Risky decision-making in children with and without ADHD: A prospective study.

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Abstract

Learning from past decisions can enhance successful decision-making. It is unclear whether difficulties in learning from experience may contribute to risky decision-making, which may be altered among individuals with attention-deficit/hyperactivity disorder (ADHD). This study follows 192 children with and without ADHD aged 5 to 10 years for approximately 2.5 years and examines their risky decision-making using the Balloon Emotional Learning Task (BELT), a computerized assessment of sequential risky decision-making in which participants pump up a series of virtual balloons for points. The BELT contains three task conditions: one with a variable explosion point, one with a stable and early explosion point, and one with a stable and late explosion point. These conditions may be learned via experience on the task. Contrary to expectations, ADHD status was not found to be related to greater risk-taking on the BELT, and among younger children ADHD status is in fact associated with reduced risk-taking. In addition, the typically-developing children without ADHD showed significant learning-related gains on both stable task conditions. However, the children with ADHD demonstrated learning on the condition with a stable and early explosion point, but not on the condition with the stable and late explosion point, in which more pumps are required before learning when the balloon will explode. Learning during decision-making may be more difficult for children with ADHD. Because adapting to changing environmental demands requires the use of feedback to guide future behavior, negative outcomes associated with childhood ADHD may partially reflect difficulties in learning from experience.