



Supplementation of Spirulina for 12 weeks Improved Cognitive Function and Metabolic Parameters in Patients with Alzheimer Disease.

Alzheimer's disease (AD) is a neurodegenerative disorder and is characterized by the accumulation and deposition of specific proteins in the brain, which are caused by increased oxidative damage and inflammation. AD is a cognitive disorder principally known as the common cause of dementia, accounting for 60%–80% of cases.

Considering the beneficial anti-inflammatory and antioxidant effects of spirulina, a randomized, double-blind, controlled clinical trial was conducted by Dr. Tamtaji's research group at Tehran University of Medical Sciences in Iran to study whether spirulina may be useful for metabolic pathways and brain function in AD^{*1}.

The clinical study was conducted in Mild (MMSE: 21-26) and moderate (MMSE: 10-20) Alzheimer Patients (Aged of 55-90 yrs). Subjects were provided spirulina or placebo (500 mg/day x 2 a day: each group: n=30) for 12 weeks, and the Mini-mental state examination score (MMSE) along with biological markers were determined before and after intervention. Clinical data indicated that supplementation of spirulina significantly improved the MMSE score ($p=0.01$) and decreased inflammation marker (High sensitivity C-reactive protein: $p=0.006$), and glucose homeostasis parameters, such as fasting glucose ($p=0.002$), insulin ($p=0.001$), insulin resistance ($p=0.001$) and sensitivity (0.003) compared to placebo group, suggesting that spirulina supplementation has the potential to improve cognitive function and glucose homeostasis*.

Dr. Toshi Ide, Sr. Technical Division Manager mentions that "This is a very interesting clinical trial claiming spirulina could improve cognitive function and glucose homeostasis. In the previously reported meta-analysis, spirulina intake improves fasting plasma glucose, insulin and lipid profiles, such as cholesterol levels in subjects with metabolic syndrome subjects, and this study was able to reproduce data from the meta-analysis. Also, antioxidants in spirulina, such as carotenoids, phycocyanin and its metabolites may play important roles in improving inflammation biomarker and lipid profiles. On the other hand, there are some limitations to prove the clinical efficacy, such as subject numbers of study, and diagnosis using MMSE is limited. Therefore, a larger clinical study and improved diagnosis for cognitive function may be needed."

Reference

¹)Tamtaji, O. R. *et al.* (2023). The effects of spirulina intake on clinical and metabolic parameters in Alzheimer's disease: A randomized, double-blind, controlled trial. *Phytotherapy Research*, 1–8. <https://doi.org/10.1002/ptr.7791>

Earthrise Nutritionals LLC

2151 Michelson Dr., Suite 262, Irvine, CA 92612
Tel: (949) 623-0980, Email: information@earthrise.com
Published in June, 2023

* These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure or prevent any disease.