Author's response to reviews

Title: The relative timing of VMO and VL in the aetiology of anterior knee pain: a systematic review and meta-analysis.

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Author's response to reviews: see over
Dear Editor

Re Manuscript: 1426035432151012 - The relative timing of VMO and VL in anterior knee pain: a systematic review and meta-analysis.

We thank the reviewers for their comments which have enabled us improve the quality of this resubmitted article. We have addressed the reviewers’ comments below.

Response to Reviewer’s Comments

Title: The relative timing of VMO and VL in the aetiology of anterior knee pain: a systematic review and meta-analysis.

Reviewer: Chris Sutton

Major Compulsory Revisions

1) We agree that pooling data is a subjective assessment, involving both statistical and clinical judgement. Homogeneity is rare in research exploring rehabilitation. We feel that readers would benefit from viewing pooled data for the specific tasks of ascending and descending stairs and reflex response, providing explicit details of potential heterogeneity are presented. In the absence of a discussion outlining the limitations of such an analysis results could be misinterpreted. On page 6, further information regarding testing of heterogeneity has been added. The text has been modified to provide further emphasis on these limitations and we have removed details of pooled estimates from figures 2-4. Pooled estimates can therefore only be accessed in the context of a discussion regarding potential limitations.

Where significant heterogeneity exists, a sensitivity analysis has been performed i.e. Boling et al’s [15], and included in the results section.

The magnitude of within group standard deviation has been discussed in further detail with respect to possible sources of heterogeneity: i) see page 14. 3rd paragraph following the sub heading “Factors affecting EMG data collection and analysis” ii) p11/12 – discussion on inclusion/exclusion criteria.

2) Discussion of subject and control matching, either intentionally as part of study methodology, or by chance, has been expanded on page 10-11. Please see response to reviewers comments (1) for further amendments.

3) The conclusion now starts with a statement emphasising the unexplained heterogeneity within and between studies. Less emphasis is placed upon the pooled results.

4) Any unintentional emphasis on the p value when assessing potential publication bias has been clarified. Please see 2nd paragraph in the discussion section on page 10.
5) Within the results section (p9) the original sentence under question has been clarified and references provided. The subsequent sentence adds further clarification. “Some studies provided insufficient raw data or necessary statistics in the text for meta-analysis. For these studies the standard deviation was either estimated from graphs or expropriated from the data of other sources; details of which are provided in the legends of figures 2-4”.

**Minor Essential Revisions**
Within the penultimate paragraph of results:

“$I^2$” statistic has been replaced by “$I^2$” statistic in

The word “neither” has been replaced with “did not report”

**Discretionary Revisions**

The degree of heterogeneity, measured as the $I^2$ has been prioritised over the statistical significance, or non significance of the heterogeneity.

**Reviewer: Rudolf W. Poolman**

Minor essential revisions have been addressed.

Within the results section (p9) the original sentence under question has been clarified and references provided. The subsequent sentence adds further clarification. “Some studies provided insufficient raw data or necessary statistics in the text for meta-analysis. For these studies the standard deviation was either estimated from graphs or expropriated from the data of other sources; details of which are provided in the legends of figures 2-4”.