Reviewer's report

Title: Prediction of plantar pressure from clinical and radiological measurements in patients with diabetes

Version: 1 Date: 7 May 2008

Reviewer: Thomas McPoil

Reviewer's report:

The authors are to be commended for developing a well-written and nicely organized manuscript. The research question posed by the authors is well defined and the methods utilized were comprehensive, appropriate, and adequately described. The results and conclusions drawn by the authors, based on the data presented, are appropriate.

Major Compulsory Revisions:

None.

Minor Essential Revisions:

1. Throughout their study, the authors focused on peak plantar pressures. Previous studies have reported that while elevated foot pressures are an important risk factor in the development of ulcerations, foot pressure is a poor tool by itself to predict foot ulcers (Lavery LA, et al: Diabetes Care 2003, 26:1069). Other factors previously discussed which could potentially influence the development of skin breakdown in neuropathic diabetic individuals include the amount of time the patient spends on a point of high plantar pressure (pressure-time integral) as well as the number of repetitions at the point of high pressure over a period of time (activity induced repetitive stress). Since authors only focused on peak plantar pressures, the reviewer believes that the authors should discuss these other potential factors that influence the development of plantar ulcers that the authors did not evaluate in their as a limitation of the study in their revision.

2. Previous research has reported that plantar pressures are significantly higher under callused regions of the foot (Young MJ, et al: Diabet Med 1992 9:55 and Menz HB, et al: Clin Exp Dermatol 2007 32:375). It does not appear after reading the manuscript that the authors removed any callus build-up from their subjects prior to collecting plantar pressure data. If this is a correct assumption, the authors should describe the reason for not removing their subject's callosities prior to pressure data collection and what impact this could have had on the peak pressure data collected in this study. For example, the authors note on page 11 that the most callus formation was found under the hallux and head of MT-1. They further note on page 15, that the greatest difference in peak forefoot pressures between those subjects with neuropathy versus those without neuropathy was measured in the MT-1 region. If callosities were removed prior to...
collecting plantar pressure data, this result could possibly be quite different. Again, the authors need to indicate why they decided not to remove callosities prior to the collection of plantar pressure data in their revision.

3. In the copy of the paper the reviewer downloaded, there are two different Tables labeled number 4 and also a Figure 5. In the manuscript, the authors refer to Table 5 on page 12, but there is no Table 5. It would appear that the second Table 4 (entitled: Regression models) is actually Table 5 and should be re-numbered. There is no mention of Figure 5 in the manuscript and it would appear that Figure 5 and the second Table 4 are identical and Figure 5 can be removed from the paper. The authors need to address and correct this issue in their revision.

Discretionary Revisions:

None.

**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 declare that I have no competing interests.