

## **Concussions\***

### **A Word About Head Injuries**

While most head injuries are minor with no long-term consequences, they can damage the scalp, skull, brain or eyes (or a combination of these), and can vary in severity from minor to life threatening. Do not judge the severity of a head injury by its appearance because serious brain or other damage can occur with no sign of damage to the head. For example, if the head is struck, the brain can be bruised as it moves violently within the skull. The brain may also be damaged by pressure inside the skull due to a buildup of fluid or bleeding in the brain after the injury. Initial symptoms often develop soon afterward and, in minor cases, commonly include a mild headache and a lump, bruise or cut on the scalp. Most athletes with a minor head injury recover completely within a few days. However, sometimes an injured person appears well at first and then symptoms of a more serious head injury develop hours or days later. Though CT scans and other medical tests may show abnormalities with head injuries, they may not always show problems associated with the mild head injuries typical in athletic competition. The outcome of a serious head injury is often difficult to predict. Recovery may take up to two years and problems such as speech problems, coma, paralysis and death may occur. Concussions are one type of head injury.

### **Concussions**

A concussion is an injury to the brain caused by a blow to the head or by striking the head on something. This causes a mild abnormality in normal brain function. The initial symptoms of a concussion are similar to that of more serious head injuries like bleeding into the brain. The difference is that symptoms of a concussion should show steady improvement over a short period after the initial injury. If symptoms are worsening or not improving, there is cause to worry about swelling or bleeding inside the skull. The signs and symptoms of a concussion include temporary loss of consciousness, confusion, loss of memory about the event that related to the concussion as well as some time before or after (amnesia), dizziness, headache, mild lack of coordination, nausea and vomiting, and inability to concentrate. These symptoms usually get better in a few hours or days.

### **Second Impact Syndrome and Post-concussional Syndrome**

Second-impact syndrome is a rapid, deadly brain swelling that may occur if a person who has had a concussion suffers another head impact – even a minor one – before the symptoms of a previous concussion have fully cleared. Even after recovery, an athlete's chance of suffering another concussion may be four times as high as that of someone who has never had a concussion. And repeated concussions could cause permanent brain damage or death. This is the reason for the strict return-to-play guidelines for concussions. However, the risk of getting second-impact syndrome does diminish with time.

Following a concussion, a few people develop post-concussional syndrome – a collection of symptoms that may follow a concussion. These include headache, poor concentration, mild memory loss, irritability, trouble sleeping, nightmares and sometimes mild personality or behavior changes. Treatment consists of watchful waiting until the symptoms resolve. There are no treatments or medicines that will shorten the recovery time. It goes away on its own and you should gradually improve to their normal pre-injury state.

Although this condition may last from weeks to months, it is important to remember that it will get better. If you are diagnosed with post-concussional syndrome, avoid making life-changing decisions such as quitting school or changing jobs because of the symptoms that you are experiencing. Changing some things at work or school environments may help minimize the problems of any memory loss or difficulties in concentration. Support from friends and family may help you remember that this is a temporary condition.

### **Treatment**

Your doctor will examine you and, if necessary, may order tests at the hospital like X-rays to look for a fracture and MRI or CT scanning to look for swelling or bleeding. Your doctor may admit you to the hospital for observation overnight. The main treatment is rest and careful observation. If your doctor does not admit you to the hospital you can be safely observed at home by a family member or close friend – they may notice changes in normal behavior that a medical person who does not know you might miss. If you have a severe headache, a cut that requires stitches, a loss of consciousness (even if brief), if you are concerned about the severity of the injury, or if additional symptoms develop you must go to the hospital or get medical help at once. Many individuals will have a headache and physical activity may make it worse. If you did not lose consciousness at the time of the concussion and have only a mild headache, it is safe to take Tylenol<sup>®</sup> (acetaminophen) to relieve the pain. You probably do not need to be at bed rest, but you should keep your activity light and get plenty of rest until you are feeling normal. An ice pack to the area struck by the original blow may help with pain for the first few days. You should take all precautions to avoid another concussion in the near future.

### **Return to Athletic Activity Guidelines**

Return-to-Athletic Activity guidelines attempt to decrease the risks of further injury and second-impact syndrome by taking into account injury severity and not allowing you to return to competition if symptoms are present. If you still have symptoms or signs of a concussion, or if exercise alone reproduces symptoms, return to competition is not allowed. But once the symptoms have cleared, there is debate among experts as to how long you should be kept from contact play. As a second concussion (especially within three months of the first one) may result in permanent brain damage and even death, some guidelines recommend that you not do contact sports for three months. Other guidelines suggest anywhere from 20 minutes, a week, a season, or forever depending on the severity of concussion and your personal history. Another example: an athlete who loses consciousness for 30 seconds would have a severe concussion and would be barred from play for one week to a month. Your own feeling regarding return to competition also needs to be considered – if you do not feel ready to return to competition, then you are not ready. **Bottom line: get your doctor's permission and medical clearance *in writing* as to when you may or may not return to competition. Be sure that your parents, coach and trainer have a copy of this written medical clearance.**

\*Please also refer to the handout “Head Injury Fact Sheet”.

This handout is adapted from the book “*Championship Nutrition and Performance: The Wrestler's Guide to Lifestyle, Diet and Healthy Weight Control*” by Nicholas Rizzo, M.D. This handout should not be considered complete nor a substitute for evaluation and treatment by a physician. Always consult your doctor first.