
Bios


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AMNESIA, CONFUSION MAY SIGNAL CONCUSSION

Memory and other concussion-related problems may require 10-day recovery

SAN DIEGO, July 21, 2003 — Loss of consciousness may not be the main indicator of a concussion, according to new research released today at the 29th Annual Meeting of the American Orthopaedic Society for Sports Medicine (AOSSM).

“Athletes may sustain a severe concussion without losing consciousness,” says lead author Mark R. Lovell, Ph.D., director of the University of Pittsburgh Medical Center (UPMC) Sports Medicine Concussion program. “Amnesia and confusion on the field after injury may be as important, if not more important, in making a return-to-play decision.”

More than 300,000 sports-related concussions occur annually in the United States with at least 62,000 resulting form high school contact sports. Approximately 34 percent of college football players have one concussion and 20 percent have multiple concussions. Contact sports have a 19 percent annualized risk of concussion.

Dr. Lovell’s study appears in the July issue of *The American Journal of Sports Medicine*. He and colleagues James P. Bradley, M.D., Michael W. Collins, Ph.D., and Charles J. Burke, M.D., from the department of orthopaedic surgery at UPMC, evaluated 181 high school and college athletes with sports-related concussions to analyze the role of loss of consciousness in predicting neurocognitive recovery. Of the athletes studied, 30 had documented loss of consciousness and 151 had no documented loss of consciousness.

“We recommend that anyone who is thought to have had a concussion not be put back into athletic contest until he or she has been thoroughly evaluated by a physician and undergone neuropsychological testing. This is especially important with athletes 18 years of age and younger because their brains are still developing,” concludes Dr. Lovell.

Concussion grading systems recently have come under scrutiny because of the lack of evidence-based support. Grading scales assign a number based on suspected concussion severity. In the grading systems, loss of consciousness is typically considered to be sole or primary indicator of serious injury. Consequently, athletes exhibiting other symptoms of concussion—including amnesia and confusion—often return to regular activities earlier than those who lost consciousness.

A recent consensus conference on concussion management questioned the role of loss of consciousness and found the existing guidelines to be inadequate. Conference recommendations emphasized the value of individualized evaluation and neuropsychological testing.

Dr. Lovell says that, given the proper amount of time to heal, young athletes’ brains should completely recover from concussion. Should a young athlete sustain a second concussion before the brain recovers from a previous concussion, the effects of the injuries may become cumulative or lingering.

Healing May Take 10 Days

In a second study released today at the AOSSM Annual Meeting, researchers tested a simple, data-based approach to measure the severity of a concussion.

The field of concussion management seems to be evolving beyond non-evidence based numeric grading systems to a data-driven approach, says Dr. Collins, assistant director of the UPMC sports concussion program within the department of orthopaedic surgery and the Center for Sports Medicine. “Dr. Lovell has developed a 20-minute computerized test battery that is sensitive to the effects of concussion.”

The Immediate Post-concussion Assessment and Cognitive Test (ImPACT)™ evaluates different areas of the brain that are sensitive to concussion by measuring reaction time, processing speed, cognitive ability, and memory. Numerous national and international professional athletic organizations, as well as 70 colleges and universities, use ImPACT. More than 10,000 athletes have been tested with the system, resulting in a large database of normative values.

“ImPACT is a brain physical,” explains Dr. Collins. “Following concussion the brain slows and we can pick that up by measuring response time to various stimuli.”

For this study, Dr. Collins, Dr. Lovell, and Freddie H. Fu, M.D., compared ImPACT results from 231 concussed high school and college athletes with that of 50 non-concussed age- and gender-matched control subjects. They found that ImPACT accurately identified the concussed athletes.

In addition, they found that recovery time from a concussion could take 10 days, despite the fact that many athletes report improved symptoms by day five post injury. “We are finding memory deficits and neurocognitive functioning deficits that last up until day 10 post injury. The athletes are either feeling much better immediately following the injury or they are minimizing their problems to get back earlier. Personally, I think it’s a combination,” says Dr. Collins. “All concussions need to be taken seriously,” he says. “A physician who is knowledgeable about sports medicine should carefully evaluate concussed athletes. Neuropsychological tools like ImPACT can quantify the injury and make evidence-based decisions about when an athlete should return to play.”

AOSSM, a world leader in sports medicine education, research, communication, and fellowship, is a national organization of orthopaedic sports medicine specialists, including national and international sports medicine leaders. The Society works closely with many other sports medicine specialists and clinicians, including family physicians, emergency physicians, pediatricians, athletic trainers, and physical therapists to improve the identification, prevention, treatment, and rehabilitation of sports injuries. All AOSSM press releases are available on the Society’s Web site, www.sportsmed.org.

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