Title: Concussion Injury In Contact Sports

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Abstract: Concussion in sports has long been a recognized entity and has been managed and evaluated in a number of different ways. This project gives a guide to sideline sport attendants or trainers of acute management of concussion in sport as well as the Prague guidelines for returning athletes to sport in a post concussion. The premise of the algorithm is to assure that long term sequelae are avoided by assuring that the player is asymptomatic and returns to play in a stepwise fashion that allows evaluation at each stage to assure the risk to the player is low.

The SCAT Card

(Sport Concussion Assessment Tool)

Medical Evaluation

Name: _____ Date _____

Sport/Team: _____ Mouth guard? Y N

1) SIGNS

Was there loss of consciousness or unresponsiveness?	Y	N
Was there seizure or convulsive activity?	Y	N
Was there a balance problem / unsteadiness?	Y	N

2) MEMORY

Modified Maddocks questions (check correct)

At what venue are we? __; Which half is it? __; Who scored last?__

What team did we play last? __; Did we win last game? __?

3) SYMPTOM SCORE

Total number of positive symptoms (from reverse side of the card) = _____

4) COGNITIVE ASSESSMENT

5 word recall	(Examples)	Immediate	Delayed (after concentration tasks)
Word 1 _____	cat	___	___
Word 2_____	pen	___	___
Word 3 _____	shoe	___	___
Word 4 _____	book	___	___
Word 5 _____	car	___	___

Months in reverse order:

Jun-May-Apr-Mar-Feb-Jan-Dec-Nov-Oct-Sep-Aug-Jul (circle incorrect)

or

Digits backwards (check correct)

5-2-8	3-9-1	_____
6-2-9-4	4-3-7-1	_____
8-3-2-7-9	1-4-9-3-6	_____
7-3-9-1-4-2	5-1-8-4-6-8	_____

Ask delayed 5-word recall now

5) NEUROLOGIC SCREENING

	Pass	Fail
Speech	___	___
Eye Motion and Pupils	___	___
Pronator Drift	___	___
Gait Assessment	___	___

Any neurologic screening abnormality necessitates formal neurologic or hospital assessment

6) RETURN TO PLAY

Athletes should not be returned to play the same day of injury.

When returning athletes to play, they should follow a stepwise symptom-limited program, with stages of progression. For example:

1. rest until asymptomatic (physical and mental rest)
2. light aerobic exercise (e.g. stationary cycle)
3. sport-specific exercise
4. non-contact training drills (start light resistance training)
5. full contact training after medical clearance
6. return to competition (game play)

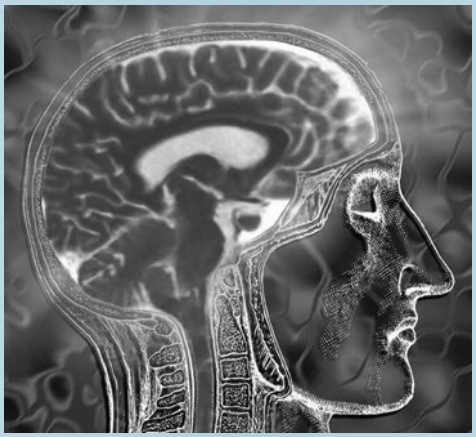
There should be approximately 24 hours (or longer) for each stage and the athlete should return to stage 1 if symptoms recur. Resistance training should only be added in the later stages.

Medical clearance should be given before return to play.

For explaination of administration please see SCAT training instructions on the Internet

PREVENTION:

Concussions cannot be prevented completely, however, many can be avoided or minimized. Some things that should be used to prevent concussions are proper use of protective gear, proper coaching, or referees appropriately implementing rules that lead to game safety. Prevention can also focus on proper treatment of concussions to prevent further brain damage for players that have head injuries. To help with this kind of prevention, it is important to recognize concussions and assure that players do not make unnecessary risks.



Information sources:

AOSSM
The American Orthopaedic Society for Sports Medicine
A world leader in sports medicine education, research, communication, and fellowship.

McCrory, Paul; et al. "Summary and Agreement Statement of the 2nd International Conference on Concussion in Sport,Prague 2004." Clin J Sport Med _ Volume 15, Number 2, March 2005

University of Minnesota

Sports Medicine

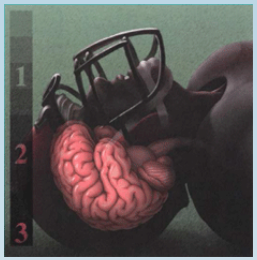
Concussion Injuries In Contact Sports

A Resource for Evaluating Athletes

"61% Of All Athletes Will Suffer Concussion During Their Career..."

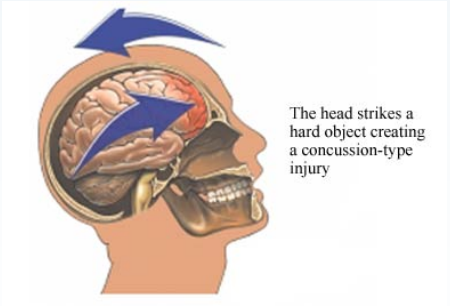
-AOSSM

Concussion



Head injury is a common problem occurring in sports. It typically results from a direct hit to the head resulting in head jarring. The sudden impact to the head causes the brain to move within the skull and results in injury to the brain. Many times these head injuries cause people to get "knocked out" or lose their memory temporarily, but sometimes they will only feel a minor "bell ringer."

It is important to take all of these head injuries seriously because they can sometimes cause severe brain damage or even death if the player does not recover completely before returning to play. Outlined here are some suggestions of how to approach a player who has had a head injury. Please be aware that this guide does not take the place of medical management, and players who have suffered a head injury should be evaluated properly by a medical doctor.



The head strikes a hard object creating a concussion-type injury

Is there a concussion present?

If an event occurs in which a player has impact to the head, it is possible that a concussion has occurred. In this instance, the player should be looked at for the following:

Difficulty with Brain functions: (Noticed by Others)

Unaware of surroundings or game scores
Confusion
Memory loss
Non-responsive
"Knocked-out"
Loss of attention
Changes in behaviors
Slowness in answering questions.

Symptoms of Brain Injury: (Player may say)

Headache
Dizziness
Nausea
Vomiting
Vision Problems
Hearing problems
Numbness in body parts
Paralysis
Balance problems

A Head Injury Occurred, What Should I Do?

1. Look for "Red Flag" signs.

   If present immediately call a paramedic and facilitate player transport to an Emergency Room.

2. Determine if any concussion symptoms are present.

   If present, the player may not return to play during the current practice period or game. If concussion is present, the player should be monitored by a trainer or medical professional every 5-10 minutes to watch for improvement of any symptoms and to monitor for worsening. SCAT questionnaire can be used to aid in the evaluation of a players concussion.

3. Followup:

   Players with concussions should see their medical provider to determine the extent of their concussion and make sure that the symptoms are resolving. The doctor should guide decisions about the player retuning to sports.

RED FLAGS

Seizure/Convusions
Loss of Conciousness more than 1 minute
Multiple Concussions over time
Neck or Spine injury
Worsening Condition
Excessive Bleeding
"Blown" Pupils

When to Play:

Guidelines for returning players to sports after concussions:

1. No exertional activity until asymptomatic.

2. When the athlete appears clear, begin low-impact activity such as walking, stationary bike, etc.

3. Initiate aerobic activity fundamental to specific sport such as skating, running, etc.

4. Begin non-contact skill drills specific to sport such as dribbling, ground balls, batting, etc.

5. Full contact in practice setting.

6. If athlete remains without symptoms, he or she may return to play.

EACH STAGE SHOULD BE MAINTAINED FOR AT LEAST 24 HOURS

ATHLETE MUST REMAIN ASYMPTOMATIC TO PROGRESS TO THE NEXT LEVEL.

IF SYMPTOMS RECUR, ATHLETE MUST RETURN TO PREVIOUS LEVEL.

MEDICAL CHECK SHOULD OCCUR BEFORE CONTACT.