



Rising Tide Martial Arts

Concussion Protocol

Introduction:

Rising Tide Martial Arts is committed to student safety. All students are urged to work within their health limitations, advocate for their safety needs, and contribute to our respectful and compassionate learning environment by following safety policies and respecting the boundaries of other students. Our classes are specifically designed to minimize risks to students by offering altered options of moves or drills to those who cannot safely physically participate, carefully introducing and regulating contact drills, teaching falling techniques, and reinforcing teamwork and sportsmanship. Despite our safeguards, all sports carry risk, and we believe that understanding the potential risk of concussion and how to address it will empower all students to better protect their health.

Information provided in this document was gathered from the following sources:

- World Karate Federation Concussion Protocol:
https://www.wkf.net/files/pdf/documents/WKF%20Medical%20Commission_Concussion%20Protocol.pdf
- Center for Disease Control - Concussion Basics:
<https://www.cdc.gov/heads-up/about/index.html>
- Mayo Clinic - Concussion:
<https://www.mayoclinic.org/diseases-conditions/concussion/symptoms-causes/syc-20355594>
- FIFA Emergency Care Manual:
<https://digitalhub.fifa.com/m/1fc77540eab37831/original/FIFA-Emergency-Care-Manual-EN.pdf>
- Texas Children's:
<https://www.texaschildrens.org/content/conditions/concussion-return-play-protocols-martial-arts>

Importance:

Concussions are a risk in any sport, including martial arts, and should be taken seriously to ensure the safety of all students. Concussions are a form of brain injury caused by trauma to the head, or trauma to the neck or body that causes the head to move rapidly back and forth (Center for Disease Control - Concussion Basics). Consequences of concussions can vary widely, from quick recovery leaving no visible impairment, to functional impairments or life-threatening injuries. Therefore, recognizing the symptoms, receiving medical care and medical clearance, and engaging in the appropriate level of physical activity during recovery is essential.



Causes and Symptoms:

Concussions are usually caused by blows or jolts to the head or body that cause the brain to move back and forth in the skull. According to the Center for Disease Control, "this sudden movement can cause the brain to bounce around or twist in the skull, creating chemical changes in the brain and sometimes stretching and damaging brain cells."

Symptoms can emerge immediately or be delayed (hours or days after injury), and can last for days or weeks. The Mayo Clinic lists possible symptoms as:

- Immediate Symptoms:
 - Temporary loss of consciousness (doesn't always occur)
 - Headache
 - Ringing in ears
 - Upset stomach
 - Vomiting
 - Fatigue
 - Drowsiness
 - Blurry vision
 - Confusion or brain fog
 - Dizziness
 - Amnesia surrounding event
 - Slurred speech
 - Delayed response to questions
 - Forgetfulness
- Delayed Symptoms:
 - Trouble with concentration and memory
 - Irritability and other personality changes
 - Sensitivity to light and noise
 - Changes in taste and smell
 - Trouble with sleep
 - Feeling emotional or depressed
- Symptoms in Children:
 - Dazed appearance
 - Lack of interest in preferred toys/activities
 - Tiring easily
 - Irritability and crankiness
 - Loss of balance and unsteady walking
 - Increased crying
 - Changes in eating or sleeping patterns
 - Vomiting



Concussion Prevention at Rising Tide:

Our classes aim to create a safe environment for learning martial arts. To limit injuries, we only teach sparring in certain styles, only teach light-contact sparring with appropriate safety equipment, forbid “knock out” moves, teach appropriate falling technique, and emphasize that students should only engage in activities they are able to safely participate in based on their health history and other personal factors.

Students should:

- Only engage in light contact sparring
- Wear appropriate protective gear for the activity, and ensure the gear is appropriately fitted and fastened (helmet, mouthguard, etc.)
- Understand the limits of protective gear
- Disclose to senseis any activities they may not be able to safely participate in
- Maintain skills related to safe fall practice after it has been introduced
- Follow the rules of all activities/drills and display good sportsmanship (not aggression)

Action to Take After Injury:

Students and parents of minor students should follow these guidelines to ensure safety after sustaining a head injury or experiencing an abrupt rocking motion to their head and neck during a martial arts class. Guidelines are based on the Concussion Protocol published by the World Karate Federation (WKF) in 2026.

- Immediately stop engaging in the current activity
 - If injury to the neck/spine is also suspected, the student should not attempt to move from their current location
- Immediately alert a sensei of the injury
 - If a student becomes unresponsive, fellow students and the student’s caregiver should immediately alert a sensei
- The sensei, the injured student (if able), and the caregiver (if present) will evaluate the student for known “red flag” symptoms, and ask questions to determine presence of the other symptoms listed under the “Causes and Symptoms” section. All students and caregivers should be aware that Rising Tide instructors are not medical professionals or experts in concussion diagnostics, and are not a replacement for seeking medical care.
 - Immediately observable signs that often signify concussion (table from the FIFA Emergency Care Manual):



Table 1: Observable signs of concussion (adapted from Davis GA, Makdissi M, Bloomfield P et al, 2019)

Lying motionless	Lying without purposeful movement on the playing surface for >2 seconds*. The player does not appear to move or react purposefully, respond or reply appropriately to the game situation (including team-mates, opponents, match officials or medical staff). Concern may be shown by other players or match officials. * >2 seconds is the threshold for removing and assessing the player. Significantly longer periods of lying motionless may necessitate immediate and permanent removal from play, depending on the circumstances.
Motor incoordination	The player appears unsteady on their feet (including losing balance, staggering/stumbling, struggling to get up or falling) or in the upper limbs (including fumbling). This may occur when the player is getting up from the playing surface or is walking or running.
Impact seizure	Involuntary clonic movements that comprise periods of asymmetric and irregular rhythmic jerking of axial or limb muscles.
Tonic posturing	Involuntary, sustained contraction of one or more limbs (typically upper limbs), so that the limb is held stiff despite the influence of gravity or the position of the player. Other muscles, such as the cervical, axial and lower-limb muscles, may also be involved. Tonic posturing may be observed while the player is on the playing surface or in the process of falling, where the player may also demonstrate no protective action*. *This was previously known as “no protective action – stiff”.
No protective action – floppy	The player falls to the playing surface in an unprotected manner (i.e. without stretching out their hands or arms to lessen or minimise the fall) after direct or indirect contact to the head. The player demonstrates loss of motor tone (which may be observed in the limbs and/or neck*) before landing on the playing surface. *When the player’s arms are being held by a tackling opponent, this may only be observed in the neck, which was previously known as “cervical hypotonia”.
Blank/ vacant look	The player exhibits no facial expression or apparent emotion in response to the environment*. *This may include a lack of focus/attention of vision. A blank/ vacant look is best appreciated in reference to the player’s normal or expected facial expression.

- Immediate inspection will occur for all students after sustaining such an injury (table from the FIFA Emergency Care Protocol):



Table 4: Initial (on-pitch) examination of a head injury

Inspection	1	Acute signs		
		Short-term loss of consciousness	No	Yes
		Deformity or swelling of the head or neck or holding of the head due to pain/for stabilisation	No	Yes
		Blood or clear fluid exiting from the ear(s) or nose	No	Yes
		Blank look	No	Yes
		Slowness in getting up	No	Yes
		Vomiting	No	Yes
		Uncharacteristic behaviour	No	Yes
	2	GCS: 15 points		
Examination		Eye opening: spontaneous (4 points)	Yes	No
		Verbal: oriented (name, place, date) (5 points)	Yes	No
		Motor: obeys commands (6 points)	Yes	No
	3	Selected new acute symptoms		
		Headache or pressure in the head	No	Yes
		Neck pain	No	Yes
		Nausea	No	Yes
		Vertigo, dizziness, drowsiness, unsteadiness	No	Yes
		Blurred or double vision, sensitivity to light	No	Yes
		Tinnitus, hypacusis, hyperacusis	No	Yes
		Impaired sensation in the upper or lower extremities	No	Yes
	4	Orientation and memory (Maddocks questions)		
		What venue are we at today?	Correct	Incorrect
		Which half of the match is it now?	Correct	Incorrect
		Who (which team) scored last in this match?	Correct	Incorrect
		Which team did your team play last week/match?	Correct	Incorrect
		Did your team win the last match?	Correct	Incorrect
	5	Delayed, slow or inappropriate responses	No	Yes
	6	New difference in pupil size, crossed eyes, spontaneous nystagmus	No	Yes
	7	Range of motion of the cervical spine (only if no acute neck pain)		
		Active rotation to the left and right from a neutral position	Normal and painless	Impaired or painful
		Active flexion and extension from a neutral position	Normal and painless	Impaired or painful
	8	Strength of the upper and lower extremities	Normal	Impaired
	9	Touch sensation of the upper and lower extremities	Normal	Impaired
	10	Balance, control and coordination of posture and the limbs		
		Stand on both legs with heel and toe together (eyes closed, 10 seconds; if failed, maximum of 1 repetition)	Stable/no sway	Failed
		Finger-to-nose task (right and left) (eyes closed, 2 repetitions, both sides)	All trials correct	Failed



If no signs or symptoms ► player allowed to return to play or training; further observation until leaving the sports facilities



Orange flags can turn into red flags

If any orange flag or if the doctor is in doubt ► removal from football and further examination



If any red flag ► emergency management

- If there are no symptoms noted (the student is entirely in the green), instructors will continue to monitor the student for changes during the remainder of the class. No follow-up will be conducted.
- If some symptoms are noted (listed in orange in the table), the student will be removed from further participation in martial arts until medically cleared. An additional assessment will be conducted.
- Secondary assessment if concerns are noted (table from FIFA Emergency Care Manual):



- This secondary assessment will be conducted if the initial inspection is abnormal; or the student, caregiver, or instructor believes there is functional neurological impairment.
- If orange or red flags are discovered, immediate emergency medical care is recommended. Red flags suggest possible life-threatening problems or signs of brain injury, orange flags suggest orthopedic or neurological impairment.

OFF-PITCH EXAMINATION (PHASE 3)

The off-pitch examination should focus on red and orange flags (see Table 5 below). This should include tests of ocular motor function as many of the pathways in the brain potentially affected by head injuries are involved in ocular motor control. Obvious minor injuries, such as lacerations or bruises, might be treated.

Table 5: Selected signs and symptoms indicating red and orange flags after a head injury

Domain	Red flags	Orange flags
Alertness/attention	GCS <13/15	Signs: GCS 13/15 or 14/15, blank look, confusion, disorientation, delayed, slow or inappropriate response, difficulty concentrating or remembering Symptoms: Feeling slowed down, "don't feel right", drowsiness, fatigue, "low energy"
Neuromotor	Seizure/convulsion or postictal signs, abnormal posturing	Signs: Impaired control of trunk or limb movements
Headache	Severe headache, repetitive vomiting	Signs: Nausea or vomiting (once), holding of the head Symptoms: Pressure, headache
Dizziness/balance	Fall due to imbalance	Signs: Imbalance Symptoms: Vertigo, dizziness, fogginess, unsteadiness
Vision/ocular motor function	Crossed eyes, nystagmus, other acute disordered eye movements, new difference in pupil size	Symptoms: Blurred vision, "eyes cannot follow", sensitivity to light
Emotion/behaviour		Signs: Emotional instability, irritability or aggression with little or no provocation
Hearing	Acute hearing loss	Symptoms: Hyperacusis, hypacusis, tinnitus
Cervical spine/spinal cord	Pain, tenderness, swelling, deformity, paresis, impaired sensation in the upper or lower extremities	Signs: Impaired hearing, tinnitus, sensitivity to noise Symptoms: Neck pain
Skull/face	Blood or clear fluid exiting from the ear(s) or nose, deformity, periorbital or retroauricular haematoma	Signs: Contusion, laceration
Personal history	Anticoagulation, clotting disorder	Previous brain injury

Note: some signs and symptoms can be attributed to different domains. Orange flags can turn into red flags.

RED FLAGS: Potential life-threatening problems or hints of intra- or extracerebral lesion

ORANGE FLAGS:

- ▶ if any: emergency management and consider immediate transportation to hospital
- ▶ Neurological or orthopaedic impairment
- ▶ if any (or the doctor is in doubt): removal from football and further examination, with a specialist to be consulted if required



- Other emergency symptoms to be aware of, as described in the FIFA Emergency Care Manual, that require immediate medical treatment:

Table 3: Emergency management principles

Domain	Concern (C), Examination (E)	Actions	Consequence
Cardiopulmonary	C: Cardiopulmonary arrest E: Unresponsiveness, not breathing normally	- Start cardiopulmonary resuscitation (CPR) chain: emphasis on chest compression and rapid defibrillation - Place the AED on the player, but shock them only if the AED device self-charges and verbally recommends pressing the shock button - Place the player onto a spinal stabilisation device (e.g. spinal board) and strap appropriately	Remove the player from the pitch and continue emergency management if indicated Consider immediate emergency transport to hospital
Brain	C: Intracranial lesion E: Glasgow Coma Scale score <13/15, loss of consciousness, severe headache, repetitive vomiting, seizure/convulsion, abnormal posturing, new difference in pupil size, nystagmus, fall due to imbalance	- Neutralise and stabilise the cervical spine appropriately - Maintain and protect the airway as safely as possible - Ventilate the unconscious patient if necessary - Place the player onto a spinal stabilisation device (e.g. spinal board) and strap appropriately	
Skull and face	C: Fracture E: Severe headache, blood or clear fluid exiting from the ear(s) or nose, deformity, periorbital or retroauricular haematoma	- Neutralise and stabilise the cervical spine appropriately - Control any external bleeding - Place the player onto a spinal stabilisation device (e.g. spinal board) and strap appropriately	
Cervical spine and neck	C: Fracture or intraspinal lesion E: Deformity, severe pain, swelling over the neck, paresis, impaired sensation	- Neutralise and stabilise the cervical spine appropriately - Place the player onto a spinal stabilisation device (e.g. spinal board) and strap appropriately	

- Observation by student caregivers or family is recommended after a head injury, in case symptoms develop later.
 - Look for new or worsening symptoms
 - Initial recovery advice (as described by the FIFA Emergency Care Manual):
 - Responsible adult should provide ongoing monitoring for at least 24 hours (72 may be best for latent symptoms)



- Phone doctor or go to the emergency room if changes are noted regarding behavior, vomiting, worsening headache, double vision, excessive drowsiness
- Other:
 - Limit physical activity
 - Limit school, work, and screen time to a level that doesn't exacerbate symptoms
 - Avoid alcohol
 - Avoid prescription/nonprescription medications without medical supervision
 - Specifically: aspirin and other anti-inflammatory medications, sleeping tablets
 - Avoid driving until medically cleared to do so
- If a concussion or other medical emergency is suspected, the student will not be allowed to participate in further martial arts activities, effective immediately.
 - Medical clearance from a licensed medical professional will be required to resume class participation

Returning to Martial Arts/Sports After a Concussion

- After a concussion, students should carefully increase their exercise/activity levels in a stepwise fashion to reduce the likelihood of delaying or complicating their recovery.
- Specific student actions should be based on their current symptoms in conjunction with advice from a medical professional, but a potential template is offered here, based on Texas Children's description of an article by McRory and colleagues (2012). Each level should be maintained for several days with diminishing symptoms before activity levels are increased. If symptoms increase, students should rest until symptoms diminish and then return to the previous level:
 - Immediately after the concussion, limit activity to daily activities that don't make symptoms worse (light walks, school or work)
 - Avoid too much physical exertion or screen time
 - Level 1: light aerobic exercise that increases heart rate (running, stationary cycling) with less than 70% effort, avoid resistance training
 - Start with 5-10 minutes and increase each day until at 30 minutes
 - Level 2: moving exercises like running, calisthenics, and forms
 - Avoid contact punching or kicking
 - Level 3: training drills that are non-contact but require a larger mental load and result in more exertion (forms, weapons skills, punching and kicking bags/pads, some resistance training)



- Level 4: full contact training after medical clearance (contact skills and full-gear sparring with control)
- Level 5: full participation (including competition)