Reviewer’s report

**Title:** Reliability and Sensitivity of the 20-Meter Walk Test among Patients with Knee Osteoarthritis

**Version:** 1  **Date:** 28 January 2013

**Reviewer:** Soren Thorgaard Skou

**Reviewer’s report:**

This manuscript deals with an important issue of several measurement methods, however several limitations exist that must be addressed, before the manuscript can be considered for publication.

**Major Compulsory Revisions (MCR)**

**MCR 1:** Background, second paragraph. This paragraph needs to be re-written with a common thread leading to a clear-cut purpose. In its present form it seems a bit incoherent, particularly the first sentences.

**MCR 2:** Background, third paragraph. You state “test administration in OA studies shows poor standardization”. This statement should be supported by references or changed.

**MCR 3:** Background, third paragraph. You state “the reliability and sensitivity of the test remains unclear”. However reliability of 20-meter walk test in OA patients has been investigated in a previous study by Villadsen et al. 2012, http://www.ncbi.nlm.nih.gov/pubmed/22311054. It is important that you are clear on the additional contribution of your study compared to the previous study.

**MCR 4:** Report your study according to the "Guidelines for Reporting Reliability and Agreement Studies (GRRAS)" and state this in the manuscript. This will ensure homogeneity and completeness in studies on reliability and agreement and potentially heighten the quality of your manuscript.

**MCR 5:** Methods, 20-Meter Walk (Self-Selected Pace). Please comment on, why the time between visit 1 and visit 2 was not standardized and also comment on possible implications for the study results.

**MCR 6:** Statistical Analyses, Comparisons and Agreement between Trials. You write that “Walk times and differences between trials were not normally distributed”. As far as I know normal distribution is an (at least indirect) assumption of both ICC and LOA. Please check this with an experienced statistician.

**MCR 7:** Results section and Figure 2. The mix between mean and median makes the interpretation a bit confusing, please revise. Referring also to MC6, I would advise you to consult a statistician (if you have not already done so).
MCR 8: Discussion. It is important that you discuss and compare your findings with the previous findings by Villadsen et al.

MCR 9: Discussion. In paragraph one and two several repetitions exists (e.g. practice trials, significant impact on the results). I would advise you to shorten the summary of your results in the first paragraph of the discussion and then discuss in the following paragraphs instead.

MCR 10: Discussion, third paragraph. Please elaborate this to make it more understandable, why there may be a difference between the mean- and the median-based approach.

MCR 11: Discussion, fifth paragraph. You state that “While we had only 15 participants they are representative of patients with knee OA.” This statement must be supported in some way.

MCR 12: Discussion/Conclusions. In the abstract you give specific numbers of SDD. The discussion and/or conclusions would benefit from actual numbers translated and discussed. This would help both clinicians and researchers. In its current state the discussion is not strong enough.

MCR 13: Conclusions. You conclude that “We advocate that one assessor, or as few assessors as possible, should administer this standardized protocol to all 299 study participants.” Since this is a study of intratester reliability you cannot conclude on the number of assessor.

Minor Essential Revisions (MER)

MER 1: Title and the whole manuscript. Your study is on intratester (and not intertester) reliability. Please state this clearly throughout the manuscript.

MER 2: Methods, participants. Assuming you refer to the criteria found here: http://www.rheumatology.org/practice/clinical/classification/oaknee.asp
You need to be more clear on which of the three (clinical and laboratory, clinical and radiographic or clinical) the participants met.

MER 3: Methods, participants. Do you have a reference for you definition of knee synovitis? If so refer to it.

MER 4: Methods, participants. Why did you choose a WOMAC pain subscore of over or equal to 2?

MER 5: Methods, participants. Please state the number of participants in the study in this section.

MER 6: Methods, 20-Meter Walk (Self-Selected Pace). I would advise you to change “8-inch” to “approx. 20cm” since you are using the metric system for the 20-meter walk test.

MER 7: Results, first paragraph. You refer to “figure 1”. You must mean “figure
MER 8: Figure 2. In the figure legend, you write “Lines under each set of trials indicate…” I cannot see the line. Please make them more obvious.

MER 9: Results, Comparisons and agreement between Trials. You refer to “table 1”. You must mean “table 2”?

Minor issues not for publication (MIP)

MIP 1: Abstract, Methods. “elected” should be “were elected”

MIP 2: Background, second paragraph. “may be” could be changed to “can be” in the first line.

MIP 3: Background, third paragraph. The phrase “clinical studies and rehabilitation clinics” have already been used in the first paragraph of the background. Consider changing to another phrase.

MIP 4: Discussion, first paragraph. In line six you write “Increased session 1 walking times”. Perhaps you should another word than increased since it was the first measurement and therefore can not increase.

MIP 5: Discussion, fifth paragraph. You write “Another limitation of or study”. However, the first limitation, though present, is not clear. Consider making it obvious what the first limitation is.

Discretionary Revisions (DR)

DR 1: Abstract, Background. You state “and therefore limit our ability to evaluate changes in gait speed”. To further emphasize the purpose of your study, you could change this to “and therefore limit our ability to evaluate real changes in gait speed not attributable to normal variability”.

DR 2: Methods, 20-Meter Walk (Self-Selected Pace). You could report the number of steps during the 20-meter walk, since this is also a part of the test.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests