Reviewer's report

Title: Reliability of lumbar spinal palpation, range of motion and determination of position

Version: 1 Date: 16 March 2007

Reviewer: B. Kim Humphreys

Reviewer's report:

General

Thank you for the opportunity of reviewing your manuscript. Manual palpation, particularly of the spinal column, is a common and important part of the physical examination procedure for manual therapists. Considerable research is still needed to advance our knowledge in this area. You are to be congratulated on your investigation of the “Reliability of lumbar spinal palpation, range of motion and determination of position.”

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. Purpose #3 in 'Background' on page 3 was "to determine the reliability of measures of upright lumbar position by 3 examiners." Blinding of examiners to each others' results is crucial here. Your methodology was not able to blind examiners in the standing position and you used Downey et al. as a priori substantiation that your results were valid. I am not convinced. Please respond.

2. Purpose # 1 states "to investigate the level of agreement of lumbar spine palpation between 3 separate examiners." Manual palpation of spinous processes typically occurs in the prone position, sometimes sitting or even standing. Side lying palpation is less familiar. Please provide a rationale for why spinous palpation in the side lying position is valid for this study, other than to address the blinding of examiners.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. The title on page 1 is "Reliability of lumbar spinal palpation, range of motion and determination of position." At the top of the abstract on page 2, the title "A study protocol to evaluate the use of the modified OSI CA 6000 for multi-center data collection" appears. Please clarify and ensure that the final title is reflective of your study purposes as stated in 'Background' at the bottom of page 4.

2. You have reported results in 'Materials and Methods' on page 5. You report on the number of participants, their gender, age and weight ranges. Please move this to the 'Results' section.

3. How did you arrive at the conclusion that 22 subjects was an adequate number of participants to use? Having used the ICC, I would be interested in your rationale for sample size. This justification should be included under 'Materials and Methods' on page 5.

4. There is insufficient information that describes the side lying position. If knees or hips are flexed, this will influence the lumbar curve and pelvis. If the lower limb was kept straight, the lumbar curve would be more comparable to the standing position. Please describe the 'side lying' position used.

5. Why did you chose to use Standard Deviations over Confidence Intervals for your Mean ROM for the 3 examiners over 3 days in Tables 1 and 2?

6. Add the number '1' to (see Figure ..) in the third sentence, second paragraph on page 6.

Discretionary Revisions (which the author can choose to ignore)
**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.