Reviewer's report

Title: Lower energy expenditures in infants from obese biological mothers

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Reviewer: James DeLany

Reviewer's report:

The authors have used a sophisticated whole body calorimeter to measure energy expenditure in infants born to lean, overweight and obese mothers over a 4 hour period. The authors have shown that extrapolated 24-h EE of infants from obese and overweight mothers was lower than that observed in infants from lean mothers. While most issues raised previously have been addressed, there is still a major issue that needs to be resolved.

Major Compulsory Revisions

The major problem with the manuscript as revised is that there is no explanation provided for the lower 24 hr EE in the infants from obese parents. There is no difference in SMR or physical activity, and the time spent sleeping was actually lower in the infants from obese parents. The authors make a statement in the discussion that “other metabolic components might account for the reduction of 24 hr EE.” However, they do not discuss what these might be. There are only 3 remaining comments of EE, RMR, TEF and energy expended in activity. While there was a suggestion, although not significant, that RMR was lower, the authors have removed that from the table. Although TEF is a possibility, this is unlikely the reason, as the infants from obese parents consumed more (although not significant in this study) than those from lean, and this component can not apparently be determined using this protocol. The authors may, however, be able to examine the final parameter, energy expended during activity. Nonetheless, this needs to be addressed in the discussion.

Minor Essential Revisions

1. Page 2, 3rd paragraph: The authors have still misinterpreted the Roberts paper. There was no significant difference in energy expenditure by parental BMI. There was however, a lower TEE in infants who became obese.
2. Page 4: The indirect calorimetry system used, at least in the Wells study was actually quite appropriate. These authors measured sleeping metabolic rate after the infants went to sleep, and then measured for 60 minutes, or until they awoke. Therefore, this method was quite appropriate and may actually be more accurate than the authors measure of SMR.
3. Page 6, FFM formula: this is actually lnFFM.
4. Page 6, line 17: The balance is not shown in Figure 1.
5. Page 9, 5th line from bottom: There were no “differences” in sleeping....
6. Page 9, 3rd line from bottom: … nutrient utilization “was not different” in regards …

**Level of interest:** An article of importance in its field

**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