

Critical View on the Newest Endocrine Society Guideline on Vitamin D



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Abstract

The 2024 Endocrine Society Guideline suggested empiric vitamin D in children and adolescents, pregnant women, prediabetic patients and older seniors over 75 years, providing estimated weighted average doses of vitamin D. The previous guidelines by Endocrine Society published in 2011 were more practical for clinicians and for general population.

Keywords: Endocrine Society; Critical View; Vitamin D Deficiency; Pregnancy

Introduction

In July 2024 the Endocrine Society published the newest "Vitamin D for the Prevention of Disease: An Endocrine Society Clinical Practice Guideline" [1]. The manuscript was published to replace the previous guidelines prepared by Endocrine Society in 2011, focused on prevention and treatment of vitamin D deficiency [2]. In the newest document the experts from different countries, representing different medical and non-medical specialties, also endocrinologists, reviewed and concluded that studies demonstrating associations between 25-hydroxyvitamin D [25(OH)D], a marker of vitamin D status, with the risk of various diseases remain uncertain. In consequence, randomized placebo-controlled trials were only included and considered by this group to create the final "Endocrine Clinical Practice Guideline".

What is the new in this document? The group of experts suggested that empiric vitamin D supplementation may be suggested for adults over 75 years of age, children and adolescents, "individuals" who are pregnant, and cases with prediabetes [1]. But how it is possible to prevent a given disease or even vitamin D deficiency/insufficiency when in the newest Endocrine Society guidelines, the diagnostic threshold values for 25(OH)D concentrations were not established and provided [1]. In this review "suggestions" from this document will be discussed shortly.

Pregnant "Individuals"

In the newest guidelines "empiric vitamin D supplementation during pregnancy, given its potential to lower risk of preeclampsia, intra-uterine mortality, preterm birth, small-for-gestational-

age (SGA) birth, and neonatal mortality" with the use of daily estimated average dose of 2500 IU (63 µg) vitamin D was suggested by experts reviewing RCTs [1]. On the same "Vitamin D supplementation for women during pregnancy." in the Cochrane Database of Systematic Reviews 2024, Issue 7, Palacios et al. [3] concluded that "supplementation with vitamin D alone compared to no intervention or a placebo resulted in very uncertain evidence on pre-eclampsia, gestational diabetes, preterm birth, or nephritic syndrome. It may reduce the risk of severe postpartum haemorrhage; however, only one study reported this outcome. It may also reduce the risk of low birthweight; however, the upper CI suggests that an increase in risk cannot be ruled out." - end of citation [3]. So, one can ask "who is in charge of pregnant women and their newborns and infants, Cochrane or Endocrine Society"? What is the real recommended, not suggested, vitamin D dose for these women, and what daily dose of vitamin D is proper for newborns and infants aged up to 1 year? These questions remain unanswered in the newest guidelines [1].

Children and Adolescents

For children and adolescents, aged 1-18 years, the Endocrine Society agreed to suggest empiric vitamin D supplementation with vitamin D in average daily dose of "approximately 1200 IU (30 µg)". In the technical remarks the empiric vitamin D was recognized to "include daily intake of fortified foods, vitamin formulations that contain vitamin D, and/or daily intake of a vitamin D supplement (pill or drops)". Again, the questions may rise for the suggested dose of "approximately 1200 IU/d", given daily to 14 months aged infant taking empiric vitamin D and who showed

hypercalciuria, hypercalcemia and health related outcomes, for example nephrocalcinosis. How about an adolescent aged 15 years, with body mass index of 31 kg/m², the patient with obesity? In previous guidelines, published in 2011 year by Holick et al. [2], the 2-3 times higher daily vitamin D dosing was recommended for obese patients compared to normal weight counterparts [2].

Adults and Seniors

For adults aged 18 up to 75 years the suggestions by experts from Endocrine Society are even more disturbing. Diagnostic thresholds for 25(OH)D nor daily empiric vitamin D dosing were not suggested (except Recommended Daily Allowance of 600 – 800 IU/d) [1]. For young adults, adults, and seniors up to 75 year of age, vitamin D status or the prevention of vitamin D deficiency/insufficiency appeared in these “suggestions” as no longer a case of care, at least for clinicians literally accepting the newest document prepared by Endocrine Society in 2024 year, or rather a paper representing the point of view of group of experts.

Older Seniors

Fortunately, seniors aged 75 year and older from general population, similar to the group of children and adolescents, were more lucky, but the reason for suggestion of use of empiric supplementation was different in this newest Endocrine Society document [1]. In contrast to children and adolescents where empiric vitamin D daily average dosing of 1200 IU was suggested to prevent nutritional rickets and potentially lower the risk of respiratory tract infections, for older seniors a daily dose 800 IU/d was pointed for a one reason: the potential to lower the risk of mortality [1]. Further, the daily dose but not an intermittent dosing was suggested – due to fact that: “the panel judged that any desirable effects of intermittent, high-dose vitamin D (compared to lower-dose, daily vitamin D) are likely trivial, while the anticipated undesirable effects are likely to be small.” [1].

It is well known for Endocrinologists that polypharmacy is a problem for some groups of patients. In clinical practice, medical doctors often prescribe vitamin D without 25(OH)D result and patients have the right to medical treatment with appropriately high doses of vitamin D. In a recent study a markedly higher daily doses, compared to that “suggested”, as well as intermittent weekly or monthly doses of vitamin D were reviewed as the alternative way of prevention and treatment, especially for seniors, older seniors, obese patients or patients suffering for multi-morbidity and multi-treatment [4]. And the answer for obvious question about the safety of higher doses of vitamin D can be find in above paper [4] as well as in results of ViDA study [5-9]. In the ViDA RCT study the intermittent vitamin D doses of 100,000 IU were given once per month for 3.3 years for 2558 adults aged 50 - 84 years, and the treatment resulted in total intake of 3 800 000 IU (95 000 µg) after 3 years of study [5-9]. According to finding published in American Journal of Clinical Nutrition [9], the hazard ratio of adverse events was similar and not significantly increased

in vitamin D and placebo groups, documenting safety of high intermittent dosing.

Conclusions

The Endocrine Society in their newest document decided to no longer endorse diagnostic thresholds for 25(OH)D concentration nor assays. Endocrine Society suggested estimated weighted average doses of vitamin D for children and adolescents and for older seniors, and for prediabetes and pregnancy. So, the obvious recommendations of

- a) how to evaluate patients at risk for vitamin D deficiency
 - b) how to interpret the result of 25(OH)D
 - c) how to treat vitamin D deficiency, and
 - d) how to prevent vitamin D deficiency or insufficiency,
- were not provided.

References

- Demay MB, Pittas AG, Bikle DD, Diab DL, Kiely ME, et al. (2024) Vitamin D for the Prevention of Disease: An Endocrine Society Clinical Practice Guideline. *J Clin Endocrinol Metab* 109(8): 1907-1947.
- Holick MF, Binkley NC, Bischoff-Ferrari HA, Gordon CM, Hanley DA, et al. (2011) Evaluation, treatment, and prevention of vitamin D deficiency: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab* 96(7): 1911-1930.
- Palacios C, Kostiuik LL, Cuthbert A, Weeks J (2024) Vitamin D supplementation for women during pregnancy. *Cochrane Database Syst Rev* 7(7): CD008873.
- Pludowski P, Marciniowska-Suchowierska E, Togizbayev G, Belaya Z, Grant WB, et al. (2024) Daily and Weekly “High Doses” of Cholecalciferol for the Prevention and Treatment of Vitamin D Deficiency for Obese or Multi-Morbidity and Multi-Treatment Patients Requiring Multi-Drugs-A Narrative Review. *Nutrients* 16(15): 2541.
- Scragg R, Stewart AW, Waayer D, Lawes CMM, Toop L, et al. (2017) Effect of Monthly High-Dose Vitamin D Supplementation on Cardiovascular Disease in the Vitamin D Assessment Study: A Randomized Clinical Trial. *JAMA Cardiol* 2(6): 608-616.
- Scragg R, Khaw KT, Toop L, Sluyter J, Lawes CMM, et al. (2018) Monthly High-Dose Vitamin D Supplementation and Cancer Risk: A Post Hoc Analysis of the Vitamin D Assessment Randomized Clinical Trial. *JAMA Oncol* 4(11): e182178.
- Khaw KT, Stewart AW, Waayer D, Lawes CMM, Toop L, et al. (2017) Effect of monthly high-dose vitamin D supplementation on falls and non-vertebral fractures: secondary and post-hoc outcomes from the randomised, double-blind, placebo-controlled ViDA trial. *Lancet Diabetes Endocrinol* 5(6): 438-447.
- Camargo CA, Sluyter J, Stewart AW, Khaw KT, Lawes CMM, et al. (2020) Effect of monthly high-dose vitamin D supplementation on acute respiratory infections in older adults: A randomized controlled trial. *Clin Infect Dis* 71(2): 311-317.
- Malihi Z, Lawes CMM, Wu Z, Huang Y, Waayer D, et al. (2019) Monthly high-dose vitamin D supplementation does not increase kidney stone risk or serum calcium: results from a randomized controlled trial. *Am J Clin Nutr* 109(6): 1578-1587.



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