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Calcium and vitamin D supplementation: does it prevent bone fractures?

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Background & Aim: There has been a great increase in the number of products, in our country, that claim to prevent bone fractures. These products are constituted mainly by calcium and vitamin D. Because these products are advertised on television and are sold over the counter, patients often buy it and take it without a medical prescription. The aim of this review is to evaluate the effectiveness of calcium and vitamin D supplementation in bone fracture prevention, on the general population over 50 years of age.

Method: We conducted a PubMed search, on 13/10/2015, with the MeSH terms “calcium”, “vitamin D” and “bone fractures”, for systematic reviews and meta-analysis, published in the last 5 years. We identified 107 articles of which 7 were included, after reading the abstracts. All the other articles were excluded because the fracture risk wasn't evaluated.

Results: Five of the 7 studies concluded that calcium and vitamin D supplementation is associated with a weak and inconsistent fracture risk reduction, in the general population over 50 years of age. They also concluded that the supplementation have an unfavorable risk-benefit profile.

The only population group that clearly benefited with the supplements are the frail elderly women in residential care with low baseline dietary calcium intake and low baseline vitamin D concentrations. There is also a benefit for those with low calcium intake in their diet.

Conclusions: The supplementation with calcium and vitamin D has shown a weak and inconsistent benefit in the general population over 50. Because the individuals that benefit with supplements containing this elements have such specific characteristics the decision on whether to take it or not should be debated with a doctor. In that case, the family doctor is in a privileged position to help his/her patients.

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