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Vitamin D Improves Mood, Cognition and Pain Tolerance

Without the sunshine vitamin, few of us would experience lives free of disease. Two new studies show that increased levels of vitamin D not only reduce the risk of developing cognitive impairments, but also improve widespread chronic pain.

People with higher blood levels of vitamin D live significantly longer than people who have low blood levels of the vitamin.

For the past several years, there has been considerable interest in the role vitamin D plays in improving health and preventing disease. Previous finding show that low levels of vitamin D have been directly associated with various forms of cancer and cardiovascular disease.

A new study, published in Journal of Parkinson's Disease, examined the relationship between serum vitamin D and neuropsychiatric function in people with Parkinson's disease (PD) – finding that increased levels of the sunshine vitamin are linked to improved mood and may reduce the risk of developing cognitive impairments.

Led by Dr Amie L. Peterson from the Oregon Health and Sciences University in the US, the team conducted a cross-sectional analysis of 286 patients with PD which indicated that higher serum 25-hydroxyvitamin D levels were associated with lower symptom severity, better cognition, and less depression in the entire group, but the relationships were even stronger in those who were not demented.

"About 30% of persons with PD suffer from cognitive impairment and dementia, and dementia is associated with nursing home placement and shortened life expectancy," explained Peterson. "We know mild cognitive impairment may predict the future development of dementia."

"Intervening in the development of dementia has the potential to improve morbidity and mortality in persons with PD."

Significant negative associations were found between vitamin D levels and disease severity, as measured both by the Hoehn and Yahr Scale and the United Parkinson's Disease Rating Scale motor section.

A significant negative association was also found for vitamin D levels and depression, as measured by the Geriatric Depression Scale, for both the entire group and those who were not demented, the team added.

These negative associations are suggestive of correlations between decreased Vitamin D levels and both depression and cognitive impairment.

Chronic Pain and Fatigue

According to a press release issued by Elsevier Health Sciences, patients with fibromyalgia syndrome typically have widespread chronic pain and fatigue. For those with low vitamin D levels, vitamin D supplements can reduce pain and may be a cost-effective alternative or adjunct to other treatment, say researchers in the current issue of PAIN.

In addition to pain and fatigue, individuals diagnosed with fibromyalgia (FMS) may experience sleep disorders, morning stiffness, poor concentration, and occasionally mild-to-severe mental symptoms such as anxiety or depression.

Calcifediol (also known as calcidiol, 25-hydroxycholecalciferol, or 25-hydroxyvitamin D (OH)D) is a prehormone produced in the liver by the enzyme cholecalciferol (vitamin D3). Calcifediol is then converted to calcitriol (1,25-(OH)2D3), which is the active form of vitamin D. The concentration of calcifediol in blood is considered the best indicator of vitamin D status.

Researchers hypothesized that vitamin D supplementation would reduce the degree of chronic pain experienced by FMS patients with low levels of calcifediol and also might improve other symptoms. “Low blood levels of calcifediol are especially common in patients with severe pain and fibromyalgia. But although the role of calcifediol in the perception of chronic pain is a widely discussed subject, we lack clear evidence of the role of vitamin D supplementation in fibromyalgia patients,” says lead investigator Florian Wepner, MD, of the Department of Orthopaedic Pain Management, Spine Unit, Orthopaedic Hospital, Speising, Vienna, Austria. “We therefore set out to determine whether raising the calcifediol levels in these patients would alleviate pain and cause a general improvement in concomitant disorders.”

In a randomized controlled trial, 30 women with FMS with low serum calcifediol levels (below 32ng/ml) were randomized to a treatment or control group. The goal for the treatment group was to achieve serum calcifediol levels between 32 and 48ng/ml for 20 weeks via oral cholecalciferol supplements. Serum calcifediol levels were reevaluated after five and 13 weeks, and the dose was reviewed based on the results. The calcifediol levels were measured again 25 weeks after the start of the supplementation, at which time treatment was discontinued, and after a further 24 weeks without supplementation.

Twenty-four weeks after supplementation was stopped, a marked reduction in the level of perceived pain occurred in the treatment group. Between the first and the 25th week on supplementation, the treatment group improved significantly on a scale of physical role functioning, while the placebo group remained unchanged. The treatment group also scored significantly better on a Fibromalgia Impact Questionnaire (FIQ) on the question of “morning fatigue.” However, there were no significant alterations in depression or anxiety symptoms.

“We believe that the data presented in the present study are promising. FMS is a very extensive symptom complex that cannot be explained by a vitamin D deficiency alone. However, vitamin D supplementation may be regarded as a relatively safe and economical treatment for FMS patients and an extremely cost-effective alternative or adjunct to expensive pharmacological treatment as well as physical, behavioral, and multimodal therapies,” says Wepner. “Vitamin D levels should be monitored regularly in FMS patients, especially in the winter season, and raised appropriately.”

About the Author

Mae Chan holds degrees in both physiology and nutritional sciences. She is also blogger and and technology enthusiast with a passion for disseminating information about health.

Sources:
metapress.com
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