

RESPONSE TO REVIEWERS

Manuscript: *Behavioural interventions in persons with oropharyngeal dysphagia: a systematic review and meta-analysis of randomised clinical trials*

REVIEWER II	RESPONSE
This manuscript presents a systematic review and meta-analysis on the efficacy of behavioural interventions for oropharyngeal dysphagia. Overall, it is a well-written and comprehensive review with a nice flow and detailed descriptions of methodology and presentation of findings. Despite the ambiguity in terminology and definition of behavioural dysphagia interventions across studies in the literature, the authors managed to categorise and analyse their effects in a coherent and organised manner. My comments are detailed below:	Thank you.
1. The use of the term, “conventional dysphagia therapy (CDT)”, is vague and diverse across studies. How were the data analysed if CDT is used as a control for one study but as an experimental condition for another? For example, in Gao and Zhang (2016)’s study, tongue and mouth exercises were used as “conventional intervention” (control), but in Moon et al (2018)’s study, tongue strengthening exercise, although not the same exercise regime, was used as experimental condition.	We agree with the reviewer. As terminology was very inconsistent between studies, we decided to categorise all behavioural interventions and comparison groups into compensatory, rehabilitative, and combined compensatory and rehabilitative interventions. A fourth category referred to groups receiving no dysphagia intervention. (See Methods section, Subheading Meta-Analysis for further details.)
2. Page 4, line 158: Were the sample sizes corrected for studies where there is more than one comparison with the same group (i.e., Treatment A vs Treatment B vs Control)?	Where studies used the same participants, only one study was included in the meta-analysis (Methods section, Subheading Meta-Analysis).
3. Page 4, line 181: Why were these interventions selected?	In the Methods section (Subheading Meta-Analysis), we describe subgroup analyses conducted to compare effect sizes between selected interventions (i.e., Shaker exercise, Chin Tuck Against Resistance exercise [CTAR], and Expiratory Muscle Strength Training [EMST]). These interventions were selected based on included studies, intervention types and data available for meta-analyses. We looked for commonalities between studies, resulting in the listed interventions.

4. Table 2: Moon et al. (2018) and Ploumis et al. (2018): Please specify what was used as control.	We added information about both intervention groups. Further details on group interventions are provided in table 3.
5. Table 2, footnote: Typo: “US” should be “UC”	We corrected the typing error.
6. Table 3: Choi et al. (2017) and Kim & Park (2019): Please add CDT to the experimental groups as well.	Table 2 reports on the included study arms: 1) Shaker exercise + CDT; 2) CDT. In Table 3, both Shaker exercise and CDT are described in further detail.
7. Table 3: Krajczy et al. (2019): Is “original dysphagia treatment” the same as CDT? If so, please change it to CDT for better consistency.	We agree with the reviewer that the terminology as used by the authors of the included studies is confusing. However, in Table 2 and 3, we chose to report on the studies using the original authors’ terminology and descriptions, providing further details in Table 3 on the materials and procedures.
8. Page 22, line 291: Typo: “or motor” should be “oromotor”.	We replaced ‘or motor’ by ‘oromotor’.
9. Figure 3: What does yellow circle with exclamation mark represent	When completing for all studies the RoB-2 excel spreadsheet, both figures 2 and 3 are created automatically. The legend of Figure 3 explains the different colours. If one or more yellow or red circles (domains) have been identified for a particular study, the Overall score (last column) shows an exclamation mark, indicating that either the study shows some concerns (yellow circle with exclamation mark) or is at high risk (red circle with exclamation mark). We added this information as a footnote (Figure 3).
10. Table 4 and Figure 5: According to the descriptions in Table 3, the CDT used in the studies by Choi et al. (2017), Hwang et al. (2019) and Kim & Park (2019) are not compensatory as some included oromotor exercises and thermal-tactile stimulation. Please clarify if this is accurate.	The three studies as listed by the reviewer are listed in Figure 5 under ‘Combi versus CDT (Compensation)’. All three studies include a combined intervention group (combined compensatory and rehabilitative interventions). The second arm of all three RCTs include the use of different techniques. However, most of these reported techniques will not directly impact the swallowing act (e.g., oral facial massage or thermal-tactile stimulation¹). As such, all three studies were considered as mainly compensatory interventions. To clarify, however, we revised the description of categories under subheading Between subgroup analyses:

	<i>'... Both behavioural interventions and CDT were categorised into mainly compensatory, rehabilitative, and combined compensatory and rehabilitative interventions....'</i> 1. Schwarz et al. Impact of thermo-tactile stimulation on the speed and efficiency of swallowing: a systematic review. <i>Int J Lang Commun Disord</i> 2018;53(4):675-688
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