

# NEUROPSYCHOLOGICAL EVALUATION OF CHRONIC LITHIUM EFFECTS ON COGNITIVE FUNCTIONS

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## Abstract

**OBJECTIVE:** Nowadays, the continuous increase of neurodegenerative disorders indicates the need for using new medication that could delay the neurodegeneration. Lithium, a widely-used mood stabilizer in Psychiatry has already shown its neuroprotective and neurotrophic role leading to the conclusion that it might enhance cognitive functions in neurological or psychiatric disorders. The present study examines the influence of long-term medication with lithium on cognitive functions of humans.

**MATERIAL – METHOD:** The neuropsychological profiles of three groups, euthymic patients with bipolar disorder undergoing chronic treatment with lithium (Li), matched euthymic patients treated chronically with valproic acid (VPA) and a matched healthy control group, were compared (N=24). Cognitive functions were assessed with the use of 7 tests of the CANTAB Eclipse neuropsychological battery (Cambridge Cognition Ltd). Participants, also, underwent a clinical assessment.

**RESULTS:** The results concerned a test which evaluates the quality of decision making. Li patients seemed to have a better strategy, in comparison with the VPA patients, as they chose to gamble on the more likely outcome. They also, gambled more on the trials with the more chances of winning compared to the healthy controls, showing a better performance. Moreover, Li patients had higher reaction times in a working memory test than the healthy group.

**CONCLUSIONS:** The results reflect better quality of decision making in Li patients. We consider these results as a significant contribution in the evaluation of lithium's neuroprotective effect in a behavioural level, especially in a cognitive area in which lithium's effect is relatively unexplored.