

Room for dessert!

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Impact addendum

It is common knowledge that in the past decades the global prevalence of obesity has markedly increased (and is still rising). This is problematic as obesity is associated with dire health problems including depression, type 2 diabetes mellitus, cardiovascular disease, and various forms of cancer. The current COVID-19 pandemic also poses a significantly bigger health risk for obese individuals.

Weight gain is the result of a positive energy balance, when more energy is consumed than is expended. Unsurprisingly then, the increasing prevalence of obesity is linked to the increasing availability and consumption of high-energy, nutrient-poor foods. Population wide limits on energy intake would help prevent obesity and hence curb the obesity epidemic, but it requires a nutrition transition; that is, a shift from a diet rich in high energy dense/nutrient poor foods to a diet rich in mainly plant based nutrient dense foods. Attempts to alter dietary patterns and decrease obesity numbers have not been very successful. Clearly, there is still a need for effective strategies to encourage healthier dietary habits.

Overeating occurs in many situations. Within a meal context, serving large portions, eating while distracted, or a high eating rate can all promote overeating. Two important determinants of food intake – related to the sensory characteristics of food – were studied in this dissertation: sensory-specific satiation (SSS) and the variety effect (the variety of foods present in a meal). Increasing variety within a meal increases intake by delaying SSS (prolonging the pleasantness of the eating activity). This ‘variety effect’ has been shown across different food groups, eating occasions, cultures, and ages. Food variety and SSS are therefore undoubtedly important determinants of food consumption and – consequently – of weight-control, which can provide useful strategies to (1) increase or motivate intake of nutritious foods and (2) decrease intake or the desire to eat energy dense/nutrient poor foods, thus encouraging healthier dietary habits.

The aim of this dissertation was to expand our knowledge of these two important determinants of eating behaviour (SSS and the variety effect). A better understanding of SSS and the role of food variety in eating behaviour provides useful leads to establish a healthy dietary habit.

Impact on intake

The present thesis is a series of studies on SSS and an exercise in trying to identify relevant variables (food-related, contextual, or individual attributes) that, when manipulated, will affect SSS and hence eating behaviour. SSS and the variety effect are important determinants of what and how much we eat. More variety decreases the magnitude of SSS and increases food intake. Therefore, combining a variety of healthy foods in a meal will encourage intake of those foods (by prolonging eating pleasure). Implementing this principle across meals will result in increased consumption of nutritious food that will benefit health and wellbeing. Inclusion of more variety in meals could also be implemented as a ‘nudge’ to encourage meal intake in, for example, vulnerable patient populations or older adults.

Impact on food choice

Naturally, food intake determines energy and nutrient status (and thus affects weight status and health), but before food consumption commences, a choice is made regarding which foods to consume. Even when no choice in different food options is offered a choice still needs to be made whether or not to eat the food. Findings of this dissertation imply that SSS and the variety effect are not only important determinants for the amount of food consumed, but are also involved in food choice. In natural eating situations, what and how much is eaten is often determined by what (and how much) is purchased, which makes food choice a prominent determinant of healthy eating habits. Our findings suggest that including variety (and complexity) in healthy, nutritious products or meals might make these more attractive, and could thereby encourage individuals to choose and consume such meals or products. Conversely, including less variety in more nutrient-poor/energy-dense products could render these options less attractive.

Conclusion

In sum, this dissertation enhances our understanding of the effect of SSS and food variety on food intake, and extends these insights to food choice. Although these implications warrant further investigation, they can provide food designers and health promoters with novel strategies to encourage healthier food choices, and consequently, healthier dietary habits. Therefore, this dissertation provides a useful starting point for developing novel strategies, services, products, or interventions to foster better living through better eating.