Reviewer's report

Title: Time-course of Exercise and its Association with 12-Month Bone Changes

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Reviewer: Robin Daly

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Overall I am happy with the author’s responses and the changes made to the manuscript. However, in their response to my comment as to why there were no relationships between the impact loads and the tibial bone changes the authors suggested that this was likely due to the impact loads being measured at the waist (via the accelerometer) … which may partly explain the lower sensitivity of the method to explain changes at the tibia. I am not convinced that this is the likely explanation given that the authors report that the accelerometer data corresponds reasonably well with ground reaction forces (and thus presumably loads - strains - at the tibia and femur). I believe this issue still warrants further discussion. One possible explanation is that the MES threshold is different for the tibia and the femur? Maybe the tibia requires higher loads to elicit similar skeletal changes? This notion of a variable MES threshold is supported by the finding of a study in rats by Hsieh et al. which showed that the strain threshold for osteogenesis was variable at different bone sites (but contrary to the findings in this study was greater distally compared to proximally in the ulna of female rats). The authors also state that the lack of an effect at the tibia indicates that the responses are site-specific. However if you load the lower extremities why would the femur adapt but not the tibia?

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.

Declaration of competing interests:

I declare that I have no competing interests