

A Parent's Guide to Concussions

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What is a Concussion?

A mild traumatic brain injury (mTBI), often referred to as a “concussion,” is swelling of the brain commonly associated with a blow to the head—although it can be caused by hard contact to any part of the body. During impact, the soft tissue of the brain collides with the hard skull and is injured. The subsequent swelling can cause a multitude of symptoms.

What to Do If You Suspect Your Child Has a Concussion

You're at your child's game, cheering for the team when a swift bump on the head occurs and your favorite player is down. You begin to worry. What do you do if your child has a concussion?

While all injuries should be treated with care, it is extremely important for parents to look for the symptoms of a concussion after a blow to the head as any level of impact can put a child at risk for a concussion.

*If your child exhibits any symptoms commonly associated with a concussion following a collision, **IMMEDIATELY** remove the child from play and seek medical care as soon as possible.*

Symptoms of a Concussion May Include:

- **Loss of consciousness:** losing consciousness for any duration of time after a blow to the head should be taken seriously.
- **Persistent headache:** or head pain that gets progressively worse.
- **Nausea and/or vomiting:** repeated vomiting increases risk of dehydration and other complications. Repeated vomiting may also be a sign of more serious injury.
- **Cognitive impairment:** difficulty following instructions, responding to questions, or generally feeling “foggy.”
- **Eye problems:** blurred vision, double vision, or one pupil that is larger than the other.
- **Drowsiness:** sleeping more than usual, or finding it difficult to fall asleep or stay asleep.
- **Balance problems and clumsiness:** exhibiting jerky or uncoordinated movements.
- **Forgetfulness:** being unable to remember events directly before or after the injury; can also be on-going trouble with remembering things.
- **Light and/or noise sensitivity:** aversion to bright lights or loud sounds.
- **Seizures:** twitching, shaking, or convulsing. While not common, this would be indicative of an immediate need for medical attention.
- **Emotional Changes:** mood swings, personality changes, or generally feeling “not right.”



How to Support Your Child If They Have Sustained a Concussion

Since patients with concussions are not put in a cast or a brace, it is easy to forget that they still require special care and patience during the recovery process. Do not expect your child to immediately return to their previous level of schoolwork, socialization, and athletic activity following a concussion. Research has shown that not only are children more likely to obtain a concussion than adults, but also that a full recovery for children is generally slower than recovery for adults following a concussion. Depending on the severity, it could take weeks or months for a child to fully recover.

How to Know if a Child Has a Concussion

If a child exhibits any of the above symptoms following a blow to the head or a hard collision, they should be removed from play and tested for a concussion. Two common tools for assessing a child with a suspected concussion are **vestibular-ocular motor screenings (VOMS)** and the **Sport Concussion Assessment Tool 5th Edition (SCAT5)**. **ImPACT testing** may also be used, but is most useful when the child completes the test before and after a concussion.

Vestibular-ocular motor screenings (VOMS) are becoming increasingly more common and can be done either on the sideline of a sporting event or in your care provider's office. This series of simple eye-movement tests is used to assess the function of both the vestibular (inner-ear) system and ocular (eye) system following a suspected concussion for individuals over 10 years old. When the vestibular system is affected, it can cause feelings of dizziness or trouble with balance. When the ocular system is affected, it can result in someone experiencing blurred or double vision.

The **Sport Concussion Assessment Tool 5th Edition (SCAT5)** is designed to be completed either on the sidelines or during a visit with your care provider within 3-5 days of injury. It includes several components including a brief neurological exam, cognitive assessment, balance assessment, and symptom checklist. This assessment can be done with or without a baseline test.

Another common way schools test their student-athletes for concussions is using **ImPACT testing**. ImPACT stands for "Immediate Post-Concussion Assessment and Cognitive Testing." This computerized test is typically taken by non-concussed athletes prior to participating in their sport so the results of the initial test can be used as a baseline for comparison following a concussion. The ImPACT test asks the patient a series of nonverbal problem solving and memory questions to help test their cognitive function following a potential concussion, but cannot give a diagnosis. The only way to receive a true concussion diagnosis is through a visit with a licensed medical professional.



Returning to Normal Activity Levels Following a Concussion: What to Expect

For Children and Teens: Tips for a Successful Recovery

**Rest, rest, rest!
Getting plenty of sleep
will help you recover.**

- Tell your doctor about any changes in severity of symptoms you are experiencing or if new symptoms arise.
- Refrain from physical activity until cleared by your care provider.
- Let your teachers know what is going on and ask for extensions as needed. You may need a note from your physician to accompany this request.
- Be patient with yourself. Just like any other injury, it will take time to fully recover and feel “normal” again.



While each case is unique and patients should follow the guidelines given by their care provider, there is a general pattern for returning to activity after a concussion. The steps listed below are an adaptation from the Center for Disease Control (CDC) HEADS UP¹ guide and Boston Children's Hospital Sports Concussion Clinic². The goal of these guidelines is to help each child recover completely and safely following a concussion.

The phases listed below should not be used as a treatment plan; they are meant to provide a general idea of what to expect throughout the recovery process. Please consult a medical professional for your child's individualized plan.

Returning to School:

Phase 1, Rest: A child in this stage should get plenty of rest, sometimes staying home for a few days. (If symptoms are mild a doctor may approve returning to school earlier.) It is recommended that TV and computer use, texting, reading, and face-to-face interactions be kept to a minimum. Think of this as a “brain rest.”

Phase 2, Re-Entry: A child in this phase of recovery can attend school, but may start with half days. This phase typically begins when symptoms have lessened, and the child can concentrate for 30-45 minutes at a time. Since the student may require a classmate to take notes for them or get extensions on assignments, it is important to keep teachers updated on the situation. Common supports include rest breaks at school, reduced homework load, and rescheduling tests.

Phase 3, Reintegration: Child may return to a full day of school while continuing to update teachers on their progress. Self-advocacy and communicating with teachers can help the student from feeling overwhelmed during this phase. Some social activities, such as club activities, may be resumed during this phase as tolerated, and make-up work can begin.

Phase 4, Return: Child may return to school full time without restrictions! This is a good time to finish any make-up work.



Returning to Normal Activity Levels Following a Concussion: What to Expect (continued)

Second Impact Syndrome

Research has shown that individuals who have already had a concussion are more prone to concussions in the future and continued play following a concussion increases the child's risk of second impact syndrome (SIS).

Second impact syndrome is the rapid swelling of the brain that occurs when a second concussion is sustained before the first has fully healed. This can occur within minutes, days, or weeks from the initial impact. The resulting swelling can lead to a variety of serious complications and is often fatal.

If you or your child has already had a concussion, it is extremely important to take steps to avoid subsequent injuries as multiple concussions have been linked to cognitive decline later in life and impaired neurological function.

Returning to Sports:

It is recommended that physical activity not be resumed until the child receives medical clearance and is managing schoolwork well. When physical activity is resumed, return to play should be gradual. During this time children and parents should continue to monitor symptoms in case any reemerge. If symptoms reemerge during an increase in exercise intensity at any stage, it is recommended to STOP IMMEDIATELY and wait 24 hours before reducing exercise intensity to the previous stage.

Phase 1: No physical activity. If tolerated, some walking and stretching is okay to prevent deconditioning.

Phase 2: Physical activity is resumed. Participating in sports is still not recommended, but non-contact physical activity may be performed. This phase is further broken down into sections based on the intensity of exercise tolerated by the child. Exercise is to be reintroduced gradually with at least 24 hours between increases in intensity. Typical phases include:

- Low levels of physical activity, including walking and light jogging;
- Moderate levels of physical activity, such as moderate jogging, brief running and warm-up activities related to the child's sport; and
- Heavy non-contact physical activity, including sprinting and training drills.

During phase 2, resistance training can slowly be resumed, beginning with reduced weight and number of repetitions.

Phase 3: Sports practice. After the doctor has deemed it safe, the child may return to sports practice beginning with controlled contact, and moving up to full contact in practice.

Phase 4: Return to full contact play, including games or matches.

¹ <https://www.cdc.gov/headsup/index.html>

² <http://www.childrenshospital.org/centers-and-services/programs/o--z/sports-concussion-clinic>



For Children and Teens: Tips for Preventing Concussions

Whether or not you have had a concussion before, the following tips can help you stay safe!

- Wear a helmet. While they cannot prevent a concussion, helmets can reduce the severity of an injury during a blow to the head. It is recommended that helmets be worn while participating in a variety of activities such as riding a bike, skateboarding, playing contact sports like football or lacrosse, and while riding horses.
- Report any possible concussion to your parent, coach, and/or healthcare provider.
- Never try to “just play through” a head injury.
- Follow the rules of play and exhibit good sportsmanship when participating in contact sports such as football or hockey.
- Speak up if something looks unsafe. While questioning a peer or authority figure can be intimidating, speaking up can help you and your teammates prevent serious injury.