

Brain circuit disturbances may underlie bulimia

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LifeScript

NEW YORK (Reuters Health) - Reduced activity in the part of the brain that helps a person exert appropriate self-control may contribute to the binge-purge syndrome bulimia nervosa, research published today suggests.

In the study, researchers found that women with bulimia responded more impulsively during psychological tests than women without the eating disorder, and brain scans showed differences in areas responsible for regulating behavior.

Dr. Rachel Marsh and colleagues at Columbia University and the New York State Psychiatric Institute, New York, report their findings in the Archives of General Psychiatry.

Bulimia nervosa usually begins during adolescence or young adulthood and primarily affects girls and women. The disorder is characterized by recurrent episodes of binge eating followed by self-induced vomiting or use of laxatives to avoid gaining weight. "These episodes of binge eating are associated with a severe sense of loss of control," Marsh and colleagues explain.

Certain pathways between nerve cells known as "frontostriatal" circuits help individuals control their own voluntary behaviors. Marsh and colleagues tested these functions in 20 adult women with bulimia and 20 healthy controls using a "cognitive control task" in which a person must indicate the direction an arrow is pointing on the screen (left or right), regardless of where it appears on the screen.

The task is easier, Marsh explained, when the arrow direction matches the side of the screen, but more difficult when, for instance, an arrow that points leftward appears on the right side of the screen.

"We found that patients with bulimia performed worse on the task," she noted in an interview with Reuters Health. The bulimics responded faster and more impulsively on incongruent conflict trials (where the arrow direction and location did not match) and they also made more errors.

"We think this has to do a lot with their general impulsivity," Marsh said, "not just in terms of their binge eating behaviors but there is also a very high prevalence of shoplifting and drug abuse in this population."

"At the same time, when we scanned their brains during performance of the task, the women with bulimia did not activate the frontostriatal circuitry as well as the healthy controls," Marsh noted. This brain circuitry is responsible for regulating behavior.

The researchers speculate that the inability of bulimics to engage these key nerve pathways in the brain contributes to their inability to regulate binge-type eating and other impulsive behaviors.

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