
INTRODUCTION

Bariatric surgery is currently the most effective treatment for obesity and its associated co-morbidities. It produces a greater and more sustained weight loss compared to other non-surgical weight loss strategies (1–4). Given that the prevalence of obesity has reached epidemic proportions, with more than half of the world’s population being overweight or obese (5), an improved understanding of the underlying mechanisms behind the magnitude and duration of the postoperative weight loss represents an important area of research.

The main mechanism driving the postoperative weight loss appears to be a substantial decrease in energy intake, which has been reported in numerous studies (6–19). This decrease seems not only to be a consequence of altered satiety but is also due to an additional decrease in energy intake caused by a shift in food preferences away from high-fat and sweet foods towards healthier less energy-dense foods (6–10, 20–23). However, an essential limitation in studies investigating changes in food preferences following bariatric surgery is the use of self-reported data, which are prone to recall bias and underestimation of food intake (24,25), especially of unhealthy foods (26). Such indirect measures are useful for the initial insight into the effect of surgery on eating behaviour but should be validated using direct measures of behaviour to avoid misguided interpretation (27).

Suggested mechanisms governing changes in food preferences include increased acuity to sweet taste, and decreased hedonic evaluation of sweet and fatty foods (28–31). These changes might cause an unconditioned shift in food selection towards less sugary and fatty foods. Another proposed mechanism is the experience of postprandial discomfort such as nausea and abdominal pain, especially after intake of sugary and fatty foods (28–30). Such unpleasant responses can lead to conditioned avoidance of the triggering food through a learned process, and thereby modify eating behaviour.

A greater understanding of the impact of bariatric surgery on food preferences and mechanisms mediating this effect may not only lead to means of optimising responses to surgery, but also the development of non-surgical interventions to induce a greater and more sustainable weight loss for people with overweight or obesity.