

Concussion Management

Get Your Head Out of the Game

Part 2 in a series of 3 articles on concussion treatment in athletes.

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Concussion has become a major focus for medical professions, athletic trainers and parents alike and a lot has changed in concussion management. The effects of a concussion may not be obvious and if one is not observant and does not ask the appropriate questions, subtle changes in the athlete's character, personality or behavior may be overlooked. Failure to notice such changes may mean missing diagnosis of a concussion. This article will continue the discussion of concussion and treatment in athletes.

Once a trainer or medical professional has determined an athlete has a concussion, he must immediately be pulled from play and carefully monitored for changes, as concussion may worsen with time. Further, while a transient loss of consciousness after an impact may be regarded as a concussion, a prolonged loss of consciousness (over 30 seconds) ought to be treated as a more severe head injury. These players should receive prompt medical attention at the local emergency room. Remember that if a patient does not regain awareness, one should also treat the patient as if he has a serious neck injury.

Most athletic trainers are now well aware of the new guidelines for concussion management. They will usually discuss the diagnosis with the coach as well as the parents and give pertinent recommendations for immediate care. However, long-term care, such as when the athlete can return to play, should only be addressed by a medical professional. Knowing when a player is safe to return to play is a difficult decision. Many guidelines have been created in an effort to both grade the severity of the concussion and determine how long a player should be sidelined. But among these 20-some classifications there is a lot of variation and none are based on scientific research. Recent guidelines have begun to focus on more accurate neuro-psychological testing strongly supported by research.

Prior to neuro-psychological testing there was little concrete evidence for "return-to-play" decisions. Neither MRI nor CAT scans can detect changes in the brain indicative of concussion. This is because concussion is not a structural injury. There is no obvious change in the anatomy of the brain. It is easy for a physician to be lulled by these tests into a false sense of security. The tests show no damage, so the player is allowed to return to play...perhaps too early, before the brain has healed.

We now know that a concussion is a metabolic disorder. This means, there is a change in the cellular machinery in the area of injury causing a loss of regulation in the affected area. This loss of regulation causes the cells to go into

“hyperdrive” and burn up all their fuel (sugar and oxygen). While better blood flow is critical at this time to replace the depleted energy stores, blood vessels may spasm as part of the reaction to the injury, resulting in less blood flow than normal. Decreased blood flow puts the concussed area of the brain at risk. But, if the athlete is kept at rest and given a proper healing period, one can expect 100% recovery. On the other hand, if an athlete returns to play too soon one can expect slow or incomplete healing. The biggest concern for any athlete that returns to play too soon is that he will sustain a second head injury before the first has healed. This event is known as “second impact syndrome” and it can prove to be life threatening.