Presence of Distractor Improves Time Estimation Performance in an Adult ADHD Sample

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Abstract

Objective:
It is widely accepted that patients with ADHD exhibit greater susceptibility to distractors, especially during tasks with higher working memory load demands. However, no study to date has specifically measured the impact of distractors on timing functions, although these have consistently shown alterations in ADHD. In this investigation, we aimed to elucidate the neural mechanisms mediating distractor effects on timing functions.

Method:
We employed a time estimation functional magnetic resonance imaging (fMRI) paradigm including a distracting element in half of the trials in a sample of 21 patients with ADHD and 24 healthy controls.

Results:
As expected, the effect of the distractor was greater in ADHD patients, where it was associated with increased orbitofrontal activity compared with controls. Behaviorally, time estimation performance benefited from the presence of distractors in both groups. In turn, such improvement correlated with medial frontal and insular activity in the brain.

Conclusion:
These results suggest that distractors could be stimulating recruitment of frontal resources in ADHD, thus contributing to increase focus on the task.