Author's response to reviews

Title: Joint space width of the tibiotalar joint in the healthy foot

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Version: 2
Date: 23 March 2015

Author's response to reviews:

Reviewer's report
Title: Joint space width of the tibiotalar joint in the normal foot
Version: 1
Date: 26 February 2015
Reviewer: Robert Kidd

Reviewer's report:
Thank you for allowing me the privilege of reviewing this report for the Journal of Foot and Ankle Research.
This is a simple but, in my opinion, well worthwhile contribution to the body of knowledge with regard to pedal anthropometry.

There is the odd, frankly quite minor point of English which should be addressed at an editorial level, but beyond that, I am happy for publication as it stands.

The small sample size would suggest that this is really a pilot study; ten specimens is a small sample and may well not represent the normal biological variation of these parameters. Making the assumption that this is a “work in progress”, and as such further works will be forthcoming, I would suggest that the issue of sexual dimorphism is addressed in a further study, together with a substantially increased sample size.

A further issue the authors may like to consider is that “shape analysis” in the broadest context of the expression is a very highly complex area and that there
may be more effective methods in which to examine joint space; one is immediately drawn towards geometric morphometrics, by manner of example. Nonetheless, I recommend publication with minor editorial corrections of English and grammar.

Kind regards

Dr Robert Kidd DPodM BA(Hons) PhD

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I have no competing interests of any variety

Dear reviewer 1

Thank you for reviewing our manuscript.

We would correct our article according to editor’s and other reviewer’s advice.

Thank you.

Reviewer's report

Title: Joint space width of the tibiotalar joint in the normal foot

Version: 1 Date: 2 March 2015

Reviewer: Bernhard Zipfel

Reviewer's report:

Joint space width of the tibiotalar joint in the normal foot

General comments to authors:

This paper by Imai et al. presents an analysis of the joint space width of the tibiotalar joint in the healthy foot using CT to carry out the measurements. The study was carried out on a small sample of subjects (n=10) placing the ankle in “neutral”, dorsiflexed and plantrflexed positions for measurement of the joint space. Even though similar studies have been carried out in the past, this study uses CT imaging which gives a better resolution and more precise measurement. The results suggest that there are significant change in joint space in particular areas of the ankle depending on the position of the foot. Even though the results a well set out, the manuscript would do well by summarising the results in a more succinct manner in the conclusions. This study will be a useful addition to the literature and of significance to a number of fields including orthopaedic surgery, functional morphology and biomechanics. It does however require some minor revision as set out below.

Minor essential revisions:

This study is well executed and the results are conclusive. There are however, a number of largely editorial issues and a few questions that need to be addressed
before this manuscript can be considered for publication. The definition of the “normal” foot is somewhat ambiguous. You refer to the “healthy foot” in the text and I think this is a more appropriate term to use. Please consider using this in the title of your study and throughout the text.

The sample is small; do you have any idea if a larger sample may produce a different result and reflect a greater range of variation? I don’t see the ranges of joint space measurements. By including these, this may allay any fears of the sample being too small and a larger sample producing greater or lesser variation. The figures and tables are good and relevant; however, the captions for all could be greatly improved by giving more detail and being more specific. Please also check that the table format is appropriate for the Journal of Foot and Ankle Research. It may look better without so many visible lines both horizontally and vertically. I compliment the authors on an interesting study. Please take note of the specific comments below.

Specific comments and revisions:

Page 4, Line 49: Abstract; “…to clarify the pathology…” seems a little awkward. Perhaps instead of “clarify”, use a words “ better understand”.

We corrected the words as you say.

Page 4, Line 54: Write out “CT” in the abstract i.e. Computerised Tomography (CT).

We corrected the words as you say.

Page 4, Line 55: Consider using “plantarflexed” and “dorsiflexed”.

We corrected the words as you say.

Page 4, Line 56: instead of “made”, consider using “fabricated”.

We corrected the words as you say.

Page 6, Line 75: Should “…moving back and forth in association” not be “…moving back and forth during…” ?

We corrected the words as you say.

Page 6, Line 79: The term “valgus” is often used quite loosely in the orthopaedic and podiatric literature. It is however more specifically used to describe a fixed bony position. This is not necessarily the case in a “flatfoot”. Perhaps the use of “everted hindfoot” might be more appropriate. Page 6, Line 81: “…osteoarthritis of the ankle of the lateral type” is a bit vague. Do you mean that the osteoarthritis occurs more laterally? Please clarify.

We corrected the words as you say.

Page 6, Line 84: Consider deleting “authors measured”.

We deleted the words as you say.

Page 6, Line 85: I suggest rephrasing this sentence to read “…the ankle joint was measured using healthy subjects [6-9]”.

We corrected the sentence as you say.
Page 7, Line 92: The citation “Kido” should be Kido et al.? Please include citation number. Also check this throughout the text.

We corrected the words as you say.

Page 7, Line 95: Everyone more or less understands the term “flatfoot”. However, it is a rather vague term, and perhaps another term could be used here. Would “hyperpronated” or “pes planus” be more appropriate? I have no objection to “flatfoot”, but wonder if you could not use more scientific terminology. On the same line, I suggest using “At present”, rather than “Nevertheless”.

We change from flatfoot to pes planus as you say.

Page 9, Line 109: Be specific about the Medical Ethics Committee. You refer to your university, but authors are affiliated with a number of universities. Specify from which institution ethical approval was granted.

We described IRB detail.

Page 9, Line 111: You refer to “healthy” volunteers; this is probably correct and better than using “normal”. Consider using this throughout, including in the title.

We corrected the words as you say.

Page 9, Line 113: Is there a reason why males and females are not distributed equally, seeing that healthy volunteers were used?

As you say, healthy volunteers were used in this study. So, male and female are not distributed equally. And our study was small sample size. We described it in the limitation page 15 line 218-219.

Page 9, Line 117: Should be “plantarflexion and dorsiflexion”.

We corrected the words as you say.

Page 9, Line 122: Reference to “neutral in all axes…” is rather vague. Does this refer to all the axes in the foot? Surely not? Also, neutral is a vague term and needs to be clarified. Is it neither plantarflexed, nor dorsiflexed? If so, is this with the subtalar joint in “neutral”? The tables reflect some of this, but don’t make it clear. This should be an important point as the degree of plantarflexion and dorsiflexion is influenced by the inverted or everted position of the calcaneus. My understanding of your study is that when you refer to maximally dorsiflexed or plantarflexed foot, it doesn’t matter what position the calcaneus moves, and this doesn't influence the joint space narrowing or widening. The “neutral” position however, is important as this defines the point at which dorsiflexion and plantarflexion begins. I understand what you mean, but please define these parameters.

We also think the determination of neutral is very important. So, we determined the neutral in all axis as the line connecting the center of the heel and the second metatarsal was vertical and the tibial shaft through the ankle center was horizontal and parallel to the table of the CT scanner, according to Kitaoka’s article in page 9 line 128-130.

Page 10, Line 129: Instead of using sole, I would suggest plantar surface.

We corrected the words as you say.
Page 10, Line 142: Were the nine regions equally divided, or how was this division made? The table is good, but would be strengthened by more detail in the text and caption. Please specify. Also, should “anterior-posterior” be “posterior-lateral”? We described detail method and corrected Figure 2. We corrected the words as you say.

Page 12, Line 154: At the beginning of the sentence, should it be “The mean joint space…”, “malleolus” instead of “malleus”? Please check this throughout and correct where appropriate. We corrected the words as you say.

Page 12: Where you refer to no significant changes and significant changes, please include the p-value where relevant with reference to Table 3. It does not seem to be clear here. We did not compare the positional change in Table 3. We compared it in Table 4. We corrected table and article.

Page 13, Line 170: Use “complex” instead of “complicated”. We corrected the words as you say.

Page 13, Line 173: You refer to the joint space width. I presume that this is the mean joint space width. If so, please say so. We corrected the words as you say.

Page 13, Line 178: Instead of saying “in the previous study”, rather refer to the study by Goker et al (if this is the one you are referring to). It is not clear which previous study you are citing. We add the references.

Page 13, Line 179: Perhaps rather refer to population group rather than race. We corrected the words as you say.

Page 13, Line 180: Should the sentence start with “Jonsson et al.”? Also include the reference number [8]. In the following sentence, which authors are you referring to? We corrected the words as you say.

Page 14, Line 188: Consider using “precisely” instead of “exactly” We corrected the words as you say.

Page 14, Line 194: Use “anterior” rather than “front”, as you use “posterior” later on. We corrected the words as you say.

Page 14, Last sentence: Should start with Kido et al. and be numbered [12], if this is the reference you are citing (there are three Kido et als’. We corrected the words as you say.

Page 15, Line 214: A “couple” refers to two, strictly speaking. If you are
referencing to more than two, rather say “several”.
We corrected the words as you say.
Page 15, Line 217: “We therefore compared….”.
We corrected the words as you say.
Page 16, Lines 224-226: You make a good point regarding the reproducibility regarding placing a load in dorsiflexion and plantarflexion. You may want to reflect this in the materials and methods section justifying why you did it this way.
We reflected the sentence as you say.
Page 16, Lines 227-229: The last sentence is unclear and I’m not sure what you mean. Please rephrase accordingly.
We deleted the last sentence.
Level of interest: An article of importance in its field
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: There is no conflict of interest.