

ACUTE ADMINISTRATION OF CAPSAICIN INCREASES RESTING ENERGY EXPENDITURE IN YOUNG OBESE SUBJECTS WITHOUT AFFECTING ENERGY INTAKE, APPETITE AND CIRCULATING LEVELS OF OREXIGENIC/ANOREXIGENIC PEPTIDES

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Introduction: Although capsaicin has been reported to reduce energy intake and increase energy expenditure in an adult (normal-weight or overweight) population, thus resulting in a net negative energy balance and weight loss, these beneficial effects have never been investigated in young obese subjects.

Aims and methods: We hypothesise that capsaicin acutely administered in young obese subjects exerts the same effects on energy balance and that these effects are mediated by changes in gastrointestinal peptides regulating appetite. So, aim of the present study was to evaluate the acute effects of capsaicin (2mg) or placebo on energy intake, hunger and satiety in obese adolescents and young adults (F/M = 4/6, age: 21.0±5.8yrs; BMI: 41.5±4.3kg/m²), free to eat ad libitum (dinner). Furthermore, circulating levels of some orexigenic (ghrelin) and anorexigenic (GLP-1 and PYY) peptides were measured after a meal completely consumed (lunch), together with the evaluation of hunger and satiety and assessment of resting energy expenditure (REE) throughout indirect computerised calorimetry.

Results: When compared to placebo, capsaicin did not significantly change either energy intake or hunger/satiety six hours after its administration (dinner). No significant differences in circulating levels of ghrelin, GLP-1 and PYY and in hunger/satiety were found in the three hours immediately after food ingestion among obese subjects treated with capsaicin or placebo (lunch). By contrast, the meal significantly increased REE in the capsaicin- but not placebo-treated group (capsaicin: from 1957.2±455.1kcal/day up to 2342.3±562.1kcal/day, p<0.05; placebo: from 2060.1±483.4kcal/day up to 2296.0±484.5kcal/day). The pre-post meal difference in REE after capsaicin administration was significantly higher than that observed after placebo (385.1±164.4kcal/day vs. 235.9±166.1kcal/day, p<0.05).

Conclusions: Although capsaicin does not exert hypophagic effects, these preliminary data demonstrate its ability as a metabolic activator in young obese subjects.