

# 25-Hydroxyvitamin D assay standardization and vitamin D guidelines paralysis

CT Sempos  
N Binkley

---

## Video Abstract

**Keywords:** Public Health Nutrition, vitamin D, 25-Hydroxyvitamin D, 25(OH)2, 25(OH)D3, insufficiency, sufficiency, toxicity, deficiency, nationally representative survey, accuracy, precision, guidelines, Vitamin D Standardization Program, VDSP, Centers for Disease Control, CDC, National Institutes of Health, NIH, public health

**Posted Date:** October 27th, 2020

**DOI:** <https://doi.org/10.21203/rs.3.rs-99154/v1>

**License:**  This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

---

# Abstract

Vitamin D guidelines are currently in a state of paralysis. The problem: the numerous competing ways of measuring levels of 25-hydroxyvitamin D, a slightly modified form of vitamin D in the body. This lack of standardization has produced three conflicting sets of guidelines for defining vitamin D status across the globe, those from the UK, the US, and the Endocrine Society. The guidelines from the UK and US set similar standards, defining vitamin D deficiency as 25-hydroxyvitamin D concentrations less than 10 to 12 nanograms per milliliter. This is the standard typically adopted by government-sponsored committees. Non-governmental organizations, however, tend to adopt the guideline set by the Endocrine Society, which defines deficiency as 25-hydroxyvitamin D concentrations less than 20 nanograms per milliliter. Despite a wealth of data on vitamin D and how to measure it, a worldwide consensus on determining vitamin D status remains elusive. And that's a problem, as rates of vitamin D deficiency only continue to grow. In a commentary recently published in the journal *Public Health Nutrition*, the authors describe the origins of this problem and propose a set of recommendations for establishing standard vitamin guidelines. Their recommendations are based on the NIH's Vitamin D Standardization Program (VDSP) and focus on standardizing measurements of 25-hydroxyvitamin D in all research and representative national surveys. Standardization includes the selection and use of assays that are fit for purpose, meaning that they will perform appropriately and provide standardized measurements in the patient populations for which they will be used. The authors also recommend that funding organizations and journals join in the effort by incentivizing work that adheres to assay standardization. That includes publishing only meta-analyses based on guidelines set by the Vitamin D Standardization Program and fit-for-purpose assays. To be sure, much work remains to be done. But without assay standardization, the current paralysis that plagues the vitamin D community will persist.