



Statement on calcium supplements

Prepared June 2012

Reviewed June 2013

In order to reduce or prevent bone loss and fracture, it is vital to have adequate levels of calcium in the body, and calcium intake needs to be high enough to maintain these body levels, particularly in bone.

Osteoporosis Australia recommends a total daily intake of 1000 mg to 1300 mg of calcium per day (recommended dietary intake, or RDI), depending on age and sex. Ideally, the RDI should be achieved by consuming a diet rich in calcium; selecting foods that are naturally high in calcium, and including foods that have had calcium added to them - so called 'calcium enriched' foods.

When the RDI cannot be achieved through diet alone, supplements may be required. In these circumstances, Osteoporosis Australia recommends a daily supplement of 500-600mg of calcium. Clinical trials have shown that calcium supplementation, especially when it is combined with vitamin D, reduces the rate of bone loss and fracture in people who are likely to be deficient in dietary calcium, and optimizes the effectiveness of osteoporosis medicines including bisphosphonates, strontium ranelate, denosumab, teriparatide and SERM therapy.

Most people taking calcium supplements do not suffer any serious side-effects, but recent re-analysis of some previous clinical trial results has suggested a possible increase in the rate of heart attacks (1,2). Other research does not support these findings (3,4).

A large European study designed to better understand the risks associated with calcium intake has been widely discussed in recent media (5). This study also appears to show an increased risk of heart attack in people who take calcium supplements. However, the researchers did not observe any increase in the risk of heart attack in people who derived their calcium intake through diet alone.

Further studies have shown that taking a combined vitamin D and calcium supplement, as recommended by Osteoporosis Australia, may be beneficial for general health as well as for reducing fracture risk in people who may not be getting enough calcium through their diet (6,7).

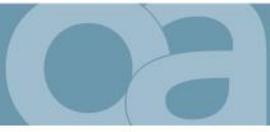
Calcium intake and the risk of heart attack and stroke is the subject of ongoing research. Osteoporosis Australia continues to recommend a daily supplement of 500-600mg of calcium with vitamin D for those not able to achieve adequate calcium through diet alone. Anyone taking calcium supplements, in particular those with osteoporosis or taking osteoporosis medications, should not stop taking calcium supplements without first consulting their doctor. Patients who have heart disease or are at higher risk of developing heart disease should discuss with their doctor the relative risks and benefits of starting or continuing calcium supplements. Taken as currently recommended, combined calcium and vitamin D supplements remain both safe and effective for the majority of people who require them.

References

1. Bolland MJ, Avenell A, Baron JA, Grey A, MacLennan GS, Gamble GD, et al. Effect of calcium supplements on risk of myocardial infarction and cardiovascular events: meta-analysis. *BMJ* 2010;341:c3691.
2. Bolland MJ, Grey A, Avenell A, Gamble GD, Reid IR. Calcium supplements with or without vitamin D and risk of cardiovascular events: reanalysis of the Women's Health Initiative limited access dataset and meta-analysis. *BMJ* 2011;342:d2040.



3. Mursu J, Robien K, Harnack LJ, Park K, Jacobs DR. Dietary Supplements and Mortality Rate in Older Women. The Iowa Women's Health Study. *Arch Intern Med.* 2011;171(18):1625-1633
4. Lewis JR, Calver J, Zhu K, Flicker L, Prince RL. Calcium supplementation and the risks of atherosclerotic vascular disease in older women: results of a 5-year RCT and a 4.5-year follow-up. *J Bone Miner Res* 2011;26:35-41.
5. Li K, Kaaks R, Linseisen J, Rohrmann S. Associations of dietary calcium intake and calcium supplementation with myocardial infarction and stroke risk and overall cardiovascular mortality in the Heidelberg cohort of the European Prospective Investigation into Cancer and Nutrition study (EPIC-Heidelberg). *Heart* 2012; 98:920-925
6. Rejnmark L, Avenell A, Masud T, Anderson F, Meyer HE, Sanders KM, Salovaara K, Cooper C, Smith HE, Jacobs ET, Torgerson D, Jackson RD, Manson JE, Brixen K, Mosekilde L, Robbins JA, Francis RM, Abrahamsen B. Vitamin D with Calcium Reduces Mortality: Patient Level Pooled Analysis of 70,528 Patients from Eight Major Vitamin D Trials. *J Clin Endocrinol Metab* 2012
7. Bostick RM, Kushi LH, Wu Y, Meyer KA, Sellers TA, Folsom AR. Relation of calcium, vitamin D, and dairy food intake to ischemic heart disease mortality among postmenopausal women. *Am J Epidemiol* 1999;149:151-61



Text