Reviewer's report

Title: Comparison of foot orthoses made by podiatrists, pedorthists and orthotists regarding plantar pressure reduction.

Version: 1 Date: 10 August 2005

Reviewer: Dieter Rosenbaum

Reviewer's report:

General
The paper addresses an interesting and relevant issue, i.e. the effectiveness of insoles for preventing high pressures. The approach with comparing three groups of different professionals providing their preferred orthoses is interesting and with a total of 31 professionals it appears well founded. It provides some evidence for a frequently stated assumption that ‘there are as many orthoses designs as there are therapists’. However, there are some issues that make it a bit difficult for the reader to ‘get the authors’ message’.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
The main point is that the authors should try to state more clearly what they consider as the main differences in the professions and their specific experiences since this is the basis of their investigation. It remains unclear how these three professional groups are expected to differ with respect to the proficiency in the area of insole design. It would be helpful if the distinction between the professional groups is explained in more detail in order to support the rationale for the study. For the distinction between the groups it should be shown whether the results of the different professions appear to be grouped or if they are too variable to detect a common pattern. The authors state in the abstract ‘within each discipline that there was an extensive variation’. Therefore, it should be interesting to display the main results not only summarized in whisker plots but to show the results for each individual and distinguish the groups by different patterns so that the reader can judge whether a grouping effect appears. In the light of this comment, it is currently not easy to decide whether the conclusions on page 12 are warranted on the basis of the presented data. Furthermore, the authors do not draw any conclusions about the effectiveness of the different orthotic designs used in their study.

With respect to the statistical analysis it remains unclear why the authors used the non-parametric Wilcoxon Test for pair-wise comparisons but performed an ANOVA for the differences between the three disciplines. This is inconsistent and I would prefer if they would also use a non-parametric test (e.g. the Friedman Test). Furthermore, the chosen level of significance should be stated. In essence, the manuscript might benefit from ‘streamline’ editing.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
Page 3, 2nd paragraph: Please explain the differences between the professions in more detail (see comment above).
Page 4, 2nd paragraph: Please explain briefly why these three patients were selected for the study. What was the indication for orthosis prescription? Did you perform barefoot plantar pressure measurements to decide whether they needed pressure reducing treatment?
Page 4, 4th paragraph: Please provide a rationale for using treadmill walking. From my experience I would feel that it is not easy especially for older, less active patients without treadmill experience and it might affect/alter their walking characteristics.
Page 6, 2nd paragraph: Please provide a more detailed description for the Anglo-Saxon Root style of orthoses for those readers that are not familiar with it.

Pages 6-9, Results: The amount of information provided is difficult to ‘digest’. I would therefore ask the authors to revise the whole Results section in order to improve the readability. Please consider presenting more of the numbers in the Tables (which might be better to get an overview) and reduce the text (which could be more concise and should only refer to the exact numbers in the tables).

Page 9, 3rd paragraph: I would like to suggest beginning the discussion with a brief summary of the main results in response to stated aim of the study.

Page 10, 1st paragraph: Please change ‘principals’ to ‘principles’. Furthermore, this paragraph merely repeats results previously presented but does not draw a conclusion from these findings.

Page 10, 2nd paragraph: Please provide a reference for the statement about the potentially dangerous increase in plantar pressure.

Page 11, 1st paragraph: Please change ‘orthoses’ to ‘orthosis’.

Page 13-15, Please list only those References that were actually used in the manuscript. I was not able to locate references 3-10, 19, 20, 22, 45, 46 in the text.

Discretionary Revisions (which the author can choose to ignore)

Abstract, Results: ‘maximal peak pressure reduction’. Either ‘maximal pressure’ or ‘peak pressure’ suffices.

In the whole text: I would prefer ‘forefoot’ as one word (as opposed to ‘fore foot’)

In the Results: If a general level of significance is stated (as asked for in a comment above) then there is no need for giving the p-values of the non-significant results and all ‘p >…’ can be omitted.

Units: I would prefer the use of the SI unit for pressure, i.e. kPa instead of using N/cm²

Table 2: I could not detect any bold-printed numbers.

Figures 1-8: Too many figures, please try to combine the data in fewer figures.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes

Declaration of competing interests:

I declare that I have received federal funding for a cooperative project on orthotic management in rheumatoid feet. It is based on a cooperation with an orthopaedic-technic company which is manufacturing CAD/CAM insoles. I do not consider this as a competing interest.