

# Who benefits from vitamin D?

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Studying the expression of genes that are dependent on vitamin D makes it possible to identify individuals who will benefit from vitamin D supplementation, shows a University of Eastern Finland study published recently in *PLoS One*.

Population-based studies have shown that vitamin D deficiency may increase the risk for chronic diseases and weaken the body's immune system. In the present study carried out at the University of Eastern Finland, Kuopio, the [study participants](#) were given a daily dose of either 40 or 80 micrograms of vitamin D, or a placebo, over a course of 5 months during Finnish winter. The results showed that the expression of vitamin D dependent genes in adipose tissue and monocytes, i.e. [white blood cells](#), correlated only in half of the study participants with their vitamin D concentrations in the blood.

The researchers concluded that persons whose expression of the CD14 and thrombomodulin genes was not altered as a result of vitamin D supplementation already had a sufficiently high serum vitamin D concentration or their utilization of vitamin D was disturbed, which calls for further study. The researchers believe that studying the expression of vitamin D dependent genes in tissues is a novel way to identify individuals who might benefit from long-term vitamin D supplementation. This observation is further supported by the fact that studying alterations in the expression of genes also made it possible to identify persons whose levels of [interleukin 6](#), an inflammation marker, were reduced as their serum vitamin D levels increased.

**More information:** Carlberg C, et al. (2013) Primary Vitamin D Target Genes Allow a Categorization of Possible Benefits of Vitamin D3 Supplementation. *PLoS ONE* 8(7): e71042. [DOI: 10.1371/journal.pone.0071042](https://doi.org/10.1371/journal.pone.0071042)

Provided by University of Eastern Finland

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