One-year test-retest reliability of the online version of ImPACT in high school athletes.

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Source

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Abstract

BACKGROUND:

The ImPACT (Immediate Post-Concussion Assessment and Cognitive Testing) neurocognitive testing battery is a popular assessment tool used for concussion management. The stability of the baseline neurocognitive assessment is important for accurate comparisons between postconcussion and baseline neurocognitive performance. Psychometric properties of the recently released online version of ImPACT have yet to be established; therefore, research evaluating the reliability of this measure is warranted.

PURPOSE:

The authors investigated the 1-year test-retest reliability of the ImPACT online version in a sample of high school athletes.

STUDY DESIGN:

Case series; Level of evidence, 4.

METHODS:

A total of 369 varsity high school athletes completed 2 mandatory preseason baseline cognitive assessments approximately 1 year apart as required by their respective athletics program. No diagnosed concussion occurred between assessments.

RESULTS:

Intraclass correlation coefficients (ICCs) for ImPACT online indicated that motor processing speed (.85) was the most stable composite score, followed by reaction time (.76), visual memory (.70), and verbal memory (.62). Unbiased estimates of reliability were consistent with ICCs: motor processing speed (.85), reaction time (.76), visual memory (.71), and verbal memory (.62).
CONCLUSION:

The online ImPACT baseline is a stable measure of neurocognitive performance across a 1-year time period for high school athletes. These reliability data for online ImPACT are higher than the 2-year ICCs previously reported from the desktop version.

CLINICAL RELEVANCE:

It is recommended that the ImPACT baseline assessment (both desktop and online) continue to be updated every 2 years. The online version of ImPACT appears to be a stable measure of neurocognitive performance over a 1-year period, and systematic evaluation of its stability over a 2-year period is warranted.