Reviewer's report

**Title:** Influence of temporomandibular disorder on temporal and masseter muscles and occlusal contacts in adolescents: electromyographic study

**Version:** 4  **Date:** 5 November 2013

**Reviewer:** Samuel W Cadden

**Reviewer's report:**

1. The question being asked is well-defined (page 4, paragraph 3).

2. The methods seem to be adequate.

3. There are some potential problems in respect of the data – or more particularly in the lack of adequate comment on the nature of the raw data which have now been supplied as a new Figure (see below).

4. All the relevant results are reported.

5. The Discussion and Conclusions are adequately supported by the data (although there is still a need for comment on the raw data – see 3 above).

6. The authors mention limitations of the work (page 13, final paragraph).

7. The authors cite a substantial amount of previous work.

8. The title is acceptable.

9. General: The paper is not difficult to understand – however there are still a few tiny errors in grammar/style which will need to be addressed at copy-editing or before.

**Major issues (compulsory revision)**

Page 7 last 2 lines: Contrary to what the authors wrote in their covering notes (both this time and for the previous submission), the manuscript still states that normalisation was to the mean RMS recorded in the three readings of MVC (it previously stated “average” RMS). This is illogical. The MVC must be the maximum, not the mean, of the three recordings. If that is what was done, then the text should be changed to state this. However, if the authors did indeed use the mean rather than the maximum, they should acknowledge this methodological weakness in the text.

Results Section: The authors have now provided a new Figure with original records of electromyograms. They have also included in their covering note, a long explanation of the relevance of the EMG findings. However this does not really address the point which I made in my previous report which was that some of the records - particularly the ones for the “rest position” - include features
which are unlike anything I have ever seen in many years of studying jaw muscle electromyograms. I expect many potential readers of this paper will feel similarly. In stating that, I am not saying there is anything wrong with the recordings. Nor am I disputing the authors comments on how and why there may be increased levels of “resting” (more appropriately called “postural”) activity in the TMD patients. However the unusual NATURE of that activity as opposed to the increased LEVEL of it, requires comment – and contrary to what the authors state in their covering note, they have not really addressed this in the first paragraph on page 10.

Minor issue (essential revisions)

Page 10, final paragraph: I am pleased the authors have now acknowledged that the physiological basis of the mandibular rest position is one of the most controversial areas in oral physiology. However the reference they give for this is a rather old one and not really representative. A more recent review article would be far more appropriate (the short review by T S Miles in 2007 might be a useful starting point for searching the literature on this topic).

Level of interest: An article of limited interest

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

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.