Reviewer’s report

Title: Estimates of adherence and error analysis of physical activity data collected via accelerometry in a large study of free-living adults

Version: 3 Date: 22 January 2008

Reviewer: Duncan J Macfarlane

Reviewer’s report:

The authors have made a reasonable attempt to address the reviewers comments either in their supporting letter or directly in the text of the article.

Minor Essential: The only issue that I remain unconvinced and feel the authors should re-address, is the discrepancies between the computer estimated waking and sleeping times. When compared to the self reports the differences are a reasonable 12 and 41 minutes: in response to my original query that these may differ from visually/manually determined times, they have re-examined this, but they have stated that the comparison between the computer and manual times (6 and 35 mins) are not very different from the original 12 and 41 mins. However, it is not the comparison between the computer and self report, nor the computer and manual times that are so relevant (the authors here simply seem to show that both methods show a consistent error: by itself, that is not a good argument) - what should have been compared is the self-report and the manual times. It would appear that there may be good congruence between these, hence the computed values may indeed carry a reasonable error (sure they claim it is faster etc, but I would suggest that precision may be of more importance in this type of study). It is not surprising the mean PA counts/min do no vary too much, but if the duration of activity is incorrectly estimated by the computer, even though the mean value may not vary much, the accumulated total activity (mean counts x time) is perhaps significantly different due to the error in estimating the awake and sleep times.

What next?: Accept after minor essential revisions

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

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