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Low Vitamin D Levels Associated with Colds and Flu

A new study has found that vitamin D may play a role in helping the immune system ward off respiratory diseases like the common cold.

Vitamin D helps your body absorb calcium, which keeps your bones strong. But the vitamin is naturally present in few foods. It's added to some, such as milk, and also available as a dietary supplement. Vitamin D is produced by the body when sunlight strikes the skin, but most people in the U.S. don't get enough sunlight to make sufficient amounts, particularly in winter months.

Some recent studies suggest that taking extra vitamin D can have health benefits beyond building bone, but the evidence hasn't been conclusive. Several studies, for example, have linked low levels of vitamin D with the risk for respiratory tract infections. However, these studies looked at small, non-diverse groups of patients.

To investigate, a research team led by Dr. Adit Ginde of the University of Colorado at Denver and Dr. Carlos A. Camargo at Massachusetts General Hospital looked at data from the Third National Health and Nutrition Examination Survey (NHANES III), which was conducted between 1988 and 1994. NHANES is a periodic survey of the U.S. population by CDC's National Center for Health Statistics. Participants in the survey went through physical and laboratory tests, submitted information on household characteristics and documented their health histories.

Using data from almost 19,000 people, the researchers examined the relationship between blood serum levels of 25-hydroxyvitamin D (25[OH]D)—a recognized indicator of the body's vitamin D stores—and respiratory tract infections like colds and flus. Their analysis adjusted for other factors, such as the season of the year, age, body mass index and smoking history. Their work was funded by NIH's National Heart, Lung and Blood Institute (NHLBI).

The team reported in the February 23, 2009, issue of the *Archives of Internal Medicine* that 24% of the participants with the lowest levels of 25[OH]D in their serum (less than 10ng/mL) had recent upper respiratory tract infections. In contrast, only 17% of those with the highest levels in their serum (greater than 30ng/mL) had recent infections. Of those with serum levels in between, 20% reported recent upper respiratory tract infections. These associations held regardless of the season. Notably, the relationship between vitamin D and respiratory tract infections seemed to be even stronger in people with asthma and chronic obstructive pulmonary disease.

The important discovery of a possible association between vitamin D and respiratory tract infections provides a strong rationale for clinical trials to confirm this finding.

"We are planning clinical trials to test the effectiveness of vitamin D to boost immunity and fight respiratory infection, with a focus on individuals with asthma and chronic obstructive pulmonary disease, as well as children and older adults—groups that are at higher risk for more severe illness," Ginde says. "While it's too early to make any definitive recommendations, many Americans also need more vitamin D for its bone and general health benefits."

—by William Duval, Ph.D.

Related Links

- Vitamin D (https://ods.od.nih.gov/factsheets/VitaminD-HealthProfessional/)
- Vitamin D and Health in the 21st Century (https://ods.od.nih.gov/News/AJCN2008.aspx)

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