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Impaired biological motion perception and action recognition in children with autism spectrum disorder

Liang-Hui Wang[1,2], Tzu-Yun Chen[2], Hsin-Shui Chen[2,3] Sarina Hui-Lin Chien[1]

[1]Graduate Institute of Neural and Cognitive Sciences, China Medical University
[2]Department of Physical Medicine & Rehabilitation, China Medical University Bei-Gang Hospital
[3]Department of Physical Medicine & Rehabilitation, China Medical University

Biological motion perception is present at birth; it plays an important role in helping individuals adapt to their social environment. Recent studies revealed impaired biological motion perception in children with autism spectrum disorder (ASD), who are characterized by marked deficits in social interaction and communication. Using point-light displays, the present study intended to examine looking preferences for human and non-human biological motion stimuli (Exp. 1) and action recognition performance (Exp. 2) in typically developing (TD) and ASD children. Forty-two participants (21 ASD and 21 TD children) aged 3-7 years were included in this study. In Exp. 1, we found that ASD children did not preferentially attend to biological motion as TD children did. ASD group also exhibited shorter total fixation time for the test displays than did the TD group. In the action recognition task of Exp. 2, ASD children made more errors in naming and spend more time to respond than did the TD children. In conclusion, children with ASD are lacking a “normal” preference for biological motion stimuli. Moreover, such abnormality might be due to an overall deficit in processing biological motion information and may explain the poor performance in action recognition in ASD individuals.