Author's response to reviews

Title: Validity of self-reported leisure-time sedentary behavior in adolescents

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Author's response to reviews:

Revisions to manuscript entitled “Validity of self-reported leisure-time sedentary behavior in adolescents”

The document has been reformatted according to the journal style and all changes have been highlighted in the revised manuscript using track changes as required. Point-by-point responses to the reviewer’s comments are offered below.

Page 3:

- reword last sentence in the 1st paragraph - "relatively easily"

I have reworded the above referenced sentence as suggested.

- Could more information be provided as it relates to the need to understand the type and context of behaviors? Why is it important to know the type and context of sedentary behavior from a research and measurement perspective?

I have included examples of type of sedentary behavior (e.g. TV viewing) and context (e.g. at home) in the text. These additions serve to identify targets in the design of interventions that aim to reduce sedentary behaviors in youth. Although not necessary for this paper, other studies may use type and context to quantify activities not well-measured by accelerometry such as biking or swimming.

- What did Klesge and Jago work find anything relating to social desirability in boys and girls?
Both studies found that social desirability had a negative impact on the report of activity behaviors. Klesges et al found that social desirability was positively associated with self-reported physical activity while Jago et al found that social desirability was negatively associated with self-reported sedentary behaviors. These details including age ranges for each study were added to the text as suggested.

Also, the paper states that is has not yet been studied in youth, what age group are the authors referring to.

The sentence regarding studies not yet conducted in youth was re-written to clarify that studies related to the impact of weight status on self-reports exists only in adults to our knowledge.

- In the intro section, do the authors want to talk more about what has been done as it relates to the validity of self-report measures and objectives measures of sedentary PA and then start the limitation of these and how the current studies is expanding upon these or filling in the holes. This will add in the need for the current study.

Additional information on the measurement of sedentary behavior has been added to the introduction section as suggested.

- More as it relates to social pressures to lead to inaccuracy in self-report measures (over/under reporting of sedentary behaviors)

Additional information on social pressure (i.e. social desirability) and self-report measures have been added to the intro section as suggested. In summary, youth are prone to provide socially desirable responses when asked about their activity behaviors (Welk, 2000; Jago 2007). In addition, complex cognitive skills are needed to accurately report previous behaviors from memory and are likely to contribute to the reporting errors in the assessment of activities in children.

Page 5:


The quote by Stevens et al. came from p. 224.

- Also, should readers be directed to paper that discusses the methods of TAAG if it is not Stevens (2005).

The design paper by Stevens et al. discusses the methods of the TAAG study in
- Is the criterion for adherence or an arbitrary time that the authors developed? Needs to be referenced or clarified.

The methods for accessing adherence to accelerometry protocol in TAAG have been published elsewhere by Treuth et al, 2004. This reference has been added to the manuscript as suggested.

- Authors’ state that 10 girls were recruited specifically who participated in youth sports program. Why was this important for these articles, since the analyses or results did not examine anything specifically relating to the 10 girls?

The recruitment of 10 active girls was not related to the goals of this manuscript. However, these details were added to give a thorough description of the study populations. Details to that affect have been added to the current manuscript.

Page 6:

- Participants wore accelerometers from Friday to Wednesday (6 days) and SAPAC access physical activity for (3 days). Could this have affected findings? What was the rationale for using all 6 days for physical activity assessment (objective measures)? Were there any differences between the total days and the last 3 days? Clearly state why 6 days was assessed objectively and sedentary behavior was only recalled for the last 3 days. Will it be appropriate to do 3 days objective and recall?

The description of the data collection schedule of the time that participants wore the accelerometers was not clear and has been re-written. All participants were fitted with the monitors on a Friday. However, accelerometry data was collected for 3 days (Saturday, Sunday, and Monday for group one or Sunday, Monday, and Tuesday for the other group). All participants returned the accelerometers on Wednesday. Participants were asked to recall their 3 days of sedentary behaviors in concordance with their accelerometry data collection period.

Page 7:

Examples of cues that were used for the recall.

The recall was administered in a classroom setting. The study staff gave scripted instructions on how to fill out the questionnaire. “First you will think about what you did yesterday, then what you did on Monday, and then what you did on
To help students recall their sedentary behavior more accurately, time spent in sedentary behavior was segmented into before school and after school on weekdays or before lunch, between lunch and dinner, and after dinner on weekend days. These details were added to the manuscript.

Page 8:
- The minutes that were reported reads as it 660 for all weekday and 1020 for weekend, would it be appropriate to change to 660/day for weekday and etc.
I have changed the text as suggested.
- Assume that an acclimation period was provided to allow students to become familiar with the devices. Since project was part of a larger study (TAAG) maybe reference that as it relates to more specific details for the intervention.

There was not acclimation period provided for accelerometry data collection. However, all monitors were set to collect data starting at 5am on the day after the monitors were placed.

Results section:
Mins and mins. are used throughout this piece – needs consistency.
This change was made throughout the manuscript as suggested.

Page 14:
- State some of the findings or previous studies. Specifically Cradock et al., 2004.
It would be beneficial to have more details as to the study (differences, compare vs. contrast) since it found a significant correlation between time spent in sedentary behaviors and physical activity.

In contrast to the current study, Cradock et al., (2004) assessed the correlation between sedentary behaviors and physical activity. Numerous validations studies have been conducted for the measurement of physical activity in adolescents. However, the has been less work done on the development of tools for measuring sedentary behavior due to the lack of a gold standard or criterion method (i.e. accelerometry) for sedentary behavior until recently.

Page 15:
- State that sedentary behaviors are difficult for children to recall. Provide information on why they are difficult to recall. The intermittent nature of activity in children has been associated with difficulty in recalling the frequency, duration,
and intensity of their activities. Cognitive ability in children also limits their ability to recall the details of their activities. (see Sallis & Saelens, 2001.)

Page 17:

- How will the implications have the potential to delay action from interventionist and policy makers?

If researchers use self-reported sedentary behavior for time spent inactive among youth, interventionists may not recognize the magnitude of the problem in this group and fail to intervene. Policy makers may also overlook the reduction of sedentary behaviors among youth as a priority in setting new policies. The implication of these delays may in turn have a negative impact on the health of the population as sedentary behavior is a known risk fact for obesity and diabetes.

Table 1

- Could the total for self-reported behaviors be added to the table?
- Is there a difference between girls self-report (roughly 322 mins) and accelerometer PA (354 mins)? The means appear to be close.

There was a significant difference in total reported sedentary behavior (SR) and accelerometer-determined (AD) sedentary behavior inl girls (SR: 283.0 -95% CI 255.5, 310.5; AD: 354.6 – 95% CI 342.6, 365.8). The total self-reported sedentary behaviors were not added to the table because we believed that it would create more confusion than add to the paper. In addition, we felt that the reported information by activity provides more information about which sedentary behavior is contributing time spent at this level of intensity. Since the participants were allowed to report participating in more than one sedentary behavior as the same time (e.g. talking on the phone and surfing the internet), the amounts of individual activities are higher than the overall amount of time spent sedentary. This is partly due to the fact that we only allowed the total amount of time for each available time period to be counted (e.g. before school – more than 120 mins.).

General items:

- Is gender the appropriate term used to describe the participants?

Gender has been changed to sex to describe the participants as suggested.