

Insight into the Visual Attentional Correlates Underpinning Autistic-Like Traits in Fragile X and Down Syndrome

Authors : Jennifer M. Glennon, Hana D'Souza, Luke Mason, Annette Karmiloff-Smith, Michael S. C. Thomas

Abstract : Genetic syndrome groups that feature high rates of autism comorbidity, like Down syndrome (DS) and fragile X syndrome (FXS), have been presented as useful models for understanding risk and protective factors involved in the emergence of autistic traits. Yet despite reaching clinical thresholds, these 'syndromic' forms of autism appear to differ in important ways from the idiopathic or 'non-syndromic' autism phenotype. To uncover the true nature of these comorbidities, it is necessary to extend definitions of autism to include the cognitive characteristics of the disorder and to then apply this broadened conceptualisation to the study of syndromic autism profiles. The current study employs a variety of well-established eye-tracking paradigms to assess visual attentional performance in children with DS and FXS who reach thresholds for autism on the Social Communication Questionnaire. It investigates whether autism profiles in these children are accompanied by visual orienting difficulties ('sticky attention'), decreased social attention, and enhanced visual search performance, all of which are characteristic of the idiopathic autism phenotype. Data is collected from children with DS and FXS aged between 6 and 10 years, in addition to two control groups matched on age and intellectual ability (i.e., children with idiopathic autism and neurotypical controls). Cross-sectional developmental trajectory analyses are conducted to enable visuo-attentional profile comparisons. Significant differences in the visuo-attentional processes underpinning autism presentations in children with FXS and DS are hypothesised, supporting notions of syndrome specificity. The study provides insight into the complex heterogeneity associated with syndromic autism presentations and autism per se, with clinical implications for the utility of autism intervention programmes in DS and FXS populations.

Keywords : autism, down syndrome, fragile X syndrome, eye tracking

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