

Michael Stuart MD Kevin Margarucci ATC

A sports concussion management program must be incorporated within each affiliate. All USA Hockey programs should follow this protocol as a minimum standard and conform to their individual state concussion statutes.

Accepted current medical practice and the law in most states requires that any athlete with a *suspected* **Sports <u>Related</u> Concussion** (SRC) is *immediately removed from play*.

- A concussion is a traumatic brain injury- *there is no such thing as a minor brain injury.*
- A player does not have to be "knocked-out" to have a concussion- *less than 10% of players lose consciousness*.
- A concussion can result from a blow to head, neck, *or body*.
- Concussions often occur to players who don't have or just released the puck, from open-ice hits, unanticipated hits, and illegal collisions.
- The youth hockey player's brain is *more susceptible* to concussion.
- Concussion in a young athlete may be *harder* to diagnosis, takes *longer* to recover, and is *more likely* to have a recurrence, which can be associated with serious long-term effects.
- The strongest predictor of slower recovery from a concussion is the severity of **initial symptoms** *in the first day or 2* after the injury.
- Treatment is individualized and it is impossible to predict when the athlete will be allowed to return to play- *there is no standard timetable*.

A player with *any* symptoms/signs or a *worrisome* mechanism of injury has a concussion until proven otherwise:

"When in doubt, sit them out."

Follow these concussion management steps:

- 1. Remove immediately from play (training, practice, or game)
- 2. Inform the player's coach/parents or guardians.
- 3. Refer the athlete to a qualified health-care professional (as defined in state statute)
- 4. Initial treatment requires a short period of rest, but the athlete may participate in light exercise (if their symptoms are not made worse).
- 5. Begin a graded return-to-sport and return-to-learn.
- 6. Provide written medical clearance for return to play (the USA Hockey Return to Play Form is required)

Diagnosis

Players, coaches, officials, parents, and heath care providers should be able to recognize the symptoms/signs of a sport related concussion. (See attached *Concussion Recognition Tool 6*)

Symptoms:

- Headache
- "Pressure in head"
- Neck Pain
- Nausea or vomiting
- Balance problems
- Dizziness
- Drowsiness
- Blurred vision
- Difficulty concentrating/remembering
- "Don't feel right"
- Sensitivity to light/noise
- More emotional or irritable
- Fatigue or low energy
- Feeling like "in a fog"
- Feeling slowed down
- Confusion
- Sadness
- Nervous or anxious

Observable Signs:

- Lying motionless on the playing surface
- Slow to get up after a direct or indirect hit to the head
- Disorientation or confusion
- · Inability or slow to respond appropriately to questions
- Blank or vacant look
- Slow movement or incoordination
- Balance or walking difficulty
- Facial injury after head trauma

Management Protocol

- 1. If the player is *unresponsive* call for help & dial 911
- 2. If the athlete is *not breathing*: start CPR
- 3. Assume a neck injury *until proven otherwise*
 - \checkmark DO NOT move the athlete.
 - \checkmark DO NOT rush the evaluation.
 - ✓ DO NOT have the athlete sit up or skate off until you have determined:
 - no neck pain
 - no pain, numbness, or tingling
 - no midline neck tenderness
 - normal muscle strength
 - normal sensation to light touch
- 4. If the athlete is conscious & responsive without symptoms or signs of a neck injury...
 - help the player off the ice to the locker room.
 - perform an evaluation.
 - do not leave them alone.
- 5. Evaluate the player in the locker room: Concussion Recognition Tool 6 or other sideline assessment tools
 - Ask about concussion *symptoms*.
 - Observe for concussion *signs*.
 - Memory Assessment
 - \rightarrow What venue are we at today?
 - \rightarrow What period is it?
 - \rightarrow Who scored last in this game?
 - \rightarrow Did your team win the last game?
 - \rightarrow Who was your opponent in the last game?
 - \rightarrow If a healthcare provider is not available, the player should be safely removed from practice or play and referral to a physician arranged.

6. A player with any symptoms or signs, disorientation, impaired memory, concentration, balance, or recall has a concussion and should not be allowed to return to play on the day of injury.

7. The player should not be left alone after the injury, and serial monitoring for deterioration is essential over the initial few hours after injury.

If any of the signs or symptoms listed below develop or worsen go to the **hospital emergency department** or dial **911**.

- Severe throbbing headache
- Dizziness or loss of coordination
- Ringing in the ears (tinnitus)
- Blurred or double vision
- Unequal pupil size
- No pupil reaction to light
- Nausea and/or vomiting
- > Slurred speech
- Convulsions or tremors
- Sleepiness or grogginess
- Clear fluid running from the nose and/or ears
- Numbness or paralysis (partial or complete)
- Difficulty in being aroused

8. Concussion symptoms & signs *evolve over time-* the severity of the injury and estimated time to return to play are unpredictable.

9. A qualified health care provider guides the athlete through **Return-to-Learn** and **Return-to-Sport** strategies.

10. Written clearance from a qualified health care provider is required for an athlete to return to play without restriction (training, practice, and competition). Only the **USA Hockey Return to Play Form** is acceptable:

Return-to-Sport (RTS) Strategy: each step typically takes a minimum of 24 hours.

Step	Exercise Strategy	Activity at each step	Goal
1	Symptom-limited activity	Daily activities that do not exacerbate symptoms (e.g., walking)	Gradual reintroduction of work/school activities
2	Aerobic exercise 2A—Light (up to approximately 55% max HR) then 2B—Moderate (up to approximately 70% max HR)	Stationary cycling or walking at slow to medium pace. May start light resistance training that does not result in more than mild and brief exacerbation* of concussion symptoms.	Increase heart rate
3	Individual sport-specific exercise Note: If sport-specific training involves any risk of	Sport-specific training away from the team environment (e.g., running, change of direction and/or individual training drills away from the team environment).	Add movement, change of direction
	inadvertent head impact, medical clearance should occur prior to Step 3	No activities at risk of head impact	
	medical clearance should occur prior to Step 3	of any symptoms, abnormalities in cognitive function and a	any other clinical findings related
	medical clearance should occur prior to Step 3 -6 should begin after the resolution	of any symptoms, abnormalities in cognitive function and a	any other clinical findings related Resume usual intensity of exercise, coordination, and increased thinking
to the c	medical clearance should occur prior to Step 3 6 should begin after the resolution o current concussion, including with an	of any symptoms, abnormalities in cognitive function and a d after physical exertion. Exercise to high intensity including more challenging training drills (e.g., passing drills, multiplayer training) can integrate into a team	Resume usual intensity of exercise, coordination, and

*Mild and brief exacerbation of symptoms (i.e., an increase of no more than 2 points on a 0–10 point scale for less than an hour when compared with the baseline value reported prior to physical activity). Athletes may begin Step 1 (i.e., symptom-limited activity) within 24 hours of injury, with progression through each subsequent step typically taking a minimum of 24 hours. If more than mild exacerbation of symptoms (i.e., more than 2 points on a 0–10 scale) occurs during Steps 1–3, the athlete should stop and attempt to exercise the next day. Athletes experiencing concussion-related symptoms during Steps 4–6 should return to Step 3 to establish full resolution of symptoms with exercise dRTS as directed by local laws and/or sporting regulations. HCP, healthcare professional; max HR, predicted maximal heart rate according to age (i.e., 220-age).

Return-to-Learn (RTL) Strategy

Step	Mental Activity	Activity at each step	Goal
1	Daily activities that do not result in more than a mild exacerbation* of symptoms related to the current concussion	Typical activities during the day (e.g., reading) while minimizing screen time. Start with 5–15 min at a time and increase gradually.	Gradual return to typical activities
2	School activities	Homework, reading or other cognitive activities outside of the classroom.	Increase tolerance to cognitive work
3	Return to school part-time	Gradual introduction of schoolwork. May need to start with a partial school day or with greater access to rest breaks during the day.	Increase academic activities
4	Return to school full time	Gradually progress in school activities until a full day can be tolerated without more than mild* symptom exacerbation.	Return to full academic activities and catch up on missed work

Following an initial period of relative rest (24–48 hours following an injury at Step 1), athletes can begin a gradual and incremental increase in their cognitive load. Progression through the strategy for students should be slowed when there is more than a mild and brief symptom exacerbation.

*Mild and brief exacerbation of symptoms is defined as an increase of no more than 2 points on a 0–10 point scale (with 0 representing no symptoms and 10 the worst symptoms imaginable) for less than an hour when compared with the baseline value reported prior to cognitive activity.

USA HOCKEY CONCUSSION MANAGEMENT RETURN TO PLAY FORM

The USA Hockey Concussion Management Protocol and most state statutes require that an athlete be removed from any training, practice or game if they exhibit any signs, symptoms or behaviors consistent with a concussion or are suspected of sustaining a concussion. The player should not return to physical activity until he or she has been evaluated by a qualified medical provider who has provided written clearance to return to sports.

This form is to be used after an athlete has been removed from athletic activity due to a suspected concussion and must be signed by their medical provider in order to return without restriction to training, practice and competition.

Player Name:	DO	B: / /	
	Please cut here		
	orm to your District Player Safety C or data collection only. Name and D		<u>ed)</u>
District/Affiliate:	Name, email, phone # of person reporting:		
Association & Team:	Date of injury:	/ /	Age at time of injury:
Location of injury/Arena:			
Injury signs/symptoms:			
Age level of play: (Y10U, Y14U, G10U, G12U, HS)	_ Date of Initial Visit to Health Care Pr	ofessional:	/ /
Print Health Care Professional Name:		_ License Number:	
Role of Health Care Professional: (Physicia etc.)	an, AI, Nurse Practitioner,		
Address:		Phone Number:	
I HEREBY AUTHORIZE THE ABOVE-NAMED ATH RESTRICTION.	ILETE TO RETURN TO ATHLETIC ACTIVITY	FOR FULL PARTICIPAT	TION WITHOUT
Signature:		_ Date: / /	,
I AM THE PARENT OR LEGAL GUARDIAN OF TH ATHLETIC ACTIVITY WITHOUT RESTRICTION		D I CONSENT TO THEIR	RETURN TO
Parent/Legal Guardian Name:			
Signature:		_ Date: / /	,
I AM THE COACH OF THE PLAYER IDENTIFIED A HEALTH CARE PROVIDER AND PARENT HAVE A			
Coaches Name:			
Coach Signature:		Date: /	/

Concussion Recognition Tool

To Help Identify Concussion in Children, Adolescents and Adults



1: Visible Clues of Suspected Concussion

Visible clues that suggest concussion include:

- Loss of consciousness or responsiveness
- Lying motionless on the playing surface
- Falling unprotected to the playing surface
- · Disorientation or confusion, staring or limited responsiveness, or an inability to respond appropriately to questions
- Dazed, blank, or vacant look
- Seizure, fits, or convulsions
- Slow to get up after a direct or indirect hit to the head
- · Unsteady on feet / balance problems or falling over / poor coordination / wobbly
- Facial injury

CRT6

2: Symptoms of Suspected Concussion

Physical Symptoms	Changes in Emotions		
Headache	More emotional		
"Pressure in head"	More Irritable		
Balance problems	Sadness		
Nausea or vomiting	Nervous or anxious		
Drowsiness			
Dizziness	Changes in Thinking		
Blurred vision	Difficulty concentrating		
More sensitive to light	Difficulty remembering		
More sensitive to noise	Feeling slowed down		
Fatigue or low energy	Feeling like "in a fog"		
"Don't feel right"			
Neck Pain	Remember , symptoms may develop over minutes or hours following a head injury.		

3: Awareness

(Modify each question appropriately for each sport and age of athlete)

Failure to answer any of these questions correctly may suggest a concussion:

"Where are we today?"

"What event were you doing?"

"Who scored last in this game?"

"What team did you play last week/game?"

"Did your team win the last game?"

Any athlete with a suspected concussion should be - IMMEDIATELY REMOVED FROM PRACTICE OR PLAY and should NOT RETURN TO ANY ACTIVITY WITH RISK OF HEAD CONTACT, FALL OR COLLISION, including SPORT ACTIVITY until ASSESSED MEDICALLY, even if the symptoms resolve.

Athletes with suspected concussion should NOT:

- Be left alone initially (at least for the first 3 hours). Worsening of symptoms should lead to immediate medical attention.
- Be sent home by themselves. They need to be with a responsible adult.
- · Drink alcohol, use recreational drugs or drugs not prescribed by their HCP
- Drive a motor vehicle until cleared to do so by a healthcare professional