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Concussion Program

The Benefits of Education, Prevention and Accurate Assessment

High school athletes rarely worry about getting hurt. But the time spent with athletes during the preparticipation physical can give doctors an opportunity to educate players about concussions and the importance of reporting symptoms to their coaches or certified athletic trainers or seeking emergency help.

Children's Healthcare of Atlanta now has a concussion program to evaluate and manage patients who have suffered head trauma—and to ensure that they are fully recovered before they return to the playing field. The treatment team includes sports medicine physicians, neurologists, neurosurgeons, neuropsychologists and certified athletic trainers.

For many years, determining when a player can safely return to play has been more of an art than a science. The system for determining the severity of a concussion has changed; there have been more than a dozen grading systems with differing criteria for return to play. But, getting it right is essential—pediatricians cannot needlessly exclude an athlete from playing; however, the consequences of prematurely returning to play can be dire. Second-impact syndrome is rare but potentially fatal. There also may be lasting and disabling problems with attention, irritability and concentration.

Children's began developing its concussion program approximately a year ago, hoping to standardize management of concussions and decisions about return to play. Last fall, the team performed neurological baseline tests on 500 athletes at schools using the ImPACT concussion management system. Nineteen athletes were seen in the clinic for posttests. (Patients who did not take baseline tests are evaluated against age-based norms.) The tests can show whether a patient's cognitive function has returned to normal and can objectively—and confidently—assist in determining when he or she is ready to return to play. It also

What to tell athletes about concussion prevention:

- It is important to notify a certified athletic trainer or coach if any sign of a concussion is detected. Even the seemingly minor symptoms can be significant. Examples of such symptoms include but, are not limited to:
 - Recurrent vomiting
 - Severe headaches
 - Vision problems
 - Weakness in his face, arms or legs
 - Paleness, sweating or weakness
 - Dizziness, unsteadiness or trouble walking
 - Slurred speech or trouble talking
 - Bleeding from nose or ears
 - Sleepiness, moodiness or irritability
- Make sure all equipment, especially helmets, fits correctly and is properly padded. If the helmet has an air bladder, make sure the bladder is properly inflated.
- Keep the mouthpiece in good condition and replace it halfway through the season. There is some evidence that a properly fitted mouthpiece can decrease the risk of sustaining a concussion.
- Tell a certified athletic trainer or coach if a teammate is acting out of the ordinary or seems dazed or incoherent. Taking an athlete out of the game before he or she can suffer another potentially harmful blow to the head may save that player's life.

helps athletes to see evidence of the neurological-response changes that have occurred as a result of trauma. This will hopefully increase compliance.

The goal is to expand the program and reduce athletes' risk of serious complications from concussion. Ideally, the program will have more certified athletic trainers and the baseline test will be offered more widely, particularly to athletes participating in lacrosse, football, hockey,

cheerleading and soccer. The team also hopes to be able to offer ImPACT testing to younger players.

ImPACT concussion management system

Children's chose an evaluation system, which was developed at the University of Pittsburgh (and also used by the Pittsburgh Steelers), in order to make available objective, evidentiary evaluations of players. This system uses a Windows-based test that can be administered in approximately 20 minutes by a certified athletic trainer with a laptop. The test measures multiple aspects of cognitive and neurological function in athletes, including attention span, memory, sustained and selective attention, problem-solving and reaction time. Reaction time can be reliably measured to within 1/100 of a second. With this data, which is taken both before and after the concussion, we can be confident that an athlete is fully recovered before a return to play. 📧

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