Reviewer's report

Title: The Effect of Regular Physical Activity on Bone Mineral Density and Fracture Rate in Post-menopausal Women aged 75 and over: a retrospective analysis from the Canadian Multicentre Osteoporosis Study.

Version: 3 Date: 6 April 2013

Reviewer: Kristina Akesson

Reviewer's report:

The authors have carefully revised the manuscript and it is much improved, while some comments remain.

1 Introduction – the main purpose is clarified; however, the study is a cross-sectional cohort study evaluating the association between BMD and amount of physical activity and it is therefore not obvious how controls apply. The authors are comparing with the least active proportion of the cohort, although it is not obvious to what extent the groups (activity level (hrs)) have been used for other categorical analyses.

2 Results

Study Design – the 3rd pg would benefit from adding a summary of Table 2, such as is presented in the Discussion; 71% were active more than 4 hrs per week.

Possible confounding – 1st pg. The detail of participants beyond Caucasian is redundant as the information is clearly presented in the table.

Effect of regular – line 9-11. The information is identical to the table 4 and redundant or highlight what is most striking. Instead it would be very valuable and more interesting if the corresponding values in g/cm2, SD or % were presented to allow for an evaluation of the clinical implications. This data is now presented in the Discussion, and while it is appropriate to discuss them they should have been presented before.

The effect of possible confounding –

Please clarify that the effect of physical activity on BMD that might be confounded.

Last pg information from table 5 is identically repeated, which is unnecessary.

Please review again for unnecessary duplication of information.

3 Discussion – it is vastly more interesting to read. Additional revision should be done in accordance with comments above.

Minor comments

Effects on bone mineral – “The measured changes...” should be the measured differences
Effects on bone mineral – Last pg on BMI. This is well known and the last 6 lines can be deleted to maintain focus.

4 Limitations
Minor comment
“Of the 1169 participants in this study, only 150 reported currently using anti-resorptive medication with 50 using bisphosphonates…” Abbreviate to clarify that it is the confounding effect that can not be evaluated.

5 Minor comment:
Table 2 – add in heading that it is hrs/week.
Abstract – please review final sentence: decreased … should be decreases

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.