Author’s response to reviews

Title: Six weeks of balance or power training induce no generalizable improvements in balance performance in healthy young adults

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Author’s response to reviews:

#Dear Editor and reviewers, we thank you very much for going through the manuscript once again.

Reviewer reports:
Lucy Parrington, PhD (Reviewer 1): The authors have satisfied most of my concerns. A few points to tidy:
#We thank you very much for going through the paper and noticing our mistakes.

1) I appreciate the detail input into the statistical methods section (i.e. defining the effects input into the LMM's). I do believe that this could be written in a slightly more succinct and clear manner.
#We thank you for this input. We have tried to make the section clearer and slightly more succinct.

2) Please note that AIC should not be used to compare between models using raw and transformed data. This is a misunderstanding of how the AIC should be used and should be removed. It is fine for the authors to justify using transformed data based off the lack of normal distribution.
#We thank you very much for this remark since we were not aware of this point. We have removed all the relevant text.

3) Did the authors assess gender as a covariate within the model? If you did, you should mention that this was assessed. If you did not, I think it is worth exploring. You have 44% and 43% female in the control and balance group, but only 25% female in the power group. This should be taken into consideration and potentially discussed depending on findings.
#This is a very good point, which we already explored in Giboin et al., 2019 (Motor learning of a dynamic balance task: Influence of lower limb power and prior balance practice). However, this factor is in our opinion very difficult to interpret in regard to balance performance since height, weight and power may also differ between genders. Yet, height, weight and power can also be explicative factors for balance performance (and most probably, in a task-specific way). Thus, gender could be (or not) a spurious factor in this situation, which would be difficult to pinpoint given the sample size. This is why
we would prefer not to delve into these analyses.

4) While some people may have the capacity to understand t-values in your table, confidence intervals around your beta coefficients are generally going to be more interpretable. I would suggest interchanging t-val for 95% or 90% CI.
#We agree with you! T-values were added mostly because asked by most journals. Therefore, we have added columns with lower and upper 95% CI in Table 4.

Thomas Muehlbauer, PhD (Reviewer 2): The authors have adequately responded to all my comments and I have no further comments.
#We thank you again for your work on this paper.