Americans still may not be getting enough calcium

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Americans may not be getting enough calcium in their diets, according to a new study published in the May 2011 issue of the *Journal of the American Dietetic Association*. This study is unique among those focusing on calcium intake in the US population because both dietary and supplemental sources were evaluated across adult age groups and compared to accompanying patterns in energy intake.

"Calcium plays a fundamental role in promoting bone health and forestalling osteoporosis. In light of evidence that energy intake declines with aging, calcium dense foods and calcium supplements become vital factors in maintaining adequate calcium intake across the lifespan," commented Jane E. Kerstetter, RD, PhD, Professor, Department of Allied Health Sciences, University of Connecticut. "Encouraging calcium supplementation is an established approach to addressing this issue in the clinical setting - one that needs additional emphasis in order to promote more frequent and sufficient supplementation in meeting adequate intake levels. Altering the concentration of calcium in the diet relative to energy by increasing consumption of nutrient dense foods is a new and important concept that also deserves additional consideration as a component of osteoporosis prevention efforts."

Using data collected from 9,475 adults during the National Health and Nutrition Examination Survey (NHANES) of 2003 to 2006, researchers from the University of Connecticut and Yale University found that while self-reported calcium density was highest in older age groups, it was still not sufficient to meet recommended levels. Although reported calcium

supplement use increased with age in both men and women, median dietary calcium intake was lower in the 81+ age group by 23% in men and by 14% in 18 women, compared to the median intake reported in the 19-30 year age group. In relating calcium and energy intake, dietary calcium density as well as calcium supplementation play a critical role in attainment of established adequate intake levels.

The authors looked at the decrease in energy intake reported by various age groups. As people age, they consume less food, and therefore less calcium. Men's median energy intake declined by 35% from the 19-30 age group to the 81+ age group; from 2,668 kcal/d to 1,733 kcal/d. For women, median energy intake showed a 28% reduction from the youngest to oldest age group; from 1,844 kcal/d to 1,325 kcal/d.

Calcium supplements have become increasingly popular in recent years. Researchers found that 51% of all individuals ≥19 y of age were taking a calcium supplement. The percentage of individuals taking a calcium supplement increased in men from 34% in the 19-30 age group to 54% in the 81+ group. In women, these percentages rose from 42% to 64% across the range of age groups.

In an accompanying editorial, Susan M. Krebs-Smith, PhD, RD, and Sharon I. Kirkpatrick, PhD, RD, of the National Institutes of Health, National Cancer Institute, caution that attention to the details of the methodologies used is warranted in interpreting the results of this and similar studies. Comparing the current study with a recent publication by Bailey and colleagues1, they show that the varying statistical procedures applied to estimate calcium intake from survey data can lead to different conclusions. Even though both research groups were working from the same data, due to the application of different statistical techniques and assumptions, Bailey and colleagues' point estimates for median dietary calcium intakes for supplement users and nonusers combined are much higher than those of Kerstetter and colleagues.

According to Krebs-Smith and Kirkpatrick, "The juxtaposition of these two papers provides not only insights into calcium intakes among the population, but also highlights the impact that different statistical approaches to dietary assessment can have on the resulting estimates, pointing to the need for further research to identify optimal methods for assessing total intakes."

More information: Bailey RL, Dodd KW, Goldman JA, Gahche JJ, Dwyer JT, Moshfegh AJ, Sempos CT, Picciano MF. Estimation of total usual calcium and vitamin D intakes in the United States. J Nutr. 2010;140:817-822.

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