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## Peer Review File

**Article Information:** <http://dx.doi.org/10.21037/apm-21-451>

**Reviewer A:**

**Comment 1: Page 1 Line 13 Prothodontics should be spelled Prosthodontics.**

Reply 1: We have corrected the spelling of Prosthodontics (see Page 1, line 15).

Changes in the text: Page 1, line 15

**Comment 2: Page 8 Line 176 Wnman should be spelled Wänman.**

Reply 2: We have corrected the spelling of Wänman as advised (see Page 11, line 221).

Changes in the text: Page 11, line 221

**Comment 3: Page 8 Line 177 spacing between al and (22).**

Reply 3: We have added the space between al and (22) (see Page 11, line 221).

Changes in the text: Page 11, line 221

**Comment 4: Page 10 Line 215 spacing between al and (23).**

Reply 4: We have added the space between al and (23) (see Page 13, line 282).

Changes in the text: Page 13, line 282

**Comment 5: Page 16 Line 348 Wnman should be spelled Wänman.**

Reply 5: We have corrected the spelling of Wänman as advised (see Page 20, line 453).

Changes in the text: Page 20, line 453

**Comment 6: Page 19 Figure Wnman should be spelled Wänman.**

Reply 6: We have corrected the spelling of Wänman in figure 3 as advised (see Page 23, line 498).

Changes in the text: Page 23, line 498

**Comment 7: Page 20- 21 Figure 4, 5, 6,7. Wnman should be spelled Wänman.**

Reply 7: We have corrected the spelling of Wänman in figure 4 as advised (see Page 23, line 500).

Changes in the text: Page 23, line 500

**Comment 8: Table 1 Wnman should be spelled Wänman.**

Reply 8: We have corrected the spelling of Wänman in table 1 (see Page 22, line 490).

Changes in the text: Page 22, line 490

**Reviewer B:**

**Comment 1: Keywords: it should be physiotherapy instead exercise therapy.**

Reply 1: We have changed exercise therapy to physiotherapy as advised (see Page 4, line 66).

45 Changes in the text: Page 4, line 66

46

47 **Comment 2: Introduction: Paragraph 66/67, Many studies have identified exercise**  
48 **therapy and occlusal splint therapy as conservative interventions for painful TMD (1)-**  
49 **and it is only one citation it should contain more citations.**

50 Reply 2: We have added more citations about this statement as advised (see Page 5, line  
51 83).

52 Changes in the text: Page 5, line 83

53

54 **Comment 3: Paragraph 89/90, To our knowledge, few data of meta-analysis comparing**  
55 **the effectiveness of exercise therapy with occlusal splint therapy for the treatment of**  
56 **painful TMD have been reported, suitable citations must be in here.**

57 Reply 3: We have added more citations about this statement as advised (see Page 6 line  
58 109).

59 Changes in the text: Page 6, line 109

60

61 **Comment 4: Discussion: Please avoid wording “Our study”.**

62 Reply 4: We have modified our discussion to avoid wording of “our study” as advised  
63 (see Page 13-17, line 281-359).

64 Changes in the text: Page 13-17, line 281-359

65

66 **Comment 5: In Abstract” OR “temporomandibular disorders” OR “craniomandibular**  
67 **disorders” OR “orofacial pain” OR OR- it shouldn't be in a capital letters.**

68 Reply 5: We have changed OR to or in abstract as advised (see Page 3, line 40-44).

69 Changes in the text: Page 3, line 40-44

70

71 **Reviewer C:**

72 **Comment 1: Introduction. Since the main objective is to know how exercise therapy**  
73 **and occlusal splint therapy relieve pain and increase the mobility, more information**  
74 **regarding how pain and mobility affect people with TMD should be more thoroughly**  
75 **addressed in the Introduction.**

76 Reply 1: We have provided more information regarding how pain and mobility affect  
77 people with TMD in introduction as advised (see Page 4, line 72-77). The main signs  
78 and symptoms of TMD are deviations or limitations during mouth opening, and pain in  
79 the TMJ, the masticatory muscles region. Pain is the most common reason patients seek  
80 TMD treatment, affecting approximately 10% of adults. Mandibular dysfunction such  
81 as limited mandibular movement may affect daily activities, resulting in lower quality  
82 of life, and therefore, the management of these TMD signs and symptoms is a major  
83 public health problem.

84 Changes in the text: Page 4, line 72-77.

85

86 **Comment 2: In line with the previous comment, the objective of the article should**  
87 **mention the fact that pain and mobility are being analysed in the review.**

88 Reply 2: We have added this fact in the objective of the article as advised (see Page 6,

89 [line 116-117\). The purpose of this study was to compare the effectiveness of exercise](#)  
90 [therapy with occlusal splint therapy in relieving pain and improving mandibular](#)  
91 [movement for painful TMD treatment.](#)

92 Changes in the text: Page 6, line 116-117.

93  
94 **Comment 3: Methods. Lines 102 and 103 you state “Search terms were used according**  
95 **to a combination of medical subject headings (MeSH) terms, text words, and keywords”**  
96 **please explain or add reference to the text words and keywords, that is, how did you**  
97 **chose them, with which basis or depending on which reference?**

98 Reply 3: We have added references to the text words that we chose as advised (see Page  
99 7, line 134-135).

100 Changes in the text: Page 7, line 134-135

101  
102 **Comment 4: Line 114: “1) diagnosis of TMD according to the RDC/TMD or any**  
103 **clinical diagnosis that involved symptoms and signs of TMD regardless of sex, or race;”**  
104 **please add reference for the Diagnostic Criteria.**

105 Reply 4: We have added the reference to the Diagnostic Criteria as advised (see Page 7,  
106 line 143).

107 Changes in the text: Page 7, line 143

108  
109 **Comment 5: Line 120 “Studies that reported one outcome measure of pain intensity and**  
110 **range of motion (ROM).” Please re-write this sentence since it is not fully understood.**

111 Reply 5: We have rewritten this sentence to make it easier to understand (see Page 8,  
112 line 149-150). [Studies that reported outcome measures of pain intensity and/or range of](#)  
113 [motion \(ROM\) were included.](#)

114 Changes in the text: Page 8, line 149-150.

115  
116 **Comment 6: In the Methods section please add more information and explanation of**  
117 **how the Cochrane Risk of Bias tool is used, as you have done with the PEDro score.**

118 Reply 6: Based on the reviewer’s comment, we checked the literature and revised this  
119 paragraph in the Methods section as advised (see Page 8, line 166-170). A meta-  
120 epidemiological study conducted by Moseley et al concluded that researchers could use  
121 either the Cochrane Risk of Bias tool or the Physiotherapy Evidence Database (PEDro)  
122 scale to quantify risk of bias, but the instruments cannot be used interchangeably. [As](#)  
123 [this meta-analysis focused on trials evaluating physical therapy interventions, PEDro](#)  
124 [scale was used to evaluate the blinding of participants and therapists in this review.](#)  
125 [Therefore, we only used the PEDro scale to quantify risk of bias in the revised-](#)  
126 [manuscript.](#)

127 Changes in the text: Page 8, line 166-170

128  
129 **Comment 7: Results. Here are my main concerns since only 6 articles are finally**  
130 **reviewed and one of them does not have a high methodologic quality. Therefore, I think**  
131 **you have to strengthen your results so they offer more information and novelty. In this**  
132 **line, as you state in your Introduction, among the occlusal splints there are different**

133 ones, and among exercise therapy there are different modalities. Therefore, a more  
134 extensive analysis of the 6 reviewed articles regarding the use of the different modalities  
135 of splints and exercise will reinforce your results.

136 Reply 7: We have performed the sub-analysis for pain relief and the maximum mouth-  
137 opening range according to the use of the different modalities of splints and exercise as  
138 advised (see Page 11-12, line 227-249).

139 Figure 2 showed the standardized mean differences between the occlusal splint  
140 therapy and exercise therapy groups regarding the effects on pain. Pain intensity was  
141 reported in two studies of subgroup 1 using self-mobilization exercise and jaw-opening  
142 exercise showing unimportant heterogeneity ( $I^2=0\%$ ;  $P=0.80$ ), and two other RCTs of  
143 subgroup 2 using self-stretching exercise and postural exercise showed substantial  
144 heterogeneity ( $I^2=84\%$ ;  $P=0.01$ ). Additionally, overall heterogeneity for this outcome  
145 was moderate ( $I^2=51\%$ ;  $P=0.10$ ), with unimportant heterogeneity observed among  
146 subgroups ( $I^2=0\%$ ;  $P=0.92$ ). The findings suggested that there were no significant  
147 differences in pain relief between occlusal splint therapy and physiotherapy ( $p=0.08$ ;  
148 weighted standardized mean difference  $-0.29$ ;  $95\%CI -0.62$  to  $0.04$ ).

149 Figures 3 demonstrated the standardized mean differences between the occlusal  
150 splint therapy and exercise therapy groups regarding the effects on maximum mouth-  
151 opening range. Subgroup 1 using the stabilization splint showed substantial  
152 heterogeneity ( $I^2=69\%$ ;  $P=0.07$ ), and one RCT of subgroup 2 using the resilient bite  
153 splint reported this outcome. Additionally, overall heterogeneity for this outcome was  
154 moderate ( $I^2=40\%$ ;  $P=0.19$ ), with unimportant heterogeneity observed among  
155 subgroups ( $I^2=0\%$ ;  $P=0.72$ ). The findings suggested that there were no significant  
156 differences for maximum mouth-opening range between occlusal splint therapy and  
157 exercise therapy ( $p=0.51$ ; weighted standardized mean difference  $0.12$ ;  $95\%CI -0.24$  to  
158  $0.48$ ).

159 Changes in the text: Page 11-12, line 227-249

161 **Comment 8: Discussion.** In regard with the limitations, I think it would be necessary to  
162 mention that other data sources which could have increased the number and quality of  
163 the retrieved RCTs, such as SCI-E or Scopus.

164 Reply 8: We have added this limitation in discussion as advised (see Page 17, line 355-  
165 356). Other data sources such as SCI-E or Scopus which could have increased the  
166 number and quality of the retrieved RCTs were not considered in this review.

167 Changes in the text: Page 17, line 355-356

169 **Comment 9: Conclusions.** They need to be strengthen and add information about  
170 clinical implications of the findings.

171 Reply 9: We have added information about clinical implications of the findings to  
172 strengthen conclusions (see Page 17, line 362-371). The effectiveness of occlusal splint  
173 therapy and exercise therapy was equivalent in pain relief and improvement of  
174 mandibular movement for painful TMD patients; exercises did not show clear  
175 superiority over occlusal splints for treating painful TMD. Given the limitations of the  
176 study, no high-quality evidence was found, indicating that there is great uncertainty

177 about the effectiveness of exercise therapy versus occlusal splint therapy for TMD. It  
178 appears that high-quality, large-scale, and well-designed RCTs that determine the  
179 diagnostic criteria for TMD and isolate the type of exercise and occlusal splint are  
180 needed to compare the effects of exercise therapy and occlusal splint therapy for the  
181 management of TMD.

182 Changes in the text: Page 17, line 362-371

183  
184 **Reviewer D:**

185 **Comment 1: Abstract line 41. You state that results revealed the exercise therapy was**  
186 **superior to a occlusal splint therapy for pain reduction in patients with painful TMD.**  
187 **However conclusion line 49 states no ability to distinguish clinical effectiveness**  
188 **between the two treatment approaches. Your conclusion is inconsistent with the results**  
189 **presented in the abstract (also the final conclusion).**

190 **Reply 1: First of all, in response to the reviewer’s comments, we need to explain the**  
191 **inconsistency between the results and conclusions. The results suggested that exercise**  
192 **therapy could more effectively relieve facial pain with statistical difference (P=0.007;**  
193 **weighted standardized mean difference -0.31; 95%CI -0.54 to -0.09). However,**  
194 **previous studies reported that the minimal clinically important differences (MCID) and**  
195 **patient acceptable symptomatic state (PASS) were estimated to be 1.4 cm and 3 cm on**  
196 **a 10 cm VAS measuring pain, respectively. Therefore, because the pooled effect on the**  
197 **pain relief remains minimal and may not be clinically significant, we concluded that no**  
198 **obvious evidence was found to distinguish the clinical effectiveness between occlusal**  
199 **splint therapy and exercise therapy in the conclusion.**

200 According to reviewer C’s comment, we performed the sub-analysis for pain relief  
201 and the maximum mouth-opening range according to the use of the different modalities  
202 of splints and exercise. The standardized mean differences with 95% confidence  
203 intervals for continuous data were summarized with a random-effect model, and found  
204 that exercise therapy was not superior to occlusal splint therapy for pain reduction in  
205 patients with painful TMD (P=0.08; weighted standardized mean difference -0.29;  
206 95%CI -0.62 to 0.04). We have revised the result and conclusion sections in abstract as  
207 advised (see Page 3-4, line 48-65).

208 Changes in the text: Page 3-4, line 48-65

209  
210 **Comment 2: Line 71 and elsewhere. Is anterior replacement device the correct term**  
211 **here? The term as used in the reference used to support the statement refers to full or**  
212 **partial coverage replacement appliances. This is different from the stabilization**  
213 **appliances used for TMD management.**

214 **Reply 2: We have changed “anterior replacement device” to “anterior repositioning**  
215 **splints”, and added appropriate references to support the statement as advised (see Page**  
216 **5, line 84-96).**

217 Changes in the text: Page 5, line 84-96.

218  
219 **Comment 3: Line 89. You state few meta-analysis have been done to examine the**  
220 **effectiveness of exercise therapy and occlusal splint therapy, but you have not reported**

221 on any in your introduction. Consider for instance the 2016 systematic review and meta-  
222 analysis by Armijo- Olivo at al. By not including relevant and previous work, it is not  
223 possible to interpret appropriately the results of the current study in context. The  
224 introduction must be revised to more appropriately review previous systematic reviews  
225 on the topic to show what this systematic review brings to the evidence. As written, it  
226 is not clear what is new or novel in this manuscript.

227 Reply 3: We have revised this paragraph to clarify what is new or novel in this review  
228 as advised (see Page 6, line 109-115). To our knowledge, few data of reviews comparing  
229 the effectiveness of exercise therapy with occlusal splint therapy for the treatment of  
230 painful TMD have been reported. Armijo-Olivo et al conducted a systematic review  
231 and found no clear indication of superiority of exercise therapy versus other  
232 conservative treatments for TMD. A recent review concluded that the evidence level  
233 for prescribing exercises and occlusal splints in the treatment of painful TMD is low.  
234 Previous studies have provided inconclusive and controversial results; in addition, none  
235 of these systematic reviews provided a meta-analysis of the trials to investigate  
236 comparative effectiveness of exercise therapy and occlusal splint therapy for the  
237 treatment of painful TMD.

238 Changes in the text: Page 6, line 109-115

239  
240 Comment 4: Line 100. Only three databases were reviewed for the systematic review,  
241 which is the bare minimum recommended for an SR. Additionally, by stating the date  
242 range to include “from inception”, it is not possible to reproduce the search as described  
243 in the methods. A firm search period with dates must be given to allow replication. This  
244 would allow the reader to reproduce the search which would improve validity.

245 Reply 4: We have added retrieval time as advised (see Page 6-7, line 125-127). PubMed  
246 (database root [1968] – March 1, 2020), Embase (database root [1988]) – March 1,  
247 2020), and the Cochrane Central Register of Controlled Trials (database root [1991] –  
248 March 1, 2020) were independently searched by two of the researchers.

249 Changes in the text: Page 6-7, line 125-127

250  
251 Comment 5: Line 114. Since a mixed subtype of TMD is allowed under these search  
252 conditions, they should be noted as a significant limitation of the study. Given the  
253 differences in subtype that could be included in the RDC\TMD diagnostic criteria,  
254 treating all patients with TMD as if they would respond the same to any intervention is  
255 not ideal. It is possible that appliance therapy is superior to exercise or vice versa for  
256 different subtypes.

257 Reply 5: We have added this limitation in the discussion as advised (see Page 15, line  
258 351-353). Given the difference in subtype included in the RDC\TMD diagnostic criteria,  
259 treating all patients with TMD as if they would respond the same to any intervention is  
260 not ideal.

261 Changes in the text: Page 15, line 351-353.

262  
263 Comment 6: Line 164. Provide details of the person prescribing an occlusal splint and  
264 exercise therapy respectively for each study. Would an over the counter appliance be

265 included here? Would exercises given to the patient by a dentist be included here? There  
266 is evidence to support that the the method of delivery of the modality whether exercise  
267 or appliance therapy is important. Indeed, the disuccssion (line 222) notes this. Please  
268 include this detail in the data extraction.

269 Reply 6: We have provided details of the person prescribing an occlusal splint and  
270 exercise therapy respectively for each study as advised (see Page 10, line 203-215). In  
271 this review, exercise therapy programs were given by a physiotherapist and were  
272 divided into four categories: self-stretching exercise, jaw-opening exercises, postural  
273 exercise, and mobilization exercise. All patients in the exercise therapy received  
274 exercise therapy interventions under the instruction and supervision of the  
275 physiotherapist. In five included studies, patients in the splint therapy group received  
276 the stabilization splint, and the remaining study used a resilient bite splint. All six  
277 studies reported a similar prescription of an occlusal splint given by a dentist in which  
278 the splint was used while sleeping at night. Recommendations for the duration of  
279 wearing the splint varied, with four studies that required patients to wear the splint as  
280 much as possible. and the other two studies required patients to wear the splint for 4–6  
281 weeks

282 Changes in the text: Page 10, line 203-215

283  
284 **Comment 7: Table 1 is impossibly hard to read on the PDF with very small font.**

285 Reply 7: We have changed the page orientation to ‘landscape’ to increase the readability  
286 of the table (see Page 22, line 490).

287 Changes in the text: Page 22, line 490

288  
289 **Comment 8: Line 183. Here you have a serious concern. Your interpretation of figure 3**  
290 **is backwards. Figure 3 shows superiority of occlusal splint therapy over exercise. Yet**  
291 **you interpret it the opposite way.**

292 Reply 8: First of all, in response to the reviewer’s comments, we need to explain the  
293 inconsistency between the results and conclusions. The results suggested that exercise  
294 therapy could more effectively relieve facial pain with statistical difference (P=0.007;  
295 weighted standardized mean difference -0.31; 95%CI -0.54 to -0.09). However,  
296 previous studies reported that the minimal clinically important differences (MCID) and  
297 patient acceptable symptomatic state (PASS) were estimated to be 1.4 cm and 3 cm on  
298 a 10 cm VAS measuring pain, respectively. Therefore, because the pooled effect on the  
299 pain relief remains minimal and may not be clinically significant, we concluded that no  
300 obvious evidence was found to distinguish the clinical effectiveness between occlusal  
301 splint therapy and exercise therapy in the conclusion.

302 According to reviewer C’s comment, we performed the sub-analysis for pain relief  
303 according to the use of the different modalities of exercises. The standardized mean  
304 differences with 95% confidence intervals for continuous data were summarized with  
305 a random-effect model, and found that exercise therapy was not superior to occlusal  
306 splint therapy for pain reduction in patients with painful TMD. We have revised the  
307 results as advised (see Page 11, line 227-236).

308 Figure 2 showed the standardized mean differences between the occlusal splint

309 therapy and exercise therapy groups regarding the effects on pain. Pain intensity was  
310 reported in two studies of subgroup 1 using self-mobilization exercise and jaw-opening  
311 exercise showing unimportant heterogeneity ( $I^2=0\%$ ;  $P=0.80$ ), and two other RCTs of  
312 subgroup 2 using self-stretching exercise and postural exercise showed substantial  
313 heterogeneity ( $I^2=84\%$ ;  $P=0.01$ ). Additionally, overall heterogeneity for this outcome  
314 was moderate ( $I^2=51\%$ ;  $P=0.10$ ), with unimportant heterogeneity observed among  
315 subgroups ( $I^2=0\%$ ;  $P=0.92$ ). The findings suggested that there were no significant  
316 differences in pain relief between occlusal splint therapy and physiotherapy ( $p=0.08$ ;  
317 weighted standardized mean difference -0.29; 95%CI -0.62 to 0.04).

318 Changes in the text: Page 11, line 227-236

319

320 **Comment 9: Figures.** There are too many figures that should be combined to improve  
321 readability. Particularly figures 4-7 could be combined to one figure with several parts  
322 since they are on the same scale.

323 Reply 9: We have combined figures 5-7 to figure 4 to improve readability (see Page 23,  
324 line 500).

325 Changes in the text: Page 23, line 500

326

327 **Comment 10: Figures 4-7.** Why are standardized results not presented? Standardized  
328 effect sizes are presented in figure 3. Please change or provide rationale.

329 Reply 10: We have corrected and provided standardized mean differences in figures 3-  
330 4 as advised (see Page 23, line 498-501).

331 Changes in the text: Page 23, line 498-501.

332

333 **Comment 11: Results.** Your findings could be consolidated into key outcomes to  
334 prevent the same paragraph being written multiple times for each finding. For example,  
335 laterotrusion results can be presented together to highlight if there are any differences  
336 between left and right. It's not clear however why you would expect a difference left to  
337 right?

338 Reply 11: We have combined several paragraphs of results to one paragraph as advised  
339 (see Page 12, line 254-260). Figure 4 shows the standardized mean differences between  
340 the occlusal splint therapy and exercise therapy groups regarding the effects on  
341 laterotrusion and protrusion. The findings suggested that there was a non-significant  
342 difference for right laterotrusion ( $p=0.99$ ; weighted standardized mean difference -0.00;  
343 95%CI -0.31 to 0.31,  $I^2 = 0\%$ ), left laterotrusion ( $p=0.32$ ; weighted standardized mean  
344 difference 0.16; 95%CI -0.16 to 0.48;  $I^2 = 4\%$ ), and protrusion ( $p=0.77$ ; weighted  
345 standardized mean difference 0.06; 95%CI -0.32 to 0.43;  $I^2 = 31\%$ ).

346 Changes in the text: Page 12, line 254-260.

347

348 **Comment 12:** The discussion in general is lacking appropriate reference to other  
349 systematic reviews on this topic to allow comparison to the data in this manuscript.  
350 Additionally throughout, several instances of citations of weak, low quality, or  
351 questionably relevant sources are cited to support authors points. For example, the  
352 reference used is a general review and does not appropriately support the statement that

353 the effect of exercise therapy versus occlusal splint therapy has been terribly  
354 controversial (line 217). Similarly line 246 suggest that previous studies have reported  
355 benefits of exercise and posture correction exercises however only one article is cited  
356 here. Careful attention to choosing appropriate and high-quality citations is needed  
357 throughout the discussion.

358 Reply 12: We have added more appropriate references to support the statement in the  
359 discussion as advised (see Page 13-16, line 281-350).

360 Changes in the text: Page 13-16, line 281-350

361  
362 **Comment 13: Line 222. The discussion of interaction between therapist and patient has**  
363 **not been set up in the results as analyzed. Where the exercises performed in the studies**  
364 **under supervision? There is evidence to suggest in other literature that supervised**  
365 **exercise is superior to unsupervised. However this is not discussed or set up well in this**  
366 **paper as written.**

367 Reply 13: According to reviewer C's comment, we performed the sub-analysis for pain  
368 relief according to the use of the different modalities of exercises, and found that  
369 exercise therapy was not superior to occlusal splint therapy for pain reduction in  
370 patients with painful TMD, which was different from previously reported results.  
371 Therefore, we have rewritten the discussion based on the current findings in the revised  
372 manuscript (see Page 14, line 285-302).

373 Previously, the efficacy of exercise therapy versus occlusal splint therapy for TMD  
374 has been controversial. Some authors suggested that therapeutic exercises under  
375 supervision of the physiotherapist had an additional effect on patient's well-being and  
376 thus might help to encourage patient's coping strategies, which may be associated with  
377 the superiority of exercise therapy over occlusal splint therapy. Although in this  
378 review, patients in the exercise therapy group received exercises under supervision of  
379 the physiotherapist, the results of the present review are in accordance with other  
380 studies; no significant difference was found for pain relief between exercise therapy  
381 and occlusal splint therapy. One possible explanation for this discordance could be  
382 the difference of included participants in the studies. The present review included  
383 patients with myofascial pain and/or arthralgia. It has been found that patients with pain  
384 in the TMJ, the masticatory muscles region receive less benefit from exercise therapy  
385 compared with patients with mandibular dysfunction. Differences in the treatment  
386 outcome could be due to the heterogeneity of the patient psychological and material  
387 factors, however, this possible heterogeneity could not be taken account into this review.  
388 Sample sizes vary across studies, which may also explain why some studies have shown  
389 the superiority of exercise therapy compared with occlusal splint therapy. Due to these  
390 diverse opinions, further RCTs to identify comparative effectiveness of exercise therapy  
391 and occlusal splint therapy are obviously required.

392 Changes in the text: Page 14, line 285-302

393  
394 **Comment 14: Line 250. Passivating is not a word.**

395 Reply 14: We have changed passivating to fundamental (see Page 16, line 334).

396 Changes in the text: Page 16, line 334

397

398 **Comment 15: Line 262. According to the findings of this review occlusal splints have**  
399 **been recommended to use during sleep.... It is unclear where this is coming from since**  
400 **it wasn't addressed in the study.**

401 **Reply 15: It has been described and addressed in the result section (see Page 10, line**  
402 **210-214). Based on the reviewer's comment, we revised this statement in the discussion**  
403 **(see Page 16, line 348-350). According to the findings of this review, occlusal splints**  
404 **have been recommended to use during sleep in TMD patients, but there is still**  
405 **controversy about the duration of wearing the splint.**

406 **Changes in the text: Page 16, line 348-350**

407

408 **Comment 16: Conclusion. This conclusion is different from the abstract conclusion**  
409 **which is different from the results of the study. There are significant concerns with your**  
410 **interpretation of the data to form a conclusion that is valid.**

411 **Reply 16: As responded in Comment 1, although the results suggested that exercise**  
412 **therapy could more effectively relieve facial pain with statistical difference, the pooled**  
413 **effect on the pain relief remains minimal and may not be clinically significant because**  
414 **previous studies reported that the minimal clinically important differences (MCID) and**  
415 **patient acceptable symptomatic state (PASS) were estimated to be 1.4 cm and 3 cm on**  
416 **a 10 cm VAS measuring pain, respectively. Therefore, we concluded that no obvious**  
417 **evidence was found to distinguish the clinical effectiveness between occlusal splint**  
418 **therapy and exercise therapy in the conclusion.**

419 **We have rewritten the conclusion based on the current results in the revised**  
420 **manuscript as advised (see Page 17, line 362-371). The effectiveness of occlusal splint**  
421 **therapy and exercise therapy was equivalent in pain relief and improvement of**  
422 **mandibular movement for painful TMD patients; exercises did not show clear**  
423 **superiority over occlusal splints for treating painful TMD. Given the limitations of the**  
424 **study, no high-quality evidence was found, indicating that there is great uncertainty**  
425 **about the effectiveness of exercise therapy versus occlusal splint therapy for TMD. It**  
426 **appears that high-quality, large-scale, and well-designed RCTs that determine the**  
427 **diagnostic criteria for TMD and isolate the type of exercise and occlusal splint are**  
428 **needed to compare the effects of exercise therapy and occlusal splint therapy for the**  
429 **management of TMD.**

430 **Changes in the text: Page 17, line 362-371**

431

432