Reviewer's report

Title: Calcium plus Vitamin D Supplementation Facilitated Fat loss in Female College Students with Very-low Habitual Calcium Intake: A Randomized Controlled Trial

Version: 1 Date: 14 September 2012

Reviewer: margo E barker

Reviewer's report:

This manuscript reports on a short-term randomised controlled trial of calcium and vitamin D supplementation in conjunction with calorie restriction on outcomes of body weight, fat mass, blood pressure, and blood insulin, glucose and lipids in young, Chinese women with high relative body mass and low habitual dietary calcium intakes. The study showed that over a 12-week period that the intervention was effective in reducing several indices of fat mass, but not body weight nor blood metabolites. The study is of interest especially because of the low calcium intake of the control group. However, we can only draw limited conclusions because of several aspects of the study design. Further detail is required to evaluate the results (major compulsory revision):

1. The dose of both calcium and vitamin D was low. Trials of less than 400IU of vitamin D have been shown to be ineffective in relation to bone health outcomes. Measurement of plasma 25(OH)D would have helped ascertain effectiveness of the intervention and to evaluate the study outcomes in relation to achieved vitamin D status.

2. Was the supplement vitamin D2 or vitamin D3?

3. The statistical power of study in relation to the effect size is necessary to evaluate the largely null results

4. There was considerable loss of subjects, but intention to treat analysis was not used. Whilst use of the latter will bias the study towards the null, intention-to-treat analysis is the norm and part of the CONSORT guidelines

5. The mechanism used to allocate the sequence of treatment to subjects was not provided. Further detail as to the randomisation procedure is needed.

6. There was much speculation as to potential beneficial effects of dietary protein on calcium metabolism. This is somewhat peripheral to the current study as we had no data on calcium absorption in relation to protein intake.

Minor points:

1. More detail of the Food Frequency Questionnaire used to assess baseline calcium intake is necessary

2. The reason why subjects were recruited with the BMI thresholds is unclear
3. Since body weight was a major outcome measurement in light clothing may not be sufficiently precise. Were subjects asked to void their bladder before measurement?

4. Comment as to the validity of body composition measures using bioelectrical impedance should be given.

**Quality of written English:** Needs some language corrections before being published.

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare I have no competing interests.