

Natural remedies for osteoporosis in postmenopausal women



Clinical question

A 68-year-old woman diagnosed with osteoporosis attended a naturopath, who advised (a) exercise in the gym 2–3 times a week, because “walking wasn’t good enough”; (b) natural progesterone cream applied to the skin; (c) oral boron supplements; (d) codliver oil 1000 mg daily; (e) chelated calcium (instead of her current calcium carbonate); and recommended that she stop drinking tea. The patient challenged her general practitioner for not giving the same advice as the naturopath, suggesting he was remiss. Her GP wondered if there was any empirical basis for these recommendations in osteoporotic patients.



Search question

■ The revised question was: *Is there empirical evidence that the following interventions reduce fracture rates and improve bone mineral density (BMD) in postmenopausal women with osteoporosis?:*

- exercise in the gym 2–3 times a week;
- natural progesterone cream;
- boron;
- codliver oil;
- chelated calcium supplement;
- abstaining from tea.

The ideal studies for this would be randomised controlled trials (RCTs) comparing each of the recommendations with either placebo or no treatment (or, in the case of the last recommendation, drinking tea) for the outcomes of interest: fracture rate and BMD.



Search

We searched three online databases: PubMed Clinical Queries (<<http://www.ncbi.nlm.nih.gov/entrez/query/static/clinical.html>>), SUMSearch (<<http://sumsearch.uthscsa.edu>>) and the *Cochrane Library*, using the search terms “osteoporosis”, “weight-bearing exercise”, “walking”, “progest”, “natural progesterone cream”, “boron”, “bone”, “cod liver oil”, “caltrate”, “calcium carbonate”, “tea”, “tannin” and “vitamin D”.



Summary of findings

We identified a number of studies that used the primary outcome measure of BMD, but none that assessed fracture rate as the primary outcome.

► Exercise

Five meta-analyses were identified that demonstrated the effectiveness of aerobic and/or strength-training exercise in increasing BMD in different body regions,¹ the lumbar spine,^{2–4} the hip,⁵ and femoral neck.⁴ The meta-analyses applied adequate eligibility criteria for the trials analysed and included either RCTs only^{1,3,5} or RCTs and non-

randomised controlled trials.^{2,4} Four RCTs specifically evaluated the benefits of walking on BMD. The sample sizes were small in two of these trials but adequate in the other two.

In a seven-month trial of 33 postmenopausal women, walking above (but not below) the anaerobic threshold (ie, sufficient to leave the subject panting) was found to significantly increase lumbar spine BMD in the walking women compared with controls, in whom BMD decreased.⁶ In a trial assessing the effects of walking and calcium supplementation on 36 postmenopausal women, those involved in a supervised one-year walking program showed a significant increase in trabecular BMD of the lumbar spine compared with sedentary women.⁷ In another trial,⁸ 165 postmenopausal women with a history of fracture of an upper limb in the previous two years were randomly assigned to do upper-limb exercises or brisk walking: after two years, there was significantly greater loss of BMD in the femoral neck for women in the former group than the latter group, but no difference in lumbar spine BMD between the two groups. The dropout rate was high in this trial at 41%. In the largest trial assessing the benefits of walking, 255 women were randomly allocated to a walking group or a control group: after 3 years BMD changes in the cross-sectional dimensions of the radius did not differ significantly between the two groups.⁹

► Progesterone

One controlled clinical trial assessed the efficacy of natural progesterone cream as an adjunct to percutaneous oestradiol in reducing postmenopausal bone loss in 57 women.¹⁰ Progesterone cream did not influence BMD.

► Boron

One RCT assessed the effect of boron supplements over one year on BMD.¹¹ Subjects were grouped according to whether they were athletes ($n = 17$) or sedentary ($n = 11$). It was not possible to tell whether boron had an effect on BMD, as no results were reported that compared those who received supplements with those who did not. Moreover, this trial was conducted in female college students rather than postmenopausal women.

► Codliver oil

No trials were identified that examined the benefits of codliver oil for BMD.

► Calcium

In a randomised crossover controlled trial, three calcium supplements were assessed for their absorption ability.¹² Thirty-five osteoporotic women received the three preparations on successive evenings: 1 g effervescent calcium, 1 g calcium carbonate or 1.2 g calcium carbonate. Urinary calcium excretion rose significantly and similarly for all three preparations, indicating similar levels of absorption. The effect that this had on BMD was not measured.



Comment

There is good evidence that exercise increases BMD in postmenopausal women with osteoporosis. Despite slight variations in the way different analyses defined each outcome measure, all five meta-analyses supported this conclusion. Although no trials specifically compared “just walking” with “exercise in the gym”, there was reasonable evidence supporting the beneficial role of walking in this patient group, particularly above the anaerobic threshold.

There is little good-quality empirical evidence to support the use of natural progesterone cream. One non-randomised controlled trial reported that its use had no effect on BMD.

There is insufficient empirical evidence to support the use of boron, codliver oil or chelated calcium supplements (as opposed to calcium carbonate), or to suggest that drinking tea should be avoided.



Outcome

The GP discussed the available evidence with the patient, who then understood why he had not made the same recommendations as her naturopath. She was pleased to have avoided the unnecessary expense that she would have incurred if she had followed the alternative advice.

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