Activity-Based Anorexia in Adolescence and its Effects on Depression in Adulthood

Anorexia Nervosa (AN) often develops in adolescence, particularly in females. Individuals with AN are also frequently diagnosed with anxiety disorders, which are often comorbid with other affective disorders, such as depression. It has been previously demonstrated that following activity-based anorexia (ABA), a paradigm in which food intake is drastically reduced and physical activity is increased, adult rats exhibit greater anxiety-like behavior than do control rats. Thus, we chose to examine the effects of ABA as an adolescent stressor on adult depression. Female adolescent rats were subjected to two rounds of ABA in adolescence and tested for depressive behavior in adulthood via the Porsolt Forced Swim, a procedure in which a rat is placed in a large tank of water. Latency to immobility measured levels of depressive behavior. Following the behavioral test, cFOS activation in the central nucleus of the amygdala, the basolateral amygdala, and the ventral subiculum of the hippocampus was examined. Analysis of the behavioral test in adulthood revealed that rats exposed to ABA in adolescence exhibited increased depressive behavior as compared to control rats.