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EMOTIONAL REAGIBILITY AND WORKING MEMORY PERFORMANCE - DIFFERENTIAL EFFECTS OF EMOTIONAL INTERFERENCE CONTROL IN SUBJECTS WITH AND WITHOUT ADHD

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In a number of studies, it has been shown that subjects with attention-deficit/hyperactivity disorder (ADHD) show deficits in executive functioning, i.e. in cognitive functions that subserve planning, monitoring and control of goal-directed behaviour (Martinussen et al., 2005; Willcutt et al., 2005), as well as in emotion regulation (Berlin et al., 2004; Desman et al., 2006). However, no study exists so far examining the interaction between cognition and emotion regulation in subjects with ADHD. In our study, we aimed to examine to what extent arousing emotional picture stimuli may account for differential effects in performance quality in subjects with and without ADHD. Thirty-nine males and females with ADHD aged 18 to 40 years and 40 matched healthy controls performed a working memory n-back task (1-back, 2-back). The task was performed with and without neutral and negative background pictures from the International Affective Picture System (IAPS) which varied in arousal (low, medium, high). Irrespective of ADHD diagnosis, all subjects were slower and demonstrated lower performance accuracy in the 2-back condition compared with the 1-back condition, and all subjects deteriorated with increasing picture arousal. In comparison to healthy controls, subjects with ADHD displayed a deficit in working memory performance in terms of prolonged reaction times and decreased performance accuracy. Beyond this, we found that whereas healthy controls did not display performance deficits until they were presented with high-arousal background pictures, subjects with ADHD were already impaired when presented with medium-arousal background pictures. The implications of these and further findings will be discussed.