

Vitamin D significantly improves symptoms of winter-related atopic dermatitis in children

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A study conducted in more than 100 Mongolian schoolchildren found that daily treatment with a vitamin D supplement significantly reduced the symptoms of winter-related atopic dermatitis, a type of eczema. Led by a Massachusetts General Hospital (MGH) physician, the report in the October issue of the *Journal of Allergy and Clinical Immunology* supports the results of a preliminary study that showed similar results in a small group of children in Boston.

"While we don't know the exact proportion of patients with [atopic dermatitis](#) whose [symptoms](#) worsen in the winter, the problem is common," says Carlos Camargo, MD, DrPH, MGH Department of Emergency Medicine. "In this large group of patients, who probably had low levels of vitamin D, taking daily vitamin D supplements – which are inexpensive, safe and widely available – proved to be quite helpful." Camargo led both the earlier Boston pilot study and the current investigation, which was performed in collaboration with investigators from the Health Sciences University of Mongolia.

A [chronic inflammatory disorder](#) of the skin, atopic dermatitis is uncomfortable and makes patients more vulnerable to bacterial infection. Symptoms of the disorder – most commonly seen in [children](#) – often worsen during wintertime. While controlled administration of ultraviolet light, which can stimulate the production of vitamin D in the skin, is a common treatment for severe atopic dermatitis, the possibility that vitamin D deficiency contributes to the seasonal worsening of symptoms had received little consideration prior to the Boston study. That investigation involved only 11 children but provided preliminary support for the hypothesis.

The current study, conducted in collaboration with

the National Dermatology Center in Mongolia, enrolled 107 children, ages 2 to 17, from nine outpatient clinics in the capital city of Ulaanbaatar. The participants – all of whom had a history of atopic dermatitis symptoms worsening either during cold weather or around the transition from autumn to winter – were randomly divided into two groups. One group received a daily vitamin D dose of 1000 IU while the other received a placebo – both delivered in odorless, colorless and tasteless drops. Neither the children's parents nor the study investigators knew to which group participants had been assigned.

Standard evaluations of atopic dermatitis symptoms were conducted at the outset of the trial and at the end of the month-long study period, and parents were also asked whether they saw any improvement in their child's condition. At the end of the month, children receiving the vitamin D supplement had an average 29 percent improvement on the primary assessment tool used, compared with 16 percent improvement in the placebo group. Additional assessments – including the report from parents – also showed significantly greater improvement among children receiving vitamin D.

While data gathered at the outset of the study could not determine whether or not participating children were deficient in vitamin D, the authors note that an even larger study of Ulaanbaatar children conducted at the same time found significant vitamin D deficiency in 98 percent of participants, supporting the probability that the children in this study were also deficient. While future studies are needed to assess the value of vitamin D treatment in adults and in children with year-round symptoms, Camargo – a professor of Medicine at Harvard Medical School – says that parents of children with symptoms that worsen in the winter should try a

vitamin D supplement for a few weeks when symptoms flare to see if it helps. He encourages parents to discuss this study and their plan with their primary care provider.

Provided by Massachusetts General Hospital

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