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Investigating motor control difficulties in autism spectrum disorders

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Although motor control deficits are not a core characteristic of Autism Spectrum Disorder (ASD), previous literature has suggested impairment in the motor skills of autistic subjects. However, due to the heterogeneity of the disorder and thus the different severity of symptoms presents in each individual, the results remain controversial. In addition, previous studies have used small sample sizes while examining one aspect of motor control at a time. Therefore, the aim of this study was to examine autistic traits in neurotypicals and determine whether they are associated with poor motor control. Six motor control aspects were measured, including: end-state comfort, motor planning, muscle tone, kinematics, speeded movement and visually-guided movement. This was done using a battery of tasks including questionnaires such as the Autism Quotient (AQ), Adult Dyspraxia Checklist (ADC) and the Toronto Alexithymia Scale-20 (TAS-20), motion tracking, obstacle avoidance and computerized tasks. A total of thirty-three (n=33) control subjects took part in the study, all of which reported no motor control disorders. The results showed no significant correlation between the participants' questionnaire scores and the six motor skills ($p>0.05$). This therefore suggests that higher autistic traits are not associated with a poorer motor performance in neurotypicals. These findings could be used as an initial step to a larger study involving neurotypicals and individuals with ASD, thus providing a deeper insight into the motor control deficits in ASD.

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