
ENDOCANNABINOID AND GASTROENTERIC HORMONE RESPONSES TO HEDONIC EATING IN HUMANS: IMPLICATIONS FOR EATING DISORDERS

A. Monteleone¹, P. Scognamiglio¹, D. Perillo¹, V. Di Marzo², P. Monteleone³, M. Maj¹

¹Department of Psychiatry, Second University, Naples, Italy ; ²Endocannabinoid Research Group, Institute of Biomolecular Chemistry Consiglio Nazionale delle Ricerche, Naples, Italy ; ³Department of Medicine and Surgery, University of Salerno, Salerno, Italy

Introduction: Hedonic eating is characterized by the consumption of food uniquely for its gustatory rewarding properties and not for the occurrence of short-term energy depletion. Eating a piece of cake after a satiating meal is a typical example of hedonic eating. It is intuitive that hedonic eating may stimulate powerfully food intake; hence, understanding its physiological modulation could help to contrast obesity and other eating disorders.

Aims: To explore the role of endogenous appetite and/or reward modulators in hedonic eating.

Methods: We measured plasma levels of ghrelin, endocannabinoids, colecystokinin-33 (CCK) and peptide YY₃₋₃₆ (PYY₃₋₃₆), in 8 satiated healthy subjects after *ad libitum* consumption of high palatable food as compared to the consumption of isoenergetic non-palatable food.

Results: Hedonic eating was characterized by increased levels of ghrelin and the endocannabinoid 2-arachidonoyl glycerol (2-AG) but a decreased secretion of the satiety hormone CCK. Levels of other endocannabinoids and PYY₃₋₃₆ did not significantly differ between hedonic and non-hedonic eating.

Conclusions: Present findings suggest that, when motivation to eat is generated by the availability of high palatable food and not by food deprivation, the increased levels of the hunger hormone ghrelin and the reduced secretion of the satiety hormone CCK could promote eating in spite of no energy need. Otherwise, the increased secretion of ghrelin and 2-AG could promote the ingestion of high palatable food via the activation of the endogenous rewarding system.