**SUPPLEMENTARY TABLES**

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| Supplementary Table 1. CNS Vital Signs Neurocognitive Domains Interpretations |
| **Domain** | **Interpretation** |
| Cognitive Flexibility | How well subject is able to adapt to rapidly changing and increasingly complex set of directions and/or to manipulate the information |
| Simple Attention | Ability to track and respond to a single defined stimulus over length periods of time while performance vigilance and response inhibition quickly and accurately |
| Complex Attentiona | Ability to track and respond to a variety of stimuli over lengthy periods of time and/or perform mental tasks requiring vigilance quickly and accurately. |
| Executive Function | How well a subject recognizes rules, categories, and manages or navigates rapid decision making |
| Motor Speed | Ability to perform movements to produce and satisfy an intention towards a manual action ang goal |
| Psychomotor Speed | How well a subject perceives, attends, responds to visual perceptual information, and performs motor speed and fine motor coordination |
| Processing Speed | How well a subject recognizes and processes information (i.e., perceiving, attending/responding to incoming information, motor speed, fine motor coordination, and visual-perceptual ability. |
| Reaction Timea | How quickly the subject can reaction, in milliseconds, to a simple and increasingly complex direction set. |
| Verbal Memory | How well subject can recognize, remember, and retrieve words. |
| Visual Memory | How well subject can recognize, remember and retrieve geometric figures. |
| Interpretation is *verbatim* from page 13 of the CNS Vital Signs interpretation guide (https://www.cnsvs.com/WhitePapers/CNSVS-BriefInterpretationGuide.pdf) |
| a lower scores are better |

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| Supplementary Table 2. Effect Size Calculation for Power Analysis |
|  | **Football****(n=31)** | **Soccer****(n=9)** | **MVA****(n=20)** | **MVA-Football (Cohen’s d)** | **MVA-Soccer (Cohen’s d)** |
| Verbal Memory Percentile T Score | 4147.7 | 4448.5 | 3546.1 | 0.16 | 0.24 |
| Visual Memory Percentile T Score | 4147.7 | 4548.7 | 2442.9 | 0.48 | 0.58 |
| Visual Motor Speed Percentile T Score | 4448.5 | 8259.2 | 4749.2 | 0.07 | 1.00 |
| Reaction Time Percentile T Score | 4147.7 | 5050.0 | 3044.8 | 0.29 | 0.52 |
| Percentiles and sample size are taken directly from Seiger et al. (2015).9 T Scores and effect sizes calculated as described in the methods.Abbreviate – MVA: Motor vehicle accident9 |