Author's response to reviews

Title: Developing a measure of muscular power during a functional task for older adults

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Author's response to reviews:

Dr. Mangiameli:

After careful consideration of the reviewers’ comments we have made significant changes to the manuscript. We have outlined the specific changes below.

In terms of changes to the abstract, after much consideration, the authors have decided to leave the Brand name of the unit in the abstract. The authors attempted to use variations and made several re-writes to this section; however, due to word limits and lack of clarity, the authors thought it was best to leave it represented as Tendo throughout. However, all references to statistical analyses have been removed from the abstract per recommendation from one or more reviewers. The authors appreciate this feedback as it makes the document read more clearly.

To address reviewer Lindemann’s comment about the definition of a field test. The authors recognize that there may be various acceptable definitions; however, in this manner a field test is referring to a method of data collection that is both portable as well as economically affordable related to other research tools. The references cited in the reviewers’ comments relate to sensors that are detected by laboratory equipment; thus, these sensors much be used in a laboratory setting. However, the authors appreciate the feedback and have addressed the need to more clearly explain field measures throughout the manuscript.

In the background of the document we have addressed the issue of introducing changes in muscular power earlier in the document (line 75). In addition, the authors have clarified the relationship between falls and muscular power among older adults and removed the emphasis on physical activity. Also, the authors have restated the fact that there are no valid field assessments of muscular power for older adults rather than a few tests.

The Experimental Approach paragraph has been removed and either omitted entirely or where pertinent was included in the subjects or procedures sections. In the procedures section, the authors have attempted to clarify the use the Tendo and its function. There are three planes of movement, the Tendo is placed
in the sagittal plane to detect the vertical (mostly) and forward (minimally) movements during the chair stand task. In most power articles, the W/kg, where kg is body weight, is used most often, not kg of lean-tissue mass. Therefore the authors chose to use the most common measure.

In the statistical analysis section, the authors chose to use a paired samples t-test as well as a Pearson Product Moment Correlation to reveal potential differences and correlations between the two variables. The authors appreciate the suggestion of using a non-parametric statistic since there is a relatively small sample size; however, after confirming there were no violations to the assumptions of the aforementioned statistical tests (skewness, kurtosis, skedasticity), the authors kept the initial analysis.

In the Discussion, the authors have corrected all inconsistencies in citations and references. We have also added a limitations section detailing the small sample size and inability for others to potentially generalize the presented results to a wide range of older adults.

Kind Regards,
Michelle Gray
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