Reviewer's report

**Title:** Influence of pain location and hand dominance on neck and scapular kinematics and EMG activities: an exploratory study

**Version:** 2  **Date:** 12 May 2011

**Reviewer:** Peter Rundquist

**Reviewer's report:**

**General Comments**

Your investigation has potential to add to the literature. As you mention in your introduction, no one has looked at how hand dominance and pain location relate to upper quarter biomechanics.

1. One overall comment: Why did you elect to utilize a 3-way repeated measures ANOVA? As you had NDI data, you could have used a multiple regression to determine which factors best predicted neck function. (Discretionary)

**Specific Comments**

**Title**

2. As you are not reporting neck kinematics, it is inappropriate to include them in the title. (Major)

**Abstract**

3. Page 2, line 12 – was should be were. (Minor)

**Background**

4. Page 4, line 5 – To place your information in appropriate context, “neck-shoulder pain” should be operationally defined. (Major)

**Methods**

5. Page 5, line 19 – As you haven’t defined neck-shoulder pain, how can you exclude other MS disorders? (Major)

6. Page 5, line 24 – Are central pain and pain on both sides synonymous? If not, you may have 4 groups. (Minor)

7. Page 6, line 8 – As you do not digitize any points on the head, how can you collect 3D kinematic data? (Major)

8. Page 7, line 6 – How high did the participants elevate? Was the scapular plane controlled? How did you ensure the motion was in the same plane on both sides? (Minor)
9. Page 7, line 8 – What is the rationale for collecting date over this time frame? (Minor)

10. Page 8, line 1 – Does the average data across 3 trials accurately represent the motion? (Minor)

11. Page 8, lines 19-21 – Are the differences you found outside the SEM you cite? (Minor)

12. Page 8, line 24 – How many Chi-squares, ANOVAs, and repeated measures ANOVAs did you run? Did your data meet the parametric assumptions to run the analyses you did? (Major)

13. Page 9, line 2 – The post-hoc analyses you plan to do should be outlined in your methods a priori. (Major)

Results

14. Page 9, line 8 – How does this gender distribution reflect the chronic neck pain population? (Minor)

15. Page 9, line 20 – Was there a three-way interaction? (Minor)

Discussion

16. The discussion will most likely change as the above concerns are addressed.

Table 1

17. Line 6 – The mastoid and nose points are only mentioned here. Were they used in coordinate system development? (Minor)

Table 2

18. The gender distribution and weight appear different in the 3 groups. Including the Chi-square and ANOVA results in the table would be a useful addition. (Minor)

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

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests