



Osteoporosis Canada

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**Information / Informations :**

**English :** 1-800-463-6842 / **Français :** 1-800-977-1778  
info@osteoporosis.ca / info@osteoporosecanada.ca

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## Calcium Intake and Effect on Bone Health and Fracture Risk Reduction

Osteoporosis Canada continues to advise Canadians to meet the Institute of Medicine established daily calcium requirement of 1000 -1200 mg, from dietary sources preferably, and to use supplements if this is not possible (in the form of calcium carbonate or calcium citrate). Every cell in our body requires calcium in order to function normally and inadequate calcium intake results in the release of calcium from the skeleton in order to meet daily requirements.

On the 29 of September 2015, Tai and colleagues published an article in the BMJ summarizing the careful assessment of 59 studies collectively evaluating the effects of calcium intake on bone mineral density in people over the age of 50 years. Small increases in bone mineral density (BMD) were noted with extra dietary calcium intake by 0.6 -1.8% over 1-2 years. Calcium supplements also were associated with increased BMD by 0.7-1.8%. Small decreases in total and spinal fractures were observed with calcium supplementation. The authors concluded that calcium intake from dietary sources and from supplements increase BMD similarly, however, the small effect on BMD is unlikely to reduce fractures.

Whether calcium could reduce fractures was explored in a second study by Bolland and colleagues, in the same issue of the BMJ. However, it did not demonstrate a significant reduction in fracture risk in the large randomized trials with calcium supplementation.

The studies which were evaluated did have significant variability with differences in the numbers of people evaluated as well as the quality of the assessments. In addition there were differences in how fractures were identified in the studies being evaluated.

Large well-designed controlled studies are required to determine the effects of calcium supplementation on skeletal health. There is no data supporting the use of calcium supplements alone as a treatment to prevent fracture in individuals with osteoporosis.

Individuals who have osteoporosis and are at increased risk for fractures may require medication, in addition to adequate calcium and vitamin D intake, in order to reduce their risk for fractures.