

## Vitamin D Supplement: Is it Truly Beneficial in Depression?

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### Editorial

Vitamin D deficiency is common in Western populations, especially in the elderly population [1]. Hypovitaminosis D peaks in the spring when vitamin D serum levels are at its lowest because of negligible skin synthesis of vitamin D caused by low levels of ultraviolet B radiation [2]. While the repercussion of vitamin D deficiency on bone health is well understood, the impact of vitamin D deficiency on mental health, particularly on depression, remains unclear. The aim of this editorial is to highlight the major studies that examined the correlation between vitamin D deficiency and depression attempting to determine whether vitamin D supplementation is promising in prevention and/or treatment of depression.

Serum levels of the vitamin D metabolite, 25-hydroxyvitamin D [25(OH) D], are used to diagnose vitamin D deficiency. When vitamin D levels were measured in 54 depressed adolescents, low levels of vitamin D were demonstrated in all samples, showing a positive correlation between vitamin D deficiency and depression [3]. In postmenopausal women, a potential inverse association of vitamin D, primarily from food sources, and depressive symptoms was demonstrated [4]. Similarly, symptoms pertaining to depression improved upon vitamin D supplementation [3]. Anecdotally, suicide attempt frequencies are known to reach their peak when vitamin D levels are at their lowest in spring [5]. While, in the Netherlands, it is recommended to do routine testing of serum vitamin D level prior to confirming the diagnosis of depression in the elderly [6,7], in Canada, it is assumed that all Canadians are deficient in vitamin D and routine serum vitamin D testing is not recommended. In France, it is suggested that a daily intake of at least 800-1,000 IU supplemental vitamin D(3) per day is the key to prevent hypovitaminosis D [8]. In Canada, it is common to have patients supplementing 1000-2,000 IU/day.

It is worth mentioning at this point that despite the numerous studies demonstrating the positive correlation between vitamin D and mental health, a few studies failed to find such a positive correlation between annual high dose of vitamin D and prevention of depressive symptoms in older women [9].

In conclusion, it is our belief that a positive correlation exists between vitamin D supplementation and improvement in symptoms related to depression. Vitamin D supplementation should be encouraged in all patients at recommended doses owing to its numerous health benefits. It is important to note that Canadians might not see significant amounts of sunlight before June. Even then, all Canadians are encouraged to wear sunscreen to avoid exposure to the harmful ultraviolet light. All of the above factors diminish vitamin D synthesis in the skin and should encourage all Canadian adults to maintain their vitamin D supplementation at all times.

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