Reviewer’s report

Title: Determination of the individual normal Values for dynamic navicular Drop - a new Model influenced by Foot Lenght and Gender

Version: 2 Date: 15 February 2009

Reviewer: Alberto Leardini

Reviewer’s report:

The study reports on a simple measure on a large population of normal subjects, i.e. navicular drop during walking (its stance? see later). This can be of value in several clinical and biomechanical context. However, the manuscript is a bit confused and several important limitations make hard the comprehension in this state.

Major:
1. The relevance for this study must be identified and reported more convincingly; in particular, what an abnormal drop would reveal about the structure or the function of the foot.
2. The technique has flaws to be clarified: the major is the justification for the need of the two additional markers, if the navicular tuberosity is then the only one tracked for navicular drop calculation;
3. The description for this calculation must be wrong; if you track the navicular from heel strike, you record all its trajectory over the first and second rocker, not exactly the drop meant here, and certainly not 5 mm long;
4. Calcaneus marker position identified in each rearfoot according to absolute distances can be in very different relative positions with the medial aspect of the calcaneous;
5. Over the 20 steps performed, which one were then analysed for calculation?
6. It is also not clear what is the reference for this motion.
7. Eventually, a validation experiment for this technique would be easy to be performed and necessary to be reported here; relevant claims in Discussion are not supported by any evidence.

Minor:
1. A number of phrases are not correct: navicular drop is not a clinical tool, perhaps a relevant measure; baseline is not a clear concept for such a fundamental role in this study: what is this?
2. Abstract eventually does not report ... the measure of this drop
3. Please, be careful with acronyms, use only those associated to concepts reported many times in the manuscript.
4. Subjects walked barefeet, don't they?
5. a picture taken at data collection would also help
6. first sentence in Results needs a unit
7. Beta in Table 4 is not known.

Discretionary:
1. For the correlation with statistical significance a scatter plot of the measurements would be very effective. If Figures 1 and 2 are meant for this, the measurement points are not reported.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests