Reviewer's report

Title: Evaluation of the iPhone versus the Scoliometer for rib hump measurement in scoliosis

Version: 1 Date: 13 May 2012

Reviewer: Carl-Eric Aubin

Reviewer's report:

This paper presents an evaluation of two techniques to measure the rib hump angle:
- the Scoliguage application and an iPhone with an acrylic sleeve;
- the standard Scoliometer.

The subject of this paper is of great interest considering the growing interest and accessibility of applications now available on smart phones. This is a very straightforward paper which is quite well written. The methodology is detailed and thorough. It is suggested to add details on the patient data used to generate the plaster torsos (i.e. type of scoliosis, Cobb angles, axial rotation at the thoracic apical vertebra, etc.)

The study is well performed. My only criticism of the overall approach is the fact that the plastic rib hump eliminates the variability normally seen in patients during the measurement of the rib hump (posture, position of forward bending, etc.), which could possibly be more important than the accuracy of the devices. It could have been interesting to combine the study with measurements of real scoliotic subjects using the two techniques to compare measurements in 'real' situations, as well as to document intra- and inter-measurer repeatability of real cases. If two measurements of the same patient are taken consecutively, measurement of the rib hump will vary - sometimes considerably. With such a 'moving target' to be measured, just how accurate does the measurement need to be? (It appears that both techniques are accurate enough). Such complementary approach and required accuracy should at minimum be discussed.

Also, the title should reflect that the iPhone was not used alone, but with an acrylic sleeve (it is well stated in the Conclusion, but not in the title). As measurements were not reported with the iPhone alone, the current title may be misleading...

The above mentioned comments are in the category "Minor Essential Revisions".

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

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the
statistics.

**Declaration of competing interests:**

I have no competing interests.