Reviewer's report

Title: Reproducibility of tests for lumbar motor control

Version: 1 Date: 15 November 2010

Reviewer: Leonardo Costa

Reviewer's report:

I found this paper interesting, specially for physiotherapists. I found some issues that should be clarified (see below).

Minor revisions

Abstract:

1. Reliability is not the same as reproducibility and validity, they are distinct concepts (see Terwee et al(1) to clarify this).
2. CCC? Do the authors actually mean ICC?

Essential revisions

Main text

Methods: the sentence “When examiner A had tested a subject, the subject was examined by examiner B, and vice versa.”... is a bit confusing for me.

As stated above, there is some confusion with regards to reproducibility (which is an umbrella term for reliability and agreement), the authors also mentioned a test named “concordance correlation coefficient” which I am assuming that is the “Intraclass correlation coefficient”... if so, the authors need to name the type of ICC, because ICCs vary considerably depending on which type you use (see paper from Krebs for reference(2)). Given the extremely high “CCC” values obtained, I am assuming that the authors used the ICC type 3,1 which tends to overestimate the reliability estimates.

I suggest the authors to demonstrate another agreement parameter other than Bland and Altman Plots (please keep the plots!), such as the SEM (Standard error of the measurement). SEM values gives us agreement estimates and they are expressed not in a dimensionless scale ranging from 0 to 1 (as ICCs do), but SEMs are expressed using the measurement units of the test itself (for example in centimetres or units of a questionnaire), and therefore SEMs are more informative than ICCs. SEMs are easy to calculate and very useful for clinicians. There are a lot of papers showing high ICCs which moderate to low SEMs(3).

The time interval “same day” is too short to provide reasonable estimates of reproducibility. Ideally it should be from 2-7 days. This also explains partially the extremely high “CCCs” observed.
Table 1. It would be nice if you provide the demographics from normal participants and patients separately.


**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