



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

The impact of nutrient and health claims on perceived healthiness and the amount of food eaten: An experimental breakfast study

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Abstract

A previous study has demonstrated that when people thought they were eating a low-calorie milkshake (versus a high-calorie labelled equivalent though same product) their physiological satiety, as measured by the gut peptide ghrelin, was consistent with what they believed they were consuming rather than the actual nutritional content (Crum *et al.*, 2011). If replicated and shown for different food types, this finding could have implications for nutrient and health claims labelling and advertising. The aim of the study was to examine whether satiation (self-reported and physiological) varies depending on the mindset in which one approaches food consumption. On two separate visits (1 week between), participants (n = 50) were asked to consume a 380-calorie yoghurt and granola breakfast product under the pretence that it was either a 500-calorie 'indulgent' breakfast (high in fat and sugar) or a 250-calorie 'sensible' breakfast (low in fat and sugar). At each visit blood samples were collected at three timepoints to measure acylated ghrelin: after a 20-minute rest period (baseline), after 60-minutes (pre-consumption) and after 90-minutes (post-consumption). Self-reported appetite scales were completed 10 minutes prior to each blood sample. During the first interval (between 20 and 60 minutes) participants rated the breakfast label's appearance and perceived healthiness, and during the second interval (between 60 and 90 minutes) participants consumed the breakfast product while rating its sensory appeal. Participants (mean [SD]: 30.1 [10.4] yrs.) rated the 'indulgent' breakfast as more appealing than the 'sensible' breakfast (mean difference: 5.00 [95% CI: 0.71, 9.30]; P = 0.024), but felt less healthy when consuming the 'indulgent' breakfast (mean difference: -13.17 [95% CI: -18.75, -7.60]; P < 0.001). The breakfasts were not rated differently according to their taste, smell, overall palatability and enjoyment. Participants reported a higher mean change in self-reported fullness for the 'indulgent' breakfast than the 'sensible' breakfast from pre-consumption to post-consumption (mean difference: 7.19 [95% CI: -0.73, 13.6]; P = 0.030). This relationship was not observed between baseline and post-consumption, or for the other self-reported appetite measures (hunger, satiety, quantity and desire to eat). Mean change in acylated ghrelin was not significantly different between the breakfasts at any timepoint. This study demonstrated an increase in self-reported fullness after consuming the 'indulgent' breakfast compared to the 'sensible' breakfast despite the fact the two breakfast products were identical. A physiological response, however, was not observed.

Conflict of Interest

There is no conflict of interest