

Abstract

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Randomized controlled trial of calcium supplementation in healthy, nonosteoporotic, older men.

Reid IR, Ames R, Mason B, Reid HE, Bacon CJ, Bolland MJ, Gamble GD, Grey A, Horne A.

Department of Medicine, Faculty of Medical and Health Sciences, University of Auckland, Private Bag 92019, Auckland, New Zealand.

BACKGROUND: There is no consistent evidence, to our knowledge, that calcium supplementation affects **bone mineral density (BMD)** in men, despite male osteoporosis being a common clinical problem.

METHODS: To determine the effects of calcium supplementation (600 mg/d, 1200 mg/d, or placebo) on BMD in men, we conducted a double-blind, randomized controlled trial for a 2-year period at an academic clinical research center. A total of 323 healthy men at least 40 years old (mean age, 57 years) were recruited by newspaper advertisement. Complete follow-up was achieved in 96% of subjects.

RESULTS: The BMD increased at all sites in the group receiving calcium, 1200 mg/d, by 1% to 1.5% more than those receiving placebo. **The results for the group receiving calcium, 600 mg/d, were not different from the placebo group at any BMD site.** There was no interaction between the BMD treatment effect and either age or dietary calcium intake. There were dosage-related, sustained decreases in serum parathyroid hormone ($P < .001$), total alkaline phosphatase activity ($P = .01$), and procollagen type 1 N-terminal propeptide ($P < .001$) amounting to 25%, 8%, and 20%, respectively, in the group receiving calcium, 1200 mg/d, at 2 years. Tooth loss, constipation, and cramps were unaffected by calcium supplementation, falls tended to be less frequent in the group receiving calcium, 1200 mg/d, but vascular events tended to be more common in the groups receiving calcium vs the group receiving placebo.

CONCLUSION: **Calcium, 1200 mg/d, has effects on BMD in men comparable with those found in postmenopausal women but a dosage of 600 mg/d is ineffective for treating BMD.**

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