

Oral Vitamin D May Help Prevent Some Skin Infections

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Debra Kain

A study led by researchers at the University of California, San Diego School of Medicine suggests that use of oral Vitamin D supplements bolsters production of a protective chemical normally found in the skin, and may help prevent skin infections that are a common result of atopic dermatitis, the most common form of eczema.

The study - led by Richard Gallo, M.D., Ph.D., professor of medicine and chief of the Division of Dermatology at the UCSD School of Medicine and the Dermatology section of the Veterans Affairs San Diego Healthcare System, and Tissa R. Hata, M.D., associate professor of medicine at UC San Diego - found that use of oral vitamin D appeared to correct a defect in the immune systems in patients with this skin disease. Their findings will be published in the October 3 edition of the *Journal of Allergy & Clinical Immunology*

The researchers studied a small number of patients with moderate to severe atopic dermatitis, a chronic skin disease that affects 10 to 20 percent of children and one to three percent of adults. Atopic dermatitis is characterized by areas of severe itching, redness and scaling. Over time, chronic changes can occur due to constant scratching and rubbing. The condition puts patients at increased risk for skin infections by *Staph aureus* and the herpes and small pox viruses.

It had previously been shown that defects in the immune system interfere with the skin's ability to produce a peptide called cathelicidin which is protective against microbial invasion. In many skin diseases, including eczema, a deficiency of cathelicidin correlates with increased infection.

Study participants (14 with atopic dermatitis and 14 without) were all given 4000 IU of oral Vitamin D3 (cholecalciferol) per day for 21 days. Skin lesions were biopsied before and after the 21-day period. The researchers found that oral vitamin D use by the patients appeared to correct the skin's defect in cathelicidin.

"These results suggest that supplementation with oral vitamin D dramatically induces cathelicidin production in the skin of patients with atopic dermatitis," said Hata. "It also slightly elevated its production in normal skin in this study."

However, the researchers caution that this was a small study and that further research is needed to evaluate the long-term effects of vitamin D supplementation, and to determine if this may be an adequate way to prevent infections in patients with atopic dermatitis.

In the past several years, vitamin D deficiency has been linked to increased rates of multiple cancers and diabetes, among other diseases, notably in studies published by UC San Diego researcher, Cedric Garland, Dr. P.H., professor with Moores UCSD Cancer Center and the Department of Family and Preventive Medicine at UC San Diego.

Additional contributors to the study include Paul Kotal, B.S., Michelle Jackson, M.D., Meggie Nguyen, B.S., Aimee Paik, M.D., Don Udall, M.D., Kimi Kanada, B.S., Kenshi Yamasaki, M.D., Ph.D., and Doru Alexandrescu, M.D., all from the UC San Diego Division of Dermatology.

Media Contact: Debra Kain, 619-543-6163