

# Vitamin D levels can be compared across studies and countries

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Knowledge about the vitamin D level of a population is important in order to assess the proportion that is vitamin D deficient or is at risk of becoming deficient, and to develop food strategies that will ensure optimal vitamin D intake. By using a standardizing method it is possible to compare existing vitamin D measurements across studies and countries. This is the finding of a Nordic project initiated by researchers from the National Food Institute, Technical University of Denmark.

Knowledge about the [vitamin D](#) status of a population is important in order to assess the proportion of that particular population which is vitamin D deficient or is at risk of becoming deficient.

Vitamin D status is measured as the vitamin D concentration in the blood, and there are several analytical methods to determine the vitamin D concentration. The quality of the analytical methods may vary and even though knowledge is available on the accuracy and precision of the individual methods, it is difficult to compare results across analytical methods and thus also across studies.

## **Standardized Nordic data**

Researchers from the National Food Institute have initiated a unique Nordic project with partners from Denmark, Norway and Finland in order to test a method that can standardize existing vitamin D measurements from previous studies in which different [analytical methods](#) have been used.

The project shows that it is possible to compare existing vitamin D measurements across studies and countries by using such a standardizing method.

Being able to compare the prevalence of vitamin D deficiency is essential to develop effective food strategies aimed at reducing the prevalence of vitamin D deficiency in the Nordic population. At the same time more comparable data are needed in order to get a better knowledge base about people's vitamin D status.

## **Analytical method**

In the project a selection of the original [blood samples](#) from three

national health surveys from Denmark, Finland and Norway and from a Danish intervention trial was standardized using an international vitamin D standardization program, VDSP.

The vitamin D concentration of the selected blood samples was reanalyzed according to the VDSP protocol. A standardization equation was prepared for each study based on the results of the reanalysis of the selected blood samples. The equation was then applied to the rest of the dataset for each study. Subsequently it was possible to compare results across individual studies.

The researchers found that there is a better correlation between vitamin D levels in the three Nordic countries after they were standardized compared with before the standardization of the individual studies.

This work shows the need to interpret the results of measurements of vitamin D levels with caution - especially when you want to compare results from studies that have used different methods of analysis. Comparison of vitamin D status across studies and countries requires a standardized methodology.

**More information:** "Standardizing serum 25-hydroxyvitamin D data from four Nordic population samples using the Vitamin D Standardization Program protocols: Shedding new light on vitamin D status in Nordic individuals", *Scandinavian Journal of Clinical and Laboratory Investigation*. [DOI: 10.3109/00365513.2015.1057898](https://doi.org/10.3109/00365513.2015.1057898)

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