Does an attention bias to appetitive and aversive words modulate interference control in youth with ADHD?

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Abstract

Interference control refers to the ability to selectively attend to certain information while ignoring distracting information. This ability can vary as a function of distractor relevance. Distractors that are particularly relevant to an individual may attract more attention than less relevant distractors. This is referred to as attention bias. Weak interference control and altered reward sensitivity are both important features of attention deficit hyperactivity disorder (ADHD). However, interference control is typically studied in isolation. This study integrates both. Youths (aged 9 to 17 years) with ADHD (n = 37, 25 boys) and typically-developing controls (n = 38, 20 boys) completed a Stroop task using appetitive words and matched neutral words to assess whether appetitive distractors diminished interference control more in youths with ADHD than controls. In order to test for specificity, aversive words were also included. As expected, appetitive words disrupted interference control but this effect was not stronger for youths with ADHD than the controls. Aversive words, on the other hand, facilitated interference control. Dimensional analyses revealed that this facilitation effect increased substantially as a function of ADHD symptom severity. Possible mechanisms for this effect include up-regulation of interference control as a function of induced negative mood, or as a function of increased effort. In conclusion, appetitive words do not lead to worse interference control in youths with ADHD compared with controls. Interference control was modulated in a valence-specific manner, concurrent with mood-induced effects on cognitive control.