Author's response to reviews

Title: Foot loading is different in people with and without pincer nails: a case control study

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Author's response to reviews: see over
Dear Dr. Hylton Menz and Dr. Cathy Bowen

*Journal of foot and ankle research* Editorial team

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Title: Gait Characteristics of Pincer Nail Cases: Clinical Evidence of the Involvement of Mechanobiology in Nail Configuration

We are most grateful to you and the reviewers for your helpful comments on our manuscript. We have taken all of the comments into account and revised the manuscript accordingly. We hope that the changes we have brought to the paper will meet with your approval, and that the revised manuscript will be suitable for publication in *Journal of Foot and Ankle Research*. We look forward to hearing from you at your earliest convenience.

Yours sincerely,

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Reviewer 1
Dear Dr. Kate Springett

We are grateful to you for your critical comments and useful suggestions which have helped us to revise and considerably improve the quality of our manuscript. The revised text is highlighted with red-colored font.

Comments by reviewer 1.
1. This is an interesting study and will help towards understanding aetiology. The authors are a little pre-emptive in proposing processes in the discussion that are not fully supported by their study, and they need to be clearer about what is supposition and what is informed by their work.

We have changed several sentences. Please see our response 2-7.

2. Are the methods appropriate and well described, and are sufficient details provided to replicate the work? Major compulsory revision. This is an area for further attention. More detail is needed on the data collection methods e.g. were all three data collection sessions sequential and at the same visit or separated by days or longer, how was method and instrumentation determined as being valid for the purpose of this study, any pilot studies undertaken to demonstrate repeatability thus trustworthiness of the data obtained, were bilateral measures taken?

A diagram to illustrate where measures of nail parameters were taken from would help. For example ‘height of nail’ forms part of the index proposed for measuring pincer nails; where is the measure of height taken from and to? A similar comment applies to the width.

We now provide more details in the “Measurement of Plantar Pressure” section. We have added an illustration of the nail parameters as Figure 1.

3. Are the data sound and well controlled?

Please see (2). Results analysis seems appropriate, though could be made more reader-friendly for those who have to work at understanding stats.

Although there is a brief section explaining what statistical tests were undertaken, it would be helpful if the test selected was aligned to the data presented in the results section, e.g. the paragraph starting “The pressure on the great toe of the pincer nail group was significantly lower than the great toe….”, what was the statistical test selected here?
The information about which test was used is now aligned to the data presented in the results section.

4. Figure 1 in my view does not confer useful information. Figure 4 (foot loading on S plate) appears genuine and is a useful inclusion, illustrating the foot loading that the authors take care to explain in the text of their paper. Figure 5 needs its caption content including within the paper and although the caption heading indicates this is a hypothesis, the supposition needs stating within the text of the paper more clearly.

We have deleted figure 1. The first sentence of the third paragraph in the Discussion has been changed from, “Based on our hypothesis and the results of the present study, it is possible that the following pathogenic mechanism leads to the common combination of pincer and ingrown nails (Figure 5).” to “Based on our hypothesis, it seems plausible that the following pathogenic mechanism may be responsible for the common association of pincer nails with ingrown nails (Figure 5)” to indicate it is a hypothesis.

5. Quite a lot of the discussion would be better placed in the introduction. Generally there is link between findings and interpretation, however it is important to clarify what is supposition or proposed, and what is direct interpretation from the scope and findings of the study.

We have shortened the Discussion by moving some of the text in the Discussion to the Introduction. Furthermore, to clarify the results and our hypothesis, the first sentence of the third paragraph in the Discussion has been revised (see our response to 4 above).

6. The title could be more precise e.g. Foot loading is different in people with and without pincer nails: a case control study. The abstract is good.

The title has been changed to “Foot loading is different in people with and without pincer nails: a case control study”.

7. The second paragraph of the results is rather tortuous and would benefit from a bit of re-writing.

The second paragraph of Results has been changed to make the content easier to understand.

Reviewer2
Dear Dr. Maria Young
We are grateful to you for your positive comments and useful suggestions which have helped us to revise and considerably improve the quality of our manuscript. The changed parts are shown in red-colored font.

1. The methods are appropriate; however more detail about which nails are affected in the pincer nail group, which metatarsal heads the pressure was measured under, and a definition of the ‘toe area’ would give clarity.

   <response>
   We now provide more details in the Measurement of Plantar Pressure section.
   
2. To replicate this work, the reader would need to understand the terms ‘peak’ and ‘average’ pressure, and each time pressure is mentioned it would need to be clear which is being referred to.

   <response>
   A detailed description has been added.
   
3. The discussion and conclusion is well balanced, however I would request a change throughout from ‘gender’ to ‘sex’.

   <response>
   ‘gender’ has been changed to ‘sex’.
   
Discretionary Revisions:

4. The hypothesis posed by the authors is clear. A short literature review to discuss pincer nails and their structure and function would be useful.

   <response>
   A short review of pincer nails and their structures and functions has been added to the start of the Discussion.
   
5. More detail about the equipment used in this study for measuring the pressure, and how these specific areas under the foot were defined, would also be of help.

   <response>
   We have added more details to the Measurement of Plantar Pressure section.
   
6. There is mention of treatment with ‘super elastic wire’, however this is not explained.

   <response>
An explanation about super elastic wire has been added.

7. The abstract accurately conveys what has been found, however I would recommend a change in the title from ‘gait characteristics’ to ‘under-foot pressures’. Since gait characteristics are not being assessed, this would seem a misleading title.

<response>
Reviewer 1 also suggested we change the title. The title has been changed to “Foot loading is different in people with and without pincer nails: a case control study”.