

ARE CLINICAL POST-CONCUSSION TESTS RELIABLE? A PILOT STUDY OF TEST-RETEST RELIABILITY OF SELECTED POST-CONCUSSION TESTS

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ABSTRACT

Background/Purpose: Objective clinical tests are utilized by physical therapists to identify impairment and functional deficits following injury. To create an appropriate plan of care, these tests must be reliable. Few studies have established reliability of post-concussion tests. The purpose of this study was to assess the test-retest reliability of Post-Concussion Symptom Scale (PCSS), convergence test (CT), cervical joint-position error (JPE) test, dynamic visual acuity (DVA), and cranio-cervical flexion test (CCFT). **Methods**: Healthy adults (18-28 years old) with no history of concussion or whiplash in the past two years and no current symptoms that would interfere with the testing were recruited. Initial testing was completed on day 1 with follow-up examinations on days 7 and 28. The testing order was consistent for all testing days. Specific equipment was implemented throughout testing. **Results**: A strong linear relationship was found between all test days for PCSS, CT, and DVA. The CCFT-control demonstrated a positive, moderate to good correlation between all testing days, whereas the CCFT-endurance showed a poor relationship. The correlation coefficients for the cervical JPE test ranged from poor to moderate in all test conditions and was inconsistent across the examinations. **Conclusion**: Based on the results, PCSS, CT and DVA show good test-retest reliability, CCFT-control has moderate reliability with poor reliability for JPE and CCFT-endurance. This suggests that the PCSS, CT, and DVA may reliably be used by clinicians to assess for changes in people following a concussive injury, whereas the CCFT and JPE should be used with caution.

Keywords: post-concussion test, Post-Concussion Symptom Scale, convergence testing, cervical joint-position error test, dynamic visual acuity, cranio-cervical flexion test

INTRODUCTION

Objective clinical tests are utilized by physical therapists to identify impairment and functional deficits following injury. To create an appropriate plan of care, these tests must be reliable. Few studies have established reliability of post-concussion tests. The purpose of this study was to assess the test-retest reliability of Post-Concussion Symptom Scale (PCSS), convergence test (CT), cervical joint-position error (JPE) test, dynamic visual acuity (DVA), and cranio-cervical flexion test (CCFT).

METHODS

Rater Training

All examiners completed training on correct administration and scoring of each outcome measure prior to the start of the study. This took place over two separate days with each session lasting an hour. The examiners then practiced each test until proficient as determined by the principle investigator.

Subjects