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Hedonic Olfactory Perception in Depression: Relationship between Self-Evaluation and Autonomic Response

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ABSTRACT

This study aimed to improve the understanding of hedonic perception in depression using the olfactory modality. We evaluated physiological (heart rate measures) and hedonic responses (subjective rating scale) obtained from 30 unipolar depressed inpatients and 30 healthy controls. The stimuli were two odorants with contrasting hedonic valence, vanillin (pleasant) and butyric acid (foul-smelling), presented at three different concentrations and in nine binary mixtures. Compared to controls, the depressed subjects had significantly increased heart rate response to olfactory stimuli, regardless of valence. These observations were not related to the severity of depression. For both groups, a significant negative correlation was found between the explicit hedonic rating and the implicit instantaneous heart rate measure. Together these pilot findings suggest that unipolar depression is associated with stronger physiological reactions to odorants and a negative bias when processing olfactory stimuli. Further studies are required to confirm these observations in larger groups of depressed subjects.

KEYWORDS

Olfaction; Depression; Hedonic Self-Evaluation; Heart Rate Response

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