

## **Clinical trial: B vitamins improve health in patients with celiac disease living on a gluten-free diet**

Vitamins are required to maintain a healthy human body. Inadequate intake of vitamins can lead to lack of energy, clinical symptoms such as a rash and anemia, as well as mood disorders. Many celiac disease experts have suggested that people with celiac disease are at risk of developing vitamin deficiencies on a gluten free diet. The deficiencies may be due to the lack of vitamin and mineral enrichment of non-wheat based foods or an unbalanced diet after gluten elimination. Psychological disorders such as depression, anxiety, bipolar disorder, and schizophrenia are also found in the celiac population. It is unclear what role gluten or celiac disease has in relation to such psychological problems.

This (\*) double blind, controlled, multicenter trial studied the biochemical and clinical effects of B vitamin supplementation in people with celiac disease after many years on a strict gluten-free diet. Sixty-five Swedish adults with biopsy-proven celiac disease, that was assumed to be in remission by negative IgA tissue transglutaminase antibodies, were entered into the study. These patients had followed the gluten-free diet for an average of 15.5 years prior to the trial. B-vitamin blood levels were drawn and a psychological well-being survey was taken at the beginning and at the end of the study. Patients were randomly assigned to the treatment group (daily supplementation of B<sub>6</sub>, B<sub>12</sub>, and folic acid) or the placebo group for the 6 month trial. The celiac patient groups' results were compared to a healthy control group from the general population. At the beginning of the study the general population had significantly healthier vitamin levels than the celiac population. After 6 months of vitamin supplementation the B vitamin levels of the treatment group improved significantly compared to the placebo group. Regarding the psychological survey; those celiacs with reduced well-being at the beginning of the study, who received vitamins, had significant improvement with anxiety and depressed mood. None of the patients who received the placebo had improved well-being at the end of the trial.

This study found unhealthy vitamin levels in the gluten-free celiac population at twice the rate of the general population. By adding vitamin supplementation, at levels within recommended daily doses, the treatment group's vitamin levels improved. In turn, improved vitamin levels had a positive effect on those celiac patients with mood and anxiety disorders.

**Bottom Line:** This study supports the practice of the University of Chicago Celiac Center's clinicians to recommend all patients on a gluten-free diet take a daily multivitamin with mineral supplement. The supplement need only provide 100% of the recommended dietary allowance for each nutrient based on patient age. As always the patient must verify the chosen supplement is gluten-free.

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(\*) Source:

Hallert C, et al., *Alimentary Pharmacology & Therapeutics*. 2009;29:811-816.