Reviewer's report

Title: Children eat their school lunch too quickly: an exploratory study of the effect on food intake

Version: 3 Date: 28 November 2011

Reviewer: Julie Lumeng

Reviewer's report:

The manuscript is very significantly improved and now much more understandable. Its findings are fascinating and it makes an important contribution. Thank you for providing the correct link to the video regarding the Mandometer - it is a fascinating research tool.

Major Compulsory Revisions

- This reviewer asks that the authors please clarify how the start and end of the meal or eating was defined, exactly, both in Study 1 and Study 2. How were the timekeepers instructed? Was it the first bite to the last bite? Sitting down at the table with a tray of food to getting up from the table? This simply needs to be clarified.

- In the statement of hypotheses for Study 2 (which is extremely helpful and clarifying!), the authors state, "This is an experimental study, testing the hypothesis that a change in the speed of eating affects food intake. However, the hypothesis does predict if a change in the speed of eating will increase or decrease food intake." Could the authors replace the last sentence with a statement such as, "It is difficult to predict if artificially increasing the speed of eating would result in reduced or greater food intake. One would hypothesize that greater speed of eating would predict greater food intake based on x, y, and z. Alternatively, one would hypothesize that greater speed of eating would predict reduced food intake based on x, y, or z." X, y, or z could be either prior studies or logical explanations. Either way, it would be very clarifying to understand why the authors feel they could not set forth a hypothesis (presumably because there are two competing hypotheses based on prior literature?).

- Could the authors please clarify this statement, "Some children took more food when eating at an increased speed and the amount was added to the total food intake." This reader has reviewed it several times and is unsure what it means.

- Could the authors clarify, in Study 2 - was there a standard amount of food provided in all 5 conditions, and did this amount of food exceed what the child may have wanted to eat in any condition (i.e. was there always food left?).

- Line 212, the authors state, "unrestrained", but I think they mean "unrestricted", which would be consistent with the vocabulary they had been using previously.
- Could the authors please just slightly further clarify the methods in lines 136-140: "The children ate individually using Mandometer® following the curve of cumulative food intake that each child had generated in the unrestricted meal, which was displayed on the screen. However, the time of the meal was increased or decreased by 30% or unchanged compared to the unrestricted meal." Specifically, how was the time increased or decreased? Were the children told, "Here is a line graph showing the speed at which you ate before, and you can watch it now as you eat this meal, but you will now have only 7 minutes to eat your meal instead of 10 minutes, so it is up to you if you want to eat faster than the line tells you to so that you can get more food in in 7 minutes, or if you want to eat at the same rate, but ultimately get less food in." Or, was the line shown on the Mandometer compressed to fit the same amount of food intake in within 7 minutes instead of 10 minutes? Could the authors just clarify how this was done, as it is essential to understanding the study results.

- Our own study actually found that in larger groups, preschool aged children have a shorter latency to begin eating once they sit down in front of the food. (Depending on how length of the meal was measured in this study, this could translate to 'faster eating rate'). In our own study, eating rate (once they had taken the first bite) did not differ significantly when eating in large v. small groups. We also found that the preschool-aged children socialized LESS, and not MORE in large groups, as deCastro has found in his work with adults. It is possible that the effects of large groups on eating behavior differ in adults and children. For details, see: Arch Dis Child. 2007 May; 92(5): 384–387. doi: 10.1136/adc.2006.103259; Eating in larger groups increases food consumption; Julie C Lumeng and Katherine H Hillman.

- Suggest that for the Figure, that the lines be removed between the conditions, since this was not a continuous measure in time across conditions (i.e., the line between school lunch and increases speed doesn't really represent anything). Box plots might be a more appropriate/accurate representation of the data.

- The finding that half the girls eat more and half eat less in conditions of altered eating speed is fascinating. Can the authors set forth some hypotheses as to why these difference exist and what they might indicate? What do the authors believe to be the next steps to understand these between-individual differences. Are girls in one group at risk for obesity and girls in the other group at risk for eating disorders? What do the authors propose to be the next step in the science (besides a larger sample size)? i.e. what else should be measured to sort this out?

Please note that this version of the manuscript is a dramatic improvement from the prior version with regard to clarity, and this is an important contribution to the field. I have listed these as "major" (which requires a re-review) because some issues still require further clarification to make the study understandable to the reader.
Level of interest: An article of importance in its field

Quality of written English: Needs some language corrections before being published

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'