

Vitamin D levels not linked to asthma or dermatitis

9 May 2017



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Vitamin D supplementation is unlikely to reduce the risk of asthma in children or adults, atopic dermatitis, or allergies according to a new study published in *PLOS Medicine* by Brent Richards, of McGill University, Canada, and the Lady Davis Institute at the Jewish General Hospital, Canada, and colleagues.

Some previous epidemiological studies have suggested that low vitamin D levels are associated with increased rates of [asthma](#), atopic dermatitis—an itchy inflammation of the skin—and elevated levels of IgE, an immune molecule linked to atopic disease (allergies). In the new work, researchers looked at genetic and health data on more than 100,000 individuals from previous large studies to determine whether genetic alterations that are associated with vitamin D levels predispose people to asthma, dermatitis, or high IgE levels.

The researchers found no statistically significant difference between rates of asthma (including childhood-onset asthma), atopic dermatitis, or IgE levels in people with or without any of the four

genetic changes associated with lower levels of 25-hydroxyvitamin D. However, the results do not exclude an association between the outcomes and levels of 1,25-dihydroxyvitamin D, the active form of the vitamin, and more work will be needed to determine if the results hold true in non-European populations and in people with vitamin D deficiency.

"Our findings suggest that previous associations between low vitamin D and atopic disease could be due to spurious associations with other factors," said Dr. Despoina Manousaki, the lead author and a PhD student at the Lady Davis Institute. "Efforts to increase vitamin D levels will probably not result in decreased risk of adult and pediatric asthma, [atopic](#) dermatitis, or elevated IgE levels."

These findings contrast with a recent study from the same group which used similar methods to provide evidence supporting a causal role for vitamin D in the risk of [multiple sclerosis](#), a common neurological disorder. "Our previous findings suggest that low vitamin D levels increase risk for some inflammatory diseases like multiple sclerosis, but these effects do not translate to other inflammatory diseases like asthma and [atopic dermatitis](#)", said Dr. Richards. Risk of multiple sclerosis is elevated in some population groups, including white people of European descent and women, and these findings suggest that people at risk for multiple sclerosis should ensure that they have adequate vitamin D levels, but that efforts to increase [vitamin](#) D would not be expected to protect against asthma.

More information: Manousaki D, Paternoster L, Standl M, Moffatt MF, Farrall M, Bouzigon E, et al. (2017) Vitamin D levels and susceptibility to asthma, elevated immunoglobulin E levels, and atopic dermatitis: A Mendelian randomization study. *PLoS Med* 14(5): e1002294. doi.org/10.1371/journal.pmed.1002294

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APA citation: Vitamin D levels not linked to asthma or dermatitis (2017, May 9) retrieved 22 July 2022 from <https://medicalxpress.com/news/2017-05-vitamin-d-linked-asthma-dermatitis.html>

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