**Vitamin D and Depression**

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Reference: Ganji V, Milone C, Cody MM, McCarty F, Wang YT. Serum vitamin D concentrations are related to depression in young adult US population: the Third National Health and Nutrition Examination Survey. *Int Arch Med*. 2010;3:29.

Design: This is a large population cross-sectional study. The study sample initially consisted of 18,875 participants. The final sample size was 7,970 U.S. non-institutionalized civilian participants aged 15-39 years after exclusions for pregnancy and lactation. Serum vitamin D concentrations were measured, and a diagnostic assessment for depression was performed using the Diagnostic Interview Schedule (DIS).

Key Findings: The authors noted a **direct relationship between vitamin D deficiency and the depression variable.** Prevalence of suboptimal serum vitamin D concentrations (<75 nmol/L) was approximately 50%, and 20% were less than 50 nmol/L. Higher prevalence was noted in women, non-Hispanic blacks, persons with higher body mass indexes, lower-income individuals, urban dwellers, and those living in the south.

Limitations: The data collection was in dissimilar months—summer in the northeast and midwest, and winter in the South. This could significantly alter the prevalence of vitamin D deficiencies noted.

Practice Implications: The role of vitamin D in depression is not completely understood. There may be a role in the regulation of neurotransmitters and oxidative activity associated with glutathione metabolism.1 This large population study did observe a significantly higher likelihood of depression in vitamin D–deficient persons. While future research needs to be carried out that assesses causality, clinicians can still assess individual vitamin D levels in patients presenting with depression and treat accordingly.

References

1. Jorde R, Waterloo K, Saleh F, Haug E, Svartberg J. Neuropsychological function in relation to serum parathyroid hormone and serum 25-hydroxyvitamin D levels. The Tromsø study. J Neurol. 2006;253(4):464-470.