

Neurological screening in the assessment of sports-related concussion

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Concussion and mild traumatic brain injury (mTBI) are common injuries in contact and collision sports, however, it has been noted that many concussions go undetected and unreported. Undetected concussions are serious because they increase the likelihood of athletes continuing to practice and play, placing themselves at risk of a subsequent and possibly more serious injury. Valid and reliable screening tools are therefore essential in assisting the sports medicine professional in recognising a concussion. The Sport Concussion Assessment Tool (SCAT) is a standardised global assessment for the identification of sport-related concussion (SRC). Commonly reported physical signs of concussion include impaired coordination, unsteady gait, and poor balance and therefore an integral component of the SCAT is the neurological screen, which contains the assessment of motor performance tasks including balance, gait and coordination measures. While many items of the SCAT have been developed and validated for inclusion, the neurological screening component of the assessment remains qualitative and limited in its utility. The development of quantitative tools that screen for neurological dysfunction attributable to SRC is an important component of the development of the SCAT and one which our research group is undertaking. This presentation will discuss the clinical development and validation of neurological items involving balance and coordination for inclusion in the SCAT2 and further working versions of this tool. Results of our recent studies that have investigated the diagnostic accuracy and reliability, as well as selected elements that might influence the neurological screening examination in a sports setting (e.g. exercise/sports participation, environment, footwear etc.) will be discussed.