Reviewer’s report

Title: Does the combination of photobiomodulation therapy (PBMT) and static magnetic fields (sMF) potentiate the effects of aerobic endurance training and decrease the loss of performance during detraining? A randomised, triple-blinded, placebo-controlled trial

Version: 0 Date: 23 Dec 2019

Reviewer: Jessica Piasecki

Reviewer's report:

The authors have collected a large sample size and conducted an intensive randomised control trial. However, the main issue within the manuscript is the authors claim that the PBMT methods can alter ATP production, yet they have not measured this directly in away way. The authors need to change the manuscript to focus solely on the performance factors measured.

Abstract: The results section needs to be clearer and state the direction of the significance, at the moment it states there is a difference but it does not highlight whether there is an improvement or not which is important to detail as the main findings in the abstract.

Introduction: Please could the authors detail in the second to last sentence of the first paragraph, the 'rapid' loss. Detail how much in what space of time the authors are referring too. It is important to highlight how this method is needed to reduce this 'rapid loss'.

Methods: Eligibility criteria needs to be more detailed, including specific inclusion and exclusion criteria. Were smokers included in the sample?

The authors cannot say that volunteers had different skin colours. This sentence must be changed. Please state in the eligibility criteria that all ethnicities were included in the sample.

The authors also need to detail how the training was/if it was adjusted for each person. Some participants will have a higher baseline than others and therefore their training should be tailored accordingly. Please provide more detail on this. The detail does not state what each participant did during the 30 min training and if this varied from session to session.

Was the training supervised or not, if not this needs to be included in the limitations

Did the authors monitor habitual activity? This would be an important consideration during detraining, some may be more conditioned than others due to the type of jobs/daily activities they carry out. If this was not considered it should be highlighted in the limitations.
Results: Please change the error at the start of the results to state there were no drop outs, rather than there were 'not' drop outs.

Table 2 and 3 repeat data. Table 2 should be changed to be specific to participant characteristics and table 3 should just be dedicated to outcome measures.

Figures 3, 4 and 5: The axis needs to be changed. The Y axis should not start at 100. The axis should state the percentage increase starting at 0 for baseline.

Discussion: The discussion does not provide enough mechanistic insight or references to back up their findings the authors repeat too much of their data that has already been stated. The authors cannot state that the method of PBMT changes/affects ATP production when they have not measured this in anyway. There are only measures of training. In order to indicate if there is ATP production alteration a number of biopsies would be needed. This is the main concern with the manuscript at the moment. The authors are trying to demonstrate that this method affects ATP production without having measured this directly.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published
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