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Vitamin D₃ Supplements in Winter May Help Protect Against Influenza A

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April 2, 2010 — Vitamin D₃ supplementation during the winter is linked to lower incidence of influenza A, particularly in specific subgroups of schoolchildren, according to the results of a randomized, double-blind, placebo-controlled trial reported online in the March 10 issue of the *American Journal of Clinical Nutrition*.

"To our knowledge, no rigorously designed clinical trials have evaluated the relation between vitamin D and physician diagnosed seasonal influenza," write Mitsuyoshi Urashima, MD, PhD, from Jikei University School of Medicine, Minato-ku, in Tokyo, Japan, and colleagues. "We investigated the effect of vitamin D supplements on the incidence of seasonal influenza A in schoolchildren."

Schoolchildren were randomly assigned to receive vitamin D₃ supplements (1200 IU/day) or placebo from December 2008 through March 2009. The main endpoint of the study was the incidence of influenza A, diagnosed by influenza antigen testing (rapid influenza diagnostic test [RIDT]) on a nasopharyngeal swab specimen.

In the vitamin D₃ group, 18 (10.8%) of 167 children had influenza A, as did 31 (18.6%) of 167 children in the placebo group (relative risk [RR], 0.58; 95% confidence interval [CI], 0.34 - 0.99; *P* = .04). The association of decreased influenza A incidence with vitamin D supplements was stronger in children who had not been taking other vitamin D supplements (RR, 0.36; 95% CI, 0.17 - 0.79; *P* = .006) and in those who started nursery school after age 3 years (RR, 0.36; 95% CI, 0.17 - 0.78; *P* = .005).

Among children with a previous diagnosis of asthma, 2 children in the vitamin D₃ group vs 12 children in the placebo group had asthma attacks as a secondary outcome (RR, 0.17; 95% CI, 0.04 - 0.73; *P* = .006).

"This study suggests that vitamin D₃ supplementation during the winter may reduce the incidence of influenza A, especially in specific subgroups of schoolchildren," the study authors write. "....Moreover, asthma attacks were also prevented by vitamin D₃ supplementation."

Limitations of this study include small sample size, lack of data on serum 25-hydroxyvitamin D or on urinary calcium data, and lack of information on the presence or development of influenza A antibodies.

"Future studies should include a larger sample size of schoolchildren without comorbidities to determine the optimal dose and duration of vitamin D supplementation by measurement of serum 25-hydroxyvitamin D, serum and urinary calcium, and titers of antibody to influenza levels," the study authors conclude.

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