

# Review of: "Coupling between Human Brain Cortical Thickness and Glucose Metabolism from Regional to Connective level: a PET/MRI study"

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Potential competing interests: No potential competing interests to declare.

In the present manuscript, Huang and colleagues focused on the relationship between cortical thickness (CTh) and glucose metabolism using 18F-FDG PET/MRI (FDG) in two different populations: middle and older age subjects.

Overall, this is an interesting manuscript, the questions are valuable, and the methodology seems appropriate to the aims.

However, I have few concerns.

- 1) If my understanding has been correct, the S-F coupling was performed for each subject between the CTh and FDG values for all 68 cortical ROIs. It would be interesting to know if the same patterns have been maintained for every subject or, at least, for each group. I'll elaborate; there are ROIs in which cortical atrophy was coupled with higher FDG uptake, and vice versa other ROIs presented thinner cortex and lower FDG uptake. Are those ROIs always the same or do they change across subjects?
- 2) Please, be consistent with the Methods and Results sections. For example, the permutation tests cited on page 8 ("Network Similarity") are not reported in the Methods section.
- 3) I would like to see the corresponding statistics and p-values for the paragraph "SC-FC Coupling" in the Results section. At least as supplementary material.
- 4) Figure 2: in a), b), and c) scatter plots the measure units need to be reported. Furthermore, improve the figure legend with more details.
- 5) Figure 3: the legend did not match the figure. a) and d) showed the functional connectivity (FC) and b) and e) the structural one (SC), but in the legend the letters are mislabeled.