

Reviewer's report

Title: Lower energy expenditures in infants from obese biological mothers

Version: 1 **Date:** 6 February 2008

Reviewer: Maciej Buchowski

Reviewer's report:

The manuscript is interesting and relates higher maternal BMI with higher BMI, lower fat-free mass and lower energy expenditure in their infants with reasonably well described methods.

Major Compulsory Revisions

- Discussion should be focused on discussing the results in the context of studied ethnic group and should not revolve unduly around methods/EMTAC.
- A separate paragraph regarding limitations of the study including the ethnic bias of the study population and extrapolation of 4-hour measurements of EE in the morning should be incorporated with a note of caution and need of further studies before any generalization of the results.
- Provide more detailed reason to prefer 4-hour recording of EE over 6-hour recording when authors have already reported that the later recording duration was more close to 24 hour energy expenditure (within $3.4\pm 7.0\%$ vs. $0.04\pm 5.4\%$ of actual 24-hour measurements) [14].

Minor Essential Revisions

- Aim of the study should be separated from the Background.
- This study relates higher maternal BMI with higher BMI, lower fat-free mass and lower energy expenditure in their infants. Given the importance of the findings the authors should consider, if possible, including data from other important ethnic groups of the US population.
- It is important to note that in the reference study [14] the ethnic composition of the study subjects has not been stated. So we are not sure whether the extrapolation comparisons were based on results from homogenous or ethnically comparable population.
- Sleeping metabolic rate: How sleeping was determined? How much time infants spent sleeping? Was sleep time consistent among groups?
- How were periods of measuring RMR separated from periods of measuring Sleeping MR? This is important since 5-min periods were used. Definition of both should be provided. Alternatively, all RMR and SMR could be combined or only TEE could be used.

Table 1

- $n=7$ row should be moved to a heading row (lean (n=7)..)

- how many males and females were in each sex group?
- ranges for all variables should be included

Table 2

- It is unclear where these equations are coming from (reference)

Figure 1 should be omitted.

Discretionary Revisions

Abstract

Methods

- Authors should consider condensing and omitting description of EMTAC, it has been well described in the prior publications (14).
- Page 7 1st paragraph: Last sentence (Moreover, the four-hour $\dot{V}O_2$ previously reported) should go under discussion with the reason for preferring 4-hour recording over 6-hour recording.
- Since participants were not selected randomly and then divided into 3 groups but rather were selected according to their mothers' BMIs, authors should consider the following or similar description:

Twenty-one healthy infants (3.9 +/- 19 months) born to normal (n=7, BMI < 25 kg/m²), overweight (n=7, BMI \geq 25), and obese (n=7) weighing $\dot{V}O_2$, respectively participated in

this study. Following measurements of infants' weight and length and mothers' weight and height, energy expenditure was measured for 4 hours postprandially using $\dot{V}O_2$. Data were extrapolated to 24 hours and adjusted for body composition and age using linear regression analysis.

Introduction

Page 4: Authors should consider redrafting last paragraph (All three of these studies $\dot{V}O_2$ components of energy expenditure.) and omit the last sentence (By utilizing the $\dot{V}O_2$ before six months of age).

Results.

- Page 9 Line 1: Consider adding $\dot{V}O_2$ (there were no significant differences $\dot{V}O_2$).

Discussion

Authors should consider redrafting avoiding overemphasis on technique/methodology and concluding results particularly in relation to studied ethnic group.

Some details:

- Page 11 1st Paragraph: Consider omitting $\dot{V}O_2$ The main purpose (already

stated) â#l maternal BMI.

- Page 12 2nd Paragraph: Consider omitting frequent references to EMTAC/new instrument.

Conclusions:

Authors should consider:

We utilized a single comprehensive method to assess daily energy expenditure in 3-6 month old infants. We found differences in total daily EE and its components between infants born to obese, overweight, and normal weight mothers. Infants born to overweight and obese mothers had lower 24-hour energy expenditure, increased BMI, and increased body fat when compared to infants born to normal weight mothers.

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of importance in its field

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

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.