Reviewer's report

Title: A stable pattern of EEG spectral coherence distinguishes children with autism from neuro-typical controls A large case control study

Version: 1 Date: 24 December 2011

Reviewer: Todd L Richards

Reviewer's report:

This is an important study that uses EEG spectral coherence to distinguish children with autism from control children. The number of subjects used in this study was impressive. There are implications of the results from this study for the clinical use of EEG in diagnosis of autism. Here are some suggestions to improve the manuscript.

1) In the abstract, clarify the age notation 1-18-year-old or change to "1409 with age ranging from 1 to 18 years old"

2) The PCA analysis and split-half replication of the EEG coherence data did show very significant results for discriminating between the autistic and control groups; however, more information needs to be provided to make these results understandable. A table or plot should be provided which gives the strength of coherence used in the 40 coherence factors used to discriminate the groups. In other words, how does the strength of coherence relate to discriminating factors.

3) It would be useful if the manuscript could describe how this procedure could be used on an individual basis for evaluation of a child. Could a set of EEG coherence scores be developed which could be compared to a normalized age-related database to see how a child's individualized scores compare to the mean and standard deviation for that age group?

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I have no financial conflict of interest with this manuscript.