Author's response to reviews

Title: Tai Chi and Vestibular Rehabilitation Improve Vestibulopathic Gait via Different Neuromuscular Mechanisms: Preliminary Report

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Response to Reviewers

Once again, we thank the reviewers for their time in reviewing this manuscript. Please find below a point-by-point response to each concern raised by the reviewers (#1 and #3), and a description of the changes we have made in response to those concerns.

Reviewer #1

In 2-17 the general and somewhat vague term “vigorous gait” seems out of place in the conclusion of a basic science article, especially when it seems to be used to describe a redistribution of mechanical energy. Does the term “vigorous gait” mean that more mechanical energy is expended at the ankles compared to the hips? This comment was also in the first and second reviews.

Response: We now state “faster gait” (pg 2, line 17).

3-16. Once again, “soft unfocussed gaze” advocated in the author’s variant of TC does not obviously indicate to this reviewer that persons with TC are not trying to see what they are doing. Rather, it seems to this reviewer that there is a different emphasis between TC and VR. In VR, many exercises combine considerable visual stimulation (i.e. checkerboard) with head movement. In TC, this isn’t the case.

Response: Indeed, a “soft unfocussed gaze” was encouraged for participants in the TC group. But we agree with the reviewer, and to our knowledge, do not suggest that TC patients are not trying to see what they are doing. Rather, we emphasize that the TC program we used did not incorporate gaze stabilization exercises.

11-8. How does the finding of a statistical difference within groups suggest that there are “clinically important differences”? With a big enough “n”, nearly any difference can be statistically significant, but this does make it clinically important.

Response: It may be clinically important because the changes observed were improvements within that group, regardless of whether those improvements differed from improvements (or lack thereof) in the other group.

11-13. “over all” should be “overall”.

Response: Typo fixed.

14-5. Again, the “clinically important trends” suggestion does not follow.

Response: We will have to disagree. We believe the changes observed are meaningful in a clinical context.

15-17. Again, the term “a more vigorous gait” is used.

Response: We now state “faster gait” (page 15, line 17).
17-12. “in diagnostic proportions” is awkward.

Response: We have made this sentence less awkward (pg 17, line 12).

Reviewer #3

Statistical Analysis p. 10
Line 6: The Ryan-Holm stepdown Bonferroni procedure is a more accurate description (Ryan described it 20 years before Holm!). Also, I think you should give a reference (rather than the not very lucid examples in lines 8-12. You could even cite my paper to which I referred you in my last report.

Response: We included the example for those unfamiliar with the procedure. We now state “Ryan-Holm” as suggested, but we already included the reference as suggested in the prior revision.

Results
I recommended previously that you give raw p values, and adjusted p' values. But in Results you give numerous p values without indicating whether they are p or p' values. It would be a very good idea put both p and p' in Table 1. And to add in other Tables that cover MEE and maybe trunk kinematics. This approach would allow you to do without the irritating multitudinous p values in the text, and merely refer to Tables.

Response: We now state that all p-values given are unadjusted p-values, and thus were compared directly to the Ryan-Holm stepdown Bonferroni significance criteria (adjusted alpha) for that variable. We give this adjusted alpha criteria were appropriate (as opposed to giving adjusted p-values, as we believe this to be less meaningful than providing the adjusted alpha) (page 10, lines 12-13, and throughout results).

Figure 3
My recommendation that you use least-products regression analysis, rather than least-squares was a counsel of perfection. You see, the Pearson product-moment correlation coefficient assumes that neither X nor Y values are fixed – the same holds for least-products regression. I shan’t insist!

Response: We assume then that our approach is in agreement with the reviewer.