Concussions

UCLA Steve Tisch BrainSPORT Clinic
Concussion facts

- **What is a concussion?** A concussion is a traumatic brain injury (TBI) caused by a bump, blow or jolt to the head or by a hit to the body that causes the head and brain to move rapidly back and forth. This sudden movement can cause the brain to bounce around or twist in the skull, creating chemical changes in the brain and sometimes stretching and damaging brain cells.

- About 80 percent of people who suffer a concussion recover fully within one month of the injury, with adolescents taking slightly longer than adults or younger children.

- Anyone is at risk of suffering a concussion. Concussions can occur in any sport, with higher risk associated with collision sports such as football, ice hockey and lacrosse, but can also occur in soccer, water polo and other sports.
• Athletes who continue to play through a concussion have been shown to take a longer time to recover compared to athletes who stopped playing at the time of injury.

• After a brief period of rest, activity following a concussion can be good. While recovering from a concussion, a gradual increase in activity may help a person get back to normal functioning sooner.

• A person does not have to be knocked out to be concussed.

• It’s the law! California Assembly bills 2127 and 2007 state that parents and student-athletes must receive education, athletes must be removed from play if a brain injury is suspected and an athlete must be cleared by a licensed health care provider trained in concussions before returning to play.
Signs and symptoms

Symptoms often begin shortly after an injury, but in some cases may not appear for hours or even a day later. Symptoms may worsen over the first few days and include:

- Headache
- Confusion/disorientation
- Dizziness
- Memory loss
- Nausea
- Blurry vision
- Impaired balance
- Light or noise sensitivity
- Vomiting
- Problems focusing
- Personality changes
- Behavioral changes
- Slowed responsiveness
- Sleep disturbance

“Red flag” danger signs

In some cases, a sports-related brain injury can be more serious than a concussion. If you see any of these signs or the athlete reports any of these symptoms, take the athlete to the doctor or emergency room immediately:

- Worsening severe headache
- Seizures
- Repeated vomiting
- Severe drowsiness
- Inability to recognize people
- Increasing confusion
- Weakness/numbness in arms or legs
- Unusual irritability
- Major personality changes
- Loss of consciousness
What to do if a concussion is suspected:

• **When in doubt, sit them out!** Immediately stop activities with contact risk.

• Notify stakeholders (coaches, trainers, parents, school administrators and care providers) if the athlete sustains a blow to the head or develops the signs and symptoms of a concussion.

• **Get the athlete evaluated by a licensed health care provider (LHCP) trained in diagnosing and managing concussions. It’s the law!** LHCP may be a pediatrician, neurologist, neuropsychologist or sports medicine doctor.

• **Give the athlete time to get better.** The brain needs time to heal after a concussion. Avoid major cognitive demands for one-to-two days, but the athlete can do tasks that don’t worsen symptoms (see return to play guide). It is better to miss one game than the entire season.
Prevention and protection

• Play by the rules
• Wear properly fitted and up-to-date equipment
• Avoid unnecessary contact
• Preseason neurological exams can be completed before an athlete is exposed to risk to provide a baseline of an athlete’s personal balance, reaction time, memory and cognitive abilities. This can help in the management of an injury. For more information, visit uclahealth.org/brainsport/prevention-and-outreach

• Education: ask about educational offerings for coaches, trainers, students, parents, teachers and providers. For more information, visit uclahealth.org/brainsport/training

For more information about the UCLA Steve Tisch BrainSPORT Program, visit: uclahealth.org/brainsport
# Return-to-play guide

Plan to spend 24–48 hours at each stage. Do not advance if symptoms return.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Appropriate activity</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Symptom-limited activity</strong>&lt;br&gt;Physical and cognitive rest to be limited by symptoms. If it makes you feel worse, don't do it.</td>
<td>Recovery</td>
</tr>
<tr>
<td>2</td>
<td><strong>Light aerobic exercise</strong>&lt;br&gt;Walking, swimming or stationary cycling. Keep heart rate under 70% of maximum. No resistance training.</td>
<td>Increase heart rate and blood pressure</td>
</tr>
<tr>
<td>3</td>
<td><strong>Aerobic+movement</strong>&lt;br&gt;For example, running drills in soccer, skating drills in hockey. No head impact activities.</td>
<td>Add movement and balance</td>
</tr>
<tr>
<td>4</td>
<td><strong>Aerobic+movement+thinking:</strong> Non-contract training drills&lt;br&gt;More complex drills.</td>
<td>Add cognitive load</td>
</tr>
<tr>
<td>5</td>
<td><strong>Full-contact practice</strong>&lt;br&gt;After medical clearance, return to normal practice activities.</td>
<td>Restore confidence. Assessment of recovery and skills by trainers and coaches</td>
</tr>
<tr>
<td>6</td>
<td><strong>Return to play</strong>&lt;br&gt;Normal game play.</td>
<td>Fully recovered</td>
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*Concussion recovery should be supervised by a licensed health care provider*
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