



## **Concussion Guidelines for Muay Thai and Kickboxing**

**A comprehensive guide to concussions, stand downs, medical staff procedures & duties at events, responsibility of coaches, back to training plans and information for parents, fighters and team mates**

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# INTRODUCTION

Southern Fight Nurses has recognized the serious lack of education in Muay Thai and all combat sports for the safety of not just fighters, but anyone training in a combat sport with the risk of getting a concussion or a delayed concussion at all levels.

This publication has been put together to assist judges, referees, promoters, coaches, medics, fighters, team mates and parents to have an easy way to identify the signs, the duties and powers of medics at shows, implementation of standowns and back to training plans.

The authors of this publication:

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# General SFM guidelines

## Fighters expectations

- Fighters are expected to take responsibility for their own safety and well being, if you are not feeling right after a fight find a medic. If you are not feeling 100% before a fight, tell your medic.
- Follow medical recommendations and safety procedures put in place, we have these to protect you and your wellbeing.
- Fighters are expected to have blood results; these can be checked off at the weigh-in prior to medical checks. They must be less than 1 year old. Hepatitis B, C and HIV are required.
- Fighters under 17 years old are not required to have blood tests
- Medical information on the medical forms needs to be true and accurate as this is the medics only source of information and if seriously injured may need to be given to a third party
- All fighters who have had a concussion within any sanction in the last 6 weeks will not be able to fight on a SFM medical show . This is to protect both the sanction and the fighters.
- Medics and refs may stop a fight if a fighter is seriously injured or the potential for a serious injury eg 8 counts and multiple head knocks **this will be a case by case basis**

## Medics

- Medics to be able to stop fights in between rounds if the fighter is getting injured, they can vito the fight this will be a case by case basis, **medic and ref have final say**
- Fighters will be glanced at by ring side medic and cleared to leave the ring. Any obvious or major injuries will be seen to immediately, other wise post fight medic will assess check and clear fighters 20-30 minutes post fight
- Ringside medic to check they are fit to leave the ring, will sign paperwork and give to ref to hand to coaches to then be signed off by post fight medic once the post flight checks have been completed
- Post fight medic to check and redo vitals and assess concussion risk and sign paperwork with the coaches this is to be done within 20-30 minutes. By signing this paper work the coach acknowledges recommendations and is responsible for their fighter.
- Medical forms need to be filled in accurately as this is your medics only source of information
- If a fighter is cut during a fight it is the medics responsibility to assess this and act accordingly
- Medics and refs may stop a fight if a fighter is seriously injured or has the potential for a serious injury eg 8 counts and multiple head knocks this will be a case by case basis

## Coaches

- Coaches are responsible for fighters' wellbeing and are encouraged to follow medical recommendations following concussions. This includes returning to sparring post stand down
- Medical information on the medical forms needs to be true and accurate as this is the medics only source of information and if seriously injured may need to be given to a third party, it is the coaches responsibility to ensure the fighter has done so correctly.

## Judges

- Support medic and refs when dealing with injuries, including managing coaches and family
- Remain impartial and disclose any conflict of interest to the promoter regarding gyms, coaches or fighters. Including any knowledge of previous fighter concussions if aware, this is a further precaution for fighter safety

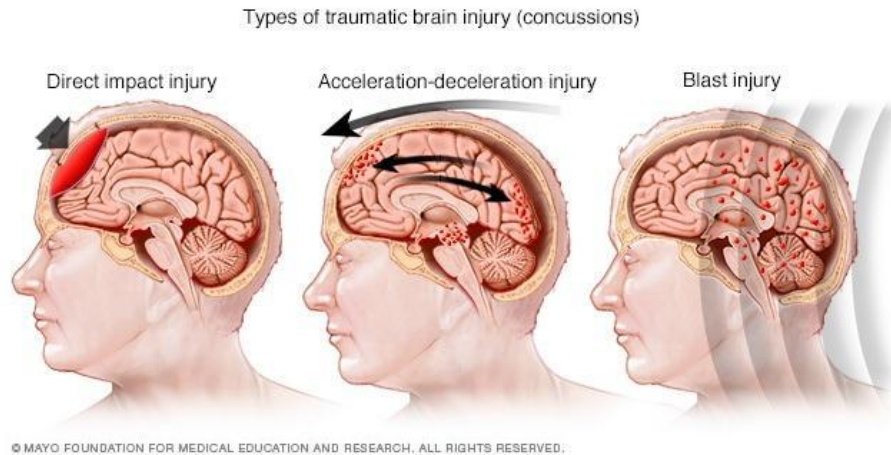
## Refs

- Medics and refs may stop a fight if a fighter is seriously injured or has the potential for a serious injury eg 8 counts and multiple head knocks this will be a case by case basis
- Work in conjunction with judges coaches and medics to achieve fighter safety
- Support medical decisions and support medics when dealing with fighters

## Promoters

- All fight sheets to be kept and compiled and available to medics and coaches as appropriate
- Support medical decisions and support medics when dealing with fighters
- Work in conjunction with judges coaches and medics to achieve fighter safety

# CONCUSSION SYMPTOMS (CHILDREN AND ADULTS)



Most sports-related head injuries, such as concussions — which temporarily interfere with the way the brain works — are mild and allow for complete recovery.

A concussion is a traumatic brain injury that affects your brain function. Effects are usually temporary but can include headaches and problems with concentration, memory, balance and coordination. Concussions are usually caused by a blow to the head. Violently shaking of the head and upper body also can cause concussions.

Some concussions cause you to lose consciousness, but most do not.

Head injuries take time to heal. After a concussion, fighters should rest from both physical and mental (cognitive) activities for a day or two. They should return to activities gradually as their symptoms allow.

If there's any suspicion of a concussion, it's best not to return to play until symptoms improve. In other words, "If in doubt, sit it out." with a gradual return to activities advised

Children might develop complications or delay healing if they are reinjured before a concussion has healed. Another blow to the head while the initial concussion is healing can result in longer lasting or more-severe symptoms.

Having a concussion puts children at higher risk of having another. The effects of repeated concussions over years can multiply.

Post-concussion syndrome is a complex disorder of concussion symptoms that last longer than the usual concussion recovery period. It's unclear why some people develop post-concussion syndrome and others don't, though some risk factors have been identified. Some research suggests that having repeated concussions might increase the risk of post-concussion syndrome.

In rare cases, what is initially thought to be a concussion turns out to be a more severe brain injury with bleeding in or around the brain. Such bleeding can increase pressure on the brain and can be life-threatening.

## Symptoms

Signs and symptoms of a concussion may include:

- Headache or a feeling of pressure in the head
- Nausea or vomiting
- Balance problems or dizziness
- Double or blurry vision
- Sensitivity to light or noise
- Feeling fatigued, sluggish, groggy or dazed
- Difficulty paying attention
- Memory problems
- Confusion
- Slowness in understanding and responding to others
- Sleeping problems
- Mood changes and irritability
- Changes in behavior
- Changes in personality
- The signs and symptoms of a concussion can be subtle and may not show up immediately.
- Difficulty with thinking skills, such as memory and attention
- Dizziness
- Fatigue
- Headaches
- Irritability
- Behavior changes such as agitation, confusion or restlessness
- Convulsions or seizures
- Inability to recognize people or places
- Loss of consciousness
- One pupil that is larger than the other
- Slurred speech
- Unusual behavior
- Extreme drowsiness or inability to be woken from sleep
- Vomiting
- Crying that won't stop and inability to be consoled

Fighters can have a concussion without losing consciousness. Also, a blow to the body that jars the head can result in concussion. Make sure your coach knows if you have had a concussion. You shouldn't return to play until you have been cleared by a medical professional. Formal return-to-sport plans are recommended.

Common symptoms after a concussion/ traumatic brain injury are headache, loss of memory (amnesia) and confusion. The amnesia usually involves forgetting the event that caused the concussion.

Physical signs and symptoms of a concussion may include:

- Headache
- Ringing in the ears
- Nausea
- Vomiting
- Fatigue or drowsiness
- Blurry vision
- Other signs and symptoms of a concussion include:
- Confusion or feeling as if in a fog
- Amnesia surrounding the traumatic event
- Dizziness or "seeing stars"

A witness may observe these signs and symptoms in the concussed person:

- Temporary loss of consciousness (though this doesn't always occur)
- Slurred speech
- Delayed response to questions
- Dazed appearance
- Forgetfulness, such as repeatedly asking the same question

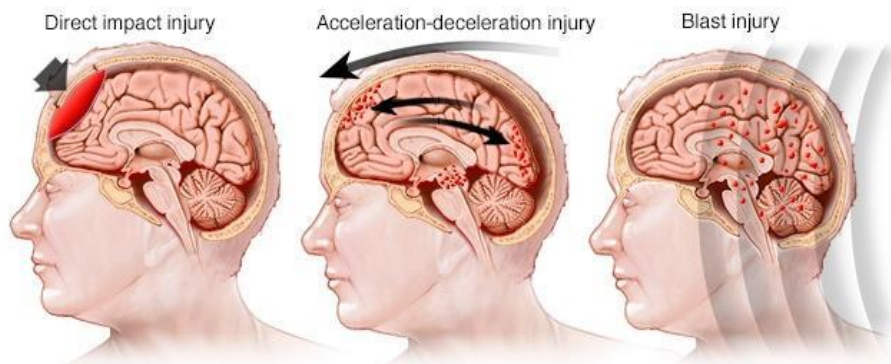
You may have some symptoms of concussions immediately, and some can occur for days after the injury, such as:

- Concentration and memory complaints
- Irritability and other personality changes
- Sensitivity to light and noise
- Sleep disturbances
- Psychological adjustment problems and depression



# STAND DOWNS

Types of traumatic brain injury (concussions)



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## Stand downs can be initiated for a number of reasons:

- Most commonly being repeated head knocks, KO, TKO from head knocks and not recovering. Stand downs may be issued for other injuries at medic and coach discretion
- Standowns can be discussed with ref, promoter and medic. Medic can only give recommendations
- There will be different stand down periods recommended, depending on the risk of further harm assessed by the medic 2,4 or 6 weeks
- Coaches will be responsible for the fighter and encouraged to stop fighter from training in the following weeks and to follow a back to training program
- All 8 counts and stand downs will be logged into a database within the SFM to prevent fighters fighting while standing down.
- All stand downs will be entered into the SFM Database. This can be requested by any promoter.
- As a guideline the following recommendations can be followed, once the athlete is 24 hours symptom free.

**A - KO/TKO Headstrikes = 7 week SFM rehab plan**

**B - 2 x 8 Counts Headstrikes = 6 week SFM rehab plan**

**C - 1 x 8 Count headstrikes = Start SFM rehab from week 4**

**D - 10+ Significant headstrikes = Start SFM rehab from week 4**

## Concussions:

- A concussion is a traumatic brain injury that affects your brain function. Effects are usually temporary but can include headaches and problems with concentration, memory, balance and coordination.
- Concussions are usually caused by a blow to the head. Violently shaking of the head and upper body also can cause concussions.
- The signs and symptoms of a concussion can be subtle and may not show up immediately. Symptoms can last for days, weeks or even longer.
- Head injuries take time to heal. After a concussion, a fighter should rest from both physical and mental (cognitive) activities for a day or two. They should return to activities gradually as their symptoms allow.

- A fighter might develop complications or delay healing if they are reinjured before a concussion has healed. Another blow to the head while the initial concussion is healing can result in longer lasting or more-severe symptoms. Having a concussion = higher risk of having another. The effects of repeated concussions over years can multiply.
- Post-concussion syndrome is a complex disorder of concussion symptoms that last longer than the usual concussion recovery period. It's unclear why some people develop post-concussion syndrome and others don't, though some risk factors have been identified. Some research suggests that having repeated concussions might increase the risk of post-concussion syndrome.
- You can have a concussion without losing consciousness, a blow to the body that jars the head can result in concussion. A violent blow to your head and neck or upper body can cause your brain to slide back and forth forcefully against the inner walls of your skull. Make sure your coach knows if you have had a concussion.
- Such bleeding in your brain can be fatal. That's why anyone who experiences a brain injury needs monitoring in the hours afterward and emergency care if symptoms worsen.

## Complications

Potential complications of concussion include:

- **Post-traumatic headaches.** Some people experience concussion-related headaches up to seven days after a brain injury.
- **Post-traumatic vertigo.** Some people experience a sense of spinning or dizziness for days, weeks or months after a brain injury.
- **Post-concussion syndrome.** A small proportion of people (15% to 20%) may have symptoms including headaches, dizziness and thinking difficulties that persist beyond three weeks. If these symptoms persist beyond three months, this becomes characterized as post-concussion syndrome.
- **Cumulative effects of multiple brain injuries.** Active research is currently underway to study the effects of repeated head injuries that don't cause symptoms (subconcussive injury). At this time, there's no conclusive evidence indicating that repeated brain injuries contribute to cumulative effects.
- **Second impact syndrome.** Rarely, experiencing a second concussion before signs and symptoms of a first concussion have resolved may result in rapid and usually fatal brain swelling. It's important for athletes never to return to sports while they're still experiencing signs and symptoms of concussion.

## Initiating Stand downs

Fighters will be recommended stood down if a medic deems there is enough evidence to support the diagnosis of a concussion or the suspicion of a delayed concussion

Any head wounds that occurred from a significant head knock would also warrant a stand down for concussion risk

Fighters with a significant injury that would be deemed to be made worse and affect the overall well being of a fighter whether head or body would will also warrant a stand down period this may be a lesser period

Wounds will be assessed and a head wound may warrant a stand down to prevent a more serious injury.

Preventing serious injury or death is paramount

Stand downs can be issued up to 24 hour post fight

Stand downs for each fighter will be collated and available to medics at each fight

# Return to Training Plan

## Training program for returning to training following a concussion/multiple 8 counts or being stood down

- You can have a concussion without losing consciousness. Also, a blow to the body that jars the head can result in concussion. Violently shaking of the head and upper body also can cause concussions. Make sure your coach knows if you have had a concussion.
- The return to training plan is to be followed ONCE THE ATHLETE HAS BEEN SYMPTOM FREE FOR 24 HOURS.
- **Formal return-to-sport plans are recommended.** Gradually working up to pre-concussion levels as symptoms improve. A gradual return to learning and physical activity is key. Head injuries take time to heal. After a concussion, a fighter should rest from both physical and mental (cognitive) activities for a day or two. They should return to activities gradually as their symptoms allow.
- A concussion is a traumatic brain injury that affects your brain function. Effects are usually temporary but can include headaches and problems with concentration, memory, balance and coordination.
- The signs and symptoms of a concussion can be subtle and may not show up immediately. Symptoms can last for days, weeks or even longer.
- If there's any suspicion of a concussion, it's best not to return until symptoms improve. "If in doubt, sit it out. These injuries affect brain function, usually for a brief period, resulting in signs and symptoms of concussion. This type of brain injury may lead to bleeding in or around your brain, causing symptoms such as prolonged drowsiness and confusion. These symptoms may develop immediately or later. Such bleeding in your brain can be fatal. That's why anyone who experiences a brain injury needs monitoring in the hours afterward and emergency care if symptoms worsen.

Weeks post injury	Training:	Signs and symptoms to be aware of:
Week one	<p>No training or exercise until the fighter is symptom free for 24 hours, then week 2 can proceed.</p> <p>A fighter might develop complications or delay healing if they are reinjured before a concussion has healed.</p> <p>Another blow to the head while the initial concussion is healing can result in longer lasting or more-severe symptoms. Having a concussion = higher risk of having another. The</p>	<p>Concentration and memory complaints</p> <p>Irritability</p> <p>Sensitivity to light and noise</p> <p>Difficulty with thinking skills, such as memory and attention</p> <p>Dizziness</p> <p>Fatigue</p> <p>Headaches</p>

	effects of repeated concussions over years can multiply.	
Week two	<p>No training minimal exercise, half an hour to an hour of gentle exercise eg walking swimming no sparring or bag/pad work</p> <p>If you display any of the symptoms associated with concussion stop immediately and rest. For at least a week then slowly return to the level you were at</p>	<p>Headache Nausea /vomiting Balance problems or dizziness, double or blurry vision Sensitivity to light or noise Feeling fatigued, sluggish, groggy or dazed Difficulty paying attention/ Memory problems/Confusion Slowness in understanding and responding to others Sleeping problems Mood changes and irritability</p>
Week three	<p>No training gradual increase in exercise</p> <p>If you display any of the symptoms associated with concussion stop immediately and rest. For at least a week then slowly return to the level you were at</p>	<p>Headache + Nausea /vomiting Balance problems or dizziness, double or blurry vision Sensitivity to light or noise Feeling fatigued, sluggish, groggy or dazed Difficulty paying attention/ Memory problems/Confusion Slowness in understanding and responding to others Sleeping problems Mood changes and irritability Changes in personality</p>
Week four	<p>Gradual reintroduction of training, no sparring. Gradual increase in exercise</p> <p>If you display any of the symptoms associated with concussion stop immediately and rest. For at least a week then slowly return to the level you were at</p>	<p>Headache + Nausea /vomiting Balance problems or dizziness, double or blurry vision Feeling fatigued, sluggish, groggy or dazed Difficulty paying attention/ Memory problems/Confusion Slowness in understanding and responding to others Sleeping problems Mood changes and irritability</p>
Week five	<p>Gradual increase in training some sparring but avoiding head shots. Can resume normal exercise regime</p> <p>If you display any of the symptoms associated with concussion stop immediately and rest. For at least a week then slowly return to the level you were at</p>	<p>Headache + Nausea /vomiting Balance problems or dizziness, double or blurry vision Sensitivity to light or noise Feeling fatigued, sluggish, groggy or dazed Difficulty paying attention/ Memory problems/ Confusion Slowness in understanding and responding to others Sleeping problems Mood changes and irritability</p>
Week six	<p>Return to sparring should wear protective gear, normal training can resume at this point, exercise is fine</p> <p>If you display any of the symptoms</p>	<p>Headache Nausea /vomiting Balance problems or dizziness, double or blurry vision Sensitivity to light or noise Feeling fatigued, sluggish, groggy or dazed</p>

	associated with concussion stop immediately and rest. For at least a week then slowly return to the level you were at	Difficulty paying attention/ Memory problems/ Confusion Slowness in understanding and responding to others Sleeping problems Mood changes and irritability
Week seven	<p>Can resume normal training but should still avoid any knocks to the head. A violent blow to your head and neck or upper body can cause your brain to slide back and forth forcefully against the inner walls of your skull.</p> <p>If you display any of the symptoms associated with concussion stop immediately and rest. For at least a week then slowly return to the level you were at</p>	<p>If any signs of symptom of concussion arise suspend training for at least 1-2 weeks and see your doctor</p> <p>By this stage of your recovery you should be clear of any signs and symptoms. Unless diagnosed otherwise. If you experience any of the above signs or symptoms see your doctor immediately.</p> <p>Post-concussion syndrome is a complex disorder of concussion symptoms that last longer than the usual concussion recovery period. It's unclear why some people develop post-concussion syndrome and others don't, though some risk factors have been identified. Some research suggests that having repeated concussions might increase the risk of post-concussion syndrome.</p>

- **Seek emergency care for an adult or child who experiences a head injury and signs and symptoms such as:**
  - Repeated vomiting or nausea
  - A loss of consciousness lasting longer than 30 seconds
  - A headache that gets worse over time
  - Fluid or blood draining from the nose or ears
  - Vision or eye disturbances, such as pupils that are bigger than normal (dilated pupils) or pupils of unequal sizes
  - Ringing in the ears that doesn't go away
  - Weakness in the arms or legs
  - Appearing very pale for longer than an hour
  - Changes in behavior, Confusion or disorientation, such as difficulty recognizing people or places
  - Slurred speech or other changes in speech
  - Obvious difficulty with mental function or physical coordination, Changes in physical coordination, such as stumbling or clumsiness
  - Seizures or convulsions, Lasting or recurrent dizziness
  - Symptoms that worsen over time

