Reviewer's report

Title: Correlates of sitting time in adults with type 2 diabetes

Version: 1 Date: 30 March 2015

Reviewer: ben ewald

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This is an interesting question, as the simple assumption that sitting more means walking less may not be true and needs to be examined in population groups.

Major compulsory revision

1) Measuring steps:
   The manuscript has scant detail on the pedometer methods, or even the results. How many hours per day did participants wear the devices? Did they keep a diary? How were non wear days handled? How did week 1 and week 2 results compare? How many steps were accumulated during postal transport, and how much variation was there? Yamax are accepted as accurate when worn by healthy young college students but are known to undercount in the obese and elderly.

Minor essential revisions

2) Covariates
   It appears that covariates other than age were dichotomised, when factors such as education and income would be better handled with multiple categories. Seasons were examined with fall + winter combined, and compared to spring/summer. This needs explanation. Why not summer with fall, and winter with spring? Why not winter vs everything else? This analysis should be based on prior research into the seasonality of step counts. This also affects figure 2.

3) Analysis
   It is conceivable that the association between sitting and steps might be quite different between men and women, so it would be helpful to stratify by sex rather than just adjusting by sex.

Discretionary

IPAQ short form has one question on sitting time. The instruction for the sitting question mentions “at work, at home, while doing course work and during leisure time” but does not mention travel time. The manuscript suggests further instruction was given, prompting people to record time spent sitting on a bus, however the greatest exposure is probably time spent sitting in cars. The short form also asks only about weekdays. For the purposes of the research question, the IPAQ long form would have been more appropriate, as it asks separately about weekdays and weekend days, which are likely to be systematically different. IPAQ short is designed for population surveillance which is a different
task to this kind of analytic research. To quote Rosenberg 2008 (reference 17) IPAQ shows “For a brief measure, the IPAQ sitting items have adequate reliability and validity to use for surveillance. When the focus of research is to improve understanding of sedentary behavior specifically, a more detailed measure should be used.”

Given that the correlation between IPAQ sitting questions and time at less than 100 counts per min in young college populations was only $r = 0.34$, it must be considered whether the lack of association with step counts found in this study was due to inability to accurately measure sitting time.

Minor points
1. Line 74 has a poorly constructed sentence.
2. Line 137 has mean + sd visits, which is meaningless as the number of visits is entirely non normal, and proportions for each visit number are given.
3. Line 150 Were are given 92 mins/day for one group but not for any comparator group.
4. Line 199- the term inversely associated is wrongly used to compare a categorical variable, employment, with a continuous variable, sitting. It would be more accurate and parsimonious just to say that blue collar workers sit less.
5. Line 204 The immigrant effect should be examined after adjustment for age, education and WORK STATUS, as it could all be an employment effect.
6. Line 227 The problem is not accuracy but of definitions. Accelerometer count <100 is not the same concept as sitting, as standing still or lying down will give the same accelerometer output.
7. Table 1 The increment in minutes column needs units. For instance for Age, are there an extra 41 minutes/day per year or per decade? For steps is it per single step, or per extra 1000 steps, or per SD of steps? The same problem pertains to the clinical features, and to table 2.

Overall
This is interesting and worth publishing, but the limitations of measuring sitting time using IPAQ should be further considered as accounting for the lack of the expected larger inverse association between steps and sitting time.

**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.