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Vitamin D deficiency linked to more colds and flu

By [Jordan Lite](#) in [60-Second Science Blog](#) Feb 23, 2009

Is sunshine more than just a home remedy for a cold? [New research](#) suggests it may be: In a study that will be published tomorrow, people with low levels of [vitamin D](#) — also known as the "sunshine vitamin" — were more likely to catch [cold and flu](#) than folks with adequate amounts. The effect of the vitamin was strongest in people with [asthma](#) and other lung diseases who are predisposed to respiratory infections.

People with the worst vitamin D deficiency were 36 percent more likely to suffer respiratory infections than those with sufficient levels, according to the research in this week's *Archives of Internal Medicine*. Among asthmatics, those who were [vitamin D deficient](#) were five times more likely to get sick than their counterparts with healthy levels. And the risk of respiratory infection was twice as high among vitamin D-deficient patients with [chronic obstructive pulmonary disease](#) (COPD) than in lung patients with normal levels of the vitamin.

All this means that healthy adults, who typically get two colds a year, might suffer an extra one if they're vitamin D deficient. For people with asthma or COPD, who get around four or five colds annually, lack of vitamin D might tack on additional infections, but exactly how many isn't known, co-author [Adit Ginde](#) tells *ScientificAmerican.com*.

Ginde, of the University of Colorado Denver School of Medicine, and colleagues at Harvard Medical School found the association when they compared vitamin D levels taken from nearly 19,000 participants in the federal government's National Health and Nutrition Examination Survey (NHANES) with their answers to the question, "In the past few days, have you had a cough, cold or other acute illness?"

Only a study that gave vitamin D supplements to people with low levels and compared their respiratory infection rates with people who had sufficient levels of the vitamin would show a true cause and effect, Ginde says. But, he adds, the results build on previous research suggesting that [vitamin D is important to the function of the immune system](#).

[Lab work has shown](#) that lack of vitamin D is associated with weaker production of an antimicrobial peptide called hCAP-18, a protein that works with immune-system cells to kill pathogens. "We think that if you're exposed to a virus [and] you have sufficient vitamin D, those cells will be better equipped to fight off that organism so you don't get an infection," says Ginde, an assistant professor of surgery in his university's department of emergency medicine. In people with vitamin D deficiency, it's possible that "those cells don't work as well so you're more like to get a cold or infection or something more severe."

In people with asthma or COPD, he added, vitamin D deficiency "is a second hit" that may

compound their underlying risk of respiratory infection from their disease.

Having 30 nanograms of vitamin D per milliliter of blood is considered optimal. More than half of the people in the study had vitamin D levels below that threshold.

The most recent [recommendations from the Institute of Medicine](#) (IOM), which are 12 years old, say that [Americans should get 200-600 International Units of vitamin D](#) a day. But those recommendations were set based on the vitamin's contribution to bone health, not immunity and overall wellbeing. Proponents of more vitamin D intake, such as [Michael Holick](#), say 1,000-2,000 IUs might be needed. An IOM update to the recommendations is [expected in May 2010](#).

"It's clear that the American population needs more vitamin D overall for its effects on bone health and the growing literature on non-skeletal benefits for general health," says Ginde, who expects participants in an upcoming vitamin D trial will get the amped up levels of 1,000-2,000 IUs that advocates are pushing for. "We're not recommending that everyone go out and take that, but that's the magnitude of change we're talking about."

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