



## Irish Amateur Wrestling Association Sports Related Concussion Guidelines

The IAWA is aware that there can be serious sequelae for wrestlers suffering from a Sports Related Concussion [SRC]. This is not limited to the immediate consequences of acute head injury. The long term effects of head injury and concussion are well recognised and can be minimised with appropriate immediate and longer term care. Most wrestling in Ireland, indeed throughout the world, takes place on wrestling Mats with medical or first aid cover and it is hoped that these guidelines will help both wrestlers and those in charge of wrestlers. It should be rare and exceptional circumstances that a wrestler with concussion or suspected concussion is not medically assessed.

### **Guidelines Summary**

- Concussion is a brain injury that needs to be taken seriously to protect the long term welfare of all wrestlers.
- Any wrestler suspected of having sustained a concussion, should be safely removed immediately from the Mat and should not return to compete or train on the same day. If there is any doubt as to whether a wrestler has suffered concussion apply the guidelines. Always err on the side of caution.
- Where a Team Doctor or other appropriately certified Health Professional is present, they must advise the person in charge of the team (i.e. Team Manager/Coach) in this regard and the wrestler must not be allowed to continue their participation in the match or training.
- Any wrestler with a suspected concussion where no appropriately trained personnel are present must be assumed to have a diagnosed concussion and must be removed from the field of play and not return to wrestle or train on the same day. In this situation, wrestlers must go through a graduated return to play (GRTP) protocol.
- Concussion is an evolving injury. It is important to monitor the wrestler after the injury for progressive deterioration.
- They should be advised to seek medical help, especially if they have continuing problems.
- Concussion diagnosis is a clinical judgement – Use of the SCAT 3 can only aid the doctor in their diagnosis.
- Wrestlers suspected of having a concussion must have adequate rest of at least 24 hours and then must follow a graduated return to play protocol.
- Wrestlers must receive medical clearance (by a doctor) before returning to wrestling or training.



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- Younger athletes require a more conservative approach to protect the developing brain. Therefore, children and adolescents must be more conservatively managed than adults.
- Second or multiple concussions need medical clearance to participate in any sport where there is the potential for a SRC

### **What is Concussion?**

Concussion is a brain injury and can be caused by a direct or indirect impact to the wrestler's head or body. Concussion typically results in an immediate onset of short lived signs and symptoms. However, in some cases, the signs and symptoms of concussion may evolve over a number of minutes or hours. Loss of consciousness occurs in less than 15% of concussion cases and whilst a feature of concussion, loss of consciousness is not a requirement for diagnosing concussion.

Concussion is only one diagnosis that may result from a head injury. Head injuries may result in one or more of the following:

1. Superficial injuries to scalp or face such as lacerations and abrasions
2. Sub concussive event – a head impact event that does not cause a concussion
3. Concussion - an injury resulting in a disturbance of brain function
4. Structural brain injury - an injury resulting in damage to a brain structure for example fractured skull or a bleed into or around the brain.

Structural brain injuries may present mimicking a concussion. In this instance the signs and symptoms of a structural brain injury will usually persist or deteriorate over time e.g. persistent or worsening headache, increased drowsiness, persistent vomiting, increasing confusion and seizures.

***Medical assessment of a concussion or a head injury where the diagnosis is not apparent is recommended to exclude a potential structural brain injury. In concussion typically, standard neuro-imaging such as MRI or CT scan is normal. All head injuries should be considered associated with cervical spine injury until proven otherwise. If there is any concern that there is a cervical spine injury the wrestler should not be moved and urgent medical/ambulance help called. (See Appendix 2)***

### **Different ages**

It is widely accepted that children and adolescent athletes (18 years and under) with concussion should be managed more conservatively. This is supported by evidence that confirms that children:

1. are more susceptible to concussion
2. take longer to recover
3. have more significant memory and mental processing issues.



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4. are more susceptible to rare and dangerous neurological complications, including death caused by a second impact syndrome.

### **CONCUSSION MUST BE TAKEN EXTREMELY SERIOUSLY**

#### **Signs and Symptoms**

Contrary to popular belief, most concussion injuries occur without a loss of consciousness and so it is important to recognise the other signs and symptoms of concussion. Concussion must be recognised as an evolving injury in the acute stage. Some symptoms develop immediately while other symptoms may appear gradually over time (24 hours +). Monitoring of wrestlers after the injury is therefore an important aspect of concussion management.

Diagnosis of acute concussion should involve the following:

1. Wrestler's subjective report of their symptoms.
2. Observation of the wrestler for physical signs of concussion.
3. Assessment of the wrestler for cognitive change or decline.
4. Observation of wrestlers for behavioral change.
5. Wrestlers report of any sleep disturbance.

**Table 1: Concussion Assessment Domains**

Indicators	What You Would Expect to See
Symptoms	Headaches* Dizziness 'Feeling in a fog.'
Physical Signs	Loss of consciousness Vomiting Vacant
Facial Expression	Clutching Head Motor Inco-ordination (unsteady on feet, falling, poor balance)
Cognitive Impairment	Loss short term memory Difficulty with concentration Decreased attention Diminished work performance
Behavioral Changes	Irritability Anger Mood Swings Feeling Nervous Anxious
Sleep Disturbance	Drowsiness Difficulty Falling Asleep * most common symptom



### **Mat Side Assessment of a Concussion Injury**

- The wrestler should be assessed by a doctor or registered healthcare practitioner (Physiotherapist/ Nurse) at the Mat using standard emergency management principles. Particular attention should be given to excluding a cervical spine injury.
- If no healthcare practitioner is available, the wrestler should be safely removed from practice or play and urgent referral to a doctor or Accident & Emergency Department is required.
- Once the first aid issues are addressed, an assessment of the concussive injury should include clinical judgement and the use of the SCAT 3 or later version (medical or trained personnel only).
- The wrestler should NOT be left alone following the injury and regular observation for deterioration is essential over the initial few hours following injury. They should not drive a car or consume alcohol.

### **What are the visible clues of a suspected concussion?**

- Wrestlers, coaches, healthcare professionals, parents, spectators and officials should be familiar with the visible clues of a suspected concussion. ***If a wrestler has ANY ONE of the visible clues they MUST be immediately removed from activity and MUST NOT return until they have completed the graduated return to play (GRTP) protocol.***
- Lying motionless on ground or convulsions
- Slow to get up
- Unsteady on feet
- Balance problems or falling over
- Grabbing/Clutching head
- Dazed, blank or vacant look
- Confused/Not aware of plays or events
- Suspected or confirmed loss of consciousness
- Loss of responsiveness

**Note:** - \*Need to **recognise that the appearance of symptoms might be delayed several hours**

**following a concussive episode.** Example: there may be no forgetfulness (retrograde amnesia) present at 0 minutes post injury, yet forgetfulness (amnesia) may be present at 10 minutes post injury.

\*Orientation tests (i.e. name, place, and person) have been shown to be an unreliable cognitive function test in the sporting situation compared with memory and attention assessment.

### **Fellow wrestlers/coaches/parents/umpires: YOUR responsibility:**

- You **MUST** do your best to ensure that the wrestler is removed from play in a safe manner, if you observe them displaying any of the visible clues or signs or symptoms of a suspected concussion.
- You **MUST NOT** allow a wrestler to take part again until they have completed the graduated return to play (GRTP) protocol if they are displaying signs or symptoms of a suspected concussion sustained while playing hockey or another sport.
- You **MUST** ensure that the wrestler is in the care of a responsible adult and inform them of the wrestler's suspected concussion.



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### **Wrestler: YOUR responsibility:**

- If you have symptoms of a suspected concussion you must STOP wrestling/training and INFORM medical and/or coaching staff immediately.
- Be honest with yourself and those looking after you.
- If you have symptoms of a suspected concussion sustained while playing wrestling or another sport, you MUST NOT play any sport until you have completed the graduated return to play (GRTP) protocol.

### **Return to Play**

- A wrestler with a diagnosed concussion should **NEVER** be allowed to return to play on the day of injury.
- Return to play must follow a medically supervised stepwise approach and a wrestler **MUST NEVER** return to play while symptomatic

The most important aspect of concussion management is physical and cognitive rest until the acute symptoms resolve and then a graded program of exertion prior to medical clearance and graduated return to play (GRTP) completed. (See Table 2 below)

1. There should be an initial period of 24-48 hours physical and mental rest for any wrestler after a concussive injury.
2. GRTP protocols following concussion follow a stepwise approach. With this stepwise progression, the wrestlers should continue to proceed to the next level only if asymptomatic at the current level.
3. Generally, each step should take 24 hours so that the athlete would take approximately one week to proceed to full rehabilitation once they are asymptomatic at rest.
4. If any post-concussion symptoms occur while in the GRTP program, then the wrestler should drop back to the previous asymptomatic level and try to progress again after a further 24 hours period of rest has passed. They should be honest to protect themselves.

Medical clearance (medical clearance refers to medical doctors) is required prior to return to full contact sports.



**Table 2 Graduated Return to Play Protocol**

<b>REHABILITATION STAGE</b>	<b>EXERCISE ALLOWED</b>	<b>OBJECTIVE</b>
1. Rest as per minimum rest period prescribed for wrestler's age	Complete physical and cognitive rest without symptoms	Recovery
2. Light aerobic exercise Walking, swimming or stationary cycling keeping intensity, <70% maximum predicted heart rate. No resistance training.	Symptom free during full 24-hour period	Increase heart rate
3. Sport-specific exercise	Running 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. Return to play	Wrestler Rehabilitated	Recover

**Note: there should be a minimum of 24 hours between each progression.**

**Helping your wrestlers cope with their concussion injury**

The best medical management for concussion is rest (Cognitive and Physical). Wrestlers often feel tired and may experience difficulties at work or school when carrying at task which require concentration. Wrestlers may also encounter mood difficulties and feel depressed, anxious or irritable with family or team mates. Support should be provided to wrestlers during this recovery period. Alcohol should be avoided as it may delay recovery and put the wrestler at increased risk for further injury. When dealing with persistent symptoms, it is essential that wrestlers only take medications prescribed by their doctor. Recovery from concussion should not be rushed, nor pressure applied to wrestlers to resume playing until recovery is complete. The risk of re injury is high and may lead to recurrent concussion injuries



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which can cause long term damage. Remember “better to have missed one game than the whole season, or worse.”

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1. are more susceptible to concussion
2. take longer to recover
3. have more significant memory and mental processing issues.
4. are more susceptible to rare and dangerous neurological complications, including death caused by a second impact syndrome

### **Concussion Management in Children 5 years – 18 years**

Concussion management is different due to the following factors: Brain development, variable growth rates, language difficulties, child versus parental reports of symptoms, lack of medical coverage at underage games, physical examination in children is usually normal.

### **Management in Children:**

Rest for minimum time recommended below.

- No sports, exertions, minimal TV, PC Use, Music etc
- Occasionally there is a need for gradual return to school work, increase breaks during school day etc (on medical recommendation)
- Children and adolescents should not return to sport until they have successfully returned to school.
- Schools should be encouraged to have SRC policies including prevention, management and offer appropriate active help to pupils to recover from SRC. Time off school may be necessary and this recognised.
- A summary of the minimum rest periods and different length GRTP
- stages for different ages is shown below:

### **Wrestlers 18 years and under**

- Minimum rest period 2 weeks and symptom free
- GRTP to follow rest, with each stage lasting 48 hours
- Earliest return to play - Day 23 post injury



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### **Adult - 19 years and over**

- Minimum rest period 24 hours and free of symptoms
- GRTP to follow rest, with each stage lasting 24 hours
- Earliest return to play - Day 7 post injury

### **A GRTP should only commence if the wrestler:**

- has completed the minimum rest period for their age
- is symptom free and off medication that modifies symptoms of concussion.

Medical or approved healthcare professional clearance is required prior to commencing a GRTP.

NOTE: An initial period of 24–48 hours of both relative physical rest and cognitive rest is recommended before beginning the RTS progression. There should be at least 24 hours (or longer) for each step of the progression. If any 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 (eg, more than 10–14 days in adults or more than 1 month in children), the athlete should be referred to a healthcare professional who is an expert in the management of concussion.

### **Recurrent or difficult concussions**

Following a concussion, a wrestler is at an increased risk of a second concussion within the next 12 months. The IAWA recommends that all concussions be taken seriously, and that full recovery be achieved prior to re-introduction of exercise.

### **Wrestlers with:**

- a second concussion within 12 months
- a history of multiple concussions
- unusual presentations or
- prolonged recovery
- should be assessed and managed by health care providers (multi-disciplinary) with experience in sports-related concussions.

If a medical practitioner experienced in concussion management or approved healthcare provider is unavailable the wrestler with a recurrent or difficult concussion history should be managed using the GRTP protocol from the lower age group as a minimum.



### **Sports Concussion Assessment Tool 3 (SCAT3, Appendix 1)**

While the diagnosis of concussion is a clinical judgment ideally made by a medical professional, the SCAT 3 provides a standardized tool assessing an injured wrestler aged from 13 years and older for concussion. SCAT 3 is designed for use by registered medical practitioners and other clinical personnel that have appropriate training to use SCAT 3. SCAT 3 consists of two parts - the first part is an initial pitch side assessment of injury severity (Concussion signs, Glasgow Coma Scale and Maddocks Score). Any wrestler with a suspected concussion should be REMOVED FROM PLAY, medically assessed, monitored for deterioration and should not drive a motor vehicle until cleared to do so by a registered medical practitioner. The second part of the SCAT 3 should be carried out after a minimum 15 minute rest period to avoid the influence of exertion and fatigue on the wrestler's performance. This assessment consists of symptom checklist, symptom severity, as well as neuro cognitive and balance functions. It is recognised that the SCAT3 should not be used solely to make or exclude the diagnosis of concussion in the absence of clinical judgement. An athlete may have a concussion even if their SCAT3 is normal. SCAT is being developed and modified and medical practitioners are recommended to ensure they are up to date with the latest version. ***The diagnosis of a concussion is a clinical judgement in the end.***

### **Conclusion**

Hockey Ireland recommends that the "Gold Standard" concussion management be implemented for all wrestlers diagnosed with a concussion or when a wrestler is suspected of having a concussion during a game or training at which there is no approved health care professional present.

This "Gold Standard" includes:

- Assessment by a certified medical practitioner familiar with international concussion protocols;
- Thorough, serial symptom analysis;
- General and neurological examination;
- Balance assessment; and
- Assessment of cognitive function preferably compared to a pre-injury baseline.

### **Concussion management - 11 "Rs"**

**Recognise** – Learn the signs and symptoms of a concussion so you understand when an athlete might have a potential concussion [sideline evaluation].

**Remove** – If an athlete has a concussion or even a potential concussion he or she must be safely removed from play immediately.

**Refer** – Once removed from play, the wrestler should be referred immediately to a medical practitioner or qualified healthcare professional who is trained in evaluating and treating concussions.

**Rest** – Wrestlers must rest from exercise until symptom-free and then start a Graduated Return to Play program.

The IAWA recommends minimum rest periods for different ages –



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U/6 to U/15 – 2 weeks minimum rest

U/16-U/19 - 1-week minimum rest

Adults - 24 hours minimum rest.

**Rehabilitation** – both physical and psychological, of the SRC and any other associated injuries.

**Refer** – to specialist in SRC incases of the wrestler suffering persistent symptoms beyond the expected normal recovery times.

**Recover** – Full recovery from the concussion is required before return to play is authorized. This includes being symptom-free. Rest and specific treatment options are critical for the health of the injured participant.

**Return to sport** – In order for safe return to play in hockey, the athlete must be symptom free and cleared in writing by a medical practitioner or approved healthcare professional, preferably who is trained in evaluating and treating concussions.

**Reconsider** – Should special populations be managed differently? Elite athletes and non-elite athletes should follow the same guidelines above. Children and adolescents should follow the guidelines above. However, early introduction to symptom limited physical activity is thought to be appropriate.

**Residual effects and sequelae** – this is related to recurrent head trauma and the risk of developing chronic traumatic encephalopathy. Therefore, any wrestler suffering recurrent SRC needs specialist evaluation.

**Risk Reduction** – *Role of pre-participation SRC evaluation. This would include a history of SRC and other injuries that may be associated with SRC. This would allow for identification of high risk participants. Baseline neurophysiological testing can be of assistance during GRTP.*

The athlete must complete a GRTP (Graduated Return to Play) program.

The IAWA would like to acknowledge Dr Mike Rossiter, Hockey Ireland, GB & England Hockey, for quotes from his document, Concussion Policy, and from GAA to quote from their Concussion Management Guidelines. The Consensus Statement on Concussion in Sport; 5th International Conference, Berlin, October 2016 has also been considered.

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