Reviewer's report

Title: Shape information from glucose curves: Functional data analysis compared with traditional summary measures.

Version: 2 Date: 4 October 2012

Reviewer: Robert West

Reviewer's report:

The manuscript reports some excellent work using functional data analysis for the assessment of glucose curves.

There are some points I would like to have clarified before I am able to recommend acceptance.

Discretionary
Unusually the FDA approach is taken despite the very limited (5) time measurements for each participant. It appears that the method still works well, and the authors have discussed taking measurements with a continuous monitor. There are other circumstances in which a limited number of measurements are available but the FDA approach might be of interest. Further comments would be useful for other researchers.

Discretionary
Time warping might be of interest but this approach is essentially ruled out due to the very few time points with which to identify landmarks/registration points. Some comment might be useful.

Major
The arguments are considerably undermined by the very few participants who are identified as having GDM - only 3 of the 974. A modification of the outcome might be able to overcome this objection.

Minor
Page 6 known known - word repeated

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

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests