor can be a tool to reduce sugar and salt in the foods Americans like to eat

Research suggests flavors can help improve palatability and consumer satisfaction from foods that are formulated to be lower in sugar and salt.⁵ For example, 192 study participants assessed three strawberry flavored and three coffee flavored yogurts with different sugar content and/or levels of flavoring. Results showed consumers had a similar preference to yogurts with 10%



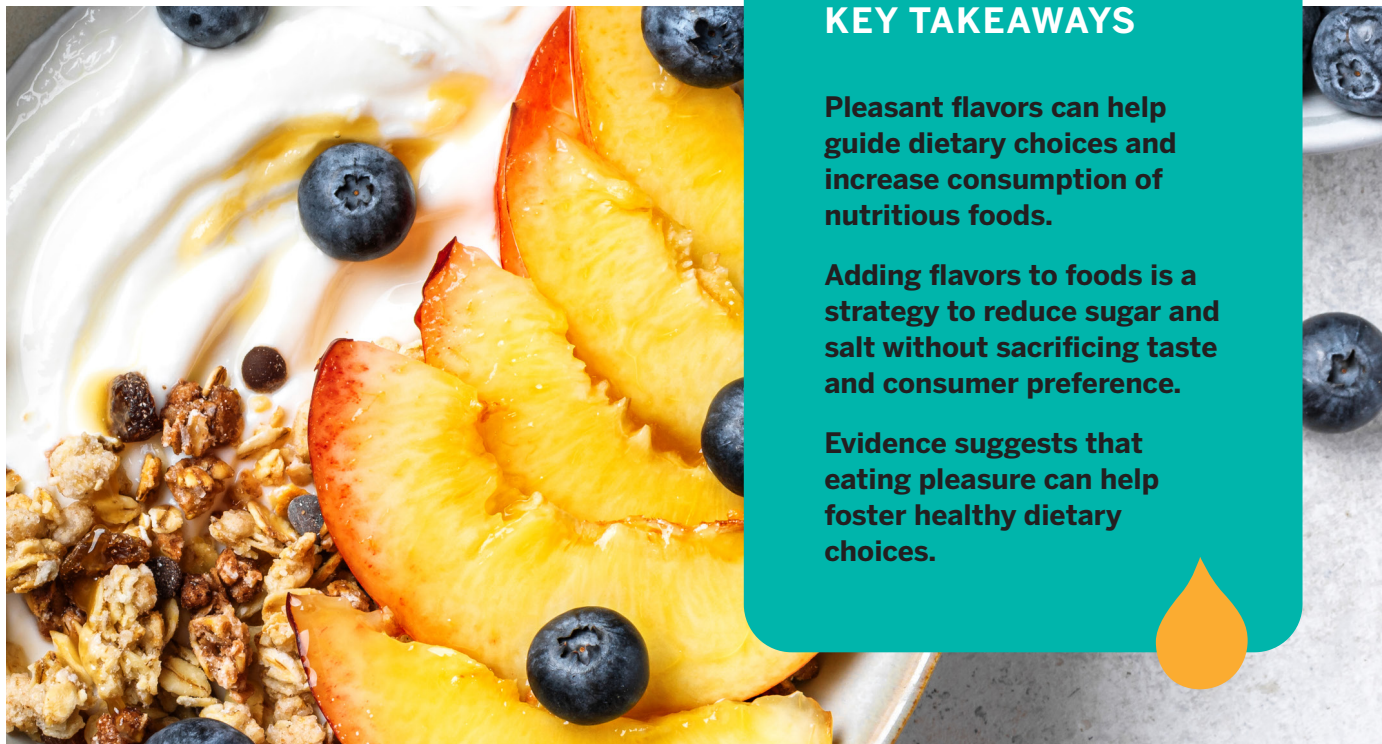
and 7% sugar when using the same flavoring concentration.⁶ In another study, different yogurt samples were tested with three different sugar concentrations (full sugar, 25% reduced and 50% reduced) and three concentrations of strawberry and vanilla flavors each. Consumers had the same acceptance of the 25% reduced sugar yogurt with vanilla or strawberry flavor relative to the full sugar yogurt.⁷

Flavors also help achieve lower salt content in food. In one small study, panelists found that smoked turkey sausage containing savory flavor along with a salt replacer that had 60% reduced sodium was not rated significantly different compared to the control. Mushrooms and umami flavorings are also known to help increase the perception of saltiness without added salt and may act as a possible alternative to meat products with similar sensory attributes.⁸

Eating pleasure can help foster healthy dietary choices

Eating pleasure is a multidimensional concept. Sensory experiences such as flavor are a key dimension of eating pleasure. Other dimensions of eating pleasure, including novelty, variety and preferences, can be influenced by flavor.⁹

A systematic scoping review analyzed data from 45 studies documenting the links between eating pleasure and dietary behaviors and health, including 12 intervention studies. Overall, researchers found a link between eating pleasure and better diet quality, healthier portion sizes, better food choices and increased liking of healthy food. While this is an emerging area of research, evidence suggests that eating pleasure may be an ally in the promotion of healthy eating, and flavor plays a role.⁹



KEY TAKEAWAYS

Pleasant flavors can help guide dietary choices and increase consumption of nutritious foods.

Adding flavors to foods is a strategy to reduce sugar and salt without sacrificing taste and consumer preference.

Evidence suggests that eating pleasure can help foster healthy dietary choices.



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