Beyond the Haze: Exploring Processing Speed, Concentration, and Cognitive Functioning in Early Concussion Recovery

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Background

- Post-concussion cognitive difficulties are common.
- Without baseline (pre-injury) testing, cognition is assessed using neurocognitive tests compared to normative data.

Objective

To examine the relationship between individual cognitive symptoms (**difficulty concentrating and feeling 'foggy'**) and **corresponding performance on neurocognitive tests** in the sub-acute phase post-concussion.

Methods

Participants were recruited prospectively from the Hull-Ellis Concussion Clinic within one week of injury. The following measures were administered at weeks 1, 2, and 12 post-concussion:

- The Sport Concussion Assessment Tool 5 (SCAT5) symptom inventory for self-reported symptoms
- Trails A & B to measure concentration
- Symbol Search/Coding (Processing Speed Index [PSI]) to measure cognitive clarity

Results

Table 1. Participant demographics.

Category	Participants (n = 344)
Mean age (years)	33.0 (12.2 SD)
% Female sex	59.9%
Common pre-existing conditions	Depression (22.9%), Anxiety (21.5%)
Mean education (years)	15.1 (2.2 SD)

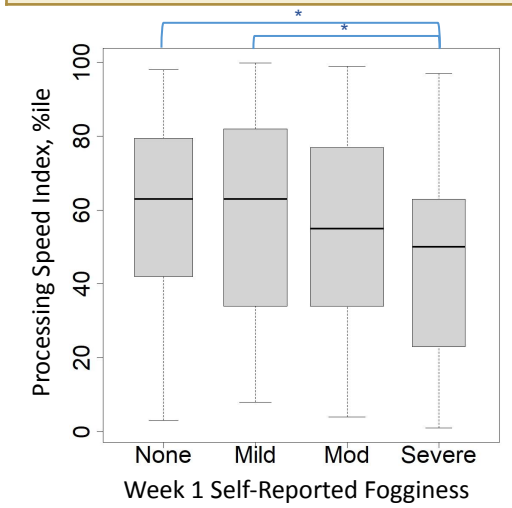

Fig. 1: Box plot Fogginess x Processing Speed(*p<0.05)

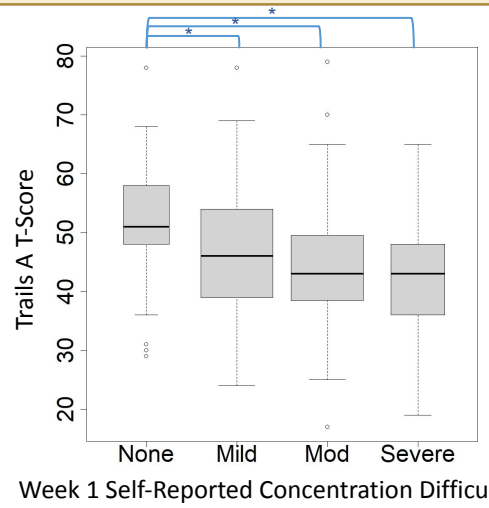

Fig. 2: Box plot Concentration x Trails A (*p<0.05).

At weeks 2 and 12, there was no association between self-reported cognitive symptoms and neurocognitive performance.

Subjective symptoms and **objective performance** were **aligned within one week of concussion.**

Using published norms to quantify cognitive difficulties **may yield false negative results**.

Population-specific normative data are needed to **accurately evaluate** cognitive performance post-concussion.

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