

Vitamin D found to not reduce risk of asthma attacks

February 5 2023



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Taking vitamin D supplements does not reduce the risk of asthma attacks in children or adults, according to an updated Cochrane Review.

These findings are in contrast to a previous Cochrane Review that indicated a reduction in [asthma](#) attacks in people taking vitamin D.

However, the review found no harm in taking vitamin D and it did not examine other possible health benefits.

The review was carried out by researchers from Queen Mary University of London and the University of Edinburgh. Researcher Adrian Martineau, Clinical Professor of Respiratory Infection and Immunity at Queen Mary University of London, said, "Vitamin D deficiency has been linked to an increased risk of severe asthma attacks and our previous Cochrane review, published in 2016, found that vitamin D reduced the risk of asthma attacks. However, more studies have been published since then and when we included the extra data in our updated review, the overall results changed. We found that vitamin D supplements had no effect on risk of asthma attacks or on control of asthma symptoms compared with a placebo."

Professor Martineau and his colleagues analyzed the results of 20 randomized controlled [trials](#)—the gold-standard for [medical research](#)—including data on 1,155 children and 1,070 adults with asthma. This compares to nine trials involving a total of 1,093 people whose data contributed to the previous review. The majority of patients in the trials had mild to moderate asthma.

When they compared patients who were assigned to take a vitamin D supplement with patients who were assigned to take a placebo (dummy medication), the researchers found no statistically significant difference in the number of people who experienced an asthma attack requiring treatment with a course of steroid tablets.

The review did not find any effect of taking vitamin D on asthma control even when people were vitamin D-deficient when they joined the studies, or with different doses of the supplement, or in people of different ages.

Professor Martineau said, "In contrast to our previous Cochrane Review on this topic, this updated review does not find that vitamin D offers protection against [asthma attacks](#) or improves control of asthma symptoms. However, the trials we looked at did not include many people with severe asthma or people with very low levels of vitamin D in their blood, so these are areas where more research is still needed.

Anne Williamson, the first author on the study who is also from Queen Mary University of London, commented: "We can't be certain why this updated review has given a different result to our original study from 2016. It could be that people with asthma may be getting better treatment than previously. Or it could be that, in general, rates of vitamin D deficiency have decreased over time, due to increasing intake of supplements or fortified foods."

"Either of these factors could obscure [potential benefits](#) from taking vitamin D supplements. Regardless of the reason, these most recent findings are likely to be correct for people living with asthma today. This also highlights why it's vital to update reviews when more research is published."

Today's review includes data from 20 [clinical trials](#), compared with nine in the 2016 review, and children with asthma are better represented than previously. The review team say they have also applied stricter criteria on which studies would be included, compared to some other reviews. For example, they excluded studies that did not compare vitamin D with a placebo and those that did not monitor patients for at least 12 weeks.

Most of the trials included in the review involved patients taking cholecalciferol, which is the typical form of vitamin D supplement. One trial that used calcidiol, which is a compound that the body can make from vitamin D, reported an improvement in asthma control in patients taking this supplement. The reviewers say further research is needed to

confirm whether this form of vitamin D has benefits for people with asthma.

The paper is published in the journal *Cochrane Database of Systematic Reviews*.

More information: Adrian Martineau et al, Vitamin D for the management of asthma, *Cochrane Database of Systematic Reviews* (2023). [DOI: 10.1002/14651858.CD011511.pub3](https://doi.org/10.1002/14651858.CD011511.pub3)

Adrian R Martineau et al, Vitamin D for the management of asthma, *Cochrane Database of Systematic Reviews* (2016). [DOI: 10.1002/14651858.CD011511.pub2](https://doi.org/10.1002/14651858.CD011511.pub2)

Provided by Cochrane

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