

## Concussion assessment for young athletes

### How to determine if an athlete can safely return to play

#### Introduction

Any athlete regardless of age, but especially a child or teenager, who has a suspected concussion should be REMOVED FROM PLAY and given an immediate medical assessment.

It's important that the athlete be monitored closely and assessed to determine whether a concussion has occurred. Never allow the athlete to be left alone during the assessment or to drive a car.

The most important steps in protecting young athletes who have had a concussion are:

- Conduct an immediate assessment
- Ensure there is an adequate rest and recovery period
- Return to activity and sports only when it's medically safe to do so and only with a release from a physician

#### CONDUCTING A CONCUSSION ASSESSMENT:

Below are the specific steps to follow in determining whether an athlete can safely return to play. All steps should be followed (in this order) to determine the possibility or severity of a concussion:

##### STEP 1 – On-the-field assessment

Observe the athlete's appearance, including movements and/or consciousness. If the athlete is unconscious, DO NOT MOVE him or her. Call 911 immediately.

If the athlete is or becomes conscious, ask questions to determine mental orientation, such as:

- What month is it?
- What is today's date?
- What day of the week is it?
- What year is it?

Remove helmet and/or move the athlete ONLY if you're sure there is no spinal injury and the athlete can move on his or her own.

If the athlete is conscious and able to walk off field, move to the sideline and begin an off-the-field assessment (Step 2).

##### STEP 2 – Signs and symptoms

Coaches, parents and other adults should watch for and record the following symptoms when working with someone who potentially has a concussion.

Does the athlete:

- Appear dazed or stunned
- Seem unsure of game score or opponent
- Lack coordination
- Exhibit poor reaction time
- Lose consciousness (even temporarily)
- Show behavioral, mood or personality changes
- Forget events before the injury
- Have “pulsing” pupils when exposed to light (This means, do the pupils of the eyes constrict, dilate partially, and continue in that pattern?)
- Have blood or clear fluid coming from nose or ears

Does the athlete report any of these symptoms:

- Headache
- Nausea or vomiting
- Balance problems or dizziness
- Double or fuzzy vision
- Sensitivity to light or noise
- Feeling sluggish
- Feeling foggy
- Change in sleep pattern
- Concentration or memory problems
- Light-headedness
- Fatigue
- Confusion

Athletes with a potential concussion should NOT return to play until they’re evaluated by a medical professional and are symptom-free while at rest, during exertion, and while concentrating during a mental activity.

### **STEP 3 – Cognitive testing**

Any failure during the cognitive testing phase of the assessment should be considered abnormal. Consult a doctor before allowing the athlete to return to play.

Ask and record these cognitive questions:

- (a) Was the athlete oriented on the field?
- (b) Can the athlete repeat the following words: Elbow, apple, carpet, saddle, bubble (alternatives: candle, paper, sugar, sandwich, wagon)
- (c) Can the athlete answer the following questions:
  - What happened in the last quarter/period/match?
  - What do you remember just before the hit?
  - What was the score of the game before the hit?
- (d) Assess concentration: Ask the athlete to do the following:
  - Repeat these numbers backwards: 63 (36 is correct); 419 (914 is correct); 3814 (4183 is correct); 62971 (17926 is correct)
  - Say the months of the year in reverse order (i.e., December, November, October ...)
- (e) Assess ability to recall word lists: Ask the athlete to repeat the five words from Step b (above).

### **STEP 4 – Balance testing**

Time each task below for 20 seconds. (Use a stopwatch or the second hand on a watch.) Count the number of errors the athlete makes within each 20-second task. If an athlete makes two errors at once, count them as one error.

## 20-second tasks are:

- Double-leg stance: “Stand with your feet together with your hands on your hips and your eyes closed. Maintain that position as long as you can. If you come out of the position, go back as quickly as you can.”
- Single-leg stance: “Show me the leg you would kick a ball with. (The athlete picks right or left leg.) Now stand on the opposite foot, hands on your hips, eyes closed, as long as you can. If you come out of the position, go back as quickly as you can.”
- Tandem stance: “Now stand with the foot you just stood on in front of your other foot, heel to toe, hands on your hips, eyes closed, as long as you can. If you come out of the position, go back as quickly as you can.”

## Errors during assessment include:

1. Hands lifting off hips
2. Opening eyes
3. Step, stumble or fall
4. Lifting toes or heel
5. Remaining out of test position for > 5 seconds

Exceeding 10 errors during this balance testing should be considered abnormal. Consult a doctor before allowing an athlete to return to play.

## STEP 5 – Vision testing

Use the vision assessment card in this toolkit for this step.

- Ask the athlete to hold the vision card containing bold letters about half an arm’s length away from his/her face.
- Instruct the athlete to shake his/her head from left to right while maintaining focus on the letters.
- Repeat the test with rapid up-and-down motion with the head.

When you conduct this assessment, note your answers to the vision assessment:

- Is it difficult for the athlete to read letters out loud while shaking his/her head left to right?
- Is it difficult for the athlete to read letters out loud while shaking his/her head up and down?
- Does the athlete report dizziness or nausea after either task?

A “yes” answer to any of the above questions is considered abnormal. Consult a physician before allowing the athlete to return to play.

## STEP 6 – Decision about returning to play

If any results listed in previous steps are positive (abnormal):

- Remove the athlete from play.
- Re-assess every five minutes since concussion conditions may worsen.
- Inform the caregivers/parents about the athlete’s condition. (You may use the tear-off info card included with this toolkit or refer parents to the Centers for Disease Control and Prevention website, [www.cdc.gov/concussion](http://www.cdc.gov/concussion).)
- Instruct the athlete and caregivers to get medical attention and guidance from a doctor before returning to practice, school or games.
- If all assessment results are negative, obtain parent permission and wait at least 15 minutes before returning the athlete to play.

Remember, concussion should be suspected when an athlete “fails” **one or more** of the assessment steps described above.

## CONCUSSION FOLLOW UP:

*(Give this page to athlete's parent or guardian following a suspected concussion.)*

Name of athlete: \_\_\_\_\_ Date/time of injury: \_\_\_\_\_

This athlete is suspected of sustaining a concussion. A careful assessment has been carried out, and no sign of life-threatening injury has been found. This athlete will need further monitoring by a responsible adult and will need a physician's release before being allowed to practice or play in a game.

### Signs to monitor:

Problems could arise during the next 24 to 48 hours. The athlete should not be left alone and must go to a hospital immediately if he/she:

- Has a headache that worsens very quickly
- Cannot be awakened
- Cannot recognize people or places
- Vomits repeatedly (more than two times)
- Behaves unusually or seems confused; is unusually irritable
- Has seizures (body jerks uncontrollably)
- Has weak or numb arms or legs
- Has slurred speech

### Important recommendations for the athlete:

Rest and avoid activity (including physical and mental activity) for at least 24 hours or for as long as you experience symptoms.

Do not:

- Consume alcohol
- Use sleep medication
- Use anti-inflammatory medication
- Drive until medically cleared
- Train or play sports until medically cleared

### Additional recommendations:

Medical clearance should be given before the athlete returns to activity. The athlete should not return to play the same day of injury. When returning to activity, the athlete should follow a "step-wise symptom-limited program" under the guidance of a physician.

For more information, contact Providence Sports Care Center at 503-962-1900 or visit [www.providence.org/rehab](http://www.providence.org/rehab).