

# Current vitamin D recommendations fraction of safe, perhaps essential levels for children

May 27 2008

---

The current recommended daily allowance (RDA) of vitamin D for children is 200 International Units (IUs), but new research reveals that children may need and can safely take ten-times that amount. According to a recently accepted report in The Endocrine Society's *Journal of Clinical Endocrinology & Metabolism (JCEM)*, this order-of-magnitude increase could improve the bone health of children worldwide and may have other long-term health benefits.

“Our research reveals that vitamin D, at doses equivalent to 2,000 IUs a day, is not only safe for adolescents, but it is actually necessary for achieving desirable vitamin D levels,” said Ghada El-Haff Fuleihan, M.D., of the American University of Beirut-Medical Center, Lebanon, and lead author of the study.

Vitamin D is an essential hormone for bone growth and development in children and promotes skeletal health in adults. Currently, the National Academy of Sciences' Institute of Medicine recommends an adequate daily intake of 200 IUs of vitamin D for children. This is also the recommendation from the American Academy of Pediatrics. These levels, however, may not be adequate for bone growth and musculoskeletal health in children and adolescents.

“Data on appropriate vitamin D levels in the pediatric age group are lacking,” said Dr. Fuleihan. “This is a major obstacle to finding the right daily allowance to enhance musculoskeletal health.”

To help clarify these important guidelines, Fuleihan and his colleagues conducted both short- and long-term trials to gauge the safety of relatively high doses of vitamin D<sub>3</sub> in children ages 10-17 years.

Vitamin D<sub>3</sub> is one of the most common forms of vitamin D, and is easily converted to 25-OHD (25-hydroxyvitamin), which is the active form of vitamin D found in the blood.

For this placebo-controlled study, researchers gave children various doses of vitamin D at various intervals and measured the impact this had on serum levels of 25-OHD.

For the short-term study, 25 students (15 boys and 10 girls) received one-weekly, 14,000 IU doses of vitamin D for eight weeks. Serum levels of 25-OHD were then measured for an additional eight weeks. This portion of the test was conducted during the summer and early fall, when the highest natural levels of vitamin D are reached.

For the long-term, one-year study, 340 students (172 boys and 168 girls) received either a low dose of vitamin D (1,400 IUs each week) or a high dose (14,000 IUs each week).

Only children given the equivalent of 2,000 IUs a day of vitamin D increased 25-OHD levels from the mid-teens to the mid-thirties (ng/ml)—the level considered optimal for adults. None of the children in either trial showed any evidence for vitamin D intoxication.

Although many experts agree that a 25-OHD level of 30 ng/ml is desirable in adults, what constitutes an optimal D level for children and adolescents is more debatable. According to the researchers, due to rapid skeletal growth, children and adolescents are more likely to be vitamin D deficient, and are far less likely to reach vitamin D levels that doctors would consider toxic.

“Supplementation of children and adolescents with 2,000 IUs a day of vitamin D3 is well tolerated and safe,” said Dr. Fuleihan. “This is particularly relevant in light of the increasingly recognized health benefits of vitamin D for adults and children.”

Source: The Endocrine Society

Citation: Current vitamin D recommendations fraction of safe, perhaps essential levels for children (2008, May 27) retrieved 26 April 2024 from <https://medicalxpress.com/news/2008-05-current-vitamin-d-fraction-safe.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.