Participants and Methods: In total, 34 participants (M = 4.99 years old) were recruited from a perinatal follow-up clinic or through the community in Calgary, AB. Participants were randomly assigned to either the DI intervention (n = 20) or tablet-based educational control games (C; n = 14). Parents completed a 2-hour training program that included information about how to support their child through the intervention using behavioural supports and metacognitive strategies.
Neuropsychological assessment was done prior to beginning the intervention and after 12 weeks of intervention. Various tests were used to assess near transfer measures of sustained attention, shifting attention, executive function, verbal working memory and inhibition, and to assess far transfer measures of language skills and early numeracy. Families tracked weekly progress using journals, with the goal of 3-4 30-minute sessions per week. Multiple ANCOVA analyses were run to analyze quantitative data using the pre-test score as a covariate.
Results: A total of 21 participants completed the 12 weeks of intervention (DI: n = 11 and C: n = 10). Those who did not complete the intervention withdrew from the study or were unable to make a follow-up assessment due to COVID-19 restrictions. Groups did not significantly differ in age (DI: M = 4.92, C: M = 4.61), sex (DI: Female = 6, C: Female = 6), or in weeks preterm (DI: M = 29.49 weeks, C: M = 32.7 weeks).
Multiple ANCOVAs were run to determine the effect of either the DI or Control intervention on the cognitive measures after controlling for the pre-intervention score of participants. As compared to the Control group, the DI intervention group showed near transfer gains in sustained attention ($F(1,7) = 5.1$, $p = 0.043$), and executive functions ($F(2,18) = 5.41$, $p = 0.014$), as well as far transfer gains in phonetic awareness ($F(2,16) = 11.63$, $p = 0.001$), vocabulary and oral language skills ($F(2,7) = 5.54$, $p = 0.014$) , and number identification fluency ($F(2,17) = 11.37$, $p = 0.001$). Detailed analyses will be discussed in the poster.
Conclusions: This study provides preliminary support for the potential efficacy of the DI intervention when delivered by parents to children born preterm. Pre-post testing after 12 weeks of intervention indicated both near and far transfer gains. These results highlight the benefits of utilizing a tablet game format to facilitate collaborative parent-child interactions in cognitive intervention. This intervention provides a potential affordable and engaging alternative to existing cognitive interventions. Further investigation with a larger and more diverse sample is required.

Categories: Cognitive Intervention/Rehabilitation
Keyword 1: cognitive rehabilitation
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90 School-based Implementation of Educational and Neurocognitive Interventions in Children with Neurodevelopmental Disorders.

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Objective: Children with neurodevelopmental disorders (NDDs) commonly experience attentional and executive function (EF) difficulties that are negatively associated with academic success, psychosocial functioning, and quality of life. Access to early and consistent interventions is a critical protective factor and there are recommendations to deliver cognitive interventions in schools; however, current cognitive interventions are expensive and/or inaccessible, particularly for those with limited resources and/or in remote communities. The current study evaluated the school-based implementation of two game-based interventions in children with NDDs: 1) a novel neurocognitive attention/EF intervention (Dino Island; DI), and 2) a commercial educational intervention (Adventure Academy; AA). DI is a game-based attention/EF intervention specifically developed for children for delivery in community-based settings.
Participants and Methods: Thirty five children with NDDs (ages 5-13 years) and 17 EAs

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participated. EAs completed on-line training to deliver the interventions to assigned students at their respective schools (3x/week, 40-60 minutes/session, 8 weeks, 14 hours in total). We gathered baseline child and EA demographic data, completed pre-intervention EA interviews, and conducted regular fidelity checks throughout the interventions. Implementation data included paper-pencil tracking forms, computerized game analytic data, and online communications.
Results: Using a mixed methods approach we evaluated the following implementation outcomes: fidelity, feasibility, acceptability, and barriers. Overall, no meaningful between-group differences were found in EA or child demographics, except for total number of years worked as an EA (M = 17.18 for AA and 9.15 for DI; t (22) = - 4.34, $p < .01$) and EA gender ($\chi 2$ (1) = 6.11, $p < .05$). For both groups, EA age was significantly associated with the number of sessions played [DI ($r = .847$, $p < .01$), AA ($r = .986$, $p < .05$)]. EAs who knew their student better completed longer sessions [DI ($r = .646$), AA ($r = .973$)], all ps < .05]. The number of years worked as an EA was negatively associated with the total intervention hours for both groups. Qualitative interview data indicated that most EAs found DI valuable and feasible to deliver in their classrooms, whereas more implementation challenges were identified with AA. Barriers common to both groups included technical difficulties (e.g., game access, internet firewalls), environmental barriers (e.g., distractions in surroundings, time of the year), child factors (e.g., lack of motivation, attentional difficulties, frustration), and game-specific factors (e.g., difficulty level progression). Barriers specific to DI included greater challenges in motivating children as a function of difficulty level progression. Furthermore, given the comprehensive nature of training required for delivery, EAs needed a longer time to complete the training for DI. Nevertheless, many EAs in the DI group found the training helpful, with a potential to generalize to other children in the classroom.
Conclusions: The availability of affordable, accessible, and effective cognitive intervention is important for children with NDDs. We found that delivery of a novel cognitive intervention by EAs was feasible and acceptable, with similarities and differences in implementation facilitators/barriers between the cognitive and commercialized academic intervention. Recommendations regarding strategies for successful school-based implementation of neurocognitive intervention will be elaborated on in the poster.

Categories: Cognitive Intervention/Rehabilitation
Keyword 1: cognitive rehabilitation
Keyword 2: attention
Keyword 3: executive functions
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91 Athletic Status Predicts Neurocognitive Dispersion in College Students

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Objective: Studies have reported that athletic conditioning or training may have neuropsychological benefits for adult athletes, including enhanced processing speed, executive function, and working memory and attention. However, others have reported that these benefits may be attenuated by an athlete's level of exposure to repetitive, subconcussive head impacts, such as heading the ball in soccer. Neurocognitive dispersion, or intraindividual variability (IIV), has become an increasingly popular tool to assess neuropsychological performance in various clinical populations. Less dispersion is typically associated with more consistent and better overall performance (i.e., fewer lapses of reaction time and accuracy). However, few studies have utilized these measures in healthy young adults. The objective of this study was to determine if athletes and non-athletes exhibited different levels of neurocognitive dispersion on a battery of neuropsychological tasks. It was hypothesized that athletes would exhibit less neurocognitive dispersion compared to non-athletes, despite their exposure to repetitive subconcussive head impacts.
Participants and Methods: Division 1 varsity and club team university athletes (n = 74, Mage = 19.93, female = 55%), and non-athlete undergraduate students (N = 154, Mage = 20.12, female = 69%) completed a neuropsychological battery consisting of 13 cognitive tests. Outcomes for each test were converted to standard scores and combined for

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