

New study shows calcium significantly improves children's bone health

July 30 2008

A recent study published in the journal *Bone* found that higher intakes of calcium, such as those recommended by the USDA, may significantly improve bone health in children.

Researchers used an evidence-based approach to assess data from 21 randomized clinical trials with more than 3,800 children to determine how the intake of dietary calcium affects bone mineral content (BMC), a marker for bone strength, in children. Statistically pooled data revealed that those children who had inadequate calcium consumption prior to the start of these studies experienced a substantial increase in their total body BMC that was approximately 25 times greater than children who already consumed adequate amounts of calcium. Equally important, the study suggests the existence of a calcium threshold for bone health – that is, the level of calcium intake that triggers a significant effect.

"Dairy and other foods that are rich in calcium are thought to be important for the growth and strengthening of bones in children and adolescents," said Michael Huncharek MD, MPH, Director of the Meta-Analysis Research Group and lead author of the study. "In the US, dairy products tend to be the preferred source of calcium since diets that exclude dairy are often deficient in this important nutrient. The new findings show that for those children who have inadequate calcium intake, increasing dietary calcium has a significant impact on bone development. Since most children don't get enough calcium, meeting calcium recommendations may help to prevent future osteoporosis."

Currently, a large majority of children and adolescents in the U.S. do not meet the daily recommended calcium intake. According to the USDA, seven out of 10 boys and nine out of 10 girls are not consuming the calcium they need for strong bones. Including at least 3 servings of low-fat or fat-free dairy foods each day as part of a healthy diet, as recommended by the 2005 Dietary Guidelines for Americans, helps reduce the risk for osteoporosis.

"The evaluation of randomized controlled trials was critical to understand the effects of calcium and dairy on children's bone health," noted Joshua Muscat, Ph.D., Professor of Public Health Sciences at Penn State College of Medicine and co-author of this study. "The literature has been unclear in this area because of the different ways researchers have measured bone health or inconclusive because many studies examined the effects of supplementation in children who were already consuming adequate amounts of dairy foods."

"It's never too early to make bone health a priority. These findings continue to support the research that shows milk is an important source of calcium which helps build and maintain strong bones, muscles and teeth in children," said Ann Marie Krautheim, R.D., senior vice president of Nutrition Affairs for the National Dairy Council.

"Consuming 3 servings of low-fat or fat-free dairy foods each day gives children not only the calcium they need, but also eight other essential nutrients, including potassium, phosphorus and protein."

References:

1. Huncharek M, Muscat J, Kupelnick B. Impact of dairy products and dietary calcium on bone-mineral content in children: results of a meta-analysis. *Bone* 2008;43:312-321.
2. What We Eat in America, NHANES 2001-2002 : Usual Nutrient

Intakes from Food Compared to Dietary Reference Intakes;
www.ars.usda.gov/foodsurvey.

3. Institute of Medicine, Food and Nutrition Board. Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride. Washington, DC: National Academy Press; 1997.

Source: National Dairy Council

Citation: New study shows calcium significantly improves children's bone health (2008, July 30)
retrieved 6 May 2024 from
<https://medicalxpress.com/news/2008-07-calcium-significantly-children-bone-health.html>

<p>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.</p>
--