

# Concussion 2014- The Basics

**AKA- mTBI**

**mild Traumatic Brain Injury**



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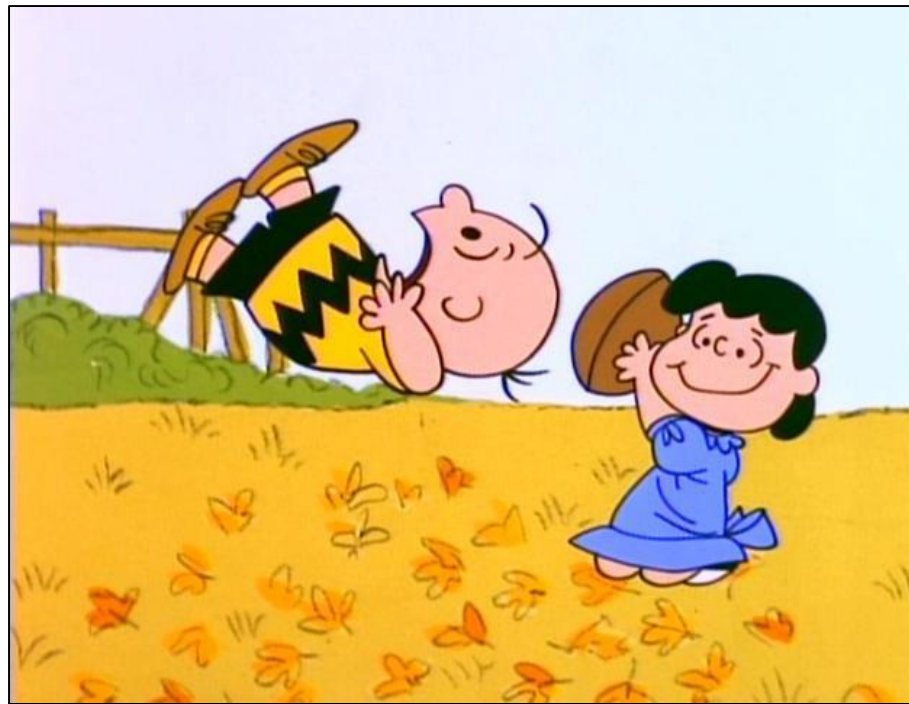
**President- NJ Chiropractic Council on Sports Injuries &  
Rehabilitation- 2013/2014**

**In Practice 18 Years**

# Definition of Concussion

Concussion is defined as “a complex pathophysiological process affecting the brain, induced by traumatic biomechanical forces. A concussion may be caused by a direct blow to the head, neck, or body with an impulsive force that transmits to the head. A concussion typically results in the rapid onset of short lived neurological dysfunction and reflects a functional disturbance rather than a structural injury.

# Dr. Stewart's 1<sup>st</sup> Date with Jodie...and 1st concussion





# Concussion Symptoms

## **Acute (On-field)**

Loss of Consciousness

Confusion

Disorientation

Imbalance

Headache

Speech Changes

Amnesia

# Concussion Symptoms (cont.)

## Acute or Chronic

Headache

Emotional Irritability

Lack of Concentration

Imbalance

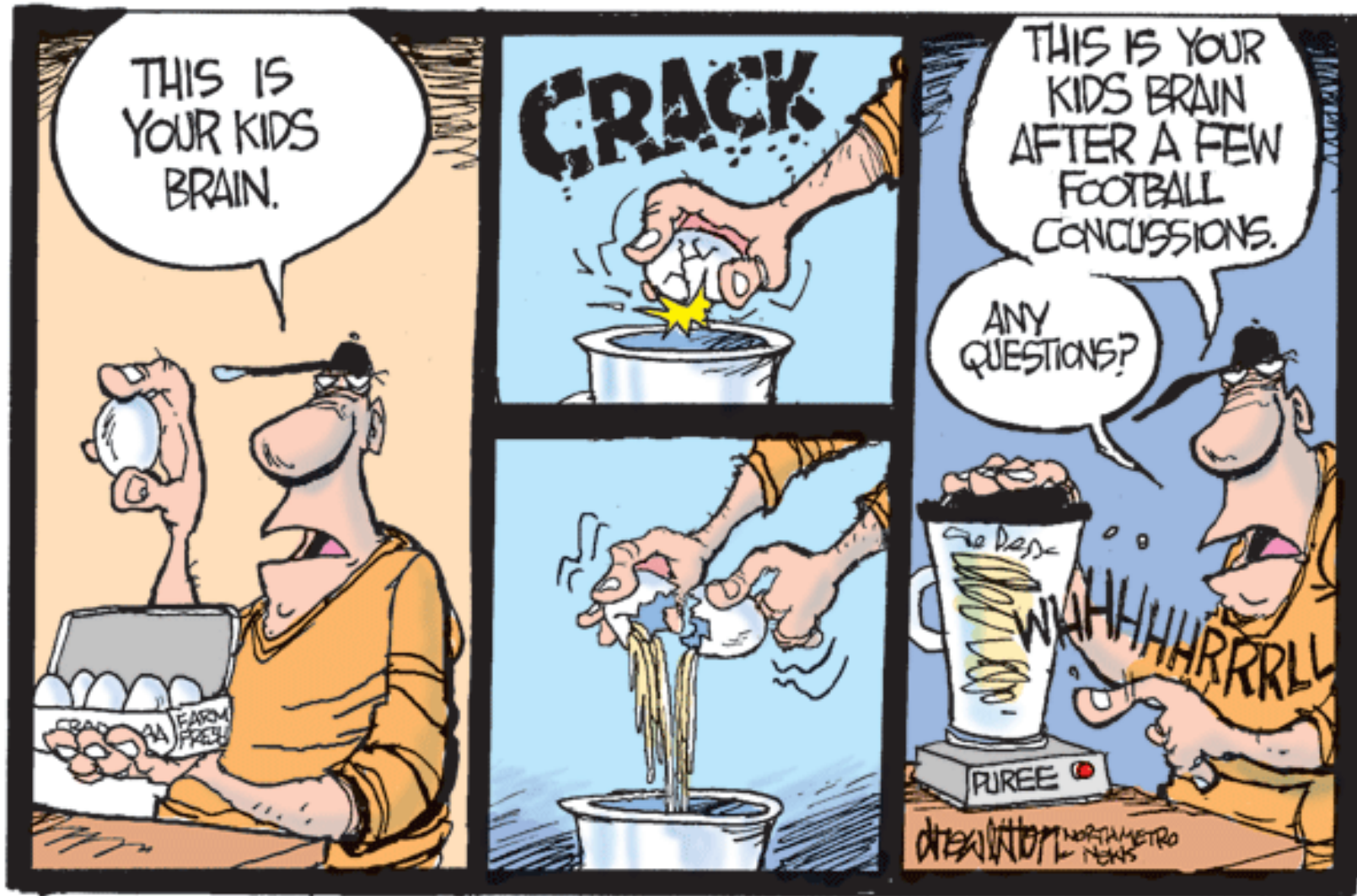
Photo/Phonophobia

Nausea/Vomiting

Fatigue

Personality Changes

# One Mustang Football Game Too Many





# **STRICT Evaluation Requirements**

## **SCAT 3 Child**

### **Sports Concussion Assessment Tool**

**3<sup>rd</sup> Edition**

**Zurich, Switzerland 2012**

**Acknowledged by:**

**FIFA - IIHF - IRB - FEI**

**Olympic Committee**

# SCAT3 Child

The SCAT3 Child is a standardized tool for evaluating injured youth athletes for concussion and can be used in athletes aged from 5 to 12 years and older. It superceeds the original SCAT and the SCAT2 Child published in 2005 and 2009. For older persons, ages 13 and over, use the SCAT3. The SCAT3 is designed for use by medical professionals. Preseason baseline testing with the SCAT3 can be helpful for interpreting post-injury test scores.

# SCAT 3 Child cont.

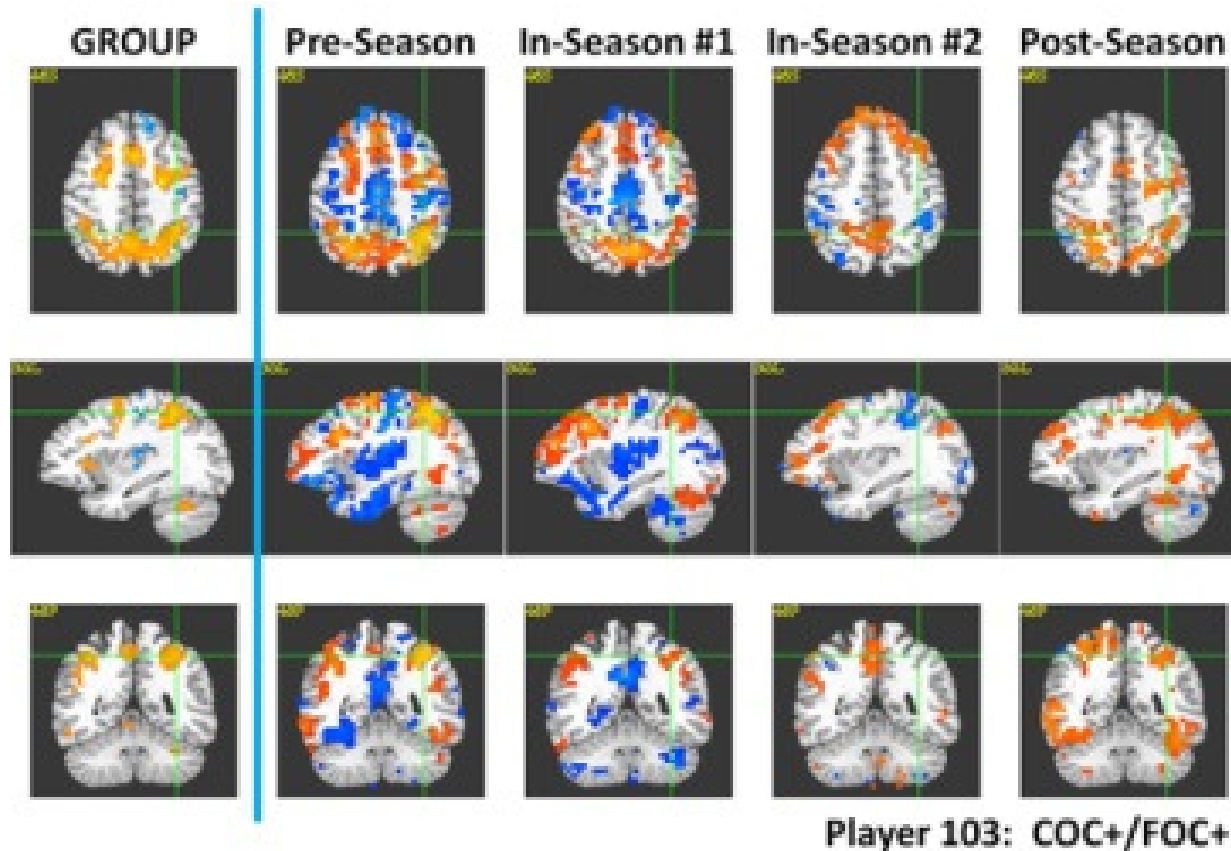
1. **Glasgow Coma Scale-** Eyes, Verbal, Motor Response
2. **Maddocks Score-** Venue, Before or After Lunch, Coach's Name, Winning/Losing
3. **Child Report-** Self Reported Symptom List- "I have..."
4. **Parent Report-** Parent feedback (not on field)- "S/he is not acting like her/himself".
5. **Cognitive Asemnt.-** Month, Date, Day, Year, Time- Count Backwards & Recall
6. **Neck Examination-** Do you have head or neck pain?
7. **Balance Exam-** Double Leg/Single Leg/Tandem
8. **Coordination Examination-** 5 Finger to nose touches
9. **SAC Delayed Recall-** Repeat as many words as you can from

#5

# Emergency Situations

LOSS of CONSCIOUSNESS  
DETERIORATING MENTAL STATUS  
POTENTIAL SPINE/CRANIAL INJURY  
PROGRESSING/WORSENING SYMPTOMS  
VOMITING MORE THAN ONCE  
BRUISES AROUND EYES or BEHIND EARS  
MULTIPLE INJURIES- Possible Fx & Concussion  
Hx of NEUROSURGERY or SEIZURE

# 2 Year Study High School Football Players



**Purdue University- Journal of Biomechanics**  
**21/24 HS Football Players w/ no concussions**  
**Shows a Decrease in Brain Function after season**

# Concussion Management

1. All young athletes suspected of having a concussion are removed from play. In some cases adults can return to play after asymptomatic and no Sx after 20 minutes of exertion.
2. DO NOT
  - Partake in strenuous activity
  - Take medication w/o consulting physician
  - Take Aspirin, Ibuprofen, or Sleeping Pills
3. DO REST- Physical and Cognitive
4. Follow strict RTP criteria

# Athlete Instructions

**Call your doctor or return to the ER if any of the following occur:**

- a. Becomes sleepy or is difficult to awaken.**
- b. Vomiting**
- c. Trouble with balance**
- d. The eyes move oddly, difficulty with focusing, unequal pupil size**
- e. Persistent or increasing headache**
- f. Restlessness or irritability, personality changes**
- g. Convulsions or seizures**
- h. New swelling at the area of the head injured**
- i. Increased neck stiffness**
- j. Numbness**
- k. Ringing in the ears**
- l. Shortness of breath**
- m. Confusion**
- n. Visual problems**
- o. Urinary or bowel incontinence**

# Return To Play Criteria (RTP)

**Primary Goal is to Prevent**

## **Second Impact Syndrome**

**Definition-** The premature return to sports after an initial concussion and the symptoms of the initial concussion exponentially increase even though the athlete may not have engaged in any major game induced impact. This condition is potentially disabling or fatal.



# Second Impact Syndrome



# RTP (cont.)

## **Graded, Stepwise RTP Protocol**

- 1. No Activity- Cognitive and physical rest until athlete acts and functions normally in everyday ADL's**
- 2. Light Aerobic Exercise- Walking, Swimming, Stationary Bike- 70% MPHR**
- 3. Sport-Specific Exercises- skating drills for hockey, running drills for soccer**
- 4. Non-contact Training Drills- progressive- passing/hand-off drills in football, dribbling and kicking drills in soccer, serving drills in tennis**
- 5. Full Contact/Complex Movement Practice- Following Medical Clearance**
- 6. Return To Play in Competitive Endeavors**
- 7. If stage is failed due to return of symptoms, athlete goes to previous stage**

**Stages 2 through 6 require 24 hours between stages w/ observation**

# NJCCSIR Concussion Position Statement

It is the position of the New Jersey Chiropractic Council on Sports Injuries & Rehabilitation (NJCCSIR) that doctors of chiropractic maintaining a license in the State of New Jersey are qualified to evaluate, diagnose, and manage patients and athletes of all ages who have sustained a concussion. A doctor of chiropractic has been trained in the appropriate neurological examination procedures necessary to evaluate post concussive effects and, subsequently, considered competent after graduating from an accredited chiropractic college or university. With this training comes the authority to return a concussion patient back to recreational endeavors or professional obligations RTP (Return To Play) if current guidelines are followed. Concussion specific training is included in the core curriculum of the Certified Chiropractic Sports Physician and Chiropractic Sports Diplomate Programs. Licensure by the State of New Jersey, and continuing education programs provided to DCs by the ANJC and the NJCCSIR offer the skills and evaluation tools to a doctor of chiropractic practicing in New Jersey to be capable of managing a patient with mTBI (mild Traumatic Brain Injury) at a more advanced level. Additionally, the ACBSP and CDC offer educational options for the interested chiropractor. It is strongly recommended that all New Jersey healthcare practitioners who expect to evaluate and manage concussion patients also study the most recent literature and participate in continuing education. It should be stated that the current science on concussion, while continually in transition, is well defined and RTP decisions remain in the realm of clinical judgment on an individual basis. **It is strongly encouraged by the NJCCSIR that any doctor of chiropractic or other health professional, attempting to diagnose and manage a patient that has suffered from a concussion be familiar with the guidelines established at the 2012, 4<sup>th</sup> International Conference on Concussion in Zurich, Switzerland, and the evaluation protocol in the Sports Concussion Assessment Tool (SCAT3).** When additional, up-to-date versions of the previous or other references are officially publicized, the new documents should be considered the latest protocols to follow. As is standard practice, should the case be deemed outside the clinical capability of the chiropractor or other practitioner, the patient should be referred to the appropriate professional.- **Acknowledged and supported by ACA-SC**

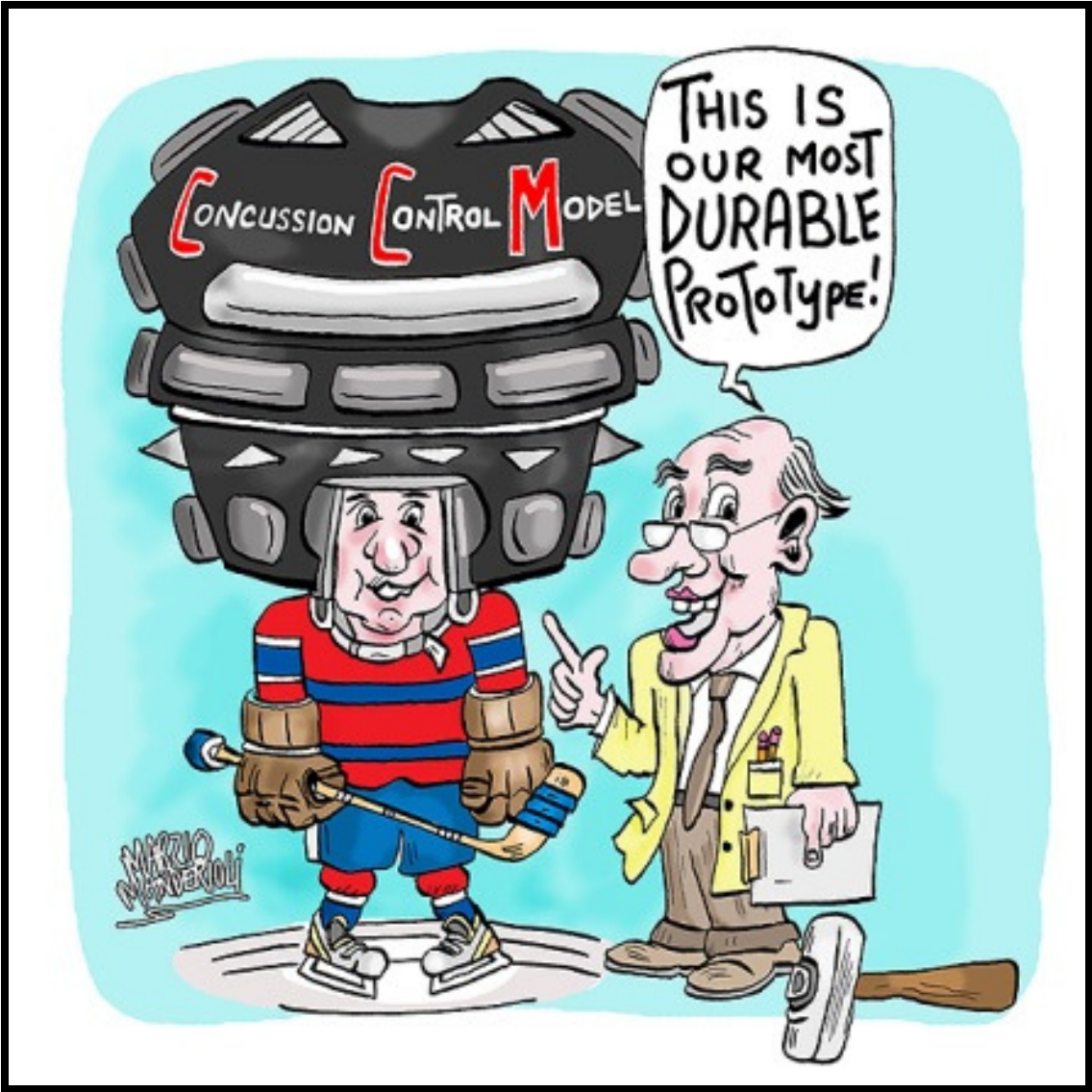
# New Jersey State Law

## Law- AB 2743- 2010

- C.18A:40-41.4 Removal of student athlete from competition, practice; return.
- 4. A student who participates in an interscholastic sports program and who sustains or is suspected of having sustained a concussion or other head injury while engaged in a sports competition or practice shall be immediately removed from the sports competition or practice. A student-athlete who is removed from competition or practice shall not participate in further sports activity until he or she is evaluated by a physician or other licensed healthcare provider trained in the evaluation and management of concussions, and receives written clearance from a physician trained in the evaluation and management of concussions to return to competition or practice.

**Each school has its own guidelines. More flexibility in recreational sports.**

# The Future of Concussion Prevention



# Resources

<http://www.acbsp.com>

<http://www.acsm.org>

<http://www.cdc.gov/concussion>

<http://www.impacttest.com>

<http://www.aan.com>

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