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**A PSYCHOMETRIC EVALUATION OF THE IMMEDIATE POST-  
CONCUSSION ASSESSMENT AND COGNITIVE TEST (ImPACT) FOR  
SPORT CONCUSSION**

A thesis presented in partial fulfilment of the requirements for the degree of  
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### **Abstract**

The increasing awareness of concussion in sport and its effect on cognitive functioning has prompted the development of neuropsychological assessments specific to sport concussion. ImPACT is one of the more popular assessment batteries that purports to measure five areas of cognitive functioning, despite a scarcity of empirical support. The current study assessed ImPACT's factor structure to determine whether its items are accurately measuring the five cognitive domains it claims to measure. Three exploratory factor analyses using a male adolescent sample were computed before the final model, consisting of eight items and two factors, representing Reaction Time and Memory, was reached. The structure was inconsistent with the current ImPACT scoring structure. This model was then successfully validated among a new sample, while a competing model found in the literature was not successfully validated. This model was then assessed for its longitudinal stability over a three year period in addition to its cross-country validity between South African and New Zealand samples. The former was supported, indicating individuals' memory and reaction time as measured by ImPACT, is relatively stable over time and that ImPACT is not subject to practice effects after a one-year interval. It is of note that cross-country invariance was not supported, therefore emphasising the importance of having population-specific norms. Overall, the present study found that ImPACT, at this stage, has several limitations. It is recommended that, while ImPACT has the potential to be a useful tool, modifications need to be made to increase its efficacy.

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