

[IMAGE]

Kids and Concussions: Pop Warner Uses Its Head

By K. Jeffrey Miller, DC, MBA

In early June the Pop Warner youth football league announced a new concussion awareness initiative in response to the growing number of concussions suffered by players each year. It also follows closely the recent suicide of former NFL player Junior Seau, who suffered from post-concussion syndrome, and the bounty scandal involving the NFL's New Orleans Saints, who allegedly rewarded players for taking opposing players out of the game.

The occurrence of concussion in football at all levels is significant. Concussions in the sport make up over half of the more than 4 million sport- and recreation-related concussions suffered each year in the United States. The majority of these injuries occur during practice. The new Pop Warner concussion prevention rules include the following:

- Contact during practice is limited to one-third of practice time. With an average practice schedule of nine hours per week, this limits contact to three hours.
- No head-to-head hits are allowed.
- Tackling drills must be initiated within a 3-foot zone. No full-speed or head-on tackling drills beyond 3 feet.

This initiative is a welcome policy for parents of youth footballers. It is also welcomed by health care providers. There will be fewer concussions. The key word in that last statement is *fewer*. Unfortunately, we cannot say there will be "no" concussions.

Kids and Concussions - Copyright © Stock Photo / Register Mark A concussion is a traumatic disruption of cerebral (brain) function. Trauma results in an increased demand for intracellular glucose that cannot be met. The imbalance results in what is thought to be altered cerebral blood flow and a variety of signs and symptoms. In the majority of cases, the condition is transient.

Signs and symptoms of concussion include headache, sleep disturbance, dizziness, confusion, nausea, unsteadiness, difficulty concentrating, disorientation, amnesia, loss of consciousness, irritability, vomiting, visual disturbances, tinnitus, lightheadedness, fatigue, impaired performance and impact seizure. Signs and

symptoms are reported by the athlete or observed with physical evaluation.

Structural changes in the brain are not seen on neuroimaging, making concussion predominantly a clinical diagnosis. However, imaging is still a good idea to rule out significant trauma such as a skull or cervical fracture, epidural or subdural hematoma, etc. If imaging is not performed initially, signs and symptoms lasting more than 10 days indicate an immediate need.

Numerous grading scales for concussion have been proposed and utilized over the years. However, the current trend is to simply rate concussions as either simple or complex. *Simple* concussions are self-resolving, usually within 10 days. They resolve without residuals and the athlete can return to play. *Complex* concussions have a continued signs and symptoms with complications (convulsions are an example). Lingering signs and symptoms can delay or permanently prevent an athlete's return to play.

If an athlete recovers from a simple concussion, a second concussion from similar trauma may be classified as complex. Concussive traumas seem to have an accumulative effect.

An athlete may exit a game reporting a head injury. They are up moving around and may just seem a little dazed. Nonetheless, the report of the head injury, even if it appears minor or is downplayed by the player, must be taken seriously. Assessment of the player's level of consciousness, orientation to person/place/time, immediate memory (game score), short-term memory (game plan) eye movements, visual function (How many fingers am I holding up?), and balance/coordination (touching the nose, standing on one foot) must be performed.

Head injury cannot be separated from the possibility of neck injury in these cases. Observation for signs of cervical spine injury is also necessary. Neck pain or stiffness, muscle spasm, asymmetrical/abnormal head positioning, respiratory difficulty, numbness, tingling or burning in the extremities, muscle weakness or paralysis, and loss of bladder or bowel control are among the primary signs and symptoms to look for.

If the player is down on the field, but conscious, assessment is even more important. Immobilization of the head and spine is necessary as part of the assessment. In addition to the neurological assessments described above, procedures such as having the player stick out their tongue, wiggle their fingers and toes, and respond to sensory stimulus are required. Transport to a health care facility is usually necessary for further evaluation and observation.

If the player is down and unconscious, then the situation is critical and should be treated as such. Assessment begins with airway, breathing and circulation (the ABCs), and proceeds as the head and spine are immobilized. Neurological screening is also required. In this circumstance, the athlete requires transport to a health care facility for further evaluation and observation once stable enough for transport.

In all circumstances, but especially this last circumstance, it is important to be prepared. Training, equipment, transportation and emergency facilities must be in place. On-field assessment is an art and anyone involved in sideline or team health care should be well-versed and well-rehearsed in it.

That said, there is a drawback to the Pop Warner initiative and clinical information described, and a drawback to all of the knowledge and preparation discussed here. Pop Warner events don't typically include sideline health care personnel. The athletes with brains most sensitive to concussion have the least amount of help available. Keep in mind that Pop Warner is the largest organization of its kind in the world, with over 200,000 participants each year.

This shifts the primary responsibility for success of the new rules directly to the coaches and parents in the league. Doctors of chiropractic can help coaches and parents understand the clinical importance of concussion as it relates to players young and old. This information must then be combined with moderation of the high level of competitiveness seen at all levels of sports today. Competitiveness must not be allowed to deviate the course of the new initiative. Talk to your chiropractor about the danger of concussions and what you can do to reduce your child's risk.

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