Reviewer's report

**Title:** Epidemiologic studies of modifiable factors associated with cognition and dementia: Systematic review and meta-analysis

**Version:** 1  **Date:** 23 January 2014

**Reviewer:** Yunhwan Lee

**Reviewer's report:**

This is a well-designed and conducted review of the current evidence of the association of modifiable factors with cognitive function and dementia. Its strength is in its comprehensive examination of the literature and explanation of hypothesized mechanisms of the association.

**Major revisions**

There are, however, some potential weaknesses in the paper that I would like the authors to discuss.

1. The search database only included Medline. Although PubMed encompasses a very wide range of literature. It is not all-inclusive.
2. Did the authors use only articles in English? If so, this could have contributed to some bias in the reported findings.
3. The study selection criteria, mainly consisting of a sample size of over 300, may have been a bit too lenient. Studies vary greatly in quality and use of some standardized quality guidelines may have helped to delineate studies of high quality and reliability.
4. For conducting meta-analysis, dichotomization of physical activity was performed. However, how did the authors decide on the “comparability” of the different definitions used by various studies?

**Level of interest:** An article of outstanding merit and interest 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.