

# Concussion Confusion

## You've Sprained Your Brain, Now What?



There are many myths and confusion about how to care for your brain after you experience a concussion.

Many people don't realize the severity of even a mild concussion and that they can be caused by a direct or indirect hit to the head or body.

Not all concussions are suffered by athletes while playing sports; falls and accidents can cause them too. All concussions are serious injuries that can have severe repercussions if not managed properly. Proper care during the first 7 - 10 days is crucial to ensure your recovery.

### Immediately following the incident

- Two to three hours following the incident you should remain awake and be monitored.
- You should **NOT DRIVE** or be left alone.
- You can now sleep for 2-3 hour increments. Someone should wake you every 3 hours, and ask simple questions to ensure that a more serious brain injury hasn't occurred.

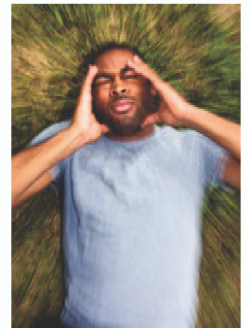
If you feel fine following the incident but notice any of the following symptom, you should seek emergency care as soon as possible:

- Rapid deterioration of symptoms
- Severe headache with sudden onset
- Slurring
- Inability to be woken up
- Repeated vomiting

Think of a concussion like any other injury such as a sprained ankle or a broken arm. What would you normally do to manage those types of injuries? **Rest!**

The problem is that we don't always know what it means to 'rest' our brain. If you go right back to work or school, or resume any physical or mental activity, it's as though you are going for a run on a sprained ankle, which is not conducive to healing. Remember the brain needs a LOT of energy to heal.

There is a 30-day window following the incident in which you are most vulnerable. It is crucial that during the first 10 days you refrain from any activity that could put you at risk for any kind of physical contact, even if you are feeling recovered and asymptomatic. The brain is extremely vulnerable after a concussion; even if you feel no symptoms, any further jostling or sudden movement, even small impacts, can actually cause more severe brain injury. How you feel doesn't always coincide with how well your brain has recovered.



## The Recovery Process

### Step 1 First 3-4 Days

- Physical and cognitive **REST** is critical.
- No driving, no screen time, no reading, no school, no homework, no physical activity.
- Rest in a dimly lit room with minimal stimulation.
- When you no longer exhibit symptoms for at least 24 hours, you can move on to the next step.

If after 4-5 days, you are still symptomatic with complete rest, return to your Upper Cervical chiropractor for re-evaluation. The **underlying neck injury** now needs to be assessed and addressed, and there are other exercises that may facilitate the recovery; this should be monitored very carefully with your practitioner.

Continued on back.

**Step 2** Light cognitive activity allowed. You should still be resting for the majority of the day, but you can attempt to read a book or do homework for a 30-45 minute daily maximum. If symptoms occur during or in close proximity to the cognitive activity, this is considered a failed step and you need to go back to step 1 for a minimum of 24 hours.

If no symptoms occur after 30-45 minutes of cognitive activity, you should still discontinue the activity for the remainder of the day. The following day you can proceed to Step 3.

**Step 3** You are now ready for a half day of work or school. No driving, no tests, no homework, no recess, no gym, no manual labor or heavy equipment usage (this includes power tools and saws, etc.)

If any symptoms arise while at school or later in the day, return to Step 2 for the following 24 hours. If no symptoms occur, progress to Step 4 the following day.

**Step 4** This step involves exactly the same recommendations as Step 3 but you may attend work or school for the full day with restrictions. If any symptoms occur, return to step 3. If no symptoms occur, you may proceed to Step 5.

Some accommodations that should be made during this step include allowing for frequent breaks, no tests or heavy thinking, having another student take notes, doing 50-70% of the normal workload, avoiding over-stimulating environments, crowds, loud noises or jostling in crowded hallways.

**Step 5** Slowly start removing restrictions and prepare for a full return to school or work as tolerated. It is recommended that you lift one restriction per 24-hour period, and once again, if no symptoms are provoked, continue to lift one restriction until a full return can be tolerated.

**Step 6** A full return to work or school with no restrictions. Driving is now permitted. Physical activity should be kept to light walking or gentle range of motion exercises until you have fully reintegrated your normal daily activities. At this stage, another evaluation should be done by your Upper Cervical chiropractor to begin the process of returning

to full physical activity or sports. For more information about your concussion and recovery, schedule an appointment with an Upper Cervical chiropractor.

## Concussion Symptoms

Headaches | Dizziness | Blurry vision  
Mental fog | Slow thinking  
Difficulty concentrating  
Emotional symptoms (moody, irritable, sad, worried)  
Sleep issues (drowsiness, trouble falling asleep)

Symptoms are not always immediately present and may take up to 24-48 hours to manifest.

*A concussion takes an average impact of 95 G's of force, but a neck injury occurs at only 4 G's of force.*

**You cannot sustain a concussion without also having an underlying injury to the neck. Both injuries need to be managed appropriately. An Upper Cervical Chiropractor will work to balance and stabilize the neck, which is vital for optimal communication between the brain and the body.**



## References

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Dr. Lee Angle



12651 McGregor Blvd Ste 102 Fort Myers, FL

239-243-8810

UpperCervicalFortMyers.com



/uchcfortmyers





# Concussion Prevention Strategy

**Theory:** If an athlete can see an impact coming they can prepare by stiffening up and using neck strength to reduce the amount of head movement. This can help to decrease brain movement in the skull and lessen or prevent concussions.

## Concussion Prevention Program

Julianne D. Schmidt, Rooney M. Training for Warriors:  
The Ultimate Mixed Martial Arts Workout, 2008

### Warm Up

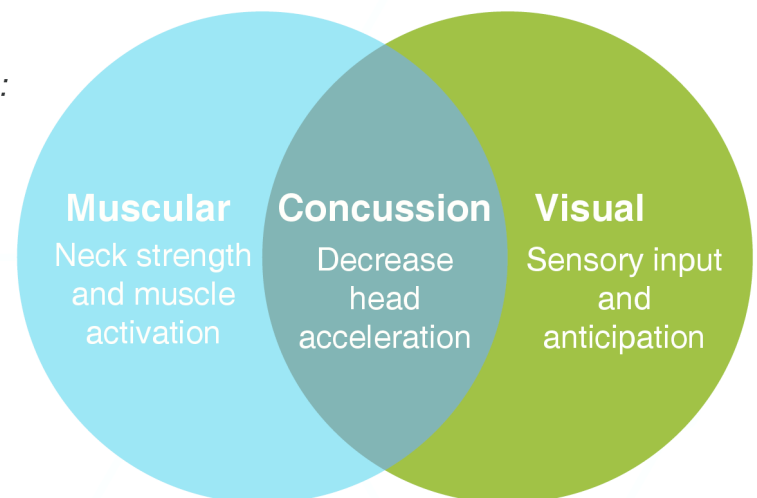
- Neck Circles
  - Clockwise
  - Counterclockwise

### Training

- Manual Neck Resistance (Isometric)
  - Flexion
  - Extension
  - Lateral Flexion (ear to shoulder)
  - Prone cobra
  - No resistance
  - Partner resistance
  - Back neck bridge
  - Front neck bridge
  - 4-way neck machine

### Anticipation/Visual Training

- Focusing
  - Use two pieces of paper with random letters in rows.
  - Place one sheet on the wall and have the athlete hold the other sheet.



- Have the athlete read from the paper on the wall to the paper they are holding.
- Measure the amount of time that it takes to complete this task.
- Work on improving the time.

### Tracking

- Use two pieces of paper with random letters in columns on the edge of each piece.
- Have the athlete read from side-to-side.
- Measure the amount of time it takes to complete.
- Work on improving the time.



# Post Concussion Syndrome



There are an estimated 2.5 million sports-related concussions a year. A majority of cases reach full recovery in a few weeks, but 15%-20% will have **symptoms that last for three weeks or more**, and for some it can be a life-altering experience.

The answer for why those 15%-20% still suffer may lie in a condition known as **Cervicogenic Post Concussion Syndrome**. In Cervicogenic PCS an upper neck injury happened along with the concussion. The brain itself can "heal" and begin to function normally pretty quickly, but the upper neck injury and ligament damage is often the underlying reason that symptoms persist.

The symptoms of PCS and Whiplash are almost identical

## PCS

- Headaches
- Dizziness
- Brain Fog
- Cognitive Dysfunction
- Fatigue

## Whiplash

- Headaches
- Dizziness
- Brain Fog
- Cognitive Dysfunction
- Neck Pain

### The neck trauma can trigger two different issues:

1. Inflammation and damage to the structures of the neck bombard the brain with nerve signals that trigger a pain response. This barrage of pain signals can be the trigger for headache disorders which are common after head trauma.
2. Disruption of the ligaments in the upper neck interferes with the body's joint position system. When your brain has poor joint-position sense, it can trigger symptoms like vertigo and balance problems.

### Resolving Cervicogenic PCS with upper cervical care

Correcting the upper neck/spine is often an important component in finding relief from the brain fog, vertigo/dizziness, headaches, and difficulty processing related to Cervicogenic PCS.