CONCUSSION GUIDELINES FOR BASKETBALL IN GREAT BRITAIN 2016

KEY POINTS SUMMARY

RECOGNISE AND REMOVE – learn to recognize the signs and symptoms of concussion and remove a player from the court if there is ANY doubt over concussion injury. IF IN DOUBT SIT THEM OUT.

PROTECT YOUNGER ATHLETES – Great Britain Basketball and Basketball England (BE), Basketball Wales (BW), Basketball Scotland (BS) including all affiliated associations recommend different return to play protocols for different age groups.

TAKE IT SERIOUSLY - to safeguard the long-term welfare of players, concussion must be taken seriously. Players with a concussion injury MUST NOT return to play or train on the same day and must complete a graded return to play (GRTP) protocol.

The Concussion in Sport Consensus Meeting produces a position paper periodically (Consensus Statement) summarizing the current evidence based knowledge in the area of concussion, discussed by world experts. The most recent Consensus Statement was produced in 2012 in Zurich, which reflects the current recommended agreed principles when managing concussion.

These concussion guidelines, which are in line with the current Consensus Statement, sets out the expected standard of care within GB Basketball, BE, BW and BS including affiliated clubs and will be reviewed annually or as significant changes to knowledge arise. It recognizes that scientific knowledge around concussion is constantly evolving and that management and return to play (RTP) remain subject to clinical judgment on an individualized basis.

WHAT IS CONCUSSION?

Concussion is defined as a complex pathophysiological process affecting the brain, induced by biomechanical forces.

Concussion is a brain injury caused by either direct or indirect forces to the head.

Concussion typically results in the rapid onset of short-lived impairment of brain function.

Loss of consciousness is NOT a requirement to diagnose concussion.

Concussion largely results in a disturbance of brain function (graded set of clinical symptoms) rather than a structural injury reflected in standard neuro-imaging via CT and MRI. Concussion is not always easily identifiable using these imaging scans.

Concussion is a serious injury.

Awareness that other head injuries may coexist with concussion is important (e.g. scalp or facial lacerations/abrasions/fractures) and all head injuries should be considered as being associated with cervical spine (neck) injury until proven otherwise.

CONCUSSION IN CHILDREN AND ADOLESCENTS

Children and adolescents (under 19) are more vulnerable to concussion than adults (19 years and over) and should be managed more conservatively. Children and adolescents are more susceptible to concussion, take longer to recover and are more significantly impacted with memory and mental processing functions. They are more susceptible to rare and dangerous neurological complications, for example second impact syndrome, which in some circumstances could be fatal due to brain swelling.

The Consensus Statement provides that children and adolescents should not return to sport or activity until they have successfully returned to school symptom free. When implementing these guidelines. the separate graded return to play protocols that apply to these different age groups should be adhered to.

A Sport Concussion Recognition Tool (SCAT3) has been developed to aid with the evaluation of a suspected concussion.

A specific Child SCAT3 (5-12 years) has been developed to enable age appropriate symptom checks. Further, assessments may need to include parents and teachers/school. This is available online: http://bjsm.bmj.com/content/47/5/263.full.pdf

DIAGNOSIS AND ASSESSMENT OF CONCUSSION

Clinical diagnosis by a doctor is the gold standard for the diagnosis of concussion and supported by:

- A review of symptoms using a recognized checklist (e.g. SCAT3, Child SCAT3)
- Cognitive (memory) assessment
- Balance evaluation

GB Basketball, BE, BW and BS supports and promotes RECOGNISE and REMOVE. Early recognition and removal is supported by the Pocket Concussion Recognition Tool developed by the Zurich 2012 Concussion Consensus Group which highlights the signs and symptoms suggestive of a concussion http://bjsm.bmj.com/content/47/5/267.full.pdf

SIGNS AND SYMPTOMS

Visible signs/clues of potential concussion include but are not limited to any one or more of the following:

- Dazed, blank or vacant look
- Lying motionless on ground / slow to get up
- Unsteady on feet / balance problems or falling over / incoordination
- Loss of consciousness or responsiveness
- Confused / not aware of plays or events

- Grabbing / clutching of head
- Convulsion (seizure)
- More emotional / Irritable

Symptoms of potential concussion include but are not limited to any one or more of the following:

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

Questions to ask

Failure to answer any of these questions 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?"

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.

Players MUST NOT return to play or training on the same day of a suspected concussion.

SCAT 3

The SCAT3 is a useful aid to the recognition and diagnosis of concussion. It is a standardized tool for evaluating Injured athletes for concussion and can be used in athletes aged 13 years and older. http://bjsm.bmj.com/content/47/5/259.full.pdf

Note that there is a SCAT3 specifically for children (5 to 12 years) http://bjsm.bmj.com/content/47/5/263.full.pdf

A baseline SCAT3 should be performed on all players as a priority as soon as possible following selection to play for GB Basketball and BE, BW and BS. This is also strongly recommended for all affiliate clubs.

Variation in any element (symptom, cognitive assessment, balance evaluation) is strongly suggestive of concussion. The player should then achieve the same, or better, result than their baseline test before return to play.

If NO baseline data is available, then the following should be considered strongly as suggestive of a diagnosis of concussion:

- Symptom checklist - one or more symptoms declared in the symptom list which is not usually experienced by the player following a match or training;

OR

- Balance evaluation - Tandem test - 3 or more errors or single leg stance test - 4 or more errors;

OR

- SAC assessment:
    - Total SAC score 24 or below
    - Concentration score (digits backward) 2 or below
    - Delayed recall 3 or fewer words

NEUROPSYCHOLOGICAL TESTING

If computer Neuropsychological testing is available it can be used in conjunction with symptom checklists, memory and balance evaluations as an aid to clinical decision making but should not be the sole determining factor in return to play.

ON COURT MANAGEMENT AND ASSESSMENT

A player with signs or symptoms of concussion should be removed from court using standard emergency management procedures. If a cervical spine (neck) injury is suspected, only those with appropriate spinal injury training can remove a player from court. Following removal, the player should then be assessed by a medical practitioner /or approved healthcare professional (a medical practitioner's assessment remains the gold standard and should always be sought).

Where there is a suspicion that a player is showing signs and symptoms of concussion. team mates, coaches, officials and all support staff present must bring this to the attention of medical practitioner or approved healthcare professional and must ensure that the player is removed from the court in a safe manner.

The final decision on removal from court play or training session is a medical decision based on clinical judgment.

Communication channels with coaching staff should be maintained at all times.

It is recognized that there may be situations where a medical practitioner or approved health care professional is not present when injury occurs. Clubs and organizations are strongly encouraged to educate their staff e.g. coaches on the signs and symptoms of concussions so that appropriate action can be taken at that time and medical support sought immediately (e.g emergency services). The Pocket Recognition Tool can be used by all http://bjsm.bmj.com/content/47/5/267.full.pdf

COURTSIDE MANAGEMENT AND ASSESSMENT

There remains uncertainty regarding the timing of sideline assessment and diagnosis of concussion. A period of rest (e.g. 15 mins) is suggested to allow athletes to recover from game induced fatigue and avoid false positives due to fatigue. As basketball is a free interchange sport there are no time restrictions so incorporating a period of rest is possible. Communication channels with coaching staff should be maintained at all times. However, if a concussion is suspected, a cautious approach must be adopted. IF IN DOUBT SIT THEM OUT

ONSET OF SYMPTOMS

Concussion signs and symptoms can develop at any time post injury but typically become apparent in the initial 24-48hrs post injury mechanism. If a concussion is diagnosed or suspected an individual should not be left alone in this period and should be checked regularly. The medical practitioner or approved healthcare professional responsible for the athlete's assessment should provide a suitable checklist of signs and symptoms to the person responsible for the athlete (parent/partner/guardian). This should include advice on what to do in the case of potential deterioration in symptoms. Individuals with a concussion injury should be advised not drive or consume alcohol until they are symptom free.

RECOVERY AND MANAGEMENT OF CONCUSSION

RECOVERY FROM CONCUSSION

Recovery from concussion should be considered on an individual basis. The majority of concussion injuries resolve over a 7-10 day period, although this can be longer in children and adolescents (under 19). Players need to be encouraged not to ignore symptoms and to be honest with themselves, medical support staff and coaching staff. Players should not return to play until they are asymptomatic and have completed a full return to play protocol. GB Basketball, BE, BW and BS recognize that there is heightened risks for younger players and extra caution should be taken to ensure they do not return to play or training if remaining symptomatic, this may require direct communication in writing to parents, schools and clubs (see Concussion in Children and Adolescents above).

The risks associated with early return to play include:

- a second concussion due to increased risk (second impact)
- 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

MANAGEMENT OF CONCUSSION

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.

Any player who presents with the following signs or symptoms MUST be permanently removed from the field of play:

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

All players with a diagnosed concussion must then go through a graduated return to play protocol (GRTP).

GRADUATED RETURN TO PLAY (GRTP)

As per the Zurich Consensus 2012, younger athletes (under 19) who sustain a concussion should be managed more conservatively. GB Basketball, BE, BW and BS recommend different minimum rest periods and different length GRTP stages for differing age groups, protecting our younger athletes in line with other sports

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Stage 2 of the GRTP should only commence if the player:

- has completed the minimum rest period for their age and setting ;
- is symptom free at rest and off medication that modifies symptoms of concussion; and
- has returned to school/education and work if not a professional basketball player

In the absence of a team doctor or health care professional experienced in the management of concussion, medical expertise must be sought from outside the relevant club or organization. Medical practitioner clearance is always required prior to commencing contact training elements of a GRTP.

The management of a GRTP should be undertaken on an individual basis and with the full cooperation of the player and parent or guardian if applicable. The commencement of stage 2 of the GRTP will be dependent on the time in which symptoms are resolved at rest and the age of

the player. It is important that concussion is managed so that there is physical and cognitive rest and stage 2 of GRTP should not be started until at least the initial minimum rest period is completed (14 days in a standard care setting and modified in an enhanced care setting). They should be free from medication that may mask symptoms and have returned to school/education or work if not a professional basketball player.

PROTOCOL OF GRADUATED RETURN TO PLAY

Before a player can restart exercise they must have rested for the prescribed minimum rest period AND be symptom free. The GRTP applies to all situations including competitions and tournaments

The GRTP contains six distinct stages: (This applies to both standard and enhanced care setting)

- A recommended rest period for the athlete's age
- Four stages of training based on increasing monitored activity
- A final return to full training and competitive play stage

Throughout the GRTP the player can proceed to the next stage if no symptoms of concussion (SCAT 3 provides a symptom checklist) are shown at the current stage. If any symptoms occur while progressing through the GRTP protocol, the player must return to the previous symptom free stage and attempt to progress again after a minimum 24-hour period of rest (48 hours for under 19) has passed without any symptom recurrence.

Prior to the final full contact training stage (5), a Medical Practitioner must review the player to confirm that the player can progress to this stage. Full contact practice equates to return to play for the purposes of concussion. However, return to competitive play itself is the final stage (6).

It is strongly recommended that a medical practitioner or approved healthcare practitioner manage the GRTP. However, when this is not possible the GRTP should be observed and managed by someone familiar with the player who could identify any abnormal signs/behaviours displayed by the player. It is therefore the responsibility of clubs, officials, staff, players and parents to read this policy and other associated literature to raise awareness of the condition, be able to recognize the signs and symptoms and take appropriate action. Clearance to play in competition by a medical practitioner should always be sought.

It is recognized that players will want to return to play as soon as possible following a concussion. To reduce the risk to a player's career longevity and long term health, players, coaches, management, parents and teachers must exercise caution to ensure that:

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

THE RETURN TO PLAY TIMES SET OUT IN THE FOLLOWING GRTP PROTOCOLS ARE THE MINIMUM REQUIRED AND PLAYERS WHO DO NOT RESPOND WITHIN THESE TIME FRAMES MAY NEED LONGER. IT IS THEREFORE ESSENTIAL THAT EACH CASE IS TREATED INDIVIDUALLY. IN THE EVENT OF A PLAYER NOT RECOVERING/WORSENING OR SUFFERING A RE-OCCURRENCE OF SYMPTOMS SPECIALIST MEDICAL ADVICE MUST BE SOUGHT IMMEDIATELY (See Recurrent or Difficult Concussion section)

STANDARD CARE RETURN TO PLAY PROTOCOL FOR PLAYERS UNDER 19 YEARS

Earliest Return to Play Day 23 Post Concussion

Stage	MINIMUM Time Between Levels	Example	Objective
1 No activity Rest period	*14 days	Physical and cognitive rest	Recovery
2 Light aerobic exercise **medical clearance recommended by a doctor	48 hours	Exercise bike 15 mins	Increase heart rate
3 Light impact and sport specific exercise	48 hours	Light jog, 20 lengths of court / 10 mins on treadmill Shooting drills such as spot shooting, cone shooting	Add sport specific impact
4 Non contact basketball	48 hours	Finishing drills, ball handling, 5 on 0	Add coordination
5 Full training **required medical clearance by a doctor	48 hours	Full contact training drills, 5 on 5, 1 on 1, transitions	Restore confidence
6 Match	24 hours	Competitive match	Return to play

**Clearance by a doctor is recommended prior to starting stage 2 and MUST be obtained prior to starting full training in Stage 5

* The rest period of 14 days begins at midnight on the day of the injury. Stage 2 can only be started if symptom free at the end of stage 1. Concussions lasting longer than 10 days need specialist assessment.

STANDARD CARE RETURN TO PLAY PROTOCOL FOR PLAYERS 19 YEARS AND OVER

Earliest Return to Play Day 19 Post Concussion

Stage	MINIMUM Time Between Levels	Example	Objective
1 No activity Rest period	*14 days	Physical and cognitive rest	Recovery
2 Light aerobic exercise **medical clearance recommended by a doctor	24 hours	Exercise bike 15 mins	Increase heart rate
3 Light impact and sport specific exercise	24 hours	Light jog, 20 lengths of court / 10 mins on treadmill Shooting drills such as spot shooting, cone shooting	Add sport specific impact
4 Non contact basketball	24 hours	Finishing drills, ball handling, 5 on 0	Add coordination
5 Full training **required medical clearance by a doctor	24 hours	Full contact training drills, 5 on 5, 1 on 1, transitions	Restore confidence
6 Match	24 hours	Competitive match	Return to play

**Clearance by a doctor is recommended prior to starting stage 2 and MUST be obtained prior to starting full training in Stage 5

* The rest period of 14 days begins at midnight on the day of the injury. Stage 2 can only be started if symptom free at the end of stage 1. Concussions lasting longer than 10 days need specialist assessment.

ENHANCED CARE SETTINGS - WHEN A MEDICAL PRACTITIONER IS AVAILABLE TO MANAGE THE GRTP

Within GB Basketball, BE, BW, BS this is likely to apply only to some professional teams and national teams. In this circumstance where enhanced medical care is available to supervise GRTP it may be possible to shorten the return to play time using a clear concussion pathway. It is never appropriate for a player aged 16 years and under to follow this pathway.

Enhanced medical care means:

A doctor with training and experience in the management of sport related concussion injuries is available to clear the player to commence a GRTP and closely supervise the GRTP in person on a daily basis.

In addition, the following must be in place

- A baseline SCAT3 is available (or equivalent baseline neuro-psychometric test) from prior to the injury.

- Ongoing serial clinical assessments (including regular SCAT3 testing) to include symptom review, cognitive function and neurological function which is formally documented in the players medical notes is maintained throughout the graded return to play programme.

- The player has access to a comprehensive multidisciplinary team with experience in managing sport concussion injuries to include neurologists, neurosurgeons to oversee further interventions as required.

- The team can demonstrate provision of education to all staff and players around concussion injuries.

GRADED RETURN TO PLAY FOR THOSE PLAYERS AGE 17 AND 18 YEARS ONLY IN AN ENHANCED CARE SETTING

Earliest Return to Play Day 12 Post Concussion

Stage	MINIMUM Time Between Levels	Example	Objective
1 No activity Rest period	*7 days	Physical and cognitive rest	Recovery
2 Light aerobic exercise	24 hours	Exercise bike 15 mins	Increase heart rate
3 Light impact and sport specific exercise	24 hours	Light jog, 20 lengths of court / 10 mins on treadmill Shooting drills such as spot shooting, cone shooting	Add sport specific impact
4 Non contact basketball	24 hours	Finishing drills, ball handling, 5 on 0	Add coordination
5 Full training	24 hours	Full contact training drills, 5 on 5, 1 on 1, transitions	Restore confidence
6 Match	24 hours	Competitive match	Return to play

* The rest period of 7 days begins at midnight on the day of the injury. Stage 2 can only be started if symptom free at the end of stage 1.

It is an absolute requirement that the whole GRTP process in an enhanced care setting must be supervised by a doctor within a structured concussion management programme. Time frames above are the minimum required in this setting and players who take longer to recover will need increased timeframes to successfully negotiate the return to play.

GRADED RETURN TO PLAY FOR THOSE PLAYERS AGE 19 YEARS OR OLDER IN AN ENHANCED CARE SETTING

Earliest Return to Play Day 6 Post Concussion

Stage	MINIMUM Time Between Levels	Example	Objective
1 No activity Rest period	*24 hours	Physical and cognitive rest	Recovery
2 Light aerobic exercise	24 hours	Exercise bike 15 mins	Increase heart rate
3 Light impact and sport specific exercise	24 hours	Light jog, 20 lengths of court / 10 mins on treadmill Shooting drills such as spot shooting, cone shooting	Add sport specific impact
4 Non contact basketball	24 hours	Finishing drills, ball handling, 5 on 0	Add coordination
5 Full training	24 hours	Full contact training drills, 5 on 5, 1 on 1, transitions	Restore confidence
6 Match	24 hours	Competitive match	Return to play

* The rest period of 24 hours begins at midnight on the day of the injury. Stage 2 can only be started if symptom free at the end of stage 1.

It is an absolute requirement that the whole GRTP process in an enhanced care setting must be supervised by a doctor within a structured concussion management programme. Time frames above are the minimum required in this setting and players who take longer to recover will need increased timeframes to successfully negotiate the return to play.

RECURRENT OR DIFFICULT CONCUSSIONS (PROLONGED/PERSISTENT SYMPTOMS)

Following a concussion a player is at an increased risk of a second concussion within the next 12 months. GB Basketball, BE, BW and BS recommend that all concussions are taken seriously.

Players 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.

The factors listed below may predict the potential for prolonged or persistent symptoms. Players with these factors should be carefully monitored by experienced practitioners and referred on to specialists in this field for further assessment.

Factors	Exacerbating Factors
Symptoms	• Number of • Duration (>10 days) • Severity
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 (10-17 years)
Co and pre morbidities	• Migraine, depression or other mental health disorders, attention • Deficit hyperactivity disorder (ADHD), learning disabilities, sleep disorders
Medication	• Psychoactive drugs • Anticoagulant
Behaviour	• Dangerous style of play
Sport	• High risk activity, contact and collision sport, high sporting level

RECOMMENDED TRAINING FOR [1]MEDICAL PRACTITIONERS AND [2]APPROVED HEALTHCARE PROFESSIONALS

GB Basketball, BE, BW and BS recommend that all those with responsibility for courtside immediate care in the event of injury must maintain:

1. A valid recognized immediate care in sport course; and
2. Complete the World Rugby concussion management e-learning modules and complete a reflective entry on transferring knowledge to basketball annually as part of their CPD.

GB Basketball, BE, BW and BS recommend that concussion management implemented for all players diagnosed with a concussion or when a player is suspected of having a concussion during a game or training reflects this policy guidance. Those medical practitioners and approved healthcare professionals working with GB Basketball, BE, BW and BS should strive for this management to include.

- Documentation of serial symptom analysis
- Assessment of cognitive function compared to a pre-injury baseline
- Documentation of General and neurological examination
- Documentation of Balance assessment

A clinical judgment decision from the medical practitioner or designated approved healthcare practitioner (with recognized experience and training in managing concussion) will be the final decision about return to play.

Recognize – Remove – Refer – Rest – Recover – Return.

[i] Medical practitioners must have a valid certificate from a course recognised by the Faculty of Pre Hospital Care and appropriate medical indemnity for pre hospital sports event clinical work.

[2]Approved healthcare practitioner should be an experienced (> 3 years qualified), fully insured Chartered Physiotherapists or Sports Therapists (must have completed 3 year degree course), have valid sports trauma training and have completed the E- Learning Modules with World Rugby.

USEFUL INFORMATION SOURCES:

Pocket Recognition Tool
http://bjsm.bmj.com/content/47/5/267.full.pdf

SCAT3
http://bjsm.bmj.com/content/47/5/259.full.pdf

Children's SCAT3
http://bjsm.bmj.com/content/47/5/263.full.pdf

Zurich concussion group consensus statement
http://www.bjsm.bmj.com/content/47/5/250.full.pdf+html

World Rugby Player Welfare (e-learning modules)
http://playerwelfare.worldrugby.org/index.php

NHS Sport and Exercise Medicine Clinics are increasing across the country and are a source of support for those managing concussion injuries with local expertise of specialists with appropriate skills and experience to facilitate player care.

Main References

1. McCrory P, Meeuwisse WH, Aubry M et al. Consensus statement on concussion in sport: the 4th International Conference on Concussion in Sport held in Zurich, November 2012. Br J Sports Med 2013;47:250–258.

2. Putukian M, Raftery M, Guskiewicz K, et al. On field assessment of concussion in the adult athlete. Br J Sports Med 2013;47:285–288.

3. Other sports concussion policies:

   http://www.thefa.com/news/my-football/2015/nov/fa-concussion-guidelines-if-in-doubt-sit-them-out

   http://www.wru.co.uk/downloads/WRU_Concussion_Guidance_English.pdf

   http://www.englandrugby.com/my-rugby/players/player-health/concussion-headcase/

   http://www.sportscotland.org.uk/resources/resources/scottish-sports-concussion-guidance/

   http://www.irbplayerwelfare.com/concussion