

HEAD INJURY INSTRUCTIONS

The child experienced a head injury today while playing sports. A **concussion (a type of head injury) is also known as mild traumatic brain injury (MTBI)**. This happens when outside forces interrupt the normal activity of the brain.

Concussion symptoms usually appear right away (although some symptoms can happen days later) and affect many different mental functions. A **stunned, confused state is the hallmark** of a concussion. If the child loses consciousness or “blacks out”, then you know that he/she had a concussion. However, most children with concussions do NOT have a loss of consciousness. Other common symptoms include; loss of mental sharpness, headache, nausea, vomiting, memory loss, dizziness, emotional instability, disturbances of balance, visual changes, and changes in cognitive functions.

In simple concussions, all symptoms improve as time goes by (usually resolving completely within a week to ten days). Concussions can range from mild (simple) to severe (complex); if symptoms last more than ten days, seek professional help. Like all injuries, however, **it is important that the injured body part be given time to heal. Resting the brain** may include limiting both physical and mental activity for a period of time.

Observe the child carefully over these first few days. If the symptoms worsen (rather than improve), this may indicate bleeding or swelling in the brain, which requires immediate medical attention. If the child becomes more and more confused, does not respond normally to questions, has a convulsion or seizure, has vomiting that won't stop, or has a severe headache or neck ache, call your doctor or bring the child to an emergency room immediately.

The quickest path to recovery is to provide the brain the opportunity for complete rest. This means not only no physical activity as long as any symptoms are present, but also limiting activities that cause the brain to work hard, such as schoolwork, computer screen time, video games, and text messaging. Since many individuals with head injuries are often bothered by both light and noise, sleeping in a darkened room for the first few days may provide the ultimate rest.

All concussions should be evaluated by a **knowledgeable health professional** that knows the child well (such as their pediatrician, family doctor, team physician, or a sports medicine doctor). The child will be evaluated to see how severe the injury is, monitor symptoms over time and decide if further testing is needed.

Concussions are not simply “a blow to the head”. They are brain injuries and must always be taken seriously. **Never participate in physical activity if any sign or symptom of a concussion is present.** Follow a program of gradual return to full activity.

Parents: all concussions are of concern and need to be managed carefully. Even though everyone feels compelled to take an athlete with a head injury to the ER, there is very little done in sophisticated evaluation there. A concussion injury always has no associated gross anatomic changes or findings, so the CAT scan or other diagnostic tests will always be negative. If there is some other more serious injury, the ER diagnostic testing may uncover that – such as bleeding around the brain. With our latest understanding of concussion, sports medicine physicians have learned that you cannot determine if the concussion is low level, moderate or severe until after you have completely recovered. While you may experience your child's level of symptoms are low at the time of the ER visit that does not always ensure that the injury will remain simple; it could evolve into a more complex problem. There are also "Concussion Centers"—if you choose to seek out one of these be sure to ask if they are up-to-date on issues relating to adolescent athletes. Some concussion centers may take an approach not specific for athletes – or specific for adolescents. Further, many of their worst cases may come from adults (and children) hurt in high speed auto accidents and other major trauma, so their perspective on athletic concussion may be different from their usual patient. On the other hand, the concussion center may be set up primarily for young athletic concussions. There have two international meetings on concussion management held within the past 8 years – one in Vienna and one in Prague. Their recommendations hold sway among most sports medicine physicians at this time. Be sure to ask a few questions to find out the approach of the physicians or neuropsychologists.

Accordingly, return to activity takes place in a step-by-step fashion, gradually advancing as symptoms improve. Through measurement of various domains of brain function, neuropsychologists have discovered that brain function is depressed and suboptimal for about 3 to 7 days after the concussion has taken place – even in those whose symptoms seem to have gone completely away. In order to heal most rapidly, the athlete should reduce the challenges to his/her brain for several days. If he/she is symptomatic, such as having headache, dizziness, light bothering him/her, noise bothering him/her, feeling "out of it", nausea or vomiting, trouble with balance, trouble sleeping, trouble concentrating? These will determine how he is doing and how long his/her recovery will take. He/she should avoid all physical exercise and limit his/her mental exercise as well – avoid video games, computer games, text messaging – perhaps staying home from school if he/she has several of the symptoms mentioned above. In the first few days, resting in a darkened room often provides the maximal opportunity to rest one's brain and thus promote more rapid recovery.

Coaches: an athlete should NEVER be returned to play if the athlete has any symptoms of head injury. Begin the return to activity by using a non-jarring activity such as riding an exercise bicycle for 20 minutes to see if symptoms return; if OK, advance the next day to light jogging and perhaps some sit ups or pushups. If OK, advance to more challenging running or very light practice (no heading and no collisions); then advance to full practice; finally on to full activity – taking 4 to 5 days to work back from inactivity to full activity. If symptoms increase from any of these activities, stop and go back to square one – No activity until all symptoms have resolved. Exercise bicycle next day, etc.

Dr. Stephen G. Rice, MD, PhD, FAAP Specializing in Pediatric Sports Medicine/Pediatrics
New Jersey Youth Soccer ODP Head Team Physician
Medical Director Jersey Shore Sports Medicine Center