

improve care, the difference between specific racial/ethnic groups during recovery merits exploration into the factors that may influence symptom reporting.

Categories: Concussion/Mild TBI (Child)

Keyword 1: concussion/ mild traumatic brain injury

Keyword 2: ethnicity

Keyword 3: self-report

Correspondence: Stephen C. Bunt, University of Texas Southwestern Medical School, stephen.bunt@utsouthwestern.edu

74 Timed Motor Performance in Children Medically Cleared for Return to Activities Post Mild Traumatic Brain Injury

Tyler A Busch¹, Adrian M Svingos^{1,2}, Hsuan-Wei Chen¹, Kayla Huntington¹, Nishta Amin¹, Beth S Slomine^{1,2}, Stacy J Suskauer^{1,2}

¹Kennedy Krieger Institute, Baltimore, MD, USA.

²Johns Hopkins School of Medicine, Baltimore, MD, USA

Objective: Children who sustain a mild traumatic brain injury (mTBI) are at increased odds of additive injury and continue to show altered motor performance relative to never-injured peers after being medically cleared (MC) to return to normal activities. There is a critical need to determine when children can return to activities without risk of short and long-term adverse effects, with research showing high re-injury rates for 3-12 months after RTP. The Physical and Neurological Examination for Subtle Signs (PANESS) measures subtle signs of motor impairment during gait, balance, and timed motor functions. Recent literature has demonstrated that PANESS timed motor function can distinguish between children medically cleared post-mTBI compared to never-injured controls. The present study examined performance on timed motor tasks in youth medically cleared from mTBI following medical clearance and 3-months later, compared to never-injured peers.

Participants and Methods: 25 children ($M_{\text{age}}=14.16$, $SD=2.46$; Male=68%) were enrolled within 6 weeks of medical clearance from mTBI ($M_{\text{days post MC}}=33$, $SD=13.4$, Range=2–59) along with 66 typically developing,

never-injured controls ($M_{\text{age}}=13.9$, $SD=2.22$; Male=50%). Group differences were evaluated for the Timed Motor section of the PANESS at enrollment and at a 3-month follow-up ($M_{\text{days from enrollment to follow-up}}=95.90$, $SD=12.69$, Range=62–129). This 3-month follow-up occurred on average 4 months after medical clearance ($M_{\text{days from MC to follow-up}}=130.08$, $SD=17.58$, Range=92 – 164). The Timed Motor section includes Repetitive (foot tapping, hand patting, and finger tapping) and Sequential (heel-toe rocking, hand pronate/supinate, finger sequencing) raw time scores, measured in seconds. The Total Timed Motor Speed score is the combination of Repetitive and Sequential Movement and the side-to-side tongue item.

Results: At 3-month follow-up, mTBI participants ($M=67.55$, $SD=8.26$, Range=53.66–83.88) performed worse than controls ($M=63.09$, $SD=10.23$, Range=39.86–100.51) on Total Timed Motor Speed, $t(89)=1.95$, $p<0.05$, including when controlling for age and sex, $F(1, 87)=4.67$, $p<0.05$. At the same time point, mTBI participants ($M=36.54$, $SD=5.47$, Range=28.74–49.17) performed worse on Sequential Speed than controls ($M=32.93$, $SD=6.1$, Range=21.49–56.76), $t(89)=2.59$, $p<0.01$, including when controlling for age and sex, $F(1, 87)=7.687$, $p<0.01$. Although groups performed similarly on Sequential Speed at the initial time point, mTBI participants exhibited a trend of less improvement from initial to follow-up ($M_{\text{mTBI}}=-1.69$, $M_{\text{control}}=-3.68$, $t(90)=1.445$, $p=0.076$).

Conclusions: Although groups did not significantly differ on Timed Motor Speed items at the initial time point, the mTBI group showed consistently lower scores than controls at both time points and less improvement over time. Results indicate that Total Timed Motor Speed, specifically Sequential Speed, may be a sensitive marker of persisting differences in high-level motor and cognitive learning/control in children who have been medically cleared after mTBI. More data are needed to evaluate these findings over a longer time period, and future studies should examine behavioral markers concurrently with physiologic brain recovery over time.

Categories: Concussion/Mild TBI (Child)

Keyword 1: concussion/ mild traumatic brain injury

Keyword 2: pediatric neuropsychology

Keyword 3: motor speed

Correspondence: Tyler Busch, Kennedy Krieger Institute, tylerbusch@gmail.com

75 Client Perspective: The Acceptability of Combining Cognitive Remediation and Transcranial Direct Current Stimulation for People with Severe Mental Illness

Anika Poppe^{1,2}, Leonie Bais², Daniëlle van Duin^{3,4}, Branislava Curcic-Blake⁵, Gerdina M.H. Pijnenborg^{1,6}, Lisette van der Meer^{1,2}

¹University of Groningen, Groningen, Netherlands. ²Lentis Psychiatric Institute, Zuidlaren, Netherlands. ³Trimbos-Institute, Utrecht, Netherlands. ⁴Phrenos Center of Expertise, Utrecht, Netherlands. ⁵University Medical Center Groningen, Groningen, Netherlands. ⁶GGZ Drenthe, Assen, Netherlands

Objective: A fundamental challenge for people with severe mental illness (SMI) is how to deal with cognitive impairments, which are common in this population and limit daily functioning. Cognitive remediation (CR) is a psychological intervention that targets these cognitive impairments to improve everyday functioning. However, reduced neural plasticity in people with SMI might hinder newly learned cognitive skills to sustain. Transcranial Direct Current Stimulation (tDCS) can promote this neural plasticity, which could enhance learning and result in longer-lasting improvements in cognitive and daily functioning. This study aimed to investigate the acceptability of the combination of CR and tDCS for people with severe mental illness who live in residential psychiatric facilities.

Participants and Methods: We interviewed participants of the ongoing HEADDSET pilot trial. In this pragmatic, randomized, controlled pilot trial, participants (individuals with SMI, 18 years or older, living in psychiatric facilities) received CR in combination with concurrent active tDCS ($n = 13$) or sham tDCS ($n = 13$) twice weekly for 16 weeks (32 sessions in total). We invited participants who finished the trial's training period ($n = 16$) to participate in the interviews. According to the Theoretical Framework of Acceptability (Sekhon et al., 2017), we assessed seven components of acceptability: Affective attitude, burden, intervention coherence, ethicality, opportunity costs, perceived effectiveness, and self-efficacy.

Results: Twelve of the 16 participants participated in the interviews: seven completers (attended at least 20 of the 32 sessions; $M = 22.7$, range = 20-25) and five non-completers ($M = 11.6$, range = 9-15). The reasons for not completing the protocol were mainly unrelated to the training (i.e., prolonged illness, substance abuse, personal circumstances). Only one participant did not complete the training because of its intensity. Independent of whether participants completed the intervention, they were positive about the training. They reported that they liked the CR program CIRCuiTS, that participating in the training was not a burden and that, in their opinion, the training could help others. Moreover, all participants observed improvement in their cognitive functioning, and six individuals (three completers and three non-completers) observed improvements in their everyday life (e.g., fewer problems with doing groceries, being more organized, and being able to concentrate and read a book). Overall, the participants would recommend the training to others. Non-completers of the intervention would recommend the CR with tDCS, while completers neither recommended nor advised against the addition of tDCS. Participants who understood and could explain how the training works reported more improvements in daily life, were better at formulating their treatment goals, and stated that the treatment goals were more relevant to them compared to the participants who were unable to do so.

Conclusions: The combined intervention of CR and tDCS was acceptable to individuals with severe mental illness, the participation in the training was no burden to both completers and non-completers, and participants reported personal benefits for their cognitive functioning and everyday life. Future studies should investigate the effectiveness of the intervention in larger randomized controlled trials.

Categories: Cognitive Intervention/Rehabilitation

Keyword 1: neuromodulation

Keyword 2: psychosis

Keyword 3: cognitive rehabilitation

Correspondence: Anika Poppe, University of Groningen, a.poppe@rug.nl