Development of ADHD symptoms in preschool children:
Genetic and environmental contributions

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Abstract

We examined genetic and environmental contributions to the development of symptoms of attention-deficit/hyperactivity disorder (ADHD) in preschool children. ADHD symptoms in siblings at 1.5, 3, and 5 years of age were investigated in a population-based sample from the prospective Norwegian Mother and Child Cohort Study. The longitudinal contributions of additive genetic, shared, twin-specific, and unique environmental influences were estimated using biometric structural equation models. Heritability of ADHD symptoms ranged from 54% to 70%. There was evidence of partially new genetic influences at successive ages, with genetic correlations ranging from .58 to .89. Contributions from shared environmental factors and twin-specific factors were minor. The importance of unique environmental effects appeared to increase across ages, and was mostly specific to a given age. There was no evidence suggesting that this pattern differs across males and females. Symptoms of ADHD are highly heritability in young children from as early as 1.5 years of age. Longitudinal stability of ADHD symptoms is mainly attributable to genetic influences, but there is also some evidence for age-specific genetic influences. These findings contribute to our understanding of development of ADHD early in life, and can guide future molecular genetics studies.