consulted to middle school, high school, and collegiate concussion management programs. Students typically were administered baseline ImPACT tests prior to participation in sports, and all students in the current sample completed post-injury ImPACT tests as part of return to play protocols. The neuropsychologist read test results through the test's online portal, then communicated interpretation and recommendations via email or phone to the school's representative (e.g., athletic trainer, athletic director, or school nurse). 837 unique concussions were recorded between 2019 and 2022. After removing abnormal cases (e.g., COVID-19 school closures, extended college breaks, non-concussions, and non-return to play decisions), 790 unique concussions (51.4% male) were included for analysis, with a mean age of 16.84 years (SD=2.17). Descriptive statistics were used to characterize the sample.
Results: Across 790 unique concussions, 7 were middle school, 571 were high school, and 212 were college students. 1,750 total post-injury ImPACT tests were administered over the three-year period. Per concussion, an average of 2.22 (SD=0.90) tests were used. Average time to the last ImPACT given was 18.47 days (SD=16.59), with a median of 15 days. Ten concussions (1.27% of total concussions) occurred within 3 months of a previous injury. The distance between schools and the medical center ranged from 2.4 to 102 miles (M=60.29; SD=34.34).
Conclusions: The current study suggests that there is value in a remote model of neuropsychological consultation for concussion management. While telehealth offers a promising method of evaluation for concussion, it may be inaccessible and present reimbursement challenges. The remote consultation model described here increases access to care by eliminating in-person visits, which decreases demand for physical space at medical centers and increases access to rural populations with seemingly no negative effect on care. This consultation model also allows neuropsychologists working in concussion management more flexibility, potentially increasing the volume of cases they can assess. This program evaluation suggests remote models have merit, but replication studies in different regions of the country are needed.

Categories: Concussion/Mild TBI (Child)

Keyword 1: concussion/ mild traumatic brain injury
Keyword 2: sports-related neuropsychology
Keyword 3: teleneuropsychology
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71 Feasibility of Virtual Useful Field of View Assessment and Equivalence with In-Person Administration Among Youth Clinically Recovered from Concussion and Uninjured Controls

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Objective: Youth athletes with concussion are at an increased risk of sustaining new concussions and orthopedic injuries after clearance for return-to-play. There are training programs, extensively studied in other patient populations, which can improve performance in cognitive domains that have been implicated in sport-related injury and re-injury after concussion (i.e., visual attention/processing speed). The Useful Field of View (UFOV) is one such training program, accompanied by a computerized adaptive assessment for evaluating response to training and maintenance in clinical trials. Remote UFOV assessment administration may help improve adherence, particularly in assessing long-term training effects. The current study explores the feasibility of virtual UFOV assessment and equivalence with in-person administration in youth clinically recovered from concussion and healthy controls.
Participants and Methods: Participants included youth ages 10-18 enrolled in a longitudinal study examining neural recovery following medical clearance from concussion. UFOV was attempted in 61 participants (Mage=15.06; SD=2.00; n=19 in-person; n=42). Of these, 7 virtual administrations were discontinued due to computer limitations, and 1 in-person administration was excluded due to overall performance validity concerns. This resulted in a total sample of 53 participants (Mage=15.02, SD=2.00, 58.5% male; n=14 concussion, $M_{days\_since\_injury}$=272.64, SD=185.35;

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n=39 controls). UFOV was administered either in-person (n=18) using manual guidelines or virtually (n=35) on the participant's computer using video-conference screen-share and a secondary device for an additional view of the participant and their keyboard/mouse. For virtual visits, the examiner recorded concerns about the remote testing environment (e.g., screen glare, viewing distance not measured appropriately), and analyses were conducted with and without cases with concerns. Between-group (in-person vs virtual administration) demographic differences were examined using chi-square tests/t-tests. Mann-Whitney U tests were used to examine for differences in UFOV scores (ms; higher scores are worse) by administration context (in-person vs. virtual) given threats to normality.
Results: For virtual administrations, the most commonly reported concerns about the remote testing environment were related to lighting (n=12) and viewing distance (n=3). There were no significant differences in age, sex, concussion history, sport participation history, or IQ by administration context (in-person vs. virtual). UFOV performance did not vary significantly by administration context for processing speed or divided attention subtests, but performance on the selective attention subtest was significantly better in the virtual administration group ($Median_{in\text{-}person}$=93.33; $Median_{virtual}$=63.33; U=203.00, p=0.035). This trend persisted after removing an outlier (>2SD; p=0.065) and after removing cases where lighting (p=0.060) and screen-viewing distance (p=0.085) were not adequately controlled.
Conclusions: Though preliminary, results suggest that UFOV can be administered virtually, in youth with and without a history of concussion, but that those assessed virtually using their home computer may have an advantage, particularly for the selective attention subtest. This may be due to comfort level within the home environment or subtle differences in viewing distance that were not appreciated by the examiner remotely. Importantly, not all participants were able to complete the assessment virtually due to computer limitations. Future work with larger samples size should examine the extent to which completers vary from non-completers in terms of sociodemographic variables.

Categories: Concussion/Mild TBI (Child)

Keyword 1: concussion/ mild traumatic brain injury
Keyword 2: cognitive functioning
Keyword 3: teleneuropsychology
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72 Neurocognitive and Emotional Symptoms of Pediatric Concussion Due to Physical Assault: A Case Series

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Objective: Much of the pediatric concussion literature focuses on sports and recreation related injuries, while there is a relative paucity of research on the cognitive and psychological sequelae associated with assault. However, it is understood that children with assault-related injuries demonstrate a longer recovery time. This case series reviews the data of four teenagers who were administered cognitive, emotional, and behavioral screeners after sustaining an assault related concussion.
Participants and Methods: Four pediatric female patients (ages 13,14,15,15) with a recent history of concussion due to physical assault presented for evaluation at a hospital-based concussion clinic. All four patients were administered a computerized cognitive screener as well as self-report measures for mood, anxiety, post-traumatic stress disorder (PTSD), and sleep disturbance.
Results: All four of the pediatric cases reported significant symptoms of PTSD, depression, anxiety, and sleep disturbance. For all four patients, the most notable problems across cognitive performance measures were observed in the areas of simple and complex attention.
Conclusions: Results of this case series revealed clinically significant anxiety, depression, PTSD-symptoms, and sleep disturbance in conjunction with poor simple and complex attention. These pediatric cases illustrate the potential link between assault-related concussions, emotional and behavioral symptoms, and cognitive functioning. Furthermore, assault-related concussions may

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