

**Neuroendocrine Responses to Hedonic Eating in Obese Patients with and Without Binge Eating disorder**

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**Introduction.** Hedonic eating refers to the consumption of food uniquely because of its gustatory rewarding properties and not for homeostatic needs; so the subject eats also when not in a state of energy depletion. Hedonic eating may stimulate powerfully food intake; hence, understanding its physiological modulation could improve our knowledge of the pathophysiology of obesity. Furthermore, obese people often present binge-eating behaviours, and binge-eating is experienced as rewarding. Endocannabinoids, including anandamide (AEA) and 2-arachidonoylglycerol (2-AG), and endocannabinoid-related compounds, oleoylethanolamide (OEA) and palmitoylethanolamide (PEA), are involved in the modulation of food-related reward.

**Objectives and Aims.** Therefore, in the present study we aimed to investigate the responses of endocannabinoids and endocannabinoid-related compounds to hedonic eating in obese patients with and without binge eating disorder (BED).

**Methods.** Peripheral levels of AEA, 2-AG, OEA and PEA were measured in 7 obese patients with BED and 7 obese patients without BED after eating hedonic and non-hedonic food, and compared to those of normal weight healthy controls.

**Results.** Peripheral levels of endocannabinoids and endocannabinoid-related compounds exhibited different response patterns to hedonic eating among the groups.

**Conclusions.** These data confirm the role of endocannabinoids and endocannabinoid-related compounds in food-related reward and suggest a dysregulation of their physiology in obesity and in the BED. These findings may have potential relevance to the prevention and treatment of obesity and BED.