Reviewer's report

Title: Regionally accentuated reversible brain grey matter reduction in ultra marathon runners detected by voxel based morphometry.

Version: 2 Date: 4 December 2013

Reviewer: Joaquim Radua

Reviewer's report:

The authors have addressed nearly all my comments.

I recommend publication of this interesting article; I include here few suggestions which the authors may address without requiring re-review.

- I'd replace "improve sensitivity [48] in longitudinal VBM comparisons" for "improve sensitivity [48] to detect mesoscopic changes, such as cortical thinning, which are probably those expected in longitudinal VBM comparisons"

- I'm sorry I don't understand how "masking" relates to not needing a MR-device covariate. Please clarify.

- Numbers at the beginning of a sentence should be spelled out.

- I wouldn't state whether WM segments were smoothed or not, if at the end of the day they weren't used.

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.