Reviewer's report

Title: Testing assumptions for endophenotype studies in ADHD: Reliability and validity of tasks in a general population sample

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Reviewer: Andreas J. Fallgatter

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As kind of a reliability and convergent validity pre-test for genetic ADHD studies the authors tested two tasks sensitive to ADHD. As they consider ADHD-symptoms as the extremes of a continuum they correlated performance on these tasks sensitive to ADHD to the continuous symptom scores of teachers and parents for a sample of healthy children. They found most of the measurements to be reliable and to be correlated with the teacher ratings but not with the parent ratings. The authors conclude that their tasks are adequate for genetic studies on ADHD.

The authors make lots of effort to prepare their genetic study they want to carry out with ADHD patients and a general population sample. The reliability and the convergent validity are important issues of a task to be discussed.

Abstract results:
Moderately strongly: be more specific (the same expression on page 13)

Abstract conclusions:
How can the association between teacher ratings of ADHD symptoms and task performance be consistent with effects of event rate and incentives? (Formulation not clear).

Introduction:
Why did the authors not balance the sequence of the tasks?

Results:
Please clarify the sentence which starts with 'Rousson et al.'. (page 10)
Please explain the model of arousal and activation regulation with a few more words.

Discussion:
Fatigue as an explanation only for the last task of the second session is not convincing. Why should the children be more tired during the second session?

For convergent validity of some tasks with ADHD children have a look on:
Nichols and Waschbusch 2004 'A review of the validity of Laboratory Cognitive Tasks Used to Assess Symptoms of ADHD.'

Long-term test-retest reliability of event-related potential measures elicited with Go-/NoGo tasks have been shown to be even better than the reported:

What next?: Accept after minor essential revisions
Level of interest: An article whose findings are important to those with closely related research interests