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Study provides model for how behavioral traits promote eating problems

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By **Pooja Yadav** | July 6, 2021



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Understanding how eating disorder behaviors and neurobiology interact can shed light on why these disorders often become chronic and could aid in the future development of treatments. The study, published in *JAMA Psychiatry*, was supported by the National Institutes of Health, US.

The study enrolled 197 women with different eating disorders (including anorexia nervosa, bulimia nervosa, binge-eating disorder, and other specified feeding and eating disorders) and different body mass indexes (BMIs) associated with eating disorder behaviors, as well as 120 women without eating disorders.

The researchers analyzed a brain reward response known as "prediction error," a dopamine-related signaling process that measures the degree of deviation from the expectation, or how surprised a person was receiving the unexpected stimulus. A higher prediction error indicates that the person was more surprised, while a lower prediction error indicates they were less surprised.

The researchers found that there was no significant correlation between BMI, eating disorder behavior, and brain reward response in the group of women without eating disorders.

But in the group of women with eating disorders, higher BMI and binge-eating behaviors were associated with lower prediction error response. Further, for the women with eating disorders, the direction of ventral striatal-hypothalamic connectivity was the reverse of those without eating disorders, with connectivity directed from the ventral striatum to the hypothalamus.

Overall, this study suggests that behavioral traits, including food intake behavior, contribute to eating disorder maintenance and progression by modulating one's internal reward response and altering food intake control circuitry.

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