Water Polo New Zealand – Concussion/Head Injury Policy

1 **PURPOSE & SCOPE**

1.1 The aim of the policy is to provide information on concussions to all those involved in water polo in New Zealand.

- Concussions MUST be taken seriously.
- All people involved in the game of water polo should be able to RECOGNISE what a concussion is.
- Any player with a concussion must be REMOVED immediately from training or the match activity and MUST NOT return.
- All concussions should be medically assessed.
- Players with a concussion MUST NOT be left alone and MUST NOT drive a vehicle.
- All suspected concussions MUST be recorded and reported via the incident/injury report form in our website. Please contact the competitions team for further information should you require it.

THE MINIMUM TOTAL STAND-DOWN PERIOD FOR A PLAYER WHO HAS SUFFERED FROM A CONCUSSION IS 21 DAYS.

NO PLAYERS ARE TO RETURN BEFORE THE MINIMUM STAND-DOWN PERIOD AND WITHOUT MEDICAL CLEARANCE.

ONCE A PLAYER RECEIVES A THIRD CONCUSSION WITHIN ONE SEASON, THEY MUST SIT OUT THE REMAINDER OF THE YEAR AND CANNOT RETURN TO PLAY

2 INTRODUCTION

2.1 It has been estimated that 35,000 head injuries occur in New Zealand every year. Of these, 21% (7,350) occur through sport related activities such as water polo. The potential for concussions/head injuries to occur in water polo is fully recognised. As a result of this recognition, due consideration should be undertaken by all who partake, administer or manage water polo activities in both the training and match environments.

The potential for serious and prolonged injuries occurring from concussions emphasis the need for comprehensive medical assessment and follow up of the player until the concussion has fully resolved.

There has long been a perception that a concussion occurs only when there is a loss of consciousness. This perception is incorrect as concussions can occur without loss of consciousness and range in severity from brief periods of confusion through to a significant loss of consciousness. Returning to train / play before the complete resolution of a concussion exposes the player to recurrent concussions and this may occur with ever decreasing forces. As well, evidence has identified that people with repeat concussions may experience a decline in their general health and quality of life up to 10 years following injury.

3 WHAT IS A CONCUSSION?

3.1 A concussion is a mild Traumatic brain Injury (mTBI). Several common features incorporating clinical, biomechanical and pathological injury may be utilized in defining the nature of a concussion. A concussion is a brain injury defined as a "complex pathophysiological process affecting the brain, induced by traumatic biomechanical forces". More simply, a concussion is a brain injury that can occur in any sport, particularly where there is full body contact. Concussion is caused by the impact of a force (a blow) to a part of the body not necessarily to the head directly. Therefore, whenever a sports person has an injury to the head and becomes confused or acts abnormally or they lose consciousness, even for a few seconds, they have been concussed. Associated with the injury to the head is typically a period of amnesia (memory loss).

Concussed athletes are often described as "stunned", "dazed", "star struck", and "had their bell rung" or "having to shake out the cobwebs". The cause of this amnesia is typically a sudden violent movement of the head due to a collision or a direct or indirect impact, resulting in an acceleration or deceleration of the brain within the skull. The result is damage to the brain. This is almost always slight and recovery from a single injury is the rule. However, in the period healing

(usually 2 to 3 weeks), the brain is sensitive and another injury may occasionally result in a serious or even fatal reaction.

In the long term, the damage from further concussions may cumulate enough to impair performance. After the impact, there is usually a period of unresponsiveness or confusion, and amnesia.

The memory loss usually spans the time from just before the injury occurred to the moment of injury itself, and a period of time following the injury (post-traumatic amnesia) which may be permanent. The memory loss can extend to include previous days or weeks (retrograde amnesia).

REMEMBER: Serious and sometimes fatal results can follow an injury what at first seems trivial. Approximately 3% of patients, who have had concussion, will have bleeding inside the skull or into the brain (intracranial haemorrhage). The key signs of a haemorrhage include worsening headache, increasing confusion and continued vomiting. If there is any presence of these symptoms the player **MUST** be transferred for further medical care immediately.

4 SIGNS AND SYMPTOMS OF A CONCUSSION

4.1 When assessing an injured player, it is important that a quick and accurate assessment is made. The ACC Sideline Concussion Check card is a useful tool to assist in the assessment of concussion and provides advice on treatment for this injury. It is the size of a credit card, so fits in your pocket for quick reference. It also has an insert detailing the procedures that should be followed in the two days following a suspected trauma to the brain or concussion.

If there is any doubt, use the questions the following questions based on Maddock's questions:

1. What venue are we at?
2. What team are we playing today?
3. Who is your opponent at present?
4. What quarter/half is it?
5. How far into the quarter/half is it?
6. Which side scored last?
7. Which team did we play last week?
8. Did we win last week?
9. Count pre-determined numbers backwards
10. Months of the year in reverse

Failure to successfully and accurately answer any of the above questions in conjunction with **ANY** signs or symptoms of an acute concussion (see below) indicates that the player has been concussed and must stop playing and be removed from the pool.

The player should be accompanied from the pool and taken to a doctor or the local emergency department for assessment as soon as possible.

It is recommended that the player should then see appropriate medical professional for their opinion as to the best future management. If the player is obviously unconscious, then the first priority is to evaluate and protect the airway and cervical spine, and to then remove the player from the pool. The player must be watched closely and carefully monitored until consciousness returns. Convulsions may sometimes occur**.**

5 SIGNS AND SYMPTOMS OF A CONCUSSION

5.1 Concussion presents with a range of signs and/or symptoms. This may or **may not** include loss of consciousness. It is important to remember that not every sign and symptom will be present with every concussion and some may have a delayed onset.

Physical signs (what you may see)

- Loss of consciousness or delayed responsiveness.
- Lying on the ground not moving or slow to get up.
- Loss of balance / co-ordination.
- Disorientation / confusion.
- Visible injury to the face or head (especially in combination with any other signs).
- Seizure or convulsion.
- Vomiting

Clinical signs (what they may feel)

- Blurred vision.
- Neck pain.
- Headache or “pressure” in head.
- Nausea or vomiting.
- Balance problems or dizziness.
- Double or blurry vision.
- Sensitivity to light.
- Sensitivity to noise.
- Concentration or memory problems.
- Feeling sluggish, hazy, foggy or groggy.
- Confusion.

• Does not “feel right.”

Only those personnel trained to carry out a sideline concussion assessment should conduct these. This result of this assessment should accompany the injured player to the Emergency Department / Sports Physician / Players Health professional wherever possible.

6 MANAGEMENT OF A CONCUSSED PLAYER

6.1 The most important steps in the early identification of a concussion is to recognise a possible injury and remove the player from the game / activity. Use the Pocket Concussion Recognition Tool (see Figure 1) to help you identify concussions.

If a player has a suspected concussion at training or during match activities then:

• The player **MUST** be immediately removed from the activity and MUST NOT return.
• The player **MUST NOT** be left alone.
• The player **MUST NOT** drive a vehicle
• The player **MUST** always be in the care of a responsible adult, who is informed of the player’s suspected concussion
• The player **MUST** be medically assessed as soon as possible.

Each concussion should be managed individually, as it is impossible to predict the clinical course of a particular concussion from a group of signs and symptoms. The onset of symptoms may occur over hours or days later. The majority (80-90%) of concussions progressively resolve over 10 - 21 days without complications. This represents the most common form of concussion seen in sports activities. These concussions can be appropriately managed by primary care medical practitioners. The cornerstone of the management of a simple concussion is rest until **ALL** symptoms resolve and then undertake a graduated return to play protocol.

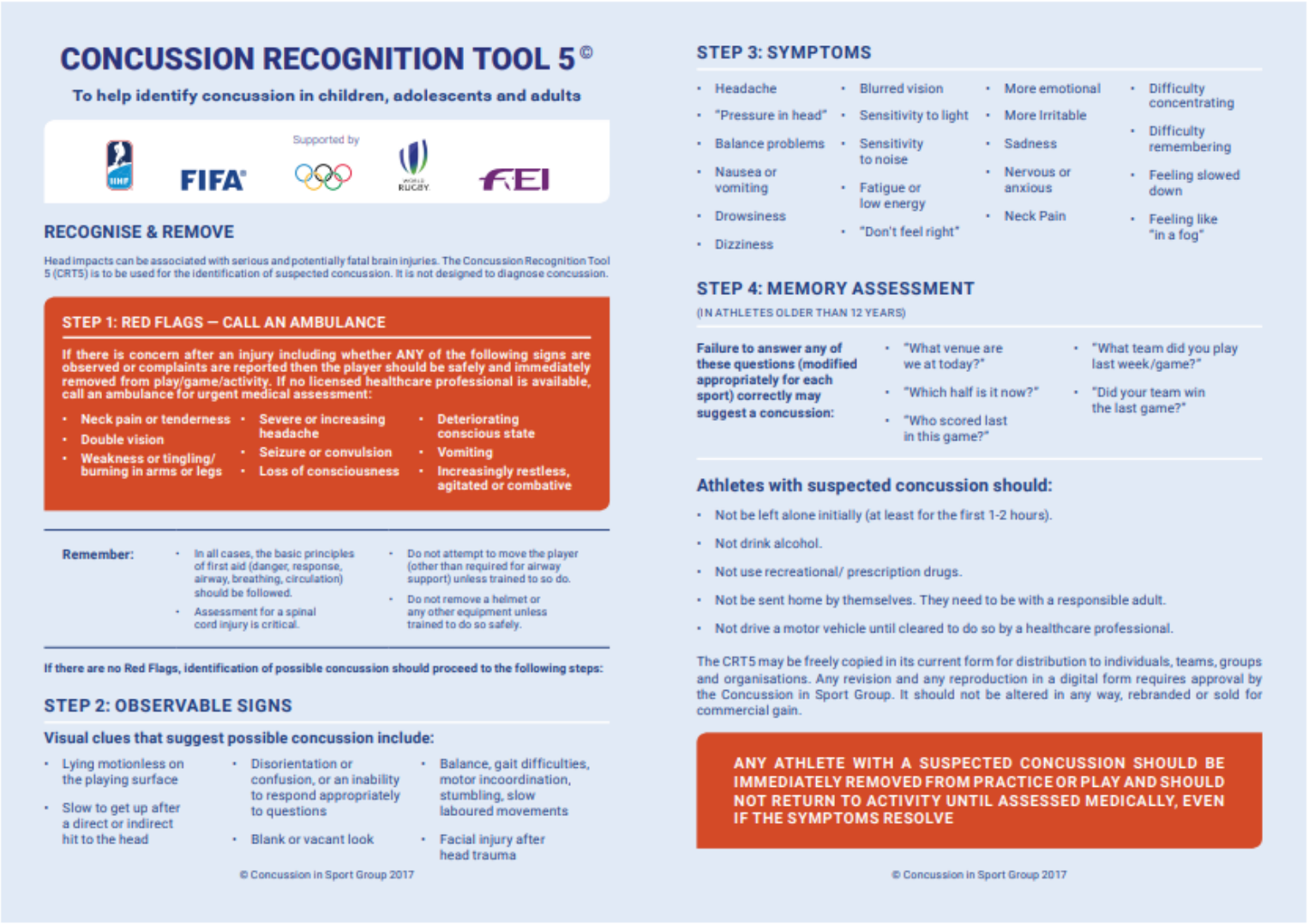

Figure 1: Concussion Recognition Tool (CRT)

Some concussions result in persistent symptoms occurring (including those symptoms that reoccur when participating in sporting activity). These types of concussions may result from players who have had consecutive concussions over time, or where the player is repeatedly concussed with less and less impact force. Formal neuropsychological investigations should be considered for concussions with ongoing symptoms.

7 MANAGEMENT OF THE UNCONSCIOUS PLAYER

7.1 If the player is obviously unconscious, the first priority is to evaluate and protect the airway and the cervical spine. The player must be watched closely and carefully monitored until consciousness returns. Should breathing stop, appropriate resuscitation is necessary, following the "Airways, Breathing, Circulation" guidelines. Always remember the possibility of an associated spinal (neck) injury, and if the player must be moved, do so carefully and appropriately. **REMOVE THE PLAYER FROM THE POOL CAREFULLY WHILE THEY ARE UNCONSCIOUS**. This should be left to appropriate medical or lifeguard personnel. When the player has regained consciousness and their breathing is regular and unobstructed, the player should be carried from the pool and allowed to recover fully. Such incidents require immediate review by a doctor. The player should then see appropriate medical professionals for their opinion on the best future management.

8 POST-CONCUSSION SYNDROME

8.1 It is quite common following concussion, for players to continue to experience problems after their apparent recovery from the initial injury. Should this continue to occur after 28 days then this is collectively referred to as post-concussion syndrome. Coach, parents, family members and team members should look for the following: Signs and symptoms:

- Sleep disturbance;
- Difficulty in concentrating;
- Difficulty in applying themselves to tasks;
- Lack of attention span;
- Irritability, intolerance in general and to noises in particular;
- Dizziness on turning of the head;
- Recurrent headaches;
- Frustration doing tasks;
- Any symptoms provided by activities such as sprints or sit-ups;
- Anxiety and/or depression

If any of these symptoms are present, then it is **mandatory that the player is assessed by a qualified neurologist, neurosurgeon or sports medicine physician before they recommence any sporting activity.**

The player is potentially prone to develop more symptoms if they continue in the sport, or to be concussed again, and they may also need special assistance to aid their recovery and return not only to sport but to their normal life.

9 SECOND IMPACT SYNDROME

9.1 If a player receives a second injury to the head before the injury has completely recovered, the chances of the player suffering brain swelling, heavy bleeding and increased pressure within the head dramatically increase that can result in permanent brain damage or death. Children and adolescents are at an increased risk of this occurring and extra precaution is advised.

10 RECOVERY PERIOD

10.1 Perhaps the most contentious issue surrounding head injury is the decision regarding the length of time a player should stay away from participating in any sporting activity. No simple way exists to determine the seriousness of a concussion or whether a player has fully recovered. The main reason for the mandatory stand-down times for a player following concussion is related to reaction times. In the period following a concussion, the player's reaction times and decision-making abilities are likely to be less than optimal and the player is at an increased risk of further accident and injury, especially to the head. The risk of second impact syndrome is increased.

Despite the fact that a player may seem to be physically fit and outwardly unaffected, coaches and administrators must be aware of this and support the decision to stand a player down.

It is well-documented that repeated episodes of concussion produce lasting effects and after a number of concussions, a player may suffer permanent changes in character and ability. A player who has had a number of concussions should, therefore, consider whether they should withdraw from all contact sport.

11 GRADUATED RETURN TO PLAY

11.1 The majority of concussions will recover spontaneously over several days. It is important though that the first few days after a concussion has occurred that complete physical AND cognitive rest is required.

The player should avoid all activities that require concentration or attention. This includes watching television, DVD's, computers, using the cell phone, reading or driving. Failure to do this may exacerbate the symptoms resulting in a delay in the recovery of the player from the concussion.

Day 0 = Day of the injury/concussion

GRADUATED RETURN TO EDUCATION/WORK & SPORT PROTOCOL			
Stage 1	**Days 1-2**		Relative rest for 24-48 hours (i.e. light activities of daily living that do not provoke symptoms are ok) • Minimize screen time • Gentle exercise (i.e. walking around the house
Stage 2	**Days 2-13**	*Minimum* of 24 hours between stages before progressing Symptoms should be progressively improving. If symptoms *worsen* drop back a stage.	Gradually introduce daily activities • Activities away from school/work (introduce TV, increase reading, games etc.) • Exercise – light physical activity (e.g. short walks outside)
Stage 3			Increase tolerance for mental & exercise activities • Increase study/work-related activities with rest periods • Increase intensity of exercise guided by symptoms
Stage 4			Return to work/study & sport training • Part time return to work/education • Start training activity without risk of head impact
Stage 5	**Earliest Day 14**	*Minimum* of 7 days at Stage 5 before progressing	Return to normal work/study & sport-specific training • Completion of Stages 1-4 **AND** • Fully reintegrated into work/school **AND** • **Symptom free** • **AND ≥ Day 14 post-injury ->** reintegration into full sport-specific training can occur
Stage 6	**Earliest Day 21**		Return to sports competition • Completion of Stage 5 **AND** • **Symptom free during sports training** • **AND ≥ Day 21 post-injury** • **AND** the player has received medical clearance from a qualified medical practitioner (doctor)

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12 CHILD AND ADOLESCENT PLAYERS

12.1 The management and return-to-play procedures identified in this policy can be applied to players as young as 10 years old. Below that age, the symptoms of concussion are reported differently from adults necessitating a full medical clearance **BEFORE** undertaking the return to play protocol.

CONCUSSION

IT'S EVERYBODY'S RESPONSIBILITY TO RECOGNISE AND REMOVE

IF IN DOUBT – SIT THEM OUT

Updated November 2025