

## What is a concussion?

A concussion is an injury that affects the way the brain works or functions. Concussions can occur from direct or indirect forces to the head or neck that cause 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.

## How is a concussion diagnosed?

A physical exam and careful history are the best ways to diagnose a concussion. Your doctor may or may not need to perform imaging to rule out more serious injuries, such as bleeding in the brain or skull fractures. Concussions cannot be seen on imaging (X-rays, CT or CAT scans, MRIs). A full exam may reveal some of the signs and symptoms as listed below, including difficulty with balance and/or memory.

## What are the symptoms of concussion?

### Symptoms you may feel:

#### Physical

- Headache
- Nausea or vomiting
- Blurry or double vision
- Dizziness or difficulty with balance
- Sensitivity to light and/or noise

#### Mental

- Confusion
- Difficulty concentrating
- Problems remembering
- Feeling foggy or slowed down

### Emotional

- Feeling sad or down
- Decreased interest in hobbies
- Irritability or moodiness
- Nervousness

### Sleep

- Difficulty falling or staying asleep
- Sleeping more or less than usual
- Drowsiness

### **Symptoms a parent, guardian, teacher, or coach may notice:**

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

### **Red flags – Seek immediate medical attention if you experience any of the following symptoms:**

- Look drowsy or cannot be woken up
- Headaches that severely worsen
- Seizures
- Slurred speech
- Increasing confusion
- Difficulty recognizing people or places
- Unusual behavior change
- Increased irritability
- Loss of consciousness
- Weakness or numbness
- Continued vomiting

### **When can you return to normal daily activities?**

All children who have suffered a concussion **must wait to return** to physical activity until a doctor clears them. The Michigan NeuroSport Clinic is a University of Michigan program that specializes in the diagnosis and management of concussion. To schedule an appointment, please call 734-930-7400.

## **How do you treat concussion at home?**

The treatment of concussion is individualized, with the goal of getting you back to normal activities as safely as possible. **The most important part of concussion management is rest**, especially avoiding triggers or activities that make symptoms significantly worse. You should not participate in any physical or sport related activities if you have symptoms. Doctors will be helpful in monitoring your symptoms and guiding recovery. To help the brain heal properly, follow the instructions below:

1. Get plenty of rest. Keep the same bedtime every day and get 8-10 hours of sleep at night.
2. For the first few days, you may take naps or rest breaks if you are tired as long as it does not interfere with nighttime sleep.
3. Limit physical and mental activities as they may make symptoms worse. Examples of physical activities include gym class, sport practice, weight training, and leisure activities such as biking, skiing and tubing. Examples of mental activities include video games, texting and computer activities.
4. Drink plenty of fluids and eat regular meals.
5. Note that feelings of frustration and sadness are normal during this time when you are not being as active as usual.

As symptoms resolve, you may begin to gradually return to your daily routine. Symptoms that worsen or return are typically an indication that you are not ready and you may need to cut back on activities and try to increase again gradually. Physical activity should not be started until there is full-time return to school without symptoms or medications, unless otherwise instructed by your doctor.

## **How do you return to school after having a concussion?**

1. Notify teachers and the school office of the injury and instruct them how to watch for symptoms.
2. You may or may not need to miss school based on the severity of your symptoms. If you miss school, return may be gradual and increase in intensity as tolerated.

3. Homework, class workload and test taking may need to be skipped or modified.
4. You may need extra help or time to perform school-related activities, and major tests or exams may need to be delayed. As you begin to feel better, the extra help and support can be gradually removed.

### **How do you return to sports after having a concussion?**

1. You should **never** return to play if you have **any** symptoms are present at rest or with school/academic work.
2. Be sure that supervisors (gym teachers, coaches and trainers) are aware of your injury and symptoms.
3. Gradual return to sport practices under the supervision of a doctor or trainer may begin once you are back to school full-time without accommodations and symptom free.
4. Return to sport must follow an activity progression. This is used to allow you to pay attention to symptoms and concentration skills at different levels of exertion.
5. If symptoms return, you should rest for 24 hours and then return to the previous level that you completed without symptoms.
6. **Athletes are not allowed to return to play** until a doctor determines it is safe to do so.
7. Return to activity must follow a strict progression and only be started once cleared by your NeuroSport doctor or another medical professional with experience in concussion management.

### **What is the prognosis for concussion?**

If you do not resume activities that make symptoms worse, and allow yourself to heal completely, the prognosis is generally very good. Once all of the symptoms are gone and you have been cleared by your doctor to resume activities, care must be taken to insure that symptoms do not return when normal activities are resumed.

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