GB & ENGLAND HOCKEY CONCUSSION POLICY

GUIDELINE SUMMARY

• **RECOGNISE AND REMOVE** - learn to recognise the signs and symptoms of concussion and remove a player from the field if in ANY doubt.

• **PROTECT OUR YOUNG ATHLETES** – England & GB Hockey recommends different return to play protocols for different ages.

• Concussion must be taken extremely seriously to safeguard the long-term welfare of players.

• **All players with a diagnosed concussion must be removed from the field of play and not return to play or train on the same day**. Players with a diagnosed concussion must go through a graduated return to play program (GRTP), described later in this document.

• All players with a suspected concussion where no appropriately trained healthcare professionals are present must be assumed to have a diagnosed concussion and must be removed from the field of play and not return to play or train on the same day. In this circumstance it is preferred that the player is assessed at the earliest available opportunity by a healthcare professional experienced in diagnosing a concussive injury. Such players must then go through a graduated return to play (GRTP) protocol if a diagnosis of concussion is made.

• Players who complete a GRTP must receive medical clearance from a doctor or a healthcare professional experienced in the management of concussion before returning to play.

CONCENSUS STATEMENT ON CONCUSSION IN SPORT

GB & England Hockey takes player welfare seriously and has been a primary supporter of the 2008, 2012 and 2016 Concussion in Sport Consensus Meetings. These meetings bring together the world experts in concussion every four years to review the current evidence surrounding concussion. Following a Consensus Conference, a position paper (Consensus Statement) is developed summarizing the current evidence based on knowledge in the area of concussion.

This concussion guideline has been updated to reflect the principles agreed following the 2016 Concussion Consensus conference. These guidelines are designed to be used by Medical Practitioners and approved healthcare professionals. All other parties involved in concussion management should refer to the guidelines for non-approved healthcare professionals and General Public.

These Guidelines are meant to ensure that players who suffer concussion are managed effectively to protect their short and long-term health and welfare. Scientific knowledge in

the field of concussion is constantly evolving and the consensus process and scientific meetings will make sure that the guidelines keep pace with these changes.

WHAT IS CONCUSSION?

Concussion is a mild traumatic brain injury caused by either direct or indirect forces to the head. This injury typically results in the rapid onset of short-lived impairment of brain function.

Concussion results in a disturbance of brain function (e.g. memory disturbance, balance problems or symptoms) rather than damage to structures such blood vessels, brain tissue or fractured skull. 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.

Medical assessment of a head injury, if there is any doubt with regards to diagnosis, is recommended to exclude a potential structural brain injury particularly if symptoms are worsening.

Standard neuro-imaging such as MRI or CT scan is not routinely performed as part of the assessment of a concussion injury as these investigations are typically normal. However, in some cases it may be deemed necessary by a medical practitioner in order to rule out a structural brain injury.

All head injuries should be considered associated with cervical spine injury until proven otherwise.

Concussion must be taken extremely seriously.

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CHILDREN & ADOLESCENTS

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

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

DIAGNOSIS AND ASSESSMENT OF CONCUSSION

Identifying concussion

GB & England Hockey supports and promotes ***RECOGNISE AND REMOVE***.

The Pocket Concussion Recognition Tool developed by the Zurich 2012 Concussion Consensus Group supports this Recognise and Remove message and is suitable for use in Age Grade and Community Hockey. This Tool highlights the signs and symptoms suggestive of a concussion. These include:

Any one or more of the following visual clues can indicate a possible concussion:

- Dazed, blank or vacant look
- Lying motionless on ground / Slow to get up
- Unsteady on feet / Balance problems or falling over / Inco-ordination
- Loss of consciousness or unresponsiveness
- Confused / Not aware of play or events
- Grabbing / Clutching of head
- Convulsion
- More emotional / Irritable

Presence of any one or more of the following signs and symptoms may suggest a concussion:

- Headache
- Dizziness
- Mental clouding, confusion, or feeling slowed down
- Visual problems
- Nausea or vomiting
- Fatigue
- Drowsiness / Feeling “in a fog“ / difficulty concentrating
- “Pressure in head”
- Sensitivity to light or noise

Failure to answer any of these questions correctly may suggest a concussion (Maddox Questions):

- “What venue are we at today?”
- “Which quarter/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?”

If a player has signs or symptoms of a possible concussion that player must be:

RECOGNISED AND REMOVED and IF IN DOUBT, SIT THEM OUT.

On field or pitch side management

A player with a signs or symptoms of concussion must be removed in a safe manner in accordance with emergency management procedures and medically assessed.

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

Team mates, coaches, match officials, team managers, administrators or parents who observe an injured player displaying any of the signs or symptoms after an injury event with the potential to cause a concussion MUST do their best to ensure that the player is removed from the field of play in a safe manner.

Diagnosing concussion

The Concussion Consensus Statement, recognised as the best practice document for concussion management, identifies concussion as being among the most complex injuries in sports medicine to diagnose, assess and manage. This paper also confirms that there is no perfect diagnostic test or marker for the immediate diagnosis of concussion in the sporting environment

The 2016 statement also confirmed that clinical diagnosis by a doctor remains the gold standard and this diagnosis should be supported by:

- a review of symptoms using a standardised checklist
- cognitive (memory) assessment
- balance evaluation

If available, neurophysiological testing (computerized or paper-based) can be used in conjunction with symptom checklists and balance evaluation as an aid to the clinical decision making process but should not be relied upon solely.

In summary the diagnosis of concussion is a clinical diagnosis supported by a multi-modal tool such as SCAT 5. Decisions regarding concussion should not be based solely on the results of any support tool and remain a clinical decision for experienced healthcare practitioners supported by tools such as SCAT 5.

Onset of symptoms

It should be noted that the signs and symptoms of concussion can present at any time but typically become evident in the first 24-48 hours following a head injury.

Recovery from concussion

Recovery from concussion is spontaneous and typically follows a sequential course. The majority (80–90%) of concussions resolve in a short (7–10 day) period, although the recovery time frame may be longer in children and adolescents.

Players must be encouraged not to ignore symptoms at the time of injury and must not return to play prior to the full recovery following a diagnosed concussion. The risks associated with premature return to play include:

- a second concussion due to increased risk
- an increased risk of other injuries because of poor decision making or reduced reaction time associated with a concussion
- reduced performance
- serious injury or death due to an unidentified structural brain injury
- a potential increased risk of developing long-term neurological deterioration

Comprehensive medical assessment and follow up is required until a concussion has fully resolved. Players must be honest with themselves and medical staff for their own protection.

GB & England Hockey recognizes the heightened risk of head injury and concussion and its complications in children and adolescent (under 18 years of age) players. Extra caution must be taken to prevent such players returning to play or continuing playing or training if any suspicion of concussion exists.

A second head impact in a player who has not fully recovered from concussion could lead to dangerous neurological complications, including death.

MANAGEMENT OF CONCUSSION

Removal from play

All players with a suspected or diagnosed concussion must be removed from the field of play and not return to play or train on the same day. Players with a diagnosed concussion must go through a graduated return to play protocol (GRTP).

Any player who presents with the following signs or symptom MUST be permanently removed from the field of play and sent directly to a local emergency department if there is any medical concern. Examples may include:

• Traumatic convulsion
• Tonic posturing
• Confirmed loss of consciousness
• Suspected loss of consciousness
• Ataxia (unsteady on feet)
• Disorientated or confused

Graduated Return to Play

All players diagnosed with a concussion must go through a graduated return to play (GRTP) program as outlined in this document.

Younger athletes who sustain a concussion should be managed more conservatively. Hockey recommends different minimum rest periods and different length GRTP stages for differing age groups.

A summary of the minimum rest periods and different length GRTP stages for different ages is shown below:

AGE GROUP	MINIMUM REST PERIOD POST CONCUSSION INJURY	GRTP	MINIMUM NUMBER OF DAYS TO RETURN TO COMPETITIVE PLAY
ATHLETES UPTO THE AGE OF 18 YEARS	14 days	Progress through stages every **48 hours** if asymptomatic	**Day 23** post injury
ATHLETES AGED 18 YEARS AND OVER	24 hours free of all symptoms	Progress through stages every **24 hours** if asymptomatic	**Day 6** post injury

NOTE:

- GRTP can only commence if the player is completely symptom free after the MINIMUM rest period and off all medications that may modify symptoms of concussion (e.g. painkillers)
- Review by a suitably qualified healthcare professional experienced in managing concussion injuries should be undertaken prior to commencing the GRTP and return to full contact training

The management of a GRTP should be undertaken on a case by case basis and with the full co-operation of the player. The commencement of the GRTP will be dependent on the time in which symptoms are resolved and the age of the player. It is important that concussion is managed so that there is physical and cognitive rest (avoidance of activities requiring sustained concentration), until there are no remaining symptoms for a minimum of 24 consecutive hours without medication that may mask the symptoms.

In the early post injury period, rest is defined as *complete physical and cognitive rest*. However, if recovery is delayed, rest is defined as being activity below the level at which physical activity or cognitive activity provokes symptoms.

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THE GRADUATED RETURN TO PLAY PROGRAM

Before a player can restart exercise they must have rested for the prescribed minimum rest period AND be symptom free.

The GRTP Program contains six distinct stages:

- The first stage is the recommended rest period for the athlete's age
- The next four stages are training based restricted activity
- Stage 6 is a return to play

Under the GRTP Program, the player can proceed to the next stage if no symptoms of concussion (SCAT 5 provides the symptom checklist) are shown at the current stage (that is, both the periods of rest and exercise during that 24-hour period).

If any symptoms occur while progressing through the GRTP protocol, the player must return to the previous stage and attempt to progress again after a minimum 24-hour period of rest has passed without the appearance of any symptoms.

Prior to entering Stage 5, a Medical Practitioner or approved healthcare professional and the player must first confirm that the player can take part in this stage. Full contact practice equates to return to play for the purposes of concussion. However, return to play itself shall not occur until Stage 6.

The GRTP applies to all situations including 'multiple game-same day' tournaments.

STAGE	REHABILITATION STAGE	EXERCISE ALLOWED	OBJECTIVE
1	Rest as per minimum rest period prescribed for player'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.	Increase heart rate
3	Sport-specific drills	Running drills, 'Stick and ball' drills. No activity where there is risk of head impact.	Add movement
4	Non-contact training drills	Progression to more complex training drills, may start progressive resistance training	Exercise, co-ordination, and cognitive load
5	Full contact practice	Normal training activities	Restore confidence and assess functional skills by coaching staff
6	Return to play	Player rehabilitated	Recover

GRTP managed by a medical practitioner or approved Healthcare Professional (HCP)

For GRTP programs managed by a medical practitioner or an approved HCP, the observation of progress may be delegated to a healthcare professional while the management of the program must remain the responsibility of the medical practitioner or approved HCP.

Adolescents and children, 18 years and under, MUST NOT return to play without clearance from a medical practitioner or approved healthcare practitioner.

When a medical practitioner or approved healthcare practitioner is not available to manage a GRTP

When a medical practitioner or approved healthcare practitioner is not available to manage and review the GRTP, the player MUST NOT play until completion of a minimum 2 week rest period and the relevant GRTP for that age.

In addition the process should be observed and managed by someone familiar with the player who could identify any abnormal signs displayed by the player.

Clearance to play by a medical practitioner or approved healthcare practitioner should always be sought.

GRTP conclusion

It is recognised that players will want to return to play as soon as possible following a concussion.

Players, coaches, management, parents and teachers must exercise caution to ensure that:

- all symptoms have subsided fully
- the GRTP program is followed
- the advice of medical practitioners or approved healthcare practitioner is strictly adhered to

In doing so, all concerned can reduce the risk to a player's career longevity and long term health.

If no medical practitioner is available to manage a Graduated Return to Play (GRTP), irrespective of their age, the player MUST rest for a minimum of 2 weeks and be symptom free. At the completion of this 2-week rest period, if the player is symptom free they can commence the GRTP with each stage progressing each 24 or 48 hours depending on the age of the player.

All involved in the process of concussion management must be vigilant for the return of symptoms or the possible development of psychological issues after a concussive event. If symptoms reoccur the player must consult a medical practitioner or approved healthcare practitioner.

Those involved in the process of concussion management and/or aware of the return of symptoms should do all they can to ensure that the player consults a medical practitioner or approved healthcare practitioner as soon as possible.

Recurrent or difficult concussions

Following a concussion a player is at an increased risk of a second concussion within the next 12 months. GB & England Hockey recommends that all concussions be taken seriously and that full recovery be achieved prior to re-introduction of exercise.

Players with:

- a second concussion within 12 month
- a history of multiple concussions
- unusual presentations or prolonged recovery

should be assessed and managed by healthcare providers with experience in sports-related concussions.

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

Factors impacting on the diagnosis and management of concussion

The factors listed below may predict the potential for prolonged or persistent symptoms. Players with these factors should be carefully monitored by experienced practitioners.

FACTORS	EXACERBATING FACTORS
Symptoms	Number of concussions suffered historically Duration of current concussion symptoms (>10 days) Severity of current concussion
Signs	Prolonged loss of consciousness (>1 minute) Amnesia
Sequelae	Concussive convulsions
Temporal	Frequency – repeated concussions over time Timing – injuries close together in time “Recency” – recent concussion or traumatic brain injury
Threshold	Repeated concussions occurring with progressively less impact force or slower recovery after each successive concussion Age - Child (<10 years) and adolescent (10-18 years) Co- and premorbidities Migraine, depression or other mental health disorders, attention deficit hyperactivity disorder (ADHD), learning disabilities, sleep disorders
Medication	Psychoactive drugs, anticoagulants
Behaviour	Dangerous style of play
Sport	High risk activity, contact and collision sport, high sporting level

GRADUATED RETURN TO SCHOOL

A key part of recovery from a concussion injury is cognitive rest. This will allow the brain to recover and therefore symptoms to resolve. Where possible it is recommended that children or young adults in full time education partake in a graduated return to school programme. This should be discussed with the player, parents, teachers, college/university etc.

Although there are no strict guidelines for this, this should be formulated according to the particular individual's own circumstances. A typical programme might look like:

STAGE	AIM	ACTIVITY	GOAL
1	Daily activities at home that do not provoke symptoms	Typical activities of the day that do not provoke symptoms (eg. reading, screentime). Start with 5-15mins at a time and gradually build up	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 increased breaks during the day	Increase academic activities
4	Return to school fulltime	Gradually increase school activities until a full day can be tolerated	Return to full academic activities and catch up on missed academic work

CONCLUSION

GB & England Hockey recommends that the "Gold Standard" concussion management be implemented for all players diagnosed with a concussion or when a player 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 healthcare professional familiar with international concussion protocols
- Thorough, serial symptom analysis
- General and neurological examination
- Balance assessment
- Assessment of cognitive function preferably compared to a pre-injury baseline.

Concussion management - 6 "Rs"

Recognise – Learn the signs and symptoms of a concussion so you understand when an athlete might have a potential concussion

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

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

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

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

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

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

References

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The SCAT 5 assessment can be found here:

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

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