Reviewer's report

Title: Similarities and Differences of the Soleus and Gastrocnemius H-reflexes during Varied Body Postures, Foot Positions, and Muscle Function: Multifactor Designs for Repeated Measures.

Version: 1 Date: 29 January 2011

Reviewer: Cara Wall-Scheffler

Reviewer's report:

Alrowayeh et al. provide a helpful study detailing differences in the electrical response of the 3 triceps surae muscles. While the research is new and useful, a few changes would improve the paper and impact.

Discretionary Revisions:

1. The introduction needs some further polishing and editing, particularly in the second paragraph. The paragraph is not consistent in tone and moves between function and anatomy unevenly. I suggest rewriting the first sentence; specifying the change in topic in the second sentence (e.g. In terms of structure, the gastroc…); and describing the ramifications of the anatomical differences following the 4th sentence. For example: It may be possible to record differences in the reflex response of the muscles, and these differences may have ramifications because______________.

2. The 3rd and 4th paragraphs should be combined.

3. I don’t have line numbers, but there should be a space between the word ‘to’ and 0.94 in the first paragraph of section 2.2.

4. Figure 1 does not need to be cited in the first paragraph of section 2.3 since the figure does not illustrate the adhesive tape which is describe in that paragraph.

5. It is interesting that basic size variables were collected. Were these simply to indicate this was a normal sample? Were there any correlations between the anthropometrics and signal variation?

6. Is there a reason the p-values were written without a 0 in front of the decimal?

Minor Essential Changes:

1. Hoffmann is spelled with two n’s. (First word of the paper.)

2. The introduction/background section does not put the study into context. Is there any reason for this study besides for patients with L5/S1 root impingements which seems to primarily only have ramifications for MG and Sol, and not for LG?

3. It is not clear what the relationship is between the 4 elicited traces described that the end of section 2.3 and the five traces discussed at the beginning of section 2.4.

4. I believe Figure 1 is missing the Sol electrode description. In addition, in the
caption there should be a hyphen between the H and reflexes.

5. Figures 2 and 3 were not described in this order; 3 was described first, so should be changed to Figure 2.

6. The current Figure 2 is not legible at all. What are the two lines supposed to be? (This seems to be pretty important based on the text.) If it is possible to label the graphs as well (Neutral, DF, PF; Standing versus Lying), this would be very helpful.

7. It is not clear why there is only one citation in the clinical relevance paragraph of the discussion (pages 10-11). If this is the purpose of the paper, this should be put into some context.

8. The last paragraph of section 5. (page 12) is not clear. Was there or wasn’t there cross talk?

Major Essential Change:

1. If the purpose of this paper is to offer advice to clinicians, why is there no description of how the different postures might aid clinicians in their diagnoses? There are reported differences between the postures, and a reasonable discussion of what may have caused these differences (inhibitory mechanisms during standing, etc), but then no discussion of how this might change clinician measures and interpretations. I believe this is a necessary addition to this paper.

**Level of interest:** An article of limited interest

**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