Reviewer's report

Title: Plasma branched-chain and aromatic amino acid concentration after ingestion of an urban or rural diet in rural Mexican women.

Version: 3

Date: 3 November 2014

Reviewer: SEAN ADAMS

Reviewer's report:

Reviewers report
Title: Plasma branched-chain and aromatic amino acid concentration after ingestion of an urban or rural diet in rural Mexican women.
Version: 2
Summary:
Lopez et al. have generally responded well to the reviewers’ comments, making this a better paper. However, issues remain in terms of the assertions made from limited data.

Major Comments:
1. Abstract final sentence, Intro final sentence: “These results indicate that the change in feeding behavior that accompanies the immigration of women from a rural to an urban diet may contribute to the development of obesity and diabetes through modification in tyrosine and branched chain amino acid concentration.” Discussion/Conclusion: “These results indicate that the change in feeding behavior that accompanies the immigration of women from a rural to an urban setting may contribute to the development of obesity and diabetes through modification in branched chain amino acid concentration.” The authors have agreed that the two diets and lifestyles have so many variables including energy-density and accessibility of foods, access and intake of simple sugars, differences in physical activity, and so on. Based on the diets provided, of course AA rises following ingestion would be higher in the urban diet. Therefore, from the data in this paper, and the aggregate of literature, there is no way to conclude from the data that Tyr and BCAA contribute to the increase in obesity and diabetes among people moving into an urban environment in Mexico. These sentences should be removed as they are not scientifically sound assertions based on the information provided in the study.

2. The authors make many assertions and assumptions related to insulin resistance and diabetes in the paper, yet have essentially no data to support any associations. It is great that additional data are now provided for glucose and lipids, but short of some type of insulin sensitivity index all assertions related to this should be re-visited, toned down. The limitation is mentioned now in the Discussion, which is good. (perhaps there is not enough sample or budget to run insulins?)
3. “it is not possible to deny that BCAA metabolism is altered during obesity…” This statement is tenuous at best, and should be modified, since there are several studies in which adiposity was controlled and the BCAA seemed to track insulin resistance or T2D independent of body fat per se (Lackey et al., AJP; Fiehn et al. PLoS One).