Reviewer's report

Title: A cross-sectional analysis of the associations between leisure-time sedentary behaviors and clustered cardiometabolic risk

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Reviewer: Paddy Dempsey

Reviewer's report:

In order to understand and influence sedentary behaviours, it is important to consider the context in which these behaviours occur, and whether the context is related to cardiometabolic risk outcomes, to inform intervention efforts. This cross-sectional study examined the associations of context-specific leisure-time sedentary behaviour and clustered cardiometabolic risk in a relatively small sample of apparently healthy adults, in what appears to part of an ongoing trial. In general, the analyses are well described and conducted. While there are a number of important limitations to the findings - particularly the less-generalizable study sample, lack of robust adjustment for other key confounders, and issues with the self-reported sedentary time measures - these are generally qualified in the limitations. I have a few comments and suggestions:

Major Compulsory Revisions

Given some of the key limitations of the study and the study sample assessed, it would probably be useful to the reader if the authors added more context to the Title to describe the nature of the study/design (i.e. "…baseline results from... "), just to be a little more explicit up-front.

Abstract: Please state that the blood measures were non-fasting. This could also be re-iterated in the limitations, as it may have implications for the CMR score.

see individuals with a history of CVD events were excluded. Please clarify whether individuals with type 2 diabetes were also excluded? This would be relevant for the CMR outcomes.

Please re-emphasise and/or clarify whether BMI is self-reported when used as an auxiliary variable. Also could adiposity components not also be relevant as a confounder and/or mediator in the relationships between the sedentary domains and CMR outcomes (i.e. not adiposity related)?

It is stated that all SBs were assessed separately for weekdays and weekend days, with an average time per day in hours (h/ day) was calculated". Since weekday sedentary time activities
are likely to be more routine than at weekends, might this influence the measurement properties of the domain-specific sedentary time questions, impacting on the aggregated average time per day spent sedentary?

Although the lack of diet-related factors (e.g. quality or energy intake) and physical activity time are mentioned in the limitations, the statistical analysis in general seems a bit 'light' on adjustment for confounders, and does make one a little uncertain about the final results. In addition, an indication of occupation type and education level would also have improved the robustness of the findings - were these variables/data collected? Further, given that the SIT-Q-7d also purportedly assesses transport sedentary time (which has been shown to relate to CMR - e.g. see Sugiyama et al, albeit with a different questionnaire) and occupational sedentary time (generally the largest portion of sedentary time for working adults), it would seem relevant to report, or at least statistically adjust for these other important sedentary domains as part of overall sedentary time in the analyses? It is stated that adjustment is made for time spent in the other SBs, but does this include work and occupational domains?

Although statistical power is likely an issue, did the authors observe any gender-specific interactions? The element of gender could also be relevant as a limitation/discussion point, given that women may have less structured lives due to higher household and/or child care activities, limiting the reliability of self-reported sedentary time estimates. Is there any information/data that could inform this?

Discussion: Please comment further on the representativeness/generalisability of the findings early on, particularly given the convenience sample tested with high chance of selection bias.

It might be useful to add further Discussion about whether the ability of participants to more accurately recall certain sedentary behaviours may be potential reason for the 'stronger' relationships observed with TV time, and perhaps not a consequence of the context itself per se? In other words, how well have the authors accounted for the different measurement properties of the individual sedentary behaviour items (e.g. TV time vs. socializing) when interpreting the associations (or lack thereof) with CMR outcomes?

Minor Essential Revisions

A more informative title for Supplemental Table 1 would be informative, so that it stands alone from Table 2 in the paper.
Discretionary Revisions

There are a number of instances throughout the text where tenses were mixed-up and odd wording was used. For example: "Current evidence suggested that..."; occurrences of "sedentarily" could be replaced with "sedentary"; "...no study examined" could be replaced with "...no study has examined", etc

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
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Yes

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I am able to assess the statistics

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