Reviewer's report

Title: A three month controlled intervention of intermittent whole body vibration designed to improve functional ability and attenuate bone loss in patients with rheumatoid arthritis

Version: 2
Date: 20 July 2014

Reviewer: Vanessa D Sherk

Reviewer's report:

This study aims to use a less-traditional training modality, whole body vibration, as an intervention to improve functional ability and attenuate bone loss in patients with RA.

Major Revisions:

The Introduction is too long – please shorten. It is currently 5.5 pages long and the relevant points that are contained within the Introduction could easily be stated within 2-3 pages. Please precisely state what is meant rather than using parentheses to clarify or paraphrase.

Please state whether there is evidence to illustrate that this WBV prescription will not generate an unfavorable inflammatory response in this population.

Insufficient rationale for the short duration of the intervention (12 weeks) is provided – please explain why a longer intervention is not being pursued. The bone remodeling sequence takes 3-6 months to complete, so it seems unlikely that an attenuation of bone loss will be detected. Interventions aimed at bone health are typically at least 8 months in duration.

Please state the expected amount of bone loss within the control group. Please state the expected difference in change in BMD between the intervention groups with a citation to support the expected outcomes.

The statistical analysis plan is not congruent with the a priori power analysis. If the aim is to determine whether WBV can improve HAQ, then the study should be powered on the difference in change in HAQ scores. Therefore, the primary statistical test should be an unpaired t-test comparing the change in HAQ between groups. If using linear mixed models, then covariates need to be explicitly stated a priori. Stating “relevant covariates where necessary” is insufficient. Further, it should be acknowledged the study will likely be underpowered if the plan is to performing ANCOVAs on a dataset that is powered on a t-test. Please state what statistical methods will be used to protect the type I error rate.

Please provide potential obstacles within the intervention and possible interpretations of the data if the evidence does not support the hypothesis.
Minor Essential Revisions:
There are numerous typographical and grammatical errors and redundant statements. The errors are so prevalent that it is distracting. A thorough proofread is required. Example: Within the abstract, line 3, “and. As such”, and in line 11, “iprove”. I will not provide an exhaustive list of errors.

Please note whether the data will be analyzed as intention-to-treat or on a per-protocol basis.

Please state what the expected attrition rate will be for this intervention.

Discretionary Revisions:
If inflammatory status and pain are factors that make it more difficult for persons with RA to exercise, then measuring the acute inflammatory (e.g., IL-6) and pain response to a bout of the WBV prescription at the beginning and at the end of the intervention is recommended.

Please explain why 2 statistical packages are required for analysis.

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

Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests.