

Brain volume found to change following weight gain in adults with anorexia

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A team of American psychologists and neuroscientists have found that adult brain volume, which can be reduced by Anorexia Nervosa, can be regained. The research, published in the *International Journal of Eating Disorders*, revealed that through specialist treatment patients with this eating disorder can reverse this symptom and regain grey matter volume.

Anorexia Nervosa (AN) is a serious psychiatric [eating disorder](#) of excessive weight loss caused by relentless dieting. The starvation that results from this illness affects physiological systems throughout the body, including the brain, but until now it has been unclear if and when [brain volume](#) reduction can be reversed through specialist treatment.

"Anorexia Nervosa wreaks havoc on many different parts of the body, including the brain," said team leader Christina Roberto, MS, MPhil from Yale University. "In our study we measured brain volume deficits among underweight patients with the illness to evaluate if the decline is reversible through short-term weight restoration."

The team, based at the Columbia University Center for Eating Disorders used [magnetic resonance imaging](#) (MRI) to take pictures of the brains of 32 adult female inpatients with Anorexia Nervosa and 21 healthy women without any psychiatric illnesses.

The scans indicated that when the women with Anorexia Nervosa were in a state of starvation they had less grey matter brain volume compared to the healthy women. Those who had the illness the longest had the

greatest reductions in brain volume when underweight.

"The good news is that when women with [Anorexia Nervosa](#) received treatment at a specialized eating disorders inpatient unit at Columbia University which helped them gain to a normal weight, the deficits in brain volume began to reverse over the course of only several weeks of weight gain," said Roberto. "This suggests that the reductions in brain matter volume that results from starvation can be reversed with appropriate treatment aimed at weight restoration."

The team's results reveal that underweight adult patients with AN have reduced brain volumes that increase with short-term weight restoration, however important questions still remain surrounding the link between brain volume reduction and anorexia.

"There is still plenty of research to be done. We do not yet have a good sense of the clinical implications of these reductions in brain volume," concluded Mrs. Roberto. "It is unclear how brain volume deficits impact functioning, which specific regions of the brain are most affected or if these deficits are linked to how patients respond to treatment."

Provided by Wiley

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