



## **Does food reward increase or decrease during weight management? A systematic review**

Pauline Oustric, Catherine Gibbons, Kristine Beaulieu, John Blundell, Graham Finlayson

Appetite Control Energy Balance Group, School of Psychology, Leeds, United Kingdom

**Background:** Overeating is the main behavioural determinant of obesity. It is understood that food intake is modulated by both homeostatic and hedonic systems; however, changes in food reward during weight management seem contradictory and have not been systematically reviewed.

**Methods:** A systematic review following PRISMA guidelines assessed long-term interventions measuring a change in food reward during weight management. Four databases were searched for articles published until April 2018 involving healthy adults with overweight or obesity. The primary outcome was food reward changes pre to post intervention and secondary outcomes were associations with changes in food intake and physiological factors.

**Results:** Of 239 full-text articles assessed, 17 long-term studies were retrieved (total n=1312). Twelve studies reported a significant change in food reward over time (mean=21 weeks). When compared to control interventions, dietary, pharmacological, behavioural and cognitive interventions were effective in decreasing liking and/or wanting for high-energy food using a range of methodologies to assess food reward. Three out of 6 studies that analysed the relationship between changes in liking and wanting with food intake or weight outcomes tended to show a positive association.

**Conclusion:** This systematic review brings new insight to the role of hedonics in weight management by showing that different types of interventions can reduce, rather than increase, liking and wanting for high-energy food. More interventions specifically assessing the hedonic aspect of food intake, especially wanting, would be helpful to gain a better understanding of how to uncouple the obesogenic relationship between food reward and overeating.