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Early Visual Evoked Potentials (VEPs) in Infant Siblings of Children with ASD, ADHD and Age-Matched Controls

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Abstract: Atypicalities in sensory perception are observed in individuals diagnosed with ASD and ADHD but have rarely been contrasted in experimental studies. In the visual domain, superior performance on visual search tasks and hypersensitivity to flickering lights have been cited as evidence of unusual sensory profiles.

To measure a reliable visual response, black-and-white checkerboards were presented under free-viewing conditions to three groups of 10-month-olds: siblings of children with ASD (N=47), ADHD (N=21) and controls (N=18). Continuous EEG was recorded and VEPs time-locked to checkerboards presentation computed.

Analysis of VEPs amplitude and latency revealed statistically significant group differences in the first 200ms post-stimulus onset. Early components were enhanced in amplitude (P100) and delayed in latency (P100-N100) in at-risk infants compared to controls ($p < .05$).

Atypical VEPs to low-level information might index a domain-general aberration in at-risk populations. The nature of this atypicality will be further investigated by analyzing its association with background EEG.