Suboptimal decision making by children with ADHD in the face of risk: Poor risk adjustment and delay aversion rather than general proneness to taking risks

Sorensen, Lin, Sonuga-Barke, Edmund, Eichele, Heike, van Wageningen, Heidi, Wollschaeger, Daniel and Plessen, Kerstin J.

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Background:
Suboptimal decision making in the face of risk (DMR) in children with ADHD may be mediated by deficits in a number of different neuropsychological processes. We investigated DMR in children with ADHD using the Cambridge Gambling Task (CGT) to distinguish difficulties in adjusting to changing probabilities of choice outcomes (so called risk adjustment) from general risk proneness, and to distinguish these two processes from delay aversion (the tendency to choose the least delayed option) and impairments in the ability to reflect on choice options. Based on previous research we predicted that suboptimal performance on this task in children with ADHD would be primarily due to problems with risk adjustment and delay aversion rather than general risk proneness.

Method:
Drug naïve children with ADHD (n = 36), 8 to 12 years, and an age-matched group of typically developing children (n = 34) performed the CGT.

Results:
As predicted children with ADHD were not more prone to making risky choices (i.e., risk proneness). However, they had difficulty adjusting to changing risk levels and were more delay averse – with these two effects being correlated.

Conclusions:
Our findings add to the growing body of evidence that children with ADHD do not favor risk taking per se when performing gambling tasks, but rather may lack the cognitive skills or motivational style to appraise changing patterns of risk effectively.