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**CONCUSSION IN ATHLETES: CAN THEY ACCURATELY EVALUATE THEIR OWN CONDITION?**

*Self-reporting of symptoms not as accurate as neurocognitive testing after concussion*

**Rosemont, Ill. – September 13, 2006** – “What did Trent Green say and when did he say it?” sports medicine doctors may be asking after the Kansas City Chiefs’ starting quarterback suffered a severe head injury in last Sunday’s Chiefs-Bengals game. New research suggests Green’s assessment of his own condition may not be as accurate as the read-out from a computer.

According to a study in the October issue of The American Journal of Sports Medicine published on behalf of The American Orthopaedic Society for Sports Medicine by SAGE, reliance on athletes’ self-reported symptoms after concussion is likely to result in underdiagnosis of concussion and may result in premature return to play. A computer-based neurocognitive test designed specifically to measure the effects of sports-related concussion is more reliable when used with an athlete’s self-report and may save the player from additional injury, the study finds.

“Overreliance on athlete symptoms has recently been criticized based on the tendency of some athletes to underreport symptoms, presumably in an attempt to speed their return to the playing field,” the authors write. “We present data in this study that suggest reliance on symptoms alone is inadequate and is likely to lead to missed diagnosis of the injury in a significant number of athletes.”

Mark R. Lovell PhD and colleagues in the Department of Orthopaedic Surgery at the University of Pittsburgh Medical Center compared 122 athletes who suffered concussions with a control group of 70 non-concussed athletes. High school and college athletes in 6 states were studied over a 3-year period. Football players represented the majority (82%) of the concussed group; swimmers were the majority (50%) of the control group.

All athletes in the study underwent preseason (baseline) evaluation using Immediate Postconcussion Assessment and Cognitive Testing (ImPACT), a widely-used computer program which measures 4 neurocognitive functions: verbal memory, visual memory, reaction time and visual motor processing speed. ImPACT is used throughout professional and amateur sports and was utilized in this study as part of the athletes’ overall medical management. ImPACT also includes a postconcussion symptom (PCS) scale in which the athletes themselves rate the severity of their symptoms, such as headache, nausea, dizziness and trouble sleeping.

Sixty-four percent of concussed athletes self-reported an increase in symptoms 2 days after injury. However, 83% of these same athletes demonstrated significantly poorer neurocognitive function as measured by ImPACT relative to their own baseline scores. The addition of the computerized neurocognitive testing resulted in a net increase in sensitivity (accuracy of diagnosis) of 19%. The use of both PCS scores and ImPACT scores resulted in an increased sensitivity of 29% over reliance on PCS scores alone. In contrast, none of the control group of nonconcussed athletes had both symptoms and abnormal neurocognitive testing. The type of sport played had no effect on scores.

“Given these results, it is of concern that most return-to-play decisions after concussion have relied heavily on the athlete’s self-report of symptoms,” the authors conclude. “This study demonstrates that even athletes who report being symptom free may continue to exhibit neurocognitive deficits that they are either unaware of or are failing to report.”

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The American Journal of Sports Medicine is the monthly peer-reviewed scientific journal of the American Orthopaedic Society for Sports Medicine (AOSSM). AOSSM is a world leader in sports medicine education, research, communication, and fellowship. The Society works closely with many sports medicine specialists and clinicians to improve the identification, prevention, treatment, and rehabilitation of sports injuries. Please visit [www.sportsmed.org](http://www.sportsmed.org). To contact corresponding author Mark R. Lovell PhD, call AOSSM Director of Communications and Member Services, Patti Davis, at 847/292-4900 or email [patti@aossm.org](mailto:patti@aossm.org).

Financial Disclosure: Two of the 5 authors of this study report they are shareholders in ImpACT Applications.

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