

**A challenge study to investigate the neural mechanisms of effect of oxytocin in Eating Disorders**

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**Authors**

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**Introduction**

Bulimia nervosa is an eating disorder characterised by fluctuations between loss-of-control binge eating behaviour, and excessive compensatory behaviour intended for weight loss. Binge eating disorder is similarly characterised by repeated loss-of-control binge eating behaviour, without excessive compensatory behaviours. While animal research has indicated that oxytocin can prevent anxiety-induced undereating behaviour, oxytocin tends to reduce hedonic eating behaviour in healthy and overweight men, and may have a similar effect in women with bulimia nervosa.

**Objective**

The current study aimed to test the influence of oxytocin on palatable food intake, 24-hour caloric consumption, subjective stress, and salivary cortisol in women with bulimia nervosa and binge eating disorder.

**Methods**

We recruited 25 women with bulimia nervosa or binge eating disorder, and 27 weight-matched comparison women without history of an eating disorder. Each participant attended two experimental sessions, receiving a divided dose of 64 international units of intranasal oxytocin in one session, and an equal volume of a placebo nasal spray in the opposite session. The order of oxytocin versus placebo administration was unknown to both participants and the researcher. We measured the effect of oxytocin on the consumption of palatable foods in the laboratory, calorie consumption in daily life over the following 24 hours, salivary cortisol, and stress.

**Results**

We did not find that oxytocin had a significant effect on any of the measurements of eating behaviour, subjective stress, or salivary cortisol in women with bulimia nervosa or binge eating disorder, nor in healthy comparison women.

## **Conclusion**

Sixty-four international units of intranasal oxytocin did not significantly impact hedonic eating behaviours, overall calorie consumption, or stress. We recommend that future studies test what dose of oxytocin is most effective in influencing eating behaviour in women with bulimia nervosa and binge eating disorder.

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