

# More than one-third of populations worldwide may have low levels of vitamin D, study shows

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A new systematic review published in the *British Journal of Nutrition*, is one of the first to focus on patterns of vitamin D status worldwide and in key population subgroups, using continuous values for 25(OH)D to improve comparisons.

Principal investigator, Dr. Kristina Hoffmann of the Mannheim Institute of Public Health (MIPH), Medical Faculty Mannheim, Heidelberg University stated, "The strength of our study is that we used strict inclusion criteria to filter and compare data, using consistent values for 25(OH)D. Although we found a high degree of variability between reports of vitamin D status at the [population level](#), more than one-third of the studies reviewed reported mean serum 25(OH)D values below 50 nmol/l."

Low levels of vitamin D have a potentially serious impact on health, particularly on bone and muscle health. In children, vitamin D deficiency is a cause of rickets; while in adults low values are associated with osteomalacia, osteopenia, osteoporosis and risk of fracture. Emerging evidence also points to increased risk for cancer and cardiovascular diseases. Yet despite its importance to [public health](#), data about vitamin D status at the population level are limited and studies are hampered by lack of consensus and consistency.

The study's key findings include:

- 37.3% of the studies reviewed reported mean serum 25(OH)D values below 50 nmol/l, values considered inadequate by [health authorities](#) worldwide.
- Only a limited number of studies for Latin America were available.
- Vitamin D values were higher in North America than in Europe or the Middle-East.
- Age-related differences were observed for the Asia-Pacific and Middle East regions, but not elsewhere.
- The substantial heterogeneity between the studies within each region precludes drawing conclusions on overall vitamin D status at the population level.
- There is a need for research designs which minimize potential sources of bias and thus strengthen understanding of vitamin D status in key subgroups worldwide.

International Osteoporosis Foundation (IOF) CEO Judy Stenmark noted, "Given the global increase in the number of seniors and the almost fourfold increase in hip fractures due to osteoporosis since 1990, public health officials must address the impact of inadequate vitamin D status on fracture risk and overall health in their ageing populations as well as on children and adolescents. IOF urges further research as well as public health measures that would help to improve [vitamin D](#) status in these high-risk population groups."

**More information:** A systematic review of vitamin D status in populations worldwide. *Br J Nutr* 2013. Epub ahead of print [DOI: 10.1017/s0007114513001840](https://doi.org/10.1017/s0007114513001840)

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