

Vitamin D May Improve Asthma Control Study Links Vitamin D Deficiency and Asthma Severity

By [Denise Mann](#)
WebMD Health News

Sept 10, 2010 -- [Vitamin D](#) is the new "it" vitamin. A number of studies link its deficiency to a host of medical conditions, including [heart disease](#), diabetes, and certain cancers. Now, a new review article makes the case for vitamin D supplementation in the [treatment of asthma](#). The findings appear in the September issue of the *Annals of Allergy, Asthma & Immunology*.

Researchers reviewed nearly 60 years' worth of literature on vitamin D status and asthma. They found that [vitamin D deficiency](#) is linked to increased airway reactivity, lower lung functions, and worse asthma control. Risk factors for vitamin D deficiency include obesity, being African-American, and living in Westernized countries, the researchers report. These are also populations known to be at higher risk for developing asthma.

Vitamin D supplementation may improve asthma control by blocking the cascade of inflammation-causing proteins in the lung, as well as increasing production of the protein interleukin-10, which has anti-inflammatory effects, the study authors suggest.

Vitamin D is often called "the sunshine vitamin" because our bodies make it when we are exposed to sunlight. Food sources include fish, eggs, and dairy products. It is also added to multivitamins and milk.

"The biggest issue is whether or not vitamin deficiency can be related to a worsening of asthma, and all the studies have been single-point in time studies, and the concern is that depending on where you live, you can be vitamin D-deficient in the winter, but not in the summer," says Thomas B. Casale, MD, a professor of medicine and the chair of allergy and immunology at Creighton University in Omaha, Neb. "We know that asthma gets worse in winter, when vitamin D is down," he says.

More Research Warranted

The next step is long-term trials that look at the effects of vitamin D supplementation in people with asthma, the study authors say.

"If we give supplemental vitamin D and measure asthma outcomes over a year, do you get better and that is the key," he says. "There is a lot of circumstantial evidence, but we need to do definitive studies with vitamin D interventions to see what happens."

Michael Holick, MD, PhD, a professor of medicine, physiology, and biophysics at the Boston University School of Medicine and the director of the Vitamin D, Skin, and Bone Research Laboratory there, thinks the jury is in regarding the role that vitamin D supplementation can and should play in treating and preventing asthma.

"This article provides strong evidence that vitamin D is altering the immune system and preventing asthma at a biochemical level," he says.

"Winter is coming on and [flu](#) season is coming on, and that is all the more reason for parents to increase vitamin D in their children," he says. "Recent studies suggest that it will reduce risk of wheezing disorders, including asthma," he says.

The Institute of Medicine is considering whether to raise its guidelines for vitamin D intake. The current guidelines call for 200 IU/day.

Low Vitamin D Linked to Worse Asthma, More Steroids

"Vitamin D ... has effects on many immune cells and we are learning more and more about the impact that it can have on allergic diseases such as asthma," says Pia Hauk, MD, an assistant professor of Pediatrics at National Jewish Health in Denver.

"If you have low vitamin D levels, your asthma may be worse and you may have to take more [medication](#) to control it," she says. But "new research suggests that if we normalize vitamin D levels, you may need less medication to get control of the inflammation."

This is important to many parents, she says.

"Many parents are very concerned about side effects of [inhaled steroids](#) and would be very happy to get away with less medication," she says.

Hauk routinely tests vitamin D levels in her patients. "If it is low, I will put them on a supplement and check the levels again after three months," she tells WebMD. "The next step is to conduct a study where people with asthma who have low levels of vitamin D are treated with [supplements](#), and then study their lung function, steroid use, and asthma exacerbations once their vitamin D levels are normal," she says.

These studies will provide definitive answers on the role that this vitamin has in asthma treatment, she says.

<http://www.webmd.com/asthma/news/20100910/vitamin-d-may-improve-asthma-control>