Reviewer’s report

Title: Medial temporal lobe function during emotional memory in early Alzheimer’s disease, mild cognitive impairment and healthy ageing: an fMRI study

Version: 3 Date: 13 January 2013

Reviewer: Mehul Trivedi

Reviewer’s report:

Major Compulsory Revisions: None

Minor Compulsory Revisions:

1) The authors should justify why they chose to use a 1SD cutoff point for MCI, when Peterson has consistently recommended using a 1.5SD threshold for distinguishing MCI from HC. As the authors make clear in their introduction and discussion, MCI exists on a continuum and not all individuals with MCI go on to develop AD. Using a more liberal threshold for characterizing MCI, as was done in this study, would further increase the variability in which study participants will go on to develop AD. Also, it might be helpful to provide information as to how many of the MCI in this study would meet Peterson's criteria versus those that would not. I am harping on this because future researchers need to be able to frame this study’s results in the context of the extant literature and there is already too much clinical variability in MCI populations between different fMRI studies.

2) The authors discuss the compensatory hypothesis in detail in the discussion, however (if I am interpreting their findings correctly) the authors did not actually find MCI > HC in the MTL ROI group analysis and no statistics for this contrast are presented in Table 2. The only support for a compensatory MCI response is in Figure 4, which appears to be extracted signal from a cluster centered around the local maxima of the MTL cluster displaying group differences. This figure also appears to be a numerical, but not statistically significant difference. I recommend de-emphasizing the discussion of the compensatory hypothesis or providing the appropriate SPM contrasts with statistics to support their position beyond Figure 4.

Discretionary Revisions: None

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:

None