

# Comment On: Serum Vitamin D Levels in Children and Adolescents with Vasovagal Syncope, Syncope due to Orthostatic Hypotension, and Cardiac Syncope

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We read the interesting study by Kovalchuk and Boyarchuk<sup>1</sup> published in January–February 2023 issue of the *Turkish Archives of Pediatrics*. On referring to the guidelines for vitamin D (VD) deficiency and supplementation in Central Europe,<sup>2</sup> Kovalchuk and Boyarchuk<sup>1</sup> reported that compared to healthy controls, Ukrainian children and adolescents with syncope exhibited a greater prevalence of VD deficiency. As a result, Kovalchuk and Boyarchuk<sup>1</sup> recommended the evaluation of VD status of individuals who have a history of syncope. In addition to the numerous study limitations that were mentioned by Kovalchuk and Boyarchuk,<sup>1</sup> we believe that the following limitation is important. There are numerous determinants of pediatric VD status such as age, gender, dietary lifestyle, body mass index, sunlight exposure, socioeconomic standard, and ethnicity.<sup>3,4</sup> Importantly, the use of accurate classification guidelines for determining VD status in a particular population is crucial. In the study methodology, Kovalchuk and Boyarchuk<sup>1</sup> mentioned that they referred to the guidelines describing serum VD levels as VD deficiency when they are less than 20 ng/mL, suboptimal when they are between 20 and 30 ng/mL, and optimal when they are between 30 and 50 ng/mL.<sup>2</sup> The employed guidelines are actually old and date back to 2013.<sup>2</sup> It is important to note that the age- and gender-specific 5th and 95th centiles of VD, occupying the range from 20.8 to 79.3 nmol/L in boys and 16.5 to 73.3 nmol/L in girls, have been recently generated for European children and adolescents.<sup>5</sup> Based on serum VD level, VD status is classified into deficient (less than 50 nmol/L), insufficient (50–75 nmol/L), and sufficient (equal or greater than 75 nmol/L).<sup>5</sup> We believe that referring to the recently published guidelines<sup>5</sup> for serum VD estimation could better outline the VD profile and the association of VD with clinical parameters of syncope among the Ukrainian population that was studied because there are discernible differences in defining VD status between the guidelines that were used in the study by Kovalchuk and Boyarchuk<sup>1</sup> and the guidelines that were recently published.<sup>5</sup>

**Declaration of Interests:** The author has no conflict of interest to declare.

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# Author's Response: Comment On: Serum Vitamin D Levels in Children and Adolescents with Vasovagal Syncope, Syncope due to Orthostatic Hypotension, and Cardiac Syncope

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We got acquainted with a very interesting and scientifically based point of view for determining vitamin D status assessment depending on the age- and gender-specific 5th and 95th centiles in children published by Wolters et al<sup>1</sup> in 2022. At the same time, the evaluation of the vitamin D status by Kovalchuk and Boyarchuk<sup>2</sup> in their article is based on the generally accepted practical guidelines for the supplementation of vitamin D and the treatment of deficits in Central Europe of 2013,<sup>3</sup> which were updated in 2023,<sup>4</sup> and the approaches to the evaluation of vitamin D remained unchanged. The main aim of Kovalchuk and Boyarchuk study<sup>2</sup> was to compare vitamin D levels between children with syncope and healthy children, while the direct assessment of vitamin D status is of secondary importance.

The next issue is different units of measurement. The author of the Letter to the Editor<sup>5</sup> wrote about nanomoles per liter whereas Kovalchuk and Boyarchuk<sup>2</sup> wrote about nanograms per milliliter. According to Pludowski et al<sup>3</sup>, the ranges of total serum 25-hydroxyvitamin D concentration indicating vitamin D deficiency [ $<20$  ng/mL ( $<50$  nmol/L)], suboptimal status [ $20\text{--}30$  ng/mL ( $50\text{--}75$  nmol/L)], and optimal concentration [ $30\text{--}50$  ng/mL ( $75\text{--}125$  nmol/L)] were published in 2013<sup>3</sup> and revised in 2023.<sup>4</sup> As a result, both values are presented in the centile tables, which Wolters et al<sup>1</sup> refer to. That is, there is absolutely no error in the assessment of vitamin D status by the authors Kovalchuk and Boyarchuk.<sup>2</sup> The levels of vitamin D for determining its status, which are indicated in the article by Kovalchuk and Boyarchuk,<sup>2</sup> are the same as those indicated by the authors and only the units are different. Moreover, in different countries, there may be different units, and therefore guidelines should take this into account.

However, there are some other issues that need to be raised. Attention to the assessment of vitamin D status using percentile curves depending on gender, age, body mass index z-scores, time spent outdoors, dietary vitamin D intake, and ultraviolet

dose is very valuable, but the timing of the publication of the article and the general guidelines should also be taken into account. It means that Kovalchuk and Boyarchuk<sup>2</sup> research was received for publication at Turkish Archives of Pediatrics at the time of Wolters et al<sup>1</sup> research publishing. Moreover, Wolters et al's study<sup>1</sup> provides a percentile distribution of vitamin D status for children aged 3– $<15$  years. In contrast, the age of children with vasovagal syncope was 8–17 years, and so the percentile evaluation of vitamin D status could not be used for 16- to 17-year-old children in the Kovalchuk and Boyarchuk<sup>2</sup> research.

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