

## **Concussion Diagnosis and Management**

### **What is a concussion?**

A concussion is an injury to the head or body that causes a change in the way the brain functions. The injury may or may not involve loss of consciousness.

### **What are the symptoms of a concussion?**

Symptoms may include headache, nausea or vomiting, dizziness, difficulty with vision, confusion, and/or changes in thinking (such as talking or memory).

### **How is concussion diagnosed?**

There is no one specific diagnostic test that confirms a concussion.

Concussions are diagnosed by a focused history of the injury and neurological exam.

Concussion does not show up on neuroimaging studies (CT or MRI).

Some standardized tests can help to detect and monitor the symptoms of a concussion. These may include:

- Graded symptom checklist (GSC)
- Clinical reaction time testing (RTclin)
- Balance error scoring system (BESS)
- King-Devick number reading test (KD)
- Standardized assessment of concussion (SAC)
- Sport Concussion Assessment Tool (SCAT)
- ImPACT Test (Immediate Post-Concussion Assessment and Cognitive Test)

### **How is concussion treated?**

Treatment for a concussion includes: Reassurance, reassurance, reassurance.

- Most children will recover and return to normal.
- Rest that is both physical and mental is important during the first several days after a concussion.
- Headache management may include over-the-counter medicines for the first several weeks. Avoid “overuse” of headache medicines to prevent rebound headaches. This means avoiding using medication every day.
- Making sure your child drinks at least 8 glasses of fluid per day, gets at least 9 hours of sleep, avoids too many naps, and maintains good eating habits.

- Your child will have a gradual return to school. They will also have a gradual return to physical activity, once they can tolerate school. This is called, “Return to Learn before Return to Play”.

**Options for accommodations to help with a gradual return to school:**

- Shorter school day
- Shorter class time
- Reduced homework assignments
- No standardized testing
- Rest periods as needed
- Observe for return of symptoms

**Steps for a gradual return to physical activity:**

- Level 1: No activity
- Level 2: Mild aerobic (walking, light exercise)
- Level 3: Moderate (jogging, stationary bike, moderate exercise/weights)
- Level 4: Heavy (sprinting/running, high-intensity exercise/weights, non-contact sport-specific drills)
- Level 5: Full contact practice
- Level 6: Full contact game/competitive play. May return to sports practice/games at this time.

Start with the first level. If your child has no symptoms of concussion and not needing any headache medicine, he/she may progress to the next level after 24-48 hours. If your child’s symptoms return, he/she may not advance to the next level. Your primary care provider, neurology office, and/or school trainer should work together to help in your child’s recovery.

**What do I need to know to help my child?**

- Most children will recover and be able to continue with their sport/physical activities.
- For most children, a first concussion will not cause serious long term symptoms.
- Their health care professional will provide accommodations for school in order to ease them back to classes/homework to minimize their anxiety about the work they are missing.

**Resources:**

- Heads Up to Youth Sports: <http://www.cdc.gov/headsup/youthsports/>
- Consensus Statement on Concussion in Sport: <https://www.ncbi.nlm.nih.gov/pubmed/23479479>