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Pediatric ED Concussion and Brain Injury Discharge Instructions

DEFINITION

A concussion is an injury that affects the way the brain works. Concussions cannot be seen on imaging (X-rays, CT or CAT scans, MRIs). Concussions can occur from direct or indirect forces to the head or neck area that causes the brain to move inside of the skull. People with concussions typically have symptoms immediately following the injury. Symptoms may be short-lived or they may last for days or weeks. Concussions are not always associated with loss of consciousness or extreme injuries. Even minor bumps can cause significant concussion.

SYMPTOMS CHILDREN MAY FEEL

A child or adolescent with a concussion may develop symptoms immediately following the injury or up to several hours after the injury. Symptoms felt by injured children can include pain or nausea, or they may be more subtle and include behavior changes or difficulty with sleep. Some of the most common symptoms of concussion that children and adolescents feel are:

- Headache
- Nausea or vomiting
- Blurry or double vision
- Dizziness or difficulty with balance
- Sensitivity to light and/or noise
- Irritability or moodiness
- Difficulty falling or staying asleep
- Decreased interest in hobbies or feeling down
- Difficulty concentrating
- Confusion
- Decreased ability to react

SYMPTOMS PARENT, GUARDIAN, TEACHER OR COACH MAY SEE

- Trouble at school or declining grades
- Confusion in normal conversations
- Forgetfulness
- Clumsy movements
- Irritability or mood/behavior changes
- Daytime sleepiness

HOW CONCUSSION IS DIAGNOSED

Your provider may or may not need to perform imaging to diagnose a concussion. Imaging may be performed to rule out more serious injuries, such as bleeding in the brain or skull fractures, but concussion is not something that shows up on imaging. A full exam of the patient may reveal some of the signs and symptoms as listed above, including difficulty with balance and/or memory. Physical exam and a careful history are the best ways to diagnose a concussion.

HOME CARE INSTRUCTIONS

There is currently no treatment for concussions, but there are recommendations and laws in place to help patients recover from concussion more quickly. The most important part of concussion management is avoiding triggers or activities that make symptoms worse. Your provider may recommend a period of both physical and cognitive rest immediately following injury in order to let the brain rest and begin to heal. Activities like reading, using cell phones, or watching



television should be stopped if they make symptoms worse. Some children may need to stay home from school or only go to school part time while their brain is healing. Some children may need extra time for homework or other assignments while they are recovering.

Most concussions will heal themselves in several days, although some may take more than 10 days to resolve. If symptoms are present for more than 10 days following injury, further evaluation is needed.

It is important that all children who have suffered a concussion wait to return to physical activity until all of their symptoms are gone and they are cleared by their primary care physician.

Getting a second concussion before your brain has completely healed from the first concussion can be very dangerous, and cause brain swelling and potentially death. No athlete should be allowed to return to play, regardless of sport, until a physician determines it is safe to do.

PROGNOSIS

If children with concussions do not resume activities that make symptoms worse, and allow themselves to heal completely, prognosis is generally very good. Once all symptoms are gone, and the patient has been released by their physician to resume activities, care does need to be taken to insure that symptoms do not return when normal activities are resumed.

There is ongoing research on the consequences of concussion to the developing brain, in addition to the consequences of sustaining multiple concussions. Currently there is no definitive answer to the long term significance of concussions.

HOME CARE INSTRUCTIONS

Anyone who has been diagnosed with a concussion needs to follow up with their primary care provider in 5-7 days. This is for the provider to assess need for medications to help with pain (headaches) or sleep, and to know when to release the patient back to their regular activities. If a provider prescribes medications to help with symptoms, the medications must be completely discontinued before returning to regular physical activity.

Athletes will need gradual return to play, regardless of sport. There are recommendations for this that must be followed in a step-wise approach. Following athletes closely for return of symptoms is necessary, and can generally be performed by a primary physician and/or athletic trainer.

SEEK IMMEDIATE MEDICAL CARE IF:

- Your child has been vomiting for more than 24 hours
- Your child has weakness, numbness or difficulty walking
- Your child has difficulty finding words or speaking
- Your child is unable or difficult to wake up
- Your child has new seizures
- Your child has continued crying that will not stop

AUTHORS

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RESOURCES

CDC Head's Up: Concussion in Youth Sports.

<http://www.cdc.gov/concussion/HeadsUp/youth.html>

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