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Is vitamin D a substantial disease modifier in patients with MS?

Vitamin D can modulate the innate and adaptive immune responses. Existing data show that vitamin D supplementation has major effect in determining MS risk.

Data from two large prospective cohorts of women (Nurses' Health Study, 92,253 followed from 1980-2000) and Nurses' Health Study II (95,310 women followed from 1991-2001) has shown that women who used supplemental vitamin D had a 40% lower risk of MS, than women who did not use vitamin D supplements.

In the prospective cohort study of 145 participants with relapsing-remitting MS higher 25-OH-D levels were associated with a reduced hazard of relapse. Also the relative risk of developing MS has been found to be lower among women born to mothers with high vitamin D intake during pregnancy.

Controversies exist regarding the therapeutic effect of vitamin D supplementation on the course of MS and not allow conclusion that vitamin D can be regarded as a substantial disease modifier in patients with MS.

In a small prospective study 15 MS patients were treated with vitamin D3 2.5 mcg/d for 48 weeks showing that the on study exacerbation rate was lower than baseline. Also in a randomized, double-blind, placebo controlled trial with vitamin D3 as an add on treatment to interferon beta 1b in patients with MS, patients in the vitamin D group have shown a significant reduction of MRI activity in comparison with group of patients only treated with interferon beta 1b. But in a 96-week randomized controlled trial in 68 MS patients, supplementation with 20,000 IU vitamin D3 weekly did not result in beneficial effect on the relapse rate, EDSS, MSFC components or fatigue. Some clinical trials are ongoing. Large prospective trials are needed to resolve this issue.