Reviewer's report

Title: Impact of Social Integration on Metabolic Functions: Evidence from a Nationally Representative Longitudinal Study of US Older Adults

Version: 6 Date: 5 November 2013

Reviewer: Bradley Layton

Reviewer's report:

All of my concerns have been addressed by the authors.

The only residual concern I have is the measurement of BMI and medication use as a covariate. Due to the lack of information at baseline, they authors adjust for some covariate information measured in 2006 (the time of the outcome assessment). The authors convincingly argue that income, SES, and education are likely stable post-retirement, yet BMI and (particularly) medication use can vary widely over 8 years in the elderly. The authors point out that BMI and medication use at the later time point is better related to the metabolic outcomes, which is true, but a confounder must also be related to the exposure/treatment (in this case, which occurred 8 years previously). There is a strong possibility that social integration could have influenced later BMI and medication use through the encouragement of healthy behaviors, better health access, etc., thus making adjustment for these factors not truly adjusting for the inherent baseline confounding. I understand the limits of the data, and I also understand that the authors are careful to not make claims of causality, but I still think the sentence at the end of the newly-added paragraph on page 12 is overstated, claiming that using the later BMI measurement is an advantage.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests