Proceedings of the Nutrition Society (2020), **79 (OCE2)**, E362 doi:10.1017/S0029665120003109

The 13th European Nutrition Conference, FENS 2019, was held at the Dublin Convention Centre, 15–18 October 2019

Changes in 'liking' and 'wanting' for high fat, high sugar foods and impact on 24hr dietary intake following gastric bypass

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Abstract

Gastric bypass surgery (GB) is a successful treatment for obesity[(1)]. Following the procedure, patients report changes in preference away from palatable high fat (HF), high sugar (HS) foods that may contribute to weight loss[(2)]. The aim of this work is to examine the relationship between changes in reported 'liking' (hedonic) and 'wanting'(motivation) for HF, HS food and 24hr dietary intake post-GB. 15 GB patients (BMI: 41.7 ± 11.54kg/m^2, 73% female) and 15 time-matched controls (BMI: 25.08 ± 4.37 kg/m^2, 73% female) were recruited as part of a larger residential study and observed for 3 days at each of 3 time points; 1-month pre-surgery, 3-months post-surgery and 1 yr post-surgery. Covert, objective assessment of 24hr dietary intake was on day 2 of each visit using weighed food records. Participants had ad-libitum access to foods pre-determined by food preference questionnaires and proportionally represented by 6 macronutrient groups (HF/HS, HF/high CHO, HF/high protein, low fat/HS, low fat/high CHO, low fat/high protein). 'Liking' and 'wanting' was measured using the Leeds Food Preference Questionnaire (LFPQ)[(3)], a validated measure that uses visual analogue scales to determine explicit liking and wanting for food. Implicit preferences are determined using response and reaction time in a forced-choice task. GB patients significantly reduced their overall energy intake (EI) from baseline to three months (-6.9 ± 8.1MJ/d p = > 0.001) and 1 yr post-surgery (-5.3 ± 7.5MJ/d, p = 0.01) compared to controls. At 3mths post-GB, there was no significant relationship between changes in preference for HS food and changes in %EI from sugar (R^2 = 0.97, F(3,26) = 0.94 p = 0.44) or from HS foods (R^2 = 0.87, F(3,26) = 0.83, p = 0.49). Changes in preferences for HF food at 3mths post-surgery were not significantly related to %EI from fat (R^2 = 0.16, F(3,26) = 1.66, p = 0.2) or HF food (R^2 = 0.18, F(3,26) = 0.16, p = 0.93). These associations remained at 1 yr post-surgery. In conclusion, previous observations based on self-reported food intake have found changes in preference for HF, HS food that may contribute to weight loss in GB. In contrast, our results show no significant relationship between changes in preference and changes in dietary intake post-surgery. Further research using direct, objective measures of dietary intake is needed to elucidate further changes in dietary intake post-GB.

Conflict of Interest

There is no conflict of interest.

References

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