Reviewer’s report

Title: Effect of Glenohumeral Forward Flexion on Upper Limb Myoelectric Activity during Simulated Mills Manipulation; Relations to Peripheral Nerve Biomechanics.

Version: 1 Date: 26 May 2014

Reviewer: Rod Whiteley

Reviewer’s report:

Major compulsory Revisions:

1. The magnitude of the EMG signal seen in this study are objectively very small in size, with the possible exception of the upper trapezius. Of course the researchers are not meaning to be deceptive in any way, however presenting such data as relative changes can be misleading: a change from 1 microvolt to 2 is a 100% increase, but most likely simply background noise. As the authors point out, normalizing to an MVC is not appropriate, however normalizing to a submaximal movement would have been – eg: simply holding the subject’s arm to 45° abduction, or flexion or similar. This would allow the reader to infer the magnitude of these protective responses in real terms – ie, how much force is actually occurring as the subject’s nervous system “exerts this “protective” reaction?

2. I appreciate the fact that the authors have essentially provided all the raw data in Figure 4, however it’s not appropriate to represent the data in figure 4 as a continuous line for each subject, rather each category (muscle group in this case) should have each data point represented by an individual marker. From this graph it is evident that the absolute values of EMG for all muscles (except upper trapezius) in all conditions in nearly all subjects are extremely low, likely less than 25 microvolts. If the authors wish to display the individual data points (which I encourage) then I would suggest a categorical scatter plot with perhaps the addition of a “Mean ± SD” point for each muscle (if the data is normally distributed) or a median ± 25th percentiles if it is not.

3. Table 2: Presenting data as percentage change and observed pwer/p value can be misleading. Since your data are likely correlated, and perhaps not normally distributed, you may wish to consult something like: Lakens D (2013) Calculating and reporting effect sizes to facilitate cumulative science: a practical primer for t-tests and ANOVAs. Front. Psychol. 4:863. doi: 10.3389/fpsyg.2013.00863.

4. Similarly, please place confidence intervals on the bars in Figure 3

Minor Essential revisions:

1. Line 10: “Since” is redundant

2. Line 43: “the effects” not “these effects”
3. Lines 68-71: ii) whether non-specific neural and muscular effects of Mills manipulation could be controlled with forward flexion of the shoulder girdle joint; with “non-specific” meaning “effects that are not the direct target of the manipulation”. I find the term “Non-specific” confusing in this context.

4. Line 278 “Measurement” should read “Measurements”

**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