

Australia
Belgium
Brazil
Bulgaria
Czech Republic
Denmark
Finland
France
Germany
Hong Kong
Hungary
India
Indonesia
Ireland
Italy
Japan
Kenya
Malaysia
Mexico
Netherlands
New Zealand
Norway
Peru
Philippines
Poland
Portugal
Romania
Russia
Singapore
Slovakia
Slovenia
South Africa
Spain
Thailand
Turkey
United Kingdom
United States
Vietnam

IADSA SCIENTIFIC RESPONSE- IADSA SCIENTIFIC ALERT SERVICE

Issue: **A systematic review shows that Vitamin D supplementation had no statistically significant effect on bone density in healthy children with normal vitamin D levels**

Publication: **Cochrane Database of Systematic Reviews, 2010 (10), Article Number: CD006944**

Title: **Vitamin D supplementation for improving bone mineral density in children**

Authors: **T.M. Winzenberg, S. Powell, K.A. Shaw, G. Jones**

Date: **6 October 2010 (online)**

Summary of the study:

The meta-analyses were conducted on 6 studies that involved 343 participants receiving placebo and 541 receiving vitamin D. All participants had taken vitamin D or the placebo for at least 3 months and were between one month and 19 years old.

The lead author, Dr Winzenberg said "Vitamin D supplementation had no statistically significant effects on bone density at any site in healthy children. There was, however, some indication that children who had low levels of vitamin D in their blood might benefit from supplementation."

Responses:

1. Vitamin D plays a key role in helping the body to absorb calcium and phosphorous to build healthy bone mass, in conjunction with adequate calcium intake and healthy lifestyle such as out-door physical exercise. It is noted that 90% of peak bone mass is laid down by 18 years of age.
2. In human, Vitamin D is obtained from sun exposure, food and dietary supplements. It is biologically inert and undergoes two hydroxylation reactions to become active in our body. The active form of vitamin D in the body is called Calcitriol (1,25-Dihydroxycholecalciferol).
3. In the northern and southern hemisphere where sunlight is not available all year round, a lack of or borderline deficiency in Vitamin D in children and adults is common. Infants, children, and adolescents should have 400 IU of Vitamin D each day.

4. There was fair evidence from studies of an association between circulating Vitamin D [25(OH)D] concentrations with some bone health outcomes (established rickets, PTH, falls, BMD)¹.
5. The studies included in the meta-analysis are heterogeneous, the dose of vitamin D3 varied from 133 IU daily to 14,000 IU per week while the supplementation period was 1 or 2 years. The mean baseline serum vitamin D levels were between 17.7 and 49.5 nmol/L.
6. For bone health, majority of studies do not study Vitamin D or calcium in isolation. Vitamin D and calcium are always taken together.
7. It is known that the effect of Vitamin D on bone mass is more pronounced in those with low baseline level of Vitamin D. Hence, it is within expectation that children with low baseline vitamin D levels showed a 2.6% increase in total body BMC following Vitamin D supplementation.
8. Vitamin D also has other health benefits, including healthy immune system, regulation of inflammation, progression of tuberculosis, etc.
9. Dr Andrew Shao, Senior Vice President of Scientific & Regulatory Affairs for the Council for Responsible Nutrition (CRN) pointed out the *“many other health benefits associated with vitamin D”*, and stated that the findings of any study on vitamin D *“should not overlook the fact that a lot of people – including children – have inadequate vitamin D status, or are fully deficient.”*

12 October 2010

References

1. Cranney A, Horsley T, O'Donnell S, et al. Effectiveness and Safety of Vitamin D in Relation to Bone Health. Evidence Report/Technology Assessment No. 158 (Prepared by the University of Ottawa Evidence-based Practice Center (UO-EPC) under Contract No. 290-02-0021. AHRQ Publication No. 07-E013. Rockville, MD: Agency for Healthcare Research and Quality. August 2007.