Reviewer's report

Title: Cortical Thickness in Youth with Major Depressive Disorder

Version: 2 Date: 2 October 2013

Reviewer: Anna Smith

Reviewer's report:

Major Compulsory Revisions

1. An earlier study is mentioned (Fallucca et al, 2011). The authors should clarify what their paper adds to the body of literature including this one, which isn’t described. Also the intro needs to include Eijndhoven’s recent paper (2013) – it is mentioned in discussion but the findings are very relevant.

2. The two subjects with substance abuse ought to be excluded from the sample (perhaps they were among those who were eventually excluded for other reasons: more clarity is needed here in the form of a table possibly?)

3. It is not clear how many tests were carried out. The areas to be tested need to be outlined a priori. In this way we can understand whether corrections for multiple testing need will be impactful. Even with a few tests this needs to be done.

4. A table of means for all comparisons should be provided – it would be interesting to know for example whether there were differences which approached significance in right ACC and in which direction the differences lie, even if too small for significance etc.

5. Correlations have been explored in children with MDD but why not in normal group as well. This would be interesting developmentally. Since a decrease in thickness was found in MDD children with age, it makes sense to examine what would be expected in those children without MDD.

6. The analysis of gender isn’t clear enough. The small sample size is mentioned but in fact it is the same size as the clinical group (16 males versus 30 females). These n values should be provided somewhere in this section as well as some kind of preamble about why this analysis is important. Personally I think this needs to be omitted as it doesn’t really add much unless context is provided. Also, comparisons within each group will have very limited power.

7. The discussion should focus upon why cortices are thicker in these frontal areas in this patient group in contrast to Fallucca’s findings of adolescents. Fallucca has focused upon more posterior regions: perhaps there are reasons for increased thickness in frontal regions that can be explored. The idea that pruning is reduced is a good one to explore – the inverse correlation with age in this MDD group suggests it is occurring but what is happening in the control population. I’m
sure this is possible to explore with this current data.

8. The van Eijndhoven paper (with correct ref) should be included in the lit review since it is highly pertinent to this paper.

Minor Essential Revisions

9. Minor point: t and p values should be reported at the end of a statement with dfs included.

**Level of interest:** An article of importance in its field

**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