**Reviewer’s report**

**Title:** Influence of recovery strategies upon performance and perceptions following fatiguing exercise: a randomized controlled trial

**Version:** 0  **Date:** 16 Jan 2017

**Reviewer:** Brett Comstock

**Reviewer’s report:**

I have thoroughly reviewed this manuscript for scientific content, manuscript construction, and general impact. This manuscript aimed to assess the effects of 5 different recovery strategies, centered on water immersion, passive, and active recovery methods. Specific effects on anaerobic performance, perceptual measures, and flexibility were assessed. The following should be addressed to strengthen the manuscript.

**Major Issues:**

There are several over-arching issues.

1. **Ecological Validity:** When developing the novelty and need for this study (in Intro & Discussion), you focus on high performance athletes, yet your population is far from high performance athletes. You mention this as a limitation, and I would agree. However, I don't think all is lost, because many recreational athletes use these and other recovery strategies. Major revisions to the Intro and Discussion are needed to tailor the study to the recreational athlete. Also, emphasize the importance and novelty of your study.

2. **Study Design:** A big issue with study design, which was not justified anywhere in the paper, is the choice of using only one hour of the recovery method. Additionally, this hour of recovery method exposure was in the immediate post-exercise hour. A few points on this: more often than not, athletes use continued multiple exposures to a recovery method in the 48 hours following exercise, practice, or games, not a single exposure. The choice to only do one hour of exposure, combined with only one data point in this short term recovery period (e.g. 24 hour period post-ex), limits what we can glean from your findings. Neither of the recovery methods is a potent enough stimulus for one hour to have lasting effects of upwards of 48 hours, I think your data shows this point. Further, if this choice has a rationale (e.g. your study was only focusing on short-term recovery after a single exposure to a recovery method), be sure to develop it in the Introduction and Discussion, emphasizing what is novel and impactful about this strategy. However, based on the rarity of an athlete or recreational active person using only one exposure of a recovery modality, major questions remain about the utility of your findings.

**Other Suggested Revisions:**
Introduction

1. Review this section to underscore the novelty AND importance of your findings. Currently, this is not the case.

2. Review this section for grammatical errors, run-on sentences, and clarity, so you communicate as best you can to our readership.

Methods

1. Consider a Study Design Figure, as Order of visits and tests were not entirely clear. This is in addition to the figure of the course layout (which I love).

2. Major Issue #2 applies here.

Results/Tables & Figures

1. Results section needs revision. Start with an opening paragraph highlighting your major, most important findings. Then report the results (with avg±SD) for each variable type.

2. Figure 2's data is already presented in the Table. In an effort to not replicate presentation of data, I would remove the figure (as it doesn't tell us much), and keep the table as is. Revise.

Discussion.

1. Here you should drive home your important findings, and why they are novel and impactful, in the context of current and population specific literature. Please revise this entire section for this point.

2. Be sure to ground your Discussion in the context of your study. This means add more about studies using your population and/or design/purposes.

It is prudent to mention that the entire manuscript should be reviewed and revised to focus on communicating the findings in a clear concise manner and removing unnecessary language that hinders clear communication of the findings, as well as grammatical or spelling errors. Also, be sure to go through the paper and spell out "hour" and/or "hours" (e.g. "One h of recovery" should have hour spelled out.

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

Yes
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.

Yes

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:

Acceptable

Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

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