

# Abstract

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## Neurochemical alterations in women with borderline personality disorder and comorbid attention-deficit hyperactivity disorder.

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**BACKGROUND:** Borderline personality disorder (BPD) is associated with structural and functional brain changes. Recent models and findings refer to alterations of glutamate and total N-acetylaspartate (tNAA) in this condition.

**METHODS:** Absolute quantities of tNAA, creatine, glutamate, glutamine, myoinositol and total choline were measured using 3 Tesla magnetic resonance spectroscopy of the left anterior cingulate cortex and the left cerebellum in 14 unmedicated women with BPD and comorbid attention-deficit hyperactivity disorder (ADHD) and 18 healthy women. Both groups were matched with respect to age, education and premorbid intelligence.

**RESULTS:** In the anterior cingulate, we found significantly higher tNAA and glutamate concentrations and a trend for lower glutamine levels in women with BPD and comorbid ADHD as compared to healthy women. There were no significant group differences in cerebellar metabolite concentrations.

**CONCLUSIONS:** Glutamatergic changes in the anterior cingulate may be associated with BPD and comorbid ADHD. Increased anterior cingulate tNAA may indicate disturbed energy metabolism or impaired frontal maturation.

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