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The effect of fasting ghrelin level on attentional bias to palatable food cues

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The appetite-stimulating hormone, ghrelin involves not only energy homeostasis but also reward-based eating behaviors. This study aims to investigate if level of fasting ghrelin influences hedonic craving which is driven by external highly palatable food-cues when not physically hungry. A total of 55 female participants with normal range of BMI were divided into two groups according to ghrelin level: high ghrelin (HG) and low ghrelin (LG) groups. Participants performed a fasting blood draw to compare ghrelin levels and consumed standard breakfast. And then, they performed free-viewing task to record eye-movements toward food cues with high (e.g. pizza, hamburger) and low palatability (e.g. vegetables). The results showed that there were differences between two groups in visual attentional pattern to food cues depending on palatability of food. The HG group showed biased attention toward highly than lowly palatable food cues. Whereas at the LG group, there were no differences in visual attentional pattern to food cues whether the food had high or low palatability. The results suggest that high level of fasting ghrelin might promote selective attention to highly palatable foods even when not hungry. Thus, a role of ghrelin in reward-based eating behavior potentially related to differential attentional processing depending on hedonic aspects of foods.

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