



Concussion Evaluation and Management Protocol 2016/2017 Season

This Concussion Evaluation and Management Protocol (“Protocol”) sets forth the procedures that Clubs shall follow regarding concussion education, testing, identification, evaluation, and management. Under this Protocol, the diagnosis and management of concussion is an individualized decision made by the Club Physician based on the principles set forth in the Protocol and on all information available to him or her.

This Protocol utilizes the descriptive definition of “concussion” set out in the *Consensus Statement on Concussion in Sport: The 4th International Conference on Concussion in Sport held in Zurich, November 2012* (“Zurich II Consensus Statement”).¹

¹ *The 4th International Conference on Concussion in Sport held in Zurich, November 2012*: “Concussion is a brain injury and is defined as a complex pathophysiological process affecting the brain, induced by biomechanical forces. Several common features that incorporate clinical, pathologic and biomechanical injury constructs that may be utilised in defining the nature of a concussive head injury include:

Concussion may be caused either by a direct blow to the head, face, neck or elsewhere on the body with an “impulsive” force transmitted to the head.

Concussion typically results in the rapid onset of short-lived impairment of neurological function that resolves spontaneously. However, in some cases, symptoms and signs may evolve over a number of minutes to hours.

Concussion may result in neuropathological changes, but the acute clinical symptoms largely reflect a functional disturbance rather than a structural injury and, as such, no abnormality is seen on standard structural neuroimaging studies.

Concussion results in a graded set of clinical symptoms that may or may not involve loss of consciousness. Resolution of the clinical and cognitive symptoms typically follows a sequential course. However, it is important to note that in some cases symptoms may be prolonged.”

I. EDUCATION

- A. **Educational Video**: Clubs shall show the 2016 concussion educational video to all Players, Coaches, Medical staff and Club Executives no later than the first day of Training Camp. A Player who joins the Club after the commencement of Training Camp and who has not seen the concussion education video that season shall be shown the video.
- B. **Educational Brochure**: Clubs shall provide the NHL Concussion Education Program FAQ (2016) brochure to all viewers of the educational video concurrently with showing the video, and shall also provide the brochure to all Players who are diagnosed with a concussion thereafter, and give copies for distribution by the NHL Players to family and close friends.

II. BASELINE TESTING

Clubs shall administer the following baseline testing to all Players at the start of Training Camp, prior to the start of unrestricted (regular colored jersey) play, to the extent possible. For Players joining a Club after the commencement of Training Camp, Clubs shall administer baseline testing prior to the start of play, to the extent possible.

- A. **X2 SCAT3 App**: All Players on a Club's reserve list shall be administered a baseline test with the X2 SCAT3 app ("X2 App") on an annual basis. The X2 App may be administered by team Athletic Trainers, Team Physicians, and Club Consulting Neuropsychologists. All persons administering the X2 App at baseline, or who may potentially be administering the X2 App if a concussion is suspected or diagnosed, shall be proficient in the use of the X2 App, including at a minimum the Club's two primary Team Physicians and Athletic Trainers, as well as any Team Physicians who travel to away games with their Club.
- B. **ImPACT**: Players shall be administered ImPACT baseline testing by the Club's consulting neuropsychologist every other year if they (i) have not suffered a concussion in the prior season and (ii) if they have valid ImPACT test data from 3 consecutive yearly English language tests. All other Players shall undergo ImPACT testing on an annual basis.
- C. **Paper and Pencil Testing**: Players diagnosed with a concussion in the previous season shall be re-evaluated by the Club's Consulting Neuropsychologist at the start of the season with the NHL Paper & Pencil test battery and ImPACT.

Clubs should consult with the Club Consulting Neuropsychologist regarding factors that may interfere with the testing process, including the optimal number of Players to be

tested at any one time in the Club’s testing environment. Additionally, when possible, Clubs should avoid administering tests immediately after physical exertion, or when the Player has had insufficient sleep, or in circumstances in which the Player is distracted (e.g., by other Players, cell phones, etc.). Also, due to possible interference in verbal memory tasks, it is recommended that the SCAT X2 App and ImPACT be administered on different days.

III. REMOVAL FROM PLAY FOR ACUTE EVALUATION

This Protocol requires the mandatory removal of a Player from play for an acute evaluation as soon as possible if a concussion is suspected, or if any of the symptoms or signs listed below exist.

Symptoms and signs leading to removal from play:

If any of the following symptoms or signs occurs **after a direct blow to the head** (including secondary contact with the glass, boards and ice) **or an indirect blow to the head** (such as a blow to the body that causes acceleration/deceleration of the head), the Club shall remove the Player from the playing environment for an acute evaluation:

1. **“Symptoms”**: The Player reports or exhibits one or more “Symptoms” of possible concussion, including:
 - Headache
 - Dizziness
 - Balance or coordination difficulties
 - Nausea
 - Amnesia for the circumstances surrounding the injury (i.e., retrograde/anterograde amnesia)
 - Cognitive slowness
 - Light/sound sensitivity
 - Disorientation
 - Visual disturbance
 - Tinnitus
2. **Sign: “Lying Motionless on the Ice”**: A Player lies motionless on the ice or falls to the ice in an unprotected manner (i.e., without stretching out his hands or arms to lessen or minimize his fall).
3. **Sign: “Motor Incoordination/Balance Problems”**: A Player staggers, struggles to get up or skate properly, appears to lose his balance, trips or falls, or stumbles while getting up, trying to get up, or skating.
4. **Sign: “Blank or Vacant Look”**: A player has a blank or vacant look.

5. **Signs: “Slow to Get Up” or “Clutches his Head”**: A player is slow to get up or clutches his head (including any part of his face)² following any of these mechanisms of injury:
- a blow to the Player’s head or upper torso from another player’s shoulder;
 - the Player’s head makes secondary contact with the ice; or,
 - the Player is punched in the head (including any part of his face) by an ungloved fist during a fight

Exceptions: If a Player is **Slow to Get Up** or **Clutches his Head** following a mechanism of injury other than the three listed above, removal from play is not mandatory and Club medical staff shall exercise their medical judgment as to whether to remove the Player for an acute evaluation.

6. In addition, if a Player exhibits any other sign, symptom or behavior that leads Club medical personnel to suspect that a Player has sustained a possible concussion, the Club shall remove the Player for an acute evaluation by Club medical personnel.

IV. IN-PLAY IDENTIFICATION OF POSSIBLE CONCUSSION

The identification and removal of Players who require an acute evaluation for possible concussion pursuant to this Protocol is a Club level responsibility.

To assist Clubs, Central League Spotters and In-Arena League Spotters (together “League Spotters”) will also observe players’ behavior during NHL Games to identify Players who exhibit visible signs of possible concussion pursuant to this Protocol.

“Central League Spotters” will be certified Athletic Trainers/Therapists with hockey expertise. Central League Spotters will observe games from the NHL Offices via live game broadcast using multiple feeds. “In-Arena League Spotters” will be Off-Ice Officials who will be dedicated to observing games live in the arena and will have access to view game footage, including replays. In-Arena League Spotters will view games from the HITS area where space permits.³

In all instances, the Central League Spotter shall be the only League Spotter who will communicate with Club medical staff. The Central League Spotter shall promptly communicate with Club medical staff each time a Player exhibits a visible sign, regardless of whether such Player is attended to by medical personnel on the ice, at the

² The Player must actually touch his head/face, with one or both hands. The clutching must be immediate and related to the blow, as opposed to removed or more distant in time.

³ If space does not permit, an alternative location will be chosen to ensure that the In Arena League Spotter has a live view of the entire ice surface and is in close proximity to the HITS area in order to have access to the video footage.

bench, or in the locker room, and regardless of whether an evaluation is mandatory or discretionary.

Removal and evaluation of a Player will be required if the Central League Spotter determines that a mandatory evaluation is warranted, even if the In-Arena League Spotter and/or Club personnel disagree that a visible sign or a mechanism of injury has occurred or been exhibited. If the Central League Spotter communicates a visible sign triggering an evaluation in the discretion of the Club's medical personnel, and the Club's medical personnel did not see the event, such Club medical personnel shall, as soon as reasonably possible following the communication (for example, during the next television time-out or intermission if the next break in play is the intermission), check in with the Player or review the video clip of the event, or both, to determine if an acute evaluation is warranted. If the In-Arena Spotter observes a visible sign not viewed on video by the Central League Spotter, this visible sign will be communicated by the Central League Spotter to the Club medical personnel and appropriate action shall be exercised as noted above.

Each of the League Spotters shall independently record any visible signs or mechanisms of injury that are observed prior to communicating with each other or with Club medical staff. Observations shall be recorded into the "Spotter Log App."

V. ACUTE EVALUATION

The Club Physician and/or Club Athletic Trainer/Therapist (when reasonably possible, together) shall examine the Player in a distraction-free environment⁴ using the X2 App (additional evaluation methods can be used at the medical staff's discretion). In all circumstances, the Club Physician shall assess the Player in person and shall be solely responsible for determining whether or not the Player is diagnosed as having a concussion. The home Club Physician shall fulfill this function for Players on the visiting team if the Visiting Club does not have a physician travelling with the Club.

The information acquired from the X2 App may be used by the Club Physician to assist him/her in clinical decision-making and should not be used in isolation either to make the diagnosis of concussion or return to play decisions. Club medical staff should consult the NHL X2 SCAT3 Data Analysis/Interpretation Manual for guidelines to interpret the test data. If the X2 App is not functioning properly, the Club Physician and/or Athletic Trainer/Therapist shall administer the NHL Modified SCAT3 using the paper form.

Monitors with feeds of live game broadcasts (with the ability to record and rewind) are in all arena medical rooms to allow Club medical staff, at their option, to review the visible signs and mechanism of injury in connection with their clinical assessment of the Player.

⁴ To ensure a distraction-free environment, only Club Physicians, Club Athletic Trainer/Therapists, and the Player may be in attendance during an acute evaluation.

Players who are diagnosed with a concussion after the acute evaluation shall not return to play or to practice on the same day, irrespective of the resolution of all concussion symptoms. If, after the evaluation noted above the Club Physician determines that the Player is not diagnosed with a concussion, the Player may return to play at the physician's discretion.

VI. MANAGEMENT OF CONCUSSION

Concussion symptoms might develop immediately after a blow to the head or body; or they might evolve over time (hours or days). Consequently, Players diagnosed with a concussion, and those who are suspected of having a concussion, should be monitored and evaluated over time.

Players who are diagnosed with a concussion should undergo an initial period of rest until symptoms have subsided to the point where activity can be gradually introduced without significantly exacerbating symptoms or provoking new symptoms. Players shall then proceed through a graded progression of activity (see Zurich II Consensus Statement). However, each Player's concussion shall be managed on an individualized basis; there is no particular program of graded progression, nor is there a minimum period of time for progression from one step to the next in the graded exercise progression.

VII. POST-CONCUSSION NEUROPSYCHOLOGICAL EVALUATION

Once a Player diagnosed with concussion is determined by the Club Physician to be free of concussion-related symptoms at rest and upon exertion, he shall be referred to the Club's Consulting Neuropsychologist (or, if on the road, a Consulting Neuropsychologist from another team) for a post-concussion evaluation. This evaluation shall occur prior to the Player engaging in an unrestricted practice (wearing a regular colored jersey) or game. The Club's Consulting Neuropsychologist's post-injury evaluation shall consist of ImPACT and the NHL Paper and Pencil neuropsychological test battery.

In order to facilitate this evaluation, Club Consulting Neuropsychologists should be advised as soon as a Player is diagnosed with a concussion. Club Consulting Neuropsychologists should be provided with baseline and post-injury X2 app data and narratives/reports of the acute medical evaluation, as well as subsequent symptom tracking for review as part of the post-injury assessment.

A Club Physician may request a neuropsychological evaluation prior to full symptom resolution only when compelling clinical reasons exist for doing so (e.g., prolonged recovery, complex clinical presentation).

Once complete, the Club Consulting Neuropsychologist shall convey the results of the evaluation to the Club Physician or Club Athletic Trainer (preferably both).

Although neuropsychological test data are very useful in assessing the neurocognitive sequelae of concussion, they should not be used in isolation to make the diagnosis of concussion or as the sole determinant for return to play.

VIII. RETURN TO PLAY

A Player who is diagnosed with a concussion shall not return to practice or a game on the same day that the event occurred, irrespective of how quickly his symptoms resolve.

A Player may return to unrestricted play at a time later than the day the event occurred if the following three circumstances have occurred: (1) there is complete recovery of concussion-related symptoms at rest; (2) there is no emergence of concussion-related symptoms at exertion levels required for competitive play; and (3) the player has been judged by the Club's Physician to have returned to his neurocognitive baseline following an evaluation by the Club consulting neuropsychologist.

There is no mandatory period of time that a Player must be withheld from play following a concussion, as the return to play decision is based on the individual circumstances of that Player.

The Club Physician remains solely responsible for making return to play decisions based on these parameters, including in circumstances where the Player is referred to a consultant for management and treatment. Prior to making the return to play decision, the Club Physician shall ensure that all aspects of the Protocol have been satisfied, including referral for neuropsychological assessment.

Issued by the Concussion Subcommittee

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