Reviewer’s report

Title: Association of maternal omega-6 fatty acid intake with infant birth outcomes: Korean Mothers and Children's Environmental Health (MOCEH) study

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Reviewer: Indu Mani

Reviewer's report:
The paper is an attempt to find a correlation between dietary n-6 PUFA intake during pregnancy and birth outcome in a Korean population. The topic is an interesting one and can add to increasing global data that suggests that higher intakes of n-6 PUFA may be detrimental to health. However, the entire calculation and interpretation is based on single point 24-hr diet recalls made only in the 2nd trimester, which may not give the true picture of intakes prior to conception.

1. In case of large data sets, it is advisable to use food frequency questionnaires which give an idea of foods consumed on a regular basis. When 24-hr DR is performed, an average of at least 3 days is required in order to get a reasonably accurate picture of daily intakes. The fact that the entire paper is based only on a single 24-hr DR is a large drawback.

2. The 24-hr DR has been done during the 2nd trimester when the intakes are likely to be quite different from the normal pre-pregnancy diet. The diet prior to conception is likely to be of far greater impact on birth outcomes and it would be useful if information on that is available.

3. The ranges of fatty acid intakes (Table 2) seem very high, and the lowest intake in all the types of FA is almost 0. Considering that the sample size is more than 1400, this high degree of variance seems a bit unlikely and it is possible that there is some mistake mainly due to the single point diet recall method used.

4. It would be worthwhile to convert the intakes into %E and see if the same relationship is obtained.
5. In page 10, lines 28-33, the authors have speculated that 'the decrease in birth weight when omega-6 FA intake has been high may be related to the inhibition of the positive effects of omega-3 FA'. It would be worthwhile to mention the omega-3 intakes and the n-6/n-3 ratios in the five quintiles of n-6 intakes, in order to substantiate this statement.

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