International Wheelchair Rugby Federation

11 September 2020

IWRF Medical Guideline – Concussion

- Collisions and falls during Wheelchair Rugby practice and competitions place athletes at risk for sports related concussions. To protect the health and safety of our athletes, IWRF has adopted the following guidelines for management of sports related concussion (SRC).

The basic principle in all sports related concussions

"Any athlete who exhibits signs, symptoms or behaviors consistent with a concussion (such as loss of consciousness,headache, dizziness, confusion, or balance problems) shall be immediately removed from the contest and shall not return to play until cleared by an appropriate health care professional."

WHEN IN DOUBT…. SIT THEM OUT

Definition

- Concussion is a traumatic brain injury (TBI) due to a blow to the head, neck or body resulting in the rapid onset of temporary neurologic imparement. It is a serious condition which if ignored or improperly managed can lead to serious consequences.

Signs and Symptoms

- The symptoms of concussion typically evolve within minutes to hours from the injury, but may be delayed in certain situations.

- Often the signs and symptoms of SRC are noticed by teammates or others who know the individual who has been injured. Any concern of SRC in a teammate should be reported to the coaching and Medical Staff.

- Visible signs of concussion:
  - Loss of consciousness, decreased responsiveness, or seizure
  - Dazed, blank or vacant look
  - Motionless after impact or slow to recover.
  - Slow to answer questions
  - Unsteady in wheelchair. Balance problems or falling forward in wheelchair
  - Loss of fine motor coordination
  - Grabbing or clutching of head
  - The athlete is irritable or more emotional than normal

- Symptoms of concussion:
  - Headache
  - Dizziness
  - Problems concentrating, confusion, or feeling slowed down
  - Impared memory
  - Visual problems
  - Nausea or vomiting
  - Fatigue
  - Sensitivity to light or noise
  - Poor balance
  - Hearing issues, tinnitus

- Failure to answer any of the following questions correctly may suggest a concussion:
  - “What venue are we at today?”
  - “Who scored last in this game?”
  - “What team did you play last game?”
  - “Did your team win the last game?”
  - Any question of common knowledge

- Actions to take with athletes with a suspected concussion
  - Remove immediately from play (training, practice or game)
  - Refer the athlete to a qualified health-care professional
  - Initial treatment requires physical and cognitive rest
  - The athlete begins a graded return to play protocol.
  - Medical clearance is required for return to play
  - Documentation of all evaluations and processes

- Any athlete with a suspected concussion should be **IMMEDIATELY REMOVED FROM PLAY**, using appropriate emergency management principles. Once safely removed from play they should be evaluated by a physician or other licensed healthcare provider prior to returning to play.

- If a neck injury is suspected, the player should only be removed by authorized healthcare professionals (AHP) with appropriate spine care training.

- Teammates, coaches, medical staff, officials, team managers, or administrators who suspect a player may have concussion MUST to ensure that the player is removed from the field of play in a safe manner.

- A player with any symptoms/signs or a worrisome mechanism of injury has a SRC until proven otherwise. No athlete should Return to Play (RTP) or practice on the same day of a concussion.

- Any athlete suspected of concussion should be evaluated by a licensed healthcare provider on that day.

- Any athlete with concussion should be medically cleared by a physician or other licensed healthcare provider prior to resuming practice or competition. (see Return to Play)

Advanced Management Protocol

- If the player is unresponsive or has diminished responsiveness, initiate local emergency medical management protocol.

- Assume a neck injury until proven otherwise
    - DO NOT have the athlete move or help the athlete sit up until you have determined:
        - no neck pain or midline neck tenderness
        - no new numbness or tingling in neck or extremities
        - no change in muscle strength
        - no change in sensation to light touch, pressure, or temperature.

- If the athlete is conscious & responsive without symptoms or signs of a neck injury it is appropriate to continue with the following steps:
    - help the player off the court to the sideline or locker room
    - begin the sideline evaluation for sports related concussion.
    - **do not leave** the athlete unattended

- Evaluate the player on the sideline, or in the locker room using the SCAT5 or other sideline assessment tools
    - Ask about concussion symptoms
    - Examine for signs
    - Verify orientation (What day is it? What is the score? Who are we playing?)
    - Check immediate memory (Repeat a list of 5 words)
    - Test concentration (List the months in reverse order)
    - Test coordination if possible (have the athlete attempt a sport related task that would normally be easily completed)
    - Check delayed recall (repeat the previous 5 words after 5-10 minutes)
    - Check vital signs, HR and BP
    - Document your finding and procedures

  ** If a healthcare provider is not available, the player should be safely removed from practice or play and urgent referral to a licensed healthcare provider arranged.

- A player with any symptoms or signs, disorientation, impaired memory, concentration, balance or recall has a SRC and should not be allowed to return to play on the day of injury.
- 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 initiate local medical emergency protocol**.
    - Severe throbbing headache

  - Severe dizziness, vertigo, or loss of coordination
  - Ringing in the ears (tinnitus)
  - Blurred or double vision
  - Unequal pupil size
  - No pupil reaction to light
  - Recurrent vomiting with severe nausea
  - Slurred speech
  - Seizures
  - Clear fluid running from the nose and/or ears
  - New numbness or paralysis
  - Difficulty in being aroused

- An athlete who is symptomatic after a concussion initially requires physical and cognitive rest.
  - A concussed athlete **should not** participate in physical activity, return to school, play video games or text message if he or she is having symptoms at rest.
  - Concussion symptoms & signs evolve over time- the severity of the injury and estimated time to return to play are unpredictable.

Return to Play (RTP)

General

- Before re-starting activity, the player must have no new symptoms or worsening symptoms at rest.
- Medical or approved healthcare provider clearance is recommended before re-starting activity.

Graduated Return to Play (GRTP)

- After the minimum rest period, AND if no new symptoms or worsening symptoms, a GRTP program should be followed.

- GRTP is a progressive exercise program that introduces an athlete back to sport step by step. This should only be started once the athlete has no new symptoms or worsening symptoms and off medications that may mask concussion symptoms

- GRTP program contains six distinct stages:
  1. Minimum rest period
  2. Light aerobic exercise
  3. Sport-specific exercise drills
  4. Non-contact training drills
  5. Full Contact Practice
  6. Return to Play
- Under the GRTP program, the player can proceed to the next stage only if there are no new symptoms or worsening symptoms of concussion during rest and at the level of exercise achieved in the previous GRTP stage.

- If any new or worsening symptoms occur while going through the GRTP program, the player must return to the previous stage and attempt to progress again after a minimum 24-hour period of rest without symptoms.

- ***IWRF recommends that a medical practitioner or approved healthcare professional confirm that the player can take part in full contact training before entering Stage 5.***

Graduated Return to Play Protocol

Each stage is a **minimum** of 24 hours

Stage	**Exercise Allowed**	**Objective**
1. Minimum rest period, Symptom limited activity	Complete body and brain rest without new symptoms or worsening symptoms. Daily activities that do not provoke symptoms	Recovery, Gradual reintroduction of work/school activities
2. Light aerobic exercise	Light pushing for 10-15 minutes, swimming or stationary cycling at low to moderate intensity. No resistance training. No new symptoms or worsening symptoms during full 24-hour period.	Increase heart rate
3. Sport-specific exercise drills	Wheelchair drills. No head impact activities.	Add movement
4. Non-contact training drills	Progression to more complex training drills, e.g. passing drills. May start progressive resistance training.	Exercise, coordination, and cognitive load
5. Full contact practice	Following medical clearance, participate in normal training activities	Restore confidence and assess functional skills by coaching staff
6. Return to play	Player rehabilitated. Normal game play	Recovered

- After a brief period of rest (24–48 hours after injury), patients can be encouraged to become gradually and progressively more active as long as these activities do not bring on new symptoms or worsen their current symptoms.

- There should be at least 24 hours (or longer) for each step of the progression. If there are any new symptoms or symptoms worsen during exercise, the athlete should go back to the previous step.

- Resistance training should be added only in the later stages (stage 3 or 4 at the earliest).

- If symptoms are persistent for more than 10–14 days in adults the athlete should be referred to a healthcare professional who is an expert in the management of concussion.

Return to Play in Competition

- If a player has been removed from play with a concussion during an IWRF sanctioned event, that player will not be permitted to return to play during the event.

- A suspected concussed athlete will not be able to return to play without the clearance/approval of the appropriate medical professional.

- The Technical Delegate will ensure that all concussion or suspected concussion cases follow the above process. If there is any doubt by the Technical Delegates regarding the athlete's fitness to return to play, the athlete will not return to play.

CONCUSSION RECOGNITION TOOL 5©

To help identify concussion in children, adolescents and adults

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RECOGNISE & REMOVE

Head impacts can be associated with serious and potentially fatal brain injuries. The Concussion Recognition Tool 5 (CRT5) is to be used for the identification of suspected concussion. It is not designed to diagnose concussion.

STEP 1: RED FLAGS — CALL AN AMBULANCE

If there is concern after an injury including whether ANY of the following signs are observed or complaints are reported then the player should be safely and immediately removed from play/game/activity. If no licensed healthcare professional is available, call an ambulance for urgent medical assessment:

- **Neck pain or tenderness**
- **Double vision**
- **Weakness or tingling/ burning in arms or legs**
- **Severe or increasing headache**
- **Seizure or convulsion**
- **Loss of consciousness**
- **Deteriorating conscious state**
- **Vomiting**
- **Increasingly restless, agitated or combative**

Remember:

- In all cases, the basic principles of first aid (danger, response, airway, breathing, circulation) should be followed.
- Assessment for a spinal cord injury is critical.
- Do not attempt to move the player (other than required for airway support) unless trained to do so.
- Do not remove a helmet or any other equipment unless trained to do so safely.

If there are no Red Flags, identification of possible concussion should proceed to the following steps:

STEP 2: OBSERVABLE SIGNS

Visual clues that suggest possible concussion include:

- Lying motionless on the playing surface
- Slow to get up after a direct or indirect hit to the head
- Disorientation or confusion, or an inability to respond appropriately to questions
- Blank or vacant look
- Balance, gait difficulties, motor incoordination, stumbling, slow laboured movements
- Facial injury after head trauma

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STEP 3: SYMPTOMS

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

STEP 4: MEMORY ASSESSMENT

(IN ATHLETES OLDER THAN 12 YEARS)

Failure to answer any of these questions (modified appropriately for each sport) correctly may suggest a concussion:

- "What venue are we at today?"
- "Which half is it now?"
- "Who scored last in this game?"
- "What team did you play last week/game?"
- "Did your team win the last game?"

Athletes with suspected concussion should:

- Not be left alone initially (at least for the first 1-2 hours).
- Not drink alcohol.
- Not use recreational/ prescription drugs.
- Not be sent home by themselves. They need to be with a responsible adult.
- Not drive a motor vehicle until cleared to do so by a healthcare professional.

The CRT5 may be freely copied in its current form for distribution to individuals, teams, groups and organisations. Any revision and any reproduction in a digital form requires approval by the Concussion in Sport Group. It should not be altered in any way, rebranded or sold for commercial gain.

ANY ATHLETE WITH A SUSPECTED CONCUSSION SHOULD BE IMMEDIATELY REMOVED FROM PRACTICE OR PLAY AND SHOULD NOT RETURN TO ACTIVITY UNTIL ASSESSED MEDICALLY, EVEN IF THE SYMPTOMS RESOLVE

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https://bjsm.bmj.com/content/bjsports/early/2017/04/26/bjsports-2017-097506SCAT5.full.pdf

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