



Concussion Overview for Parents Children
Atlantic Health Sports Concussion Center at Overlook Hospital
(Dr Joseph Rempson Atlantic Neurosurgical)



When in doubt...sit out !!

At Gabriele Fitness and Performance you have worked hard to become the best athlete you can, but you must stay healthy to perform.

There are 1.6-3.8 million sports-related concussions per year. The word concussion may sound benign, but it is a brain injury. Many athletes suffer knee injuries, ankle injuries, shoulder injuries, and a variety of musculoskeletal injuries. Some of these injuries we can play through, others require rest, and a very small percentage requires surgery. Unlike musculoskeletal injuries we cannot play while still suffering from the effects of a concussion.

1) What is a concussion? A blow to the head or body that causes shaking of the brain which causes damage to the tissue of the brain. Common examples include an athlete's head hitting a stationary object such as the ground in field sports (football, soccer, etc), boards/ice in hockey, and floor in basketball. Other examples include head-to-head contact, head to elbow contact, and head to knee contact while falling. It must be kept in mind that just a hard blow to the body that shakes the head can cause a concussion. The head doesn't have to be hit directly.

2) What do we look for?

Symptoms: headache, nausea, vomiting, confusion, ringing in the ears, dizziness, seeing stars or flashing legs, double vision, feeling stones/dazed, and being unaware of the period/opposition/or score of the game

Signs: loss of consciousness, seizure, slow to answer questions, easily distracted, poor concentration, vacant stare, nausea/vomiting, slurred speech, inappropriate playing behavior, poor coordination, poor balance

Remember loss of consciousness occurs in less than 10% of athletes with concussion.

3) When do kids come out of games? If there is any doubt that a young athlete has had a concussion he or she must be removed immediately from the game. An athlete can start to feel much better within a few minutes on the sideline. However, the symptoms may not manifest for several hours to several days. It is important that if a concussion is suspected that athlete be monitored without contact over the next several days to see if they have had a concussion.

- If we return the athlete back to the field even though they feel better and it turns out they did have a concussive episode and sustains more hits we can turn a simple 1-3 week recovery process into a 4-6 month recovery process. During that time the student athlete may miss time from school, social life, and sports. Imagine having a young athlete severely restricted in all aspects of their life for extended periods of time. This is a big challenge.
- If it turns out the athlete doesn't manifest the symptoms of concussion over the next several days they, in most cases, can safely return to sports after the proper medical evaluation without incident. At most they have lost several days, but haven't risked losing months.

It is important for our young athlete's to learn the signs and symptoms of concussion and be honest about reporting how they are feeling. This is the most important step in protecting the ability of our young athlete's to continue playing the sports they enjoy. You must understand that while trying to be a warrior and play through any signs and symptoms, you may be unintentionally jeopardizing not

only your ability to play certain sports for a lifetime, but your long term goals and aspirations.

4) What are the short and long term consequences of concussions and their treatments?

Both short and long-term symptoms can include difficulty with headaches, sensitivity to light, sensitivity to noise, fatigue, poor concentration, poor memory, dizziness, difficulty with balance, feeling foggy, trouble falling asleep, sleeping too much, nausea, ringing in the ears, depression, anxiety, sadness, feeling more emotional, irritability.

It should be noted the headache usually remains in the same spot. It can be different from concussion a concussion, but if your headache starts on the right side in a particular concussion it will stay on that side until resolution. If a headache starts on the left side it is unlikely the concussion. Also not all individuals with concussions have headaches but a majority does. It is often described as a pressure-type headache.

- a) Short term management includes both **cognitive and physical rest (see red print below)**. **Cognitive activity** may force the part of the brain that has been injured to work harder than it is able to secondary to the brain injury aggravating the symptoms and prolonging recovery. Physical activity can shake the injured part of the brain aggravating symptoms and prolonging recovery. **Observing cognitive and physical rest is the most important part of recovery period. If you're doing something that aggravates her symptoms you need to stop. Clearly getting hit again isn't an option that can lead to long term consequences.**

Examples of cognitive stress: Computers, Texting, Television, Parties, Talking on the telephone, Studying, Taking tests, Going to school, Video games, Light, Noise, and etc.

Examples of physical stress: Running, Jumping, Lifting weights, Rough housing with friends/siblings, and etc.

Example we try to avoid: A young athlete sustains a blow to the head on Friday night and doesn't feel too bad. They may have a small headache and feel a little groggy. By Sunday their headache is worse and they are having trouble with light, noise, concentration, and memory along with a headache. They go to school on Monday and feel worse during the day. They may go to the nurse a couple of times and get some Advil/Tylenol. This usually does not help. They go home and try to do homework; this continues to make things worse. The next day they have a test and struggle through the test. This can become a repetitive cycle. The athlete continues to feel worse and his or her grades often suffer. This is a classic example of a lack of cognitive rest. The student will continue to have their symptoms increase and often not do well in school. This is what we try to avoid.

- b) Long-term consequences and management: I will not going to this in detail since our goal is to avoid this life altering situation. This can lead to grade point averages dropping, retirement from sports, depression, and a complete change of ones social life. Daily and long-term headaches, dizziness, depression, and other symptoms which can last years. This situation often involves treatment by physicians, psychologists, neuropsychologists, and learning disability specialists. Many of these youngsters need to be put on academic accommodations so they are able to continue in school.

There are no medications which help one recover from a concussion. They may mask the symptoms so you feel a little better, but they do not heal the brain. The

5) When can I return to play?

At the minimum you must be symptom free with full cognitive and physical exertion. Some school programs will have you take a computerized test to check your memory. There is a test you can take before the season (baseline) and after a concussion (post-concussion test) to look for changes in your memory. This test must also return to baseline levels. The most common computerized test used in the state on New Jersey is Impact (for information go to www.impacttest.com). There is also a format for the exertion protocol:

When returning athletes to play, they should follow a stepwise symptom-limited program, with stages of progression. For example:

1. rest until asymptomatic (physical and mental rest)
2. light aerobic exercise (e.g. stationary cycle)
3. sport-specific exercise
4. non-contact training drills (start light resistance training)
5. full contact training after medical clearance
6. return to competition (game play)

There should be approximately 24 hours (or longer) for each stage and the athlete should return to stage 1 if symptoms recur. Resistance training should only be added in the later stages. Athletes will not be cleared to play until they are cleared by a medical professional. **Passing all the tests doesn't guarantee a return to play.** It also depends on the duration of the concussion and prior concussion history.

6) How do I prevent a concussion?

- Make sure your helmet fits and your chin strap is snug and secure at all times. **In football, hockey, and lacrosse no one helmet has been shown to be scientifically better than another in preventing concussion. The only exception is the Revolution Helmet in football by Riddell which has been**

studied and shown to have a small reduction. Some of the helmets may be better than others, but there is no science to prove it.

- Under no circumstances lead with your head.
- Keep your head up. It helps you see what is coming, and minimizes direct head contact into the boards.
- Many of us believe improving neck strength may also benefit.

7) What are some of the common myths in concussion?

- **Does heading in soccer cause concussions?** Heading in soccer rarely cause concussions, but not seeing the ball come and having it hit you in the head can.
- **Do I need a CAT SCAN or MRI?** CAT scans and MRI's are negative in concussions. They don't show the damage from a concussion, they show bleeds (rare in concussions). Not all concussive episodes need imaging studies.
- **Do I need to lose consciousness to have a concussion?** Most athletes who have concussions don't lose consciousness.
- **Do mouth guards prevent concussion?** Most scientific evidence shows that mouth guards **don't** prevent concussions, but they should be worn to prevent oral facial injuries in the appropriate sports.

REMEMBER AS ATHLETES WATCH OUT FOR EACH OTHER. THESE ARE NOT ONLY YOUR TEAMMATES, BUT YOUR FRIENDS. IF YOU THINK YOUR TEAMMATE HAS HAD A CONCUSSION GET THEM OUT OF THE GAME. TELL THEIR PARENT, COACH, OR ATHLETIC TRAINER

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