Calcium supplements play an important role in maintaining bone health

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A broad range of scientific research has demonstrated that an adequate intake of calcium plays an important role in building and maintaining optimum bone mass, and a recent meta-analysis published online in the *British Medical Journal* should not cause consumers to doubt the value of calcium supplements for maintaining bone health.

"Adequate calcium intake is vital to building and maintaining healthy bones, and to preventing osteoporosis—which is caused by a failure to build adequate bone mass or by bone loss that occurs as we age. Most people do not get enough calcium from diet alone, and this is where a calcium supplement can be important to consumers of all ages," said Andrew Shao, Ph.D., senior vice president, scientific & regulatory affairs, Council for Responsible Nutrition. "The results from this meta-analysis does not undermine the value calcium supplements offer to those concerned with maintaining or increasing bone density, as years of research shows these products do."

The authors of the meta-analysis examined the effects of calcium supplements on the risk of cardiovascular events, concluding there is an increased risk, and calling for a reassessment of the role of calcium supplements for osteoporosis. According to CRN, these conclusions are dramatically overstated, considering the limitations of meta-analysis, in general, and this meta-analysis, specifically.

For example, the analysis could have potentially included over 300 scientific studies on calcium supplementation's effect on bone, but only

15 randomized clinical trials were deemed "eligible for analysis."

Further, seven of the 15 trials evaluated had no, or incomplete, data on cardiovascular outcomes, and only five of the 15 studies accounted for almost all of the cardiovascular outcomes. Further, because the researchers chose to exclude any trials administering calcium plus vitamin D, many large, important trials—including the Women's Health Initiative, which found calcium plus vitamin D had no effect on the risk of coronary heart disease or stroke—were not included.

"The authors characterize these findings as though all of the selected studies suggest increased risk. In fact, the opposite is true: most of the studies do not suggest increased risk," says Dr. Shao. "Bone health is one of the most common reasons why healthcare professionals recommend calcium supplements; there are other health benefits that may be associated with calcium supplementation, such as reduction of colon cancer risk. This is not even considered by the authors. It's unfortunate that these researchers are making sweeping judgments about the value of calcium supplements by only assessing a handful of handpicked studies."

Dr. Shao also pointed out that none of the original studies included in the meta-analysis were designed to evaluate cardiovascular outcomes. Additionally, the data on cardiovascular events was never previously published, so the meta-analysts had to track the information down separately, in some cases, 10 even 20 years after the original study was published.

"Meta-analysis can be a useful tool for scientific evaluation, but we have to recognize its limitations, and keep in mind that its findings are based on a collection of past studies that may have different designs, doses and study populations," says Dr. Shao. "This analysis should not dissuade consumers, particularly young women, from taking calcium supplements. They should talk with their doctors about their current and

long-term needs and determine how much calcium they are getting from their diets, and supplement accordingly—likely in combination with vitamin D."

Provided by Council for Responsible Nutrition