

# What is concussion?

Concussion is the mildest form of traumatic brain injury (TBI) with an estimated seven million occurring annually in the United States. Symptoms vary and are often short-lived. To ensure this, it is imperative that concussion be properly identified, diagnosed and treated.

**John Heinz Rehab**

*A division of Allied Services*

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*A division of Allied Services*

**Sports Concussion  
Management**

## The statistics are alarming.

Fifty percent of college athletes have had a history of concussion. One in ten high school athletes involved in contact sports sustains a concussion every year.



Coaches, team personnel, and other individuals may have limited training in recognizing signs and symptoms of concussion and therefore may not accurately identify the injury when it has occurred. Additionally, many players may be reluctant to report concussive symptoms to the athletic trainer or team physician for fear they will be removed from the game, which may jeopardize their status on the team or their careers.

The classic symptoms of loss of consciousness, confusion, memory loss and/or balance problems may be present in some athletes with mild concussion, but there may or may not be obvious signs that a concussion has occurred. Symptoms indicative of brain impairment can be quite subtle and may go unnoticed by the athlete, team medical staff, or coaches.

For these reasons, athletes should undergo baseline neurocognitive testing and athletes, parents and team personnel should be educated about concussion and its appropriate diagnosis and treatment.

### Return to Play?

The safe determination of return to play once concussion has been diagnosed is often debated. Though long-term deficits in the form of post-concussion syndrome have been observed from a single concussive event, it is typically assumed that proper management of concussion should lead to a favorable prognosis without long term effects. Conversely, returning an athlete to play prior to complete recovery may greatly increase the risk of lingering, long-term, or catastrophic neurologic consequences. As such, acute assessment of injury and determination of existing symptoms may indicate incomplete recovery. This proves critical to the safe management of the concussed athlete. In short, no athlete should return to play until all signs and symptoms of concussive injury have completely resolved. The International Symposium on Concussion in Sport document states that neuropsychological testing should be part of a comprehensive and systematic approach to concussion injury.

### ImPACT™

ImPACT™ ([www.impacttest.com](http://www.impacttest.com)) software is utilized as part of the John Heinz Rehab concussion management program. ImPACT™ is a sophisticated research-based software tool developed to assist sports medicine clinicians evaluate recovery following concussion. The ImPACT™ program evaluates and documents multiple aspects of neurocognitive functioning, including memory, brain processing speed, reaction time and post-concussive symptoms. In addition, the program provides an injury documentation system that facilitates the tracking of the injury from the field through the recovery process. Combining ImPACT™ with comprehensive neuropsychological assessment of the concussed athlete provides valuable information to assist in making return to play decisions and ensuring the health of our athletes.

**Michael J. Raymond, Ph.D.**, Director Clinical/Forensic Neuropsychology

- Credentialed ImPACT™ Consultant
- Board Certified Neuropsychologist
- Diplomate, American Board of Professional Neuropsychology
- Added Qualifications in Rehabilitation and Forensics
- Fellow, National Academy of Neuropsychology
- Fellow, American Board of Professional Neuropsychology
- Recipient of the 2003 Distinguished Neuropsychologist Award

**Dr. Raymond and the team at John Heinz Rehab are dedicated to the comprehensive neuropsychological assessment and management of sports related concussion. From baseline assessment to post concussion management, we work with physicians, athletic trainers, sports medicine personnel and coaches in bringing state of the art care to the athlete to ensure safe return to play.**