Author's response to reviews

Title: Limited ankle dorsiflexion increases the risk for mid-portion Achilles tendinopathy in infantry recruits: a prospective cohort study

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Author's response to reviews: see over
Response to reviewers’ comments

Comments made by Editor:

General comments:

A template was obtained as suggested and changes were made to headings, references, P-values and “subjects” as requested. Thank you!

Specific comments:

- Comment regarding title – Changes made as requested.
- Comment regarding “Ankle” Replaced to “ankle” as requested.
- Comment regarding specifying “mid-portion” AT – This was specified in the Abstract (line 33) and Introduction (lines 57-60) as requested. Thank you!
- Comment regarding Ethics approval – No. of approval was added (line 117).
- Comment regarding “table 1” – Changed to “Table 1” as requested (line 166)
- Comment regarding replacing hyphens with “to” – Changes made throughout the document as requested.
- Comment regarding “FIGURE” – Replaced with “Figure” as requested (line 170, 171, 189).
- Comment regarding more detailed ABT – I’m afraid that is all the information the IDF is willing to share. Apologies.
- Comment regarding “analysed” – Changed to “analyzed” (line 229). Thank you!
- Comment regarding optimum cutoff value – Text was added to explain how this value was established (lines 230-232).
- Comment regarding reduction in odds ratio – Changed as requested (lines 250-251).
- Comment regarding role of pronation as a mechanism of injury – Argument balanced as requested (lines 274-275). Thank you!
• Comment regarding addition of 2 references for bent knee DF measurements – References added and “bent-knee” was added to the text (line 319)
• Comment regarding “A” – Deleted as requested.
• Comment regarding “Contribution” – Changed to “Contributions”. Thank you!
• Comment regarding references – All changes were made to meet the requirements of the template. Reference 18 was addressed as well.
• Comment regarding Figure legends and Table headings – Changed as requested.
• Comment regarding Tables – Vertical lines were removed from both tables.
• Comment regarding decimal points – Changed as requested.
• Comment regarding “Non-Injured” – Changed to “Non-injured” as requested.
• Comment regarding LSD – The scores corresponding to “Good” and “Moderate” were added to the table. Thank you!

Comments made by reviewer - Nele Mahieu:
• Comment regarding line 35 – We did not assess straight knee ankle dorsiflexion in this study. This would certainly have been a reasonable thing to do, however, we did not have the personnel, or the time required to complete another measurement with this sample. The rational for choosing bent-knee DF is outlines in the Introduction (lines 67-86)
• Comment regarding line 99-100 – No, there are no studies to that effect, as far as we’re aware. We are in the process of assessing lower extremity kinematics associated with differing quality of movement during the LSD, so hopefully, some news soon.
• Comment regarding line 157 – This is certainly a possibility, and we have added text to that end to the Discussion (lines 314-316). Thank you!
• Comment regarding line 204 – No imaging was used for this study. The decision to use imaging was at the discretion of the Orthopaedic surgeon, however, imaging was not eventually used for the diagnosis in this study. We changed the text to make this point clear (lines 212-213).

• Comment regarding line 209 – Correct. Thank you! We have deleted “crepitation” from the text. Although crepitation was sought routinely during the PE it wasn’t a criterion for diagnosing AT (and it was not present in any of the injured participants). Please note, that the diagnosis of AT was made only once tenderness to palpation was present over the mid-portion and the patient reported that this reproduced his main complaint. Therefore, we are reasonably certain that participants suffered from tendinopathy.

• Comment regarding line 236 – This is interesting indeed, and we have added text that may shed some light on the possible effect that “sidedness” may have on the risk of injury (lines 294-302).

• Table 2 – This is correct, and the difference is even significant. This is the topic of an upcoming manuscript of our group. We have repeatedly seen this in our studies: left (and most times, non-dominant) WB DF is typically 5-7° greater than right WB DF ROM. However, no such difference exists for NWB DF ROM. One possible reason may be that a true difference in talocrural ROM exists, but only when and adequate torque is applied to the joint (such as during a WB DF lunge measurement) this difference is noticed. Another explanation may be a greater sub-talar/midtarsal mobility on the non-dominant lower extremity (possibly resulting from the tendency to use the left lower extremity for balancing/stability functions). Please also note reference #25 which deals specifically with the correlation between WB and NWB DF. This correlation is only moderate (about 0.6 in several studies by our group). This could help explain the difference in bilateral symmetry of WB and NWB DF.

• Comment regarding reference 11 – Style of reference was changed to fit the template of JFAR.
• Comment regarding video use for LSD in the future – We couldn’t agree more and we have already decided to videotape all LSD test in upcoming studies. Thank you!
• Comment regarding contradicting text regarding the use of imaging – Text was corrected to reflect the fact that no imaging was used for the diagnosis of AT in this study (lines 212-213)

**Comments by reviewer - Anna V. Lorimer:**

**Major compulsory revisions:**

• Comment regarding knee position during DF ROM measurement – We have added the rational for choosing the 90-degrees position to the Discussion (lines 325-329). Thank you!
• Comment regarding sentence between lines 74-79 – Sentence shortened. Hopefully clearer now (lines 82-86). Thank you!
• Comment regarding sentence between lines 313-317 – Sentence shortened a little and split as requested. Hopefully better now (lines 343-348).
• Comment regarding description of examiner’s body weight during NWB DF measurement – The description was expanded as requested (lines 191-193).
• Comment regarding sentence on prevention strategies – Removed.
• Comment regarding left WB DF difference – We have addressed this finding in the Discussion (lines 290-302).

**Minor essential revisions:**

• Comment regarding external validity – We have restricted our discussion to military recruits as suggested (Abstract, line 51; Conclusions, line 358).
• Comment regarding wording on lines 38-39 – Changed as suggested (lines 40-41).
• Comment regarding mid-portion AT – Added to Introduction as requested (Abstract, line 33; Introduction, lines 57-60).
Discretionary revisions:

We believe that the significant difference in left WB DF ROM reflects a bilaterally or even a generally (systemic) more limited flexibility/ROM among injured participants. We have also provided a possible rational as to why injuries only occurred on the right side even though it seems that injured participants were less flexible bilaterally. Given the added text in lines 290-302, we do not believe that the same level of significance found for right NWB DF and left WB DF is a major source of confusion. We hope that you agree.