The emergence and stability of attention deficit hyperactivity disorder in boys with fragile X syndrome.

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Abstract

BACKGROUND:
Children with fragile X syndrome (FXS) are at high risk for developing a range of behavioural disorders, including attention deficit/hyperactivity disorder (ADHD) and autism spectrum disorders (ASD). However, very few studies have investigated the comorbid profile of FXS and ADHD and the possible dissociation from the FXS and ASD profile. The present study examined the relationship of childhood temperament characteristics of the Surgency facet (activity level, impulsivity, approach, shyness, and smiling and laughter) and the severity of ADHD and ASD features at two measurement time points in childhood, preschool (ages 3-4) and at school entry (ages 5-6).

METHODS:
The study consisted of males with FXS measured at each time point (preschool and school entry), as well as comparison of typically developing (TD) boys at the preschool measurement time point. Parent reported measures of temperament and behavioural symptoms were collected at each time point. Multiple regression analyses were used to analyse obtained data.

RESULTS:
Elevated activity level scores are associated with ADHD scores at preschool age and elevated shyness and decreased smiling and laughter are strongly associated with ADHD scores upon school entry. Impulsivity emerges as a strong indicator of elevated ADHD scores around school age, but even preschool impulsivity scores demonstrate some predictive value for higher ADHD scores later in school. Finally, no Surgency characteristic was significantly related to ASD scores at any age.

CONCLUSIONS:
Impulsivity serves as an indicator of elevated ADHD symptoms across development periods in boys with FXS, while activity level is just indicative of higher ADHD scores at the preschool age. The Surgency facet of temperament at either age does not predict strong relationships of comorbid pathologies of ADHD and ASD in FXS. However, Surgency characteristics may serve as informative discriminative factors when studying behavioural outcomes in boys with FXS.