

From the Health Clinic



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Concussions



A concussion is a brain injury that causes temporary changes in the way the brain works. You might think they happen when someone is knocked unconscious while playing sports. But concussions can happen with any head injury, often without a loss of consciousness.

We often hear about head injuries in athletes, but most concussions happen off the playing field - in car and bicycle accidents, in fights, and even minor falls.

About Concussions

A concussion is a type of traumatic brain injury. The brain is made of soft tissue and is cushioned by spinal fluid. It is encased in the hard, protective skull. The brain can move around inside the skull and even bang against it. If the brain bangs against the skull - for example, in a

fall on a playground or a whiplash-type of injury - blood vessels can tear and the nerves inside the brain can be injured. These injuries can cause a concussion.

Anyone who has a head injury should be watched closely for signs of a concussion, even if the person feels OK. An undiagnosed concussion can put someone at risk for brain damage and even disability. So anyone who has **any** symptom of a concussion should be seen right away by a doctor.

Sports-related concussions get a lot of attention. Doctors now recommend these steps after a suspected sports concussion:

1. The player should immediately stop playing or practicing.
2. The player should get checked out by a doctor before returning to practice or play.

All injured body parts take time to heal, even brains. By resting and taking certain important precautions, children with concussions usually recover within a week or two without lasting health problems.

Signs and Symptoms

Someone with a concussion may be knocked unconscious, but this does not happen in every case. In fact, a brief loss of consciousness or "blacking out" does not mean a concussion is any more or less serious than one where a person didn't black out.

If your child might have had a concussion, go to the emergency room if you see any of these symptoms:

- loss of consciousness
- severe headache, including a headache that gets worse
- blurred vision
- trouble walking
- confusion and saying things that don't make sense
- slurred speech
- unresponsiveness (you can not wake your child)

Call your doctor right away to report other problems, such as vomiting, dizziness, headache, or trouble concentrating. Then you can get advice on what to do next. For milder symptoms, the doctor may recommend rest and ask you to watch your child closely for changes, such as a headache that gets worse.

Symptoms of a concussion do not always show up right away, and can develop within 24 to 72 hours after an injury. Young children usually have the same physical symptoms as older children

and adults, but cognitive and emotional symptoms (such as irritability and frustration) can appear later, be harder to notice, and last longer. Sleep-related issues are more common in teens.

Though most children recover quickly from concussions, some symptoms -including memory loss, headaches, and problems with concentration - may linger for several weeks or months. It is important to watch for these symptoms and call your doctor if they last. Often, in these cases, children need further evaluation and treatment.

Diagnosis

To diagnose a concussion, the doctor will ask about how and when the head injury happened, and about your child's symptoms. The doctor also may ask basic questions to test your child's consciousness, memory, and concentration ("Who are you?"/"Where are you?"/"What day is it?").

The doctor also will do a physical exam and focus on the nervous system by testing balance, coordination, nerve function, and reflexes. Sometimes a computed tomography (CAT scan or CT scan) or magnetic resonance imaging (MRI) brain scan will be done to rule out internal bleeding or other problems from the injury.

Some children who have head injuries from playing organized sports are examined by a coach or athletic trainer immediately after they are injured. This is known as **sideline concussion testing** because it might happen on the sidelines during a game. Sideline testing is common in schools and sports leagues. By watching a player's behavior and doing a few simple tests, a trained person can see if immediate medical care is needed.

Lots of schools or sports leagues use computerized programs that test players at the start of a sports season to measure their normal brain function and ability to process information. These tests are called **baseline concussion tests**. After a possible injury, sideline test results are compared with baseline test results to help doctors determine if there has been a change in brain function and to help make a diagnosis.

Treatment

Because each concussion is unique, symptoms can differ in severity. For this reason, treatment depends on a child's particular condition and situation.

If a concussion is not serious enough to require hospitalization, a doctor will give instructions on home care. This includes watching the child closely for the first 24 to 72 hours after the injury. It is not necessary to wake the child up while he or she is sleeping to check for symptoms.

If a child has a headache that gets worse quickly, becomes increasingly confused, or has other symptoms (such as continued vomiting), it may mean there is a more serious problem. Call the doctor if your child has any of these symptoms.

Otherwise, home care for a concussion may include:

- **Physical rest.** This means not doing things like sports and physical activities until the concussion is completely healed. While they still have symptoms, children should do only the basic activities of day-to-day living. This reduces stress on the brain and decreases the chances of re-injuring the head in a fall or other accident.

When all symptoms are gone, kids should return to physical activities slowly, working their way back to pre-concussion levels.

- **Mental rest.** This means avoiding any cognitive (thinking) activity that could make symptoms worse, such as using a computer, cellphone, or other device; doing schoolwork; reading; and watching TV or playing video games. If these "brain" activities do not make symptoms worse, kids can start them again gradually, but should stop immediately if symptoms return.
- Eating well and drinking plenty of non-caffeinated beverages.

Kids with concussions also should avoid bright lights and loud noises, which can make symptoms worse. While they have symptoms, teens should take time off from work and not drive, operate heavy machinery, or do any other activities that require quick decisions and reactions.

Healthy kids usually can return to their normal activities within a few weeks, but each situation is different. The doctor will monitor your child closely to make sure that recovery is going well, and might recommend acetaminophen, ibuprofen, or other aspirin-free medicines for headaches. Pain medicines can hide symptoms, though, so kids should not return to normal activities until they no longer need to take them.

Returning to Normal Activities

Be sure to get the OK from the doctor before your child returns to sports or other physical activities. Sometimes kids feel better even though their thinking, behavior, and/or balance have not yet returned to normal.

Even if your child pleads that he or she feels fine or a competitive coach or school official urges you to go against medical instructions, it's **essential** to wait until the doctor has said it's safe to return to normal activities. To protect kids and remove coaches from the decision-making process, almost every state has rules about when kids with concussions can start playing sports again.

It's very important for anyone with a concussion to heal completely before doing anything that could lead to another concussion. Hurrying back to sports and other physical activities increases the risk of a condition called **second-impact syndrome**, which can happen as a result of a second head injury. Although very rare, second impact syndrome can cause lasting brain damage and even death.

Preventing Concussions

All children should wear properly fitting, appropriate headgear and safety equipment when playing contact sports or biking, rollerblading, skateboarding, snowboarding, or skiing. Nothing can prevent every concussion, but safety gear has been shown to help protect against severe head trauma.

Childproofing your home will go a long way toward keeping an infant or toddler safe from concussions and other injuries. Babies reach, grasp, roll, sit, crawl, pull up, "cruise" along furniture, and walk. Toddlers may pull themselves up using table legs; they will use bureaus and dressers as jungle gyms; they will reach for whatever they can see. All of these activities can result in a head injury that leads to a concussion. Be sure your child has a safe place to play and explore, and never leave a baby or toddler unattended.

Proper child car seats, booster seats, and seatbelts can help prevent head injuries in the event of a car accident and should be used every time kids are in a car.

People are much more likely to sustain a concussion if they have had one before, so prevention is even more important following a head injury. Evidence shows that repeated concussions can result in lasting brain damage, even when the injuries happen months or years apart.

Concussions are serious injuries that can become even more serious if children do not get the time and rest needed to heal them completely. Safety precautions can help prevent concussions, and following a doctor's advice can minimize their effects if they do happen.

