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Trace Lithium Supplementation for Bipolar Disorder

Preliminary findings suggest beneficial effects on mood.

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This is the fifth post in a series on non-pharmacologic treatments of [bipolar disorder](#). Previous posts briefly reviewed the evidence for amino acids, the B vitamin choline, and a proprietary nutrient formula. This post is offered as a concise review of the evidence for trace lithium. I also comment on the limited available evidence on supplementation with potassium and magnesium for this condition.

Trace lithium for bipolar disorder

Lithium is widely used to treat symptoms of bipolar disorder. However, many individuals who benefit from lithium [therapy](#) discontinue this treatment because of adverse effects including weight gain, tremor, hair loss and thyroid problems. The belief that trace amounts of lithium may have beneficial positive effects on the mood came from early studies purporting a lower incidence of bipolar disorder in geographic regions where drinking water is higher in lithium. However, large epidemiological studies fail to show correlations between higher long-term lithium exposure from drinking water and reduced incidence of bipolar disorder (Kessing 2017).

A few small studies have been done on trace lithium supplementation in bipolar disorder. In a 4-week study 24 subjects randomized to a small daily dose of lithium (400 micrograms) versus [placebo](#) reported sustained improvement in mood. In small 2-week open study 13 individuals diagnosed with bipolar disorder who received natural lithium 50 micrograms/day reported improved mood which returned to the former depressed state when lithium supplementation was discontinued. Some findings suggest that very small doses of lithium reduce [suicide](#) risk however findings are inconsistent. Some studies report reduced risk among women only, while other studies report reduced risk among men only.

Lithium orotate may have greater bioavailability than lithium carbonate

Proponents of lithium orotate claim that lithium in this form more readily crosses the blood-[brain](#) barrier than lithium salts typically prescribed by Western physicians (e.g., lithium carbonate and lithium citrate) potentially resulting in positive mood effects in bipolar disorder and other mental [health](#) problems in response to very low doses in the range of micrograms. Unfortunately, opinions on the effectiveness of lithium orotate are largely based on case reports. Most studies on lithium orotate have been done in rats, and very few human trials have been conducted. One animal study reported toxic effects of lithium orotate on the kidneys however critics argue that renal toxicity may have been due to relatively high doses administered to rats that do not reflect recommended doses in humans.

Possible beneficial effects of potassium and magnesium supplementation in bipolar disorder

Findings from animal research and a small open study suggest that bipolar patients who take potassium 20 milliequivalents (mEq) twice daily with their prescription lithium therapy experience fewer side effects, including tremor, compared to patients who take lithium only at typically prescribed doses. No changes in serum lithium

Findings of a small pilot study suggest that magnesium supplementation 40 milli-equivalents (mEq) per day may be as effective as lithium in the treatment of rapidly cycling bipolar patients (Chouinard 1990).

Inconclusive findings call for large placebo-controlled studies

All of the above findings should be regarded as highly preliminary pending confirmation by large placebo-controlled trials.

References

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"Bipolar Disorder: The Integrative Mental Health Solution" by James Lake MD <http://theintegrativementalhealthsolution.com/bipolar-disorder-the-integrative-mental-health-soution.html>

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James Lake, M.D., visiting assistant professor of medicine at the University of Arizona, works to transform mental health care through the evidence-based uses of alternative therapies.

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