Neuropsychological Correlates of Declarative Memory in Bariatric Surgery Patients with and without Mood Disorders

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Background: There is now emerging evidence for an association between subtle cognitive dysfunction and widespread endocrine disturbances such as obesity. Given that patients with mood disorders experience higher rates of obesity than the general population, this may play a role in the cognitive dysfunction often seen in these patients. This study examined the impact of obesity on declarative (recognition) memory in patients with mood disorders, an area known to be susceptible to impairment in mood disorder patients.

Methods: This study compared declarative memory in obese subjects (BMI > 35 kg/m2) with Major Depressive Disorder or Bipolar Disorder, obese subjects without a mood disorder and healthy non-obese controls prior to intervention at the St. Joseph's Healthcare bariatric surgery program. Subjects (ages 18-60) were administered a standardized battery of neuropsychological tests aimed at establishing performance on tests of declarative and intellectual functioning. Warrington's *Recognition Memory Task* was performed in a 3T functional magnetic resonance imaging (fMRI) scanner; neural activation patterns during both encoding and recognition processes were compared within groups to determine if recognition memory performance was associated with specific patterns of neural activation.

Results: Obesity exerts a moderate negative effect on declarative and recognition memory; this effect is further exacerbated in patients with a mood disorder (adjusted for age and gender).

Conclusions: Obesity may have a negative impact on memory that is exacerbated in the presence of a mood disorder. Given that different psychiatric drugs confer different risks of weight gain, this study will impact treatment in this vulnerable population.

