

Abstract
Posters

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Cognitive Profiles in Athletes with Neurodevelopmental Disorders on Baseline Testing

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Objective: The Immediate Post-concussion Assessment and Cognitive Testing (ImPACT) is a commonly utilized sport concussion assessment. Previous literature examined differences in concussion rates, symptom scores, and invalid baselines between healthy athletes and athletes with neurodevelopmental disorders. There are no current studies that investigate cognitive profiles of athletes with autism. The present study explores possible differences in ImPACT performance for these athletes. **Method:** Participants included 31,368 high school athletes (mean age = 15.0, SD = 1.2; mean education = 9.0; SD = 1.4; 43.9% female) selected from a larger database who completed baseline ImPACT testing from 2008–2016. Self-reported neurodevelopmental history consisted of these distinct groups: attention-deficit/hyperactivity disorder (ADHD; 3.6%), learning disorders (LD; 1.3%), Autism (0.3%), ADHD/LD (0.6%). ImPACT Composite Scores were analyzed using Mixed-model ANCOVA (age and gender covariates)-Verbal Memory (VerbM), Visual Memory (VisM), Visual Motor Speed (VisMot), Reaction Time (RT), and Impulse Control (IC). Composites were standardized and RT was reverse coded. For comparison purposes, individuals from all neurodevelopmental groups were utilized. **Results:** There was a main effect for Composites and neurodevelopmental history ($p < .01$). An interaction effect between Composites and neurodevelopmental history was found ($p < .01$). The Autism group scored significantly lower than healthy athletes on VerbM, VisM, VisMot, and RT. No difference was found for IC. Pattern differences between neurodevelopmental groups will also be reported. **Discussion:** Results reveal cognitive profile differences for athletes with Autism and other neurodevelopmental disorders. The ImPACT provides normative data for LD and ADHD athletes; however, our results indicate similar pattern differences for Autism and ADHD/LD. Future research should investigate whether separate norms may be beneficial for these groups.