Reviewer’s report

Title: Effects of motor imagery training of gait in Parkinson’s disease: a protocol for a randomized clinical trial

Version: 0 Date: 21 Jun 2019

Reviewer: Dietrich Haubenberger

Reviewer’s report:

This study aims to assess the effects of motor imagery training on kinematic gait parameters, EEG measures as well as mobility. The study is designed as randomized controlled trial with blinded investigators performing outcome assessments. There are several aspects warranting revisions and/or clarifications:

- The rationale / background on the selection of EEG as outcome for this study needs to be spelled out and supported more clearly. Would EEG be used as biomarker, and if so what type of biomarker (target engagement? surrogate?)? This should be supported by references, etc.

- Sample size estimation: the study is powered based on previous observed effects of locomotor imagery training on degrees of hip excursions. In this referenced study, the difference between the means of hip excursion was apprx 6 degrees. Please justify the selection of this specific measure (over all other measures deployed in this previous study) to calculate the sample size, and provide a rational for relevance / clinical meaningfulness of this measure and the intended change.

- Clarify whether the inclusion criterion requirement subjects being "between stages 1.5 and 3" on the H&Y scales, allows subjects with a stage 1.5 or 3 can be included or not.

- The specific primary and secondary outcomes should be listed - either in the text or in a table / box. "Kinematic variables” and "electroencephalographic activity” is to general, and the actual extracted and computed variables should be identified that go into the analysis. In particular, as the study was powered on the expected change of hip excursions, this outcome should be assessed. Also, in the data analysis section, specify the variables (EEG frequency bands are not an outcome measure)

- Since the assessors and analysis staff will be blinded to the allocation, please elaborate on the blinding procedure, to ensure that there is protection from accidental or unintended unblinding.

Level of interest
Please indicate how interesting you found the manuscript:

An article of importance in its field

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

Not suitable for publication unless extensively edited

Quality of figures
All images and figures within the manuscript should be genuine i.e. without evidence of manipulation. No specific feature within an image may be enhanced, obscured, moved, removed, or introduced. If you have concerns about the veracity of the figures you should choose the first option below.

Statistical review
Is it essential that this manuscript is seen by an expert statistician? If so, please give your reasons in your report.

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

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

There are no conflicts of interest

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors'
responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal

Were you mentored through this peer review?

No