



EVALUATING ADHERENCE, TOLERABILITY AND SAFETY OF ORAL CALCIUM CITRATE IN ELDERLY OSTEOPENIC SUBJECTS: A REAL-LIFE NON-INTERVENTIONAL, PROSPECTIVE, MULTICENTER STUDY.

Rondanelli, M; Minisola, S; Barale, M; ; et al.
Aging clinical and experimental research. 2024;36(1):38
With Expert Review from [Ana-Paula Agrela](#)

The occurrence of fractures and osteoporosis are significant concerns in elderly adults, as ageing remains one of the primary risk factors for these conditions. While the incidence of fracture and risk may vary, the incidence of fragility fractures significantly increases with advancing age, particularly after the age of 50 years. This study's aim was to evaluate the adherence, tolerability, and safety of calcium citrate administration in an "outpatient" population in routine clinical practice. This study was a non-interventional, prospective, multicentre study. Two-hundred and sixty-eight individuals (comprised 245 females (91.4%) and 23 males (8.6%)) were enrolled. Results showed a high rate of adherence to calcium citrate supplementation over a one-year period in osteopenic elderly subjects. Additionally, the incidence of adverse reactions was low (3.9%), further emphasizing the tolerability of calcium citrate. Authors concluded that future studies designed to assess the long-term impact of calcium citrate supplementation on hard endpoints, such as bone density, fractures/falls, quality of life measures and adherence are needed.



THE EFFECTS OF POLYPHENOLS ON BONE METABOLISM IN POSTMENOPAUSAL WOMEN: SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROL TRIALS.

Salvio, G; Ciarloni, A; Gianfelice, C; et al. Antioxidants (Basel, Switzerland). 2023;12(10)
With Expert Review from [Chloe Steele](#)

Women who are post-menopause are at a higher risk of osteoporosis due to lower levels of the hormone oestrogen. Oestrogens promote bone building and limit breakdown. In addition, oestrogen protects the bones against oxidative stress, which can cause further bone breakdown. Polyphenols, which are naturally occurring chemicals found in fruits and vegetables, may prevent oxidative stress and subsequent bone breakdown. This systematic review and meta-analysis of 21 randomised control trials aimed to determine the effect of polyphenol supplementation on post-menopausal bone density. The results showed that polyphenol supplementation had no effect on bone density in the spine, leg, hip, or across the whole body. If polyphenol supplementation extended beyond 2 years, there was evidence of an improvement in spinal bone density. Supplementation also increased one biomarker associated with bone building and decrease one associated with its breakdown. It was concluded that polyphenol use is not recommended to improve bone health in postmenopausal women. This study could be used by healthcare professionals to understand polyphenol supplementation is ineffective for the prevention of osteoporosis and other lifestyle modifications should be considered.

COMBINED BIOAVAILABLE ISOFLAVONES AND PROBIOTICS IMPROVE BONE STATUS AND ESTROGEN METABOLISM IN POSTMENOPAUSAL OSTEOPENIC WOMEN: A RANDOMIZED CONTROLLED TRIAL.

Lambert, MNT, Thybo, CB; Lykkeboe, S; et al.
The American journal of clinical nutrition. 2017;106(3):909-920. With Expert Review from [Clare Grundel](#)

This was a well-constructed randomised, parallel-design, placebo-controlled, double-blind trial over 12 months. The primary aim was to determine the effectiveness of a novel fermented red clover extract (RCE) containing isoflavones and probiotics combined with traditional calcium/magnesium/vitamin D supplementation, in comparison with traditional calcium/magnesium/vitamin D supplementation alone on bone mineral density (BMD) in postmenopausal women with osteopenia. 85 participants were eligible and randomised to either the control or treatment group. Treatment group received 95 mL of RCE twice daily, containing 60 mg isoflavone aglycones and probiotics, plus 1040mg calcium, 487mg magnesium and 25µg Vitamin D daily (CMD/d). Control group received masked RCE placebo plus CMD/d. Fermented RCE with CMD/d slowed oestrogen-deficient BMD loss and improved one marker of bone turnover in postmenopausal osteopenic women. Combining RCE with CMD/d was found to be more effective in preserving bone density than CMD/d alone in this target group. Probiotics in the fermented RCE appear to enhance intestinal isoflavone uptake, metabolism, and therapeutic effect.



ADDITIVE EFFECTS OF EXERCISE AND VITAMIN D SUPPLEMENTATION (WITH AND WITHOUT CALCIUM) ON BONE MINERAL DENSITY IN OLDER ADULTS: A SYSTEMATIC REVIEW AND META-ANALYSIS.

Fischer, C; Jakob, F; Kohl, M; et al.
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With Expert Review from [Chloe Steele](#)

Exercise and vitamin D supplementation are thought to have positive effects on bone mineral density (BMD) and when in combination, benefits may be enhanced. This systematic review and meta-analysis aimed to determine the effects of vitamin D and exercise combination therapy on the BMD of the lumbar spine and proximal femur. The study looked at comparative ≥6 month vitamin D exercise trials in adults aged ≥50 years from 6 electronic databases. Outcome measures were BMD at lumbar spine, total hip, or femoral neck as determined by dual X-ray absorptiometry, dual photon absorptiometry, and quantitative computed tomography. Vitamin D supplementation ranged from 284-2000 IU/d. The addition of vitamin D to exercise did not affect the BMD of the lumbar spine, femoral neck, or hip compared to exercise alone (P=0.912, P=0.675, and P=0.976 respectively), even when a trial with low vitamin D doses was excluded. However, this may be due to the trials not employing bone specific exercises and the inclusion of studies which were not performed in individuals with vitamin D deficiency.

