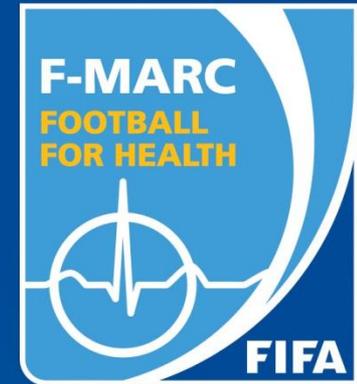


Head Games: The coach and head injury



Donald T. Kirkendall

FIFA Medical Assessment and Research Centre

Duke Center for Learning Health Care

Duke Sports Medicine



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3 strikes and
your done

No LOC.
So OK

>conc = CTE

Helmets
work

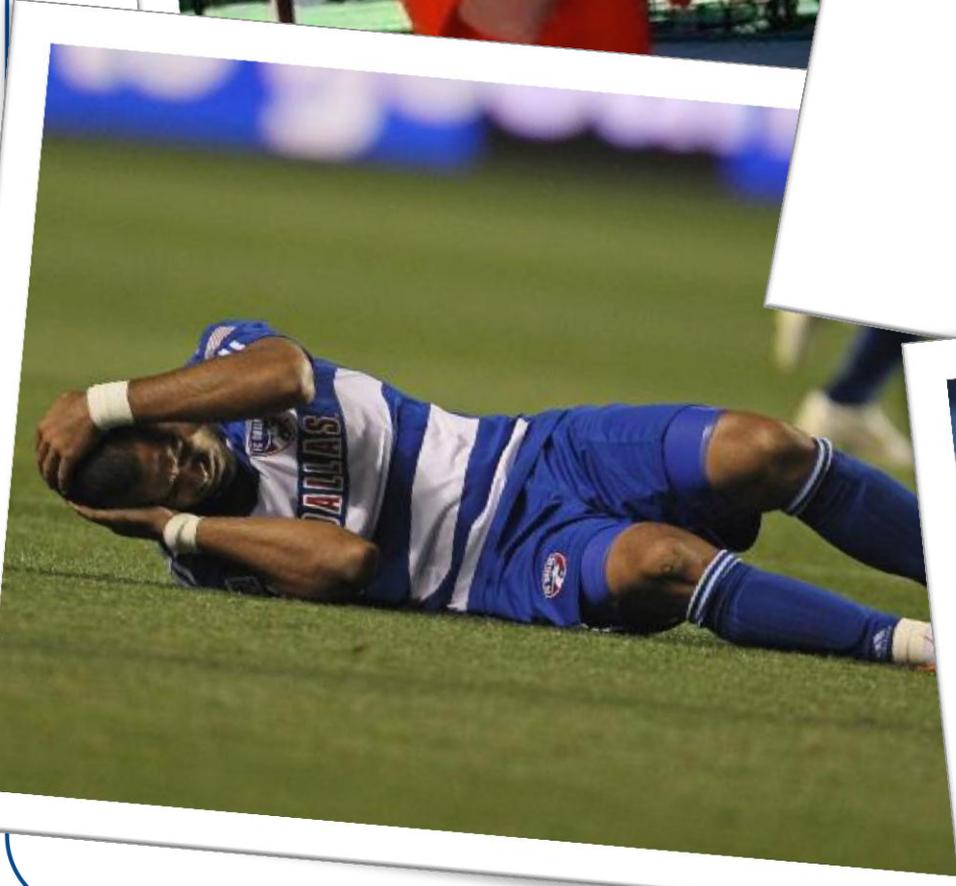
A boys injury

Next one >
this one

Concussions are
obvious



ICD-9-CM Codes ^a	Description
Initially recommended for use, regardless of survival status	
800.0-801.9	Fracture of vault or base of the skull
803.0-804.9	Other and unqualified and multiple fractures of the skull
850	Concussion
851	Cerebral laceration and contusion
852	Subarachnoid/ subdural, extradural hemorrhage after injury
853	Other/ unspecified intracranial hemorrhage after injury
854	Intracranial injury of other and unspecified nature
Subsequently recommended for inclusion, regardless of survival status^c	
950.1-950.3	Injury to the optic chiasm, optic pathways, or visual cortex
959.01	Head injury, unspecified
995.55	Shaken Infant Syndrome
Recommended for inclusion, but only for fatal events identified from death certificates	
873.0-873.9	Other open wound of head
905.0	Late effect of fracture of skull and face bones
907.0	Late effect of intracranial injury without mention of skull fracture



















Traumatically induced transient disturbance of brain function . . .
. (aka MTBI, albeit on the low severity end of spectrum) . . .
Self limited in duration and resolution.



All concussions are MTBI, but not all MTBI are concussions



Physical

Headache

Nausea

Vomiting

Balance

Dizzy

Vision

Fatigue

Light/noise sensitive

Numb/tingling

Dazed/stunned

Cognitive

'foggy'

Slowed down

Concentration

Remembering

Forgetful

Confused

Answers slowly

Repeats Q's

Emotional

Irritable

Sad

More emotional

nervousness

Sleep

Drowsiness

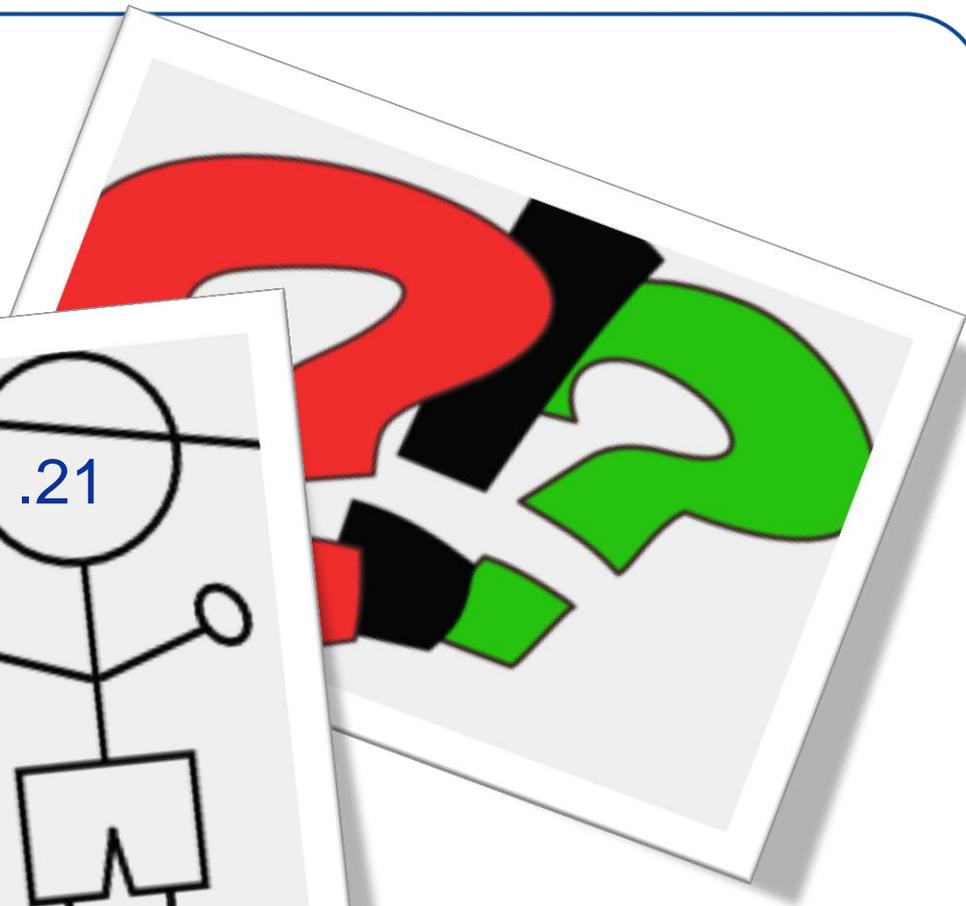
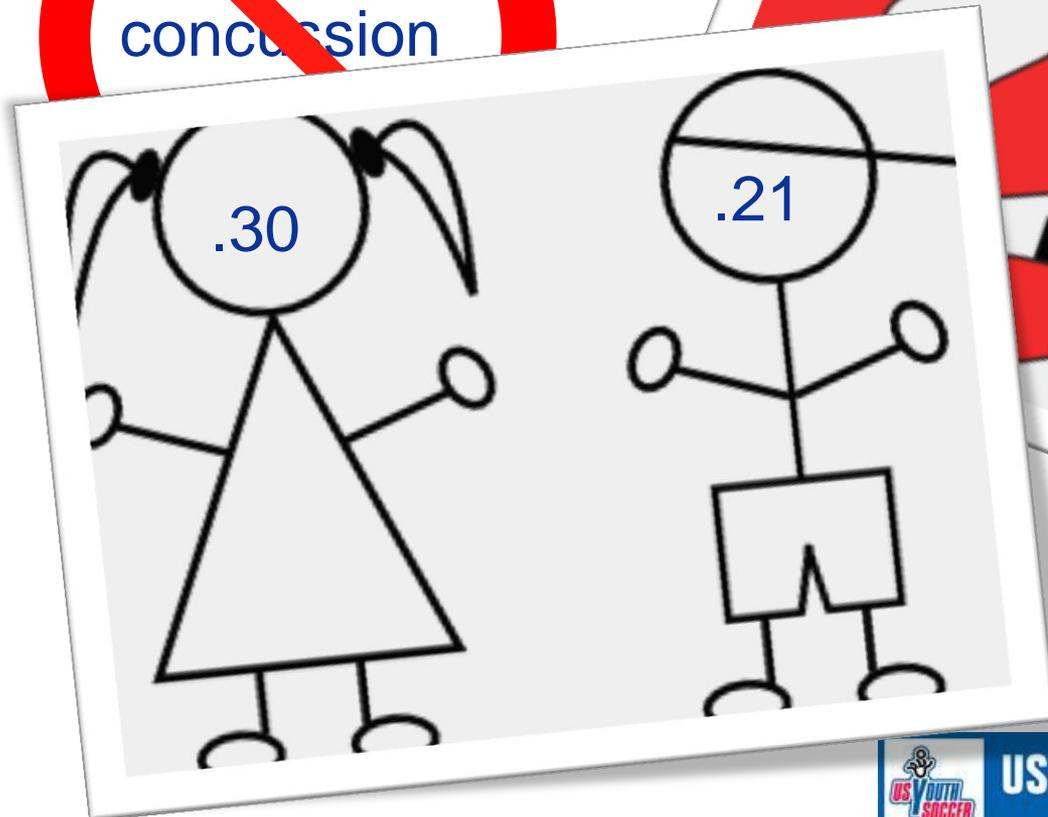
Sleep more

Sleep less

Difficulty falling asleep

A photograph of a group of people, including men and children, standing on a green soccer field. They are gathered in a loose circle, some looking towards the camera. The background shows a chain-link fence, trees with autumn foliage, and a utility pole. A large, white, thought-bubble-shaped graphic is overlaid on the lower half of the photo, containing the text 'How many are we likely to see?'.

How many are we likely to see?





Easy to spot, right?





Sport
Position
style of pl



History

Injury mechanism

Physical

Neuro

Neuro

Blood

Image



8-9/10 clear in a week

Symptoms

Balance

SIS

Cognitive function

Post concussion syndrome

Medical, not coaching, decision

From just heading a ball?



ZERO®

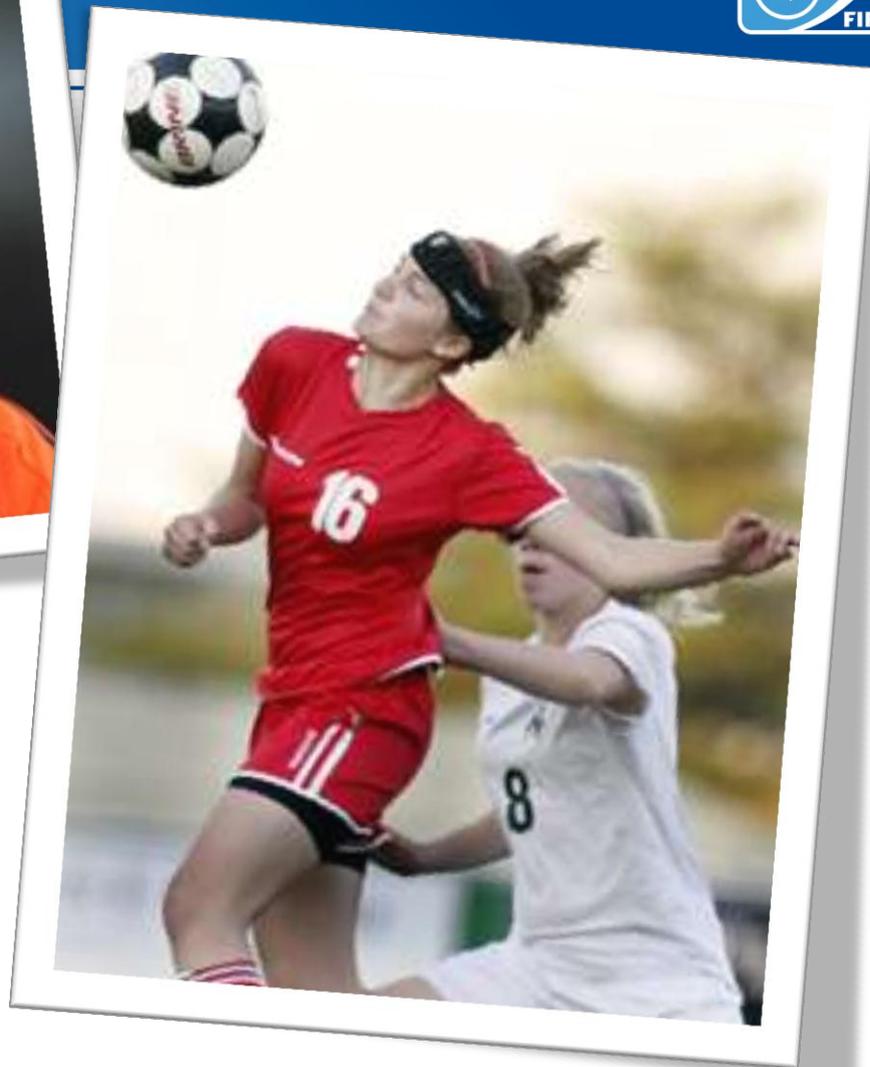


But that study?

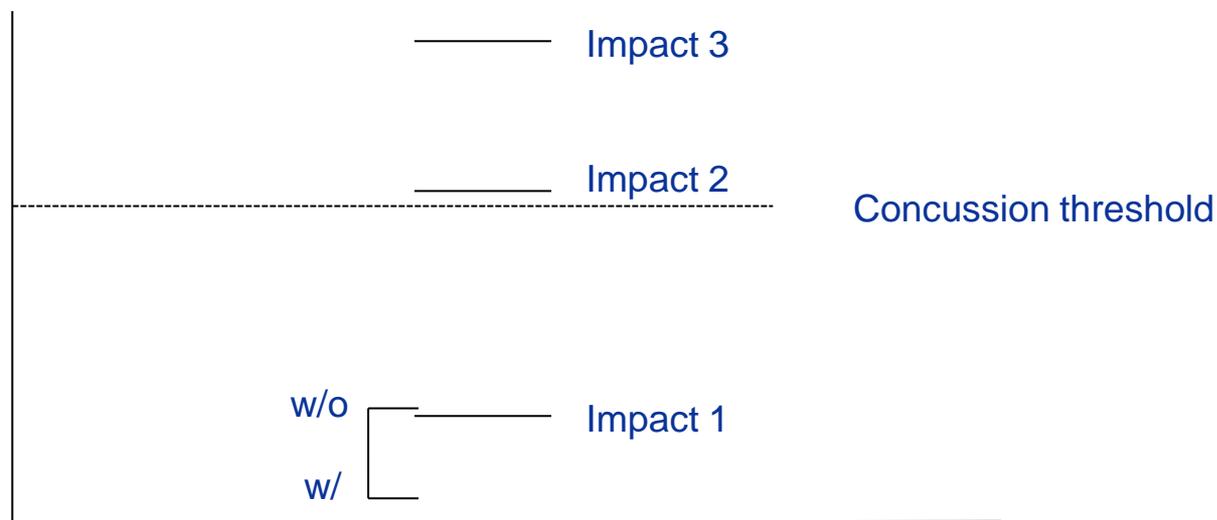


Can't you protect the head?





Head impact





I know. Strengthen the neck!



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Mark Asanovich, Ralph Cornwell Jr. & Matthew Kavalek



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What's with those
computerized tests?






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ImPACT provides computerized neurocognitive assessment tools and services that are used by medical doctors, psychologists, athletic trainers, and other licensed healthcare professionals to assist them in determining an athlete's ability to return to play after suffering a concussion. Learn about our [Best Practices](#).

[▶ LEARN MORE](#) or [▶ PURCHASE](#)

“ After working with ImPACT this fall, our district has not had any problems with it at all. The implementation went well and our concussion policy has worked well for all involved. ”
 - Gennaro Manocchio, ATC, Jamestown High School

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Testing

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Medicine & Science IN Sports & Exercise

The Official Journal of the American College of Sports Medicine
www.acsm-msse.org

... Published ahead of Print

Effects of Concussion on Attention and Executive Function in Adolescents

David Howell¹, Louis Osternig¹, Paul van Donkelaar², Ulrich Mayr³, and Li-Shan Chou¹

¹Department of Human Physiology, University of Oregon, Eugene, OR

²School of Health and Exercise Sciences, University of British Columbia, Kelowna, BC, Canada

³Department of Psychology, University of Oregon, Eugene, OR

Turning Too

View Comments

BS Connecticut) – athletes who have returned to the brain has fully

Massachusetts found that athletes in the state in their cognitive abilities once returning to the

playing field too soon following a concussion.



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What's the coach's main task when it comes to a head injury?

Recognize that it's happened



SCAT2

Sport Concussion Assessment Tool 2



© 2007 FIFA TM

Name _____

Sport/team _____

Date/ time of injury _____

Date/ time of assessment _____

Age _____ Gender M F

Years of education completed _____

Examiner _____

What is the SCAT2?'

This tool represents a standardized method of evaluating injured athletes for concussion and can be used in athletes aged from 10 years and older. It supersedes the original SCAT published in 2005². This tool also enables the calculation of the Standardized Assessment of Concussion (SAC)^{3,4} score and the Maddocks questions⁵ for sideline concussion assessment.

Instructions for using the SCAT2

The SCAT2 is designed for the use of medical and health professionals. Preseason baseline testing with the SCAT2 can be helpful for interpreting post-injury test scores. Words in *italics> throughout the SCAT2 are the instructions given to the athlete by the tester.*

This tool may be freely copied for distribution to individuals, teams, groups and organizations.

What is a concussion?

A concussion is a disturbance in brain function caused by a direct or indirect force to the head. It results in a variety of non-specific symptoms (like those listed below) and often does not involve loss of consciousness. Concussion should be suspected in the presence of **any one or more** of the following:

- Symptoms (such as headache), or
- Physical signs (such as unsteadiness), or
- Impaired brain function (e.g. confusion) or
- Abnormal behaviour.

Any athlete with a suspected concussion should be REMOVED FROM PLAY, medically assessed, monitored for deterioration (i.e., should not be left alone) and should not drive a motor vehicle.

Symptom Evaluation

How do you feel?

You should score yourself on the following symptoms, based on how you feel now.

	none	mild	moderate	severe			
Headache	0	1	2	3	4	5	6
"Pressure in head"	0	1	2	3	4	5	6
Neck Pain	0	1	2	3	4	5	6
Nausea or vomiting	0	1	2	3	4	5	6
Dizziness	0	1	2	3	4	5	6
Blurred vision	0	1	2	3	4	5	6
Balance problems	0	1	2	3	4	5	6
Sensitivity to light	0	1	2	3	4	5	6
Sensitivity to noise	0	1	2	3	4	5	6
Feeling slowed down	0	1	2	3	4	5	6
Feeling like "in a fog"	0	1	2	3	4	5	6
"Don't feel right"	0	1	2	3	4	5	6
Difficulty concentrating	0	1	2	3	4	5	6
Difficulty remembering	0	1	2	3	4	5	6
Fatigue or low energy	0	1	2	3	4	5	6
Confusion	0	1	2	3	4	5	6
Drowsiness	0	1	2	3	4	5	6
Trouble falling asleep (if applicable)	0	1	2	3	4	5	6
More emotional	0	1	2	3	4	5	6
Irritability	0	1	2	3	4	5	6
Sadness	0	1	2	3	4	5	6
Nervous or Anxious	0	1	2	3	4	5	6

Total number of symptoms (Maximum possible 22) _____

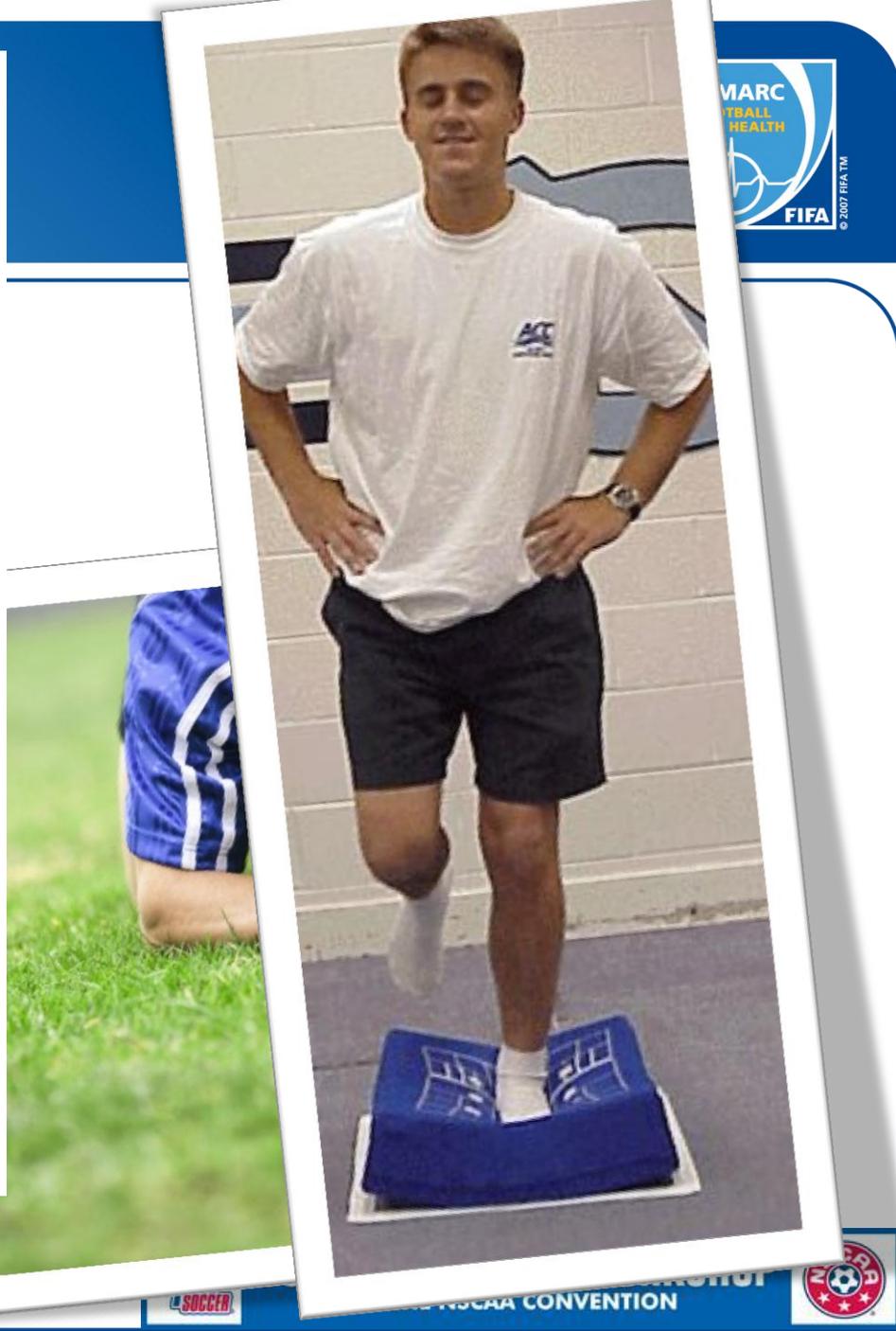
Symptom severity score
(Add all scores in table, maximum possible: 22 x 6 = 132)

Do the symptoms get worse with physical activity? Y N
Do the symptoms get worse with mental activity? Y N

Overall rating

If you know the athlete well prior to the injury, how different is the athlete acting compared to his / her usual self? Please circle one response.

no different very different unsure



CONVENTION

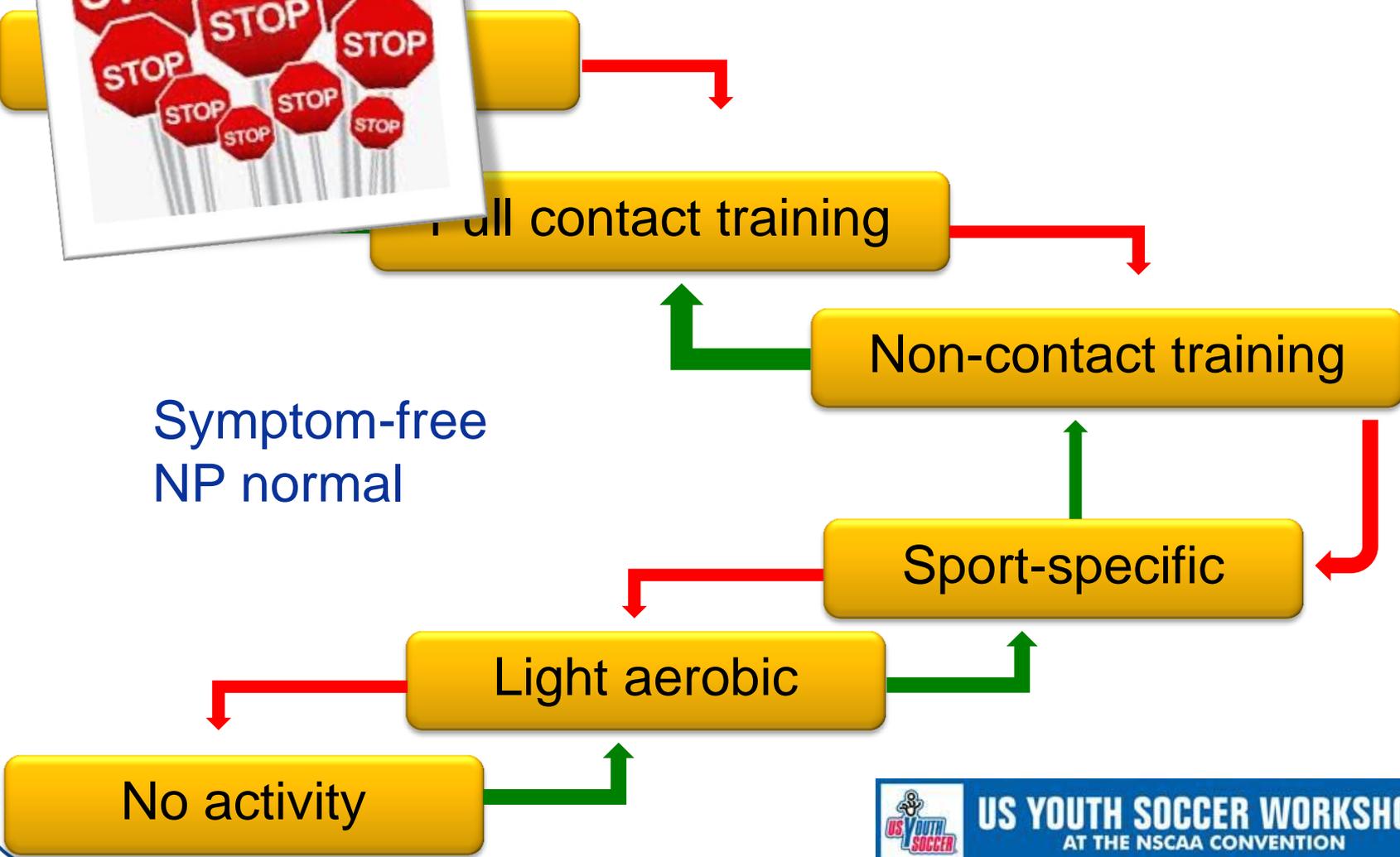




From the office of Robert Cantu, MD

1. one exam/day max. incr time, no lengthy homework
2. Only walking allowed. No lifting or anything that risks a fall
3. Avoid unnecessary mental activity.
Nothing that provokes symptoms.
4. Avoid anything that provokes symptoms
5. No physical education

“no head trauma is good head trauma”



Symptom-free
NP normal

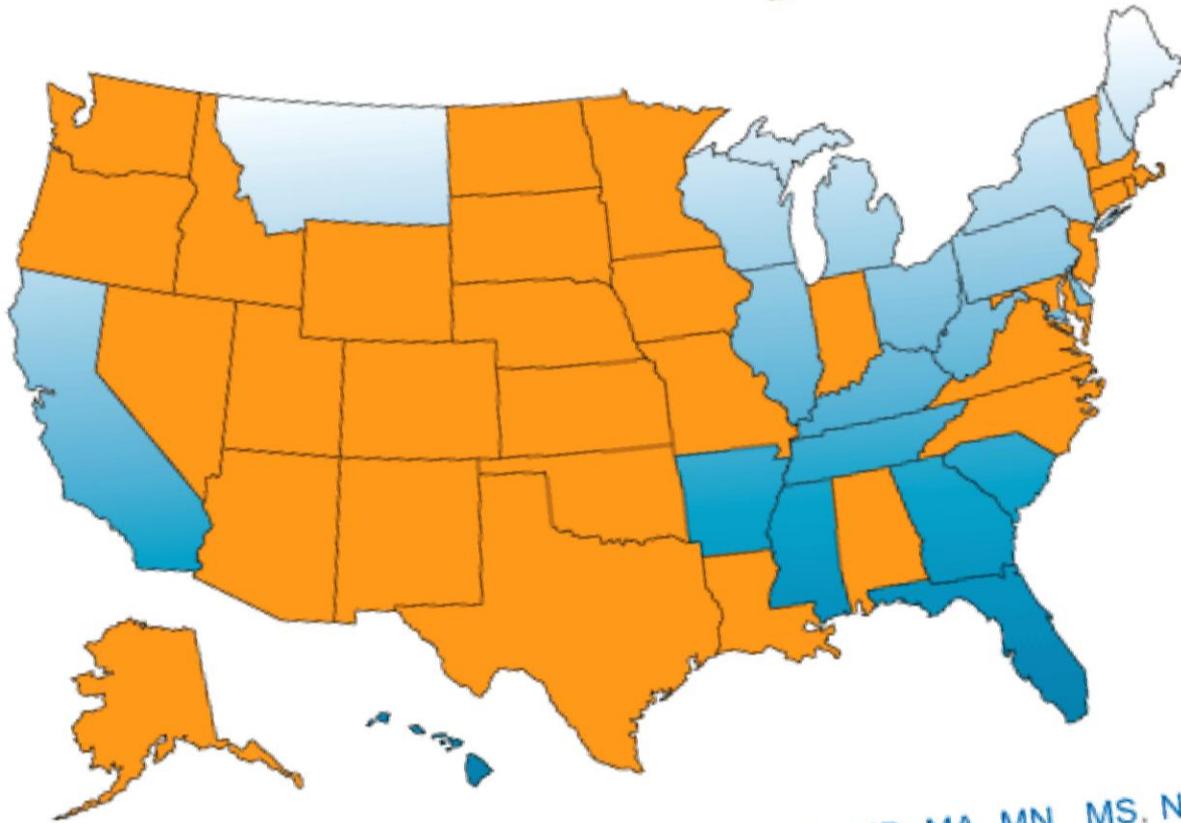
From the office of Robert Cantu,

1. **NEVER** play w/ symptoms
2. Best treatment: physical & cognitive
3. Properly managed, the player will get better
4. If not, risk of longer recovery, post concussion syndrome

“no head trauma is good head trauma”



■ Has state concussion law



AL, AK, AZ, CA, CO, CT, DC, ID, IL, IN, IA, KS, LA, MD, MA, MN, MS, NE, NV,
NJ, NM, NC, ND, OK, OR, RI, SD, TX, UT, VT, VA, WA, WY





Summary and agreement statement of the first International Conference on Concussion in Sport, Vienna

M Aubry, R Cantu, J Dvorak, T Graf-Baumann, K Johnston (Chair), J Kelly, M Lovell, P McCrory, W Meeuwisse, P Schamasch (the Concussion in Sport Group)

Recommendations for the improvement of safety

Journal of Athletic Training 2009;44(4):434-448
© by the National Athletic Trainers' Association, Inc
www.nata.org/jat

Consensus Statement on Concussion in Sport from the 4th International Conference on Concussion in Sport in Zurich, November 2008

Paul McCrory, MBBS, PhD*; Willem Meeuwisse, MD, PhD†; Jiri Dvorak, MD§; Mark Aubry, MD||; Robert Cantu, MD††#

*University of Melbourne, Parkville, Australia; †University of Rehabilitation Institute, Toronto, Ontario, Canada; §FIFA Medical Centre, Zurich, Switzerland; ||International Ice Hockey Federation, Ottawa, Ontario, Canada; ††International Rugby Board

ORIGINAL ARTICLE

Summary and agreement statement of the 2nd International Conference on Concussion in Sport, Prague 2004

P McCrory, K Johnston, W Meeuwisse, M Aubry, R Cantu, J Dvorak, T Graf-Baumann, J Kelly, M Lovell, P Schamasch

See end of article for authors' affiliations

Correspondence to:
Associate Professor
McCrory, PO Box 93,
Shoreham, Victoria 3916,

Br J Sports Med 2005;39:196-204. doi: 10.1136/bjism.2005.018

In November 2001, the 1st International Symposium on Concussion in Sport was held in Vienna, Austria, for the improvement of safety and health of athletes who suffer concussion in soccer, and other sports. The 2nd International Symposium on Concussion in Sport was held in Prague, Czech Republic in November 2004. The date of the Vienna consensus recommendations, which are presented here

consensus statement

Concussion in Sport

4th International Consensus Conference



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4th

International
Consensus
Conference on

Concussion
in Sport

We are pleased to announce the 4th International Consensus Conference on Concussion in Sport. The meeting will adhere to a NIH consensus format with an open public session on 1-2 November 2012, hosted by FIFA at the Home of FIFA in Zurich.



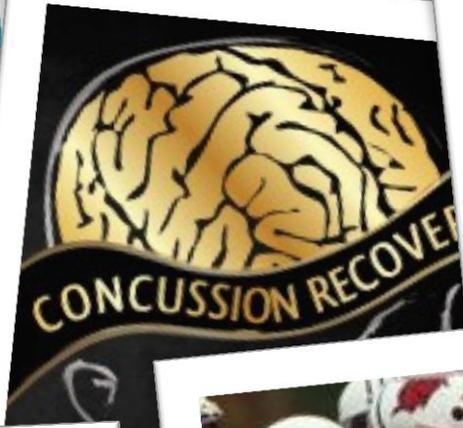
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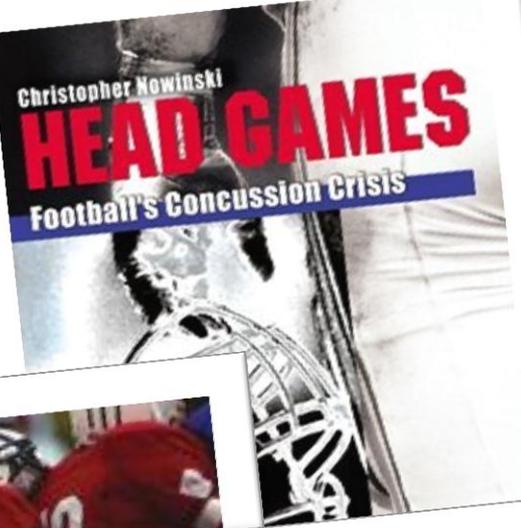


"Parents of teenage athletes should take a careful look at this book."
—Abigail Zucker, MD, *The New York Times*

THE CONCUSSION CRISIS

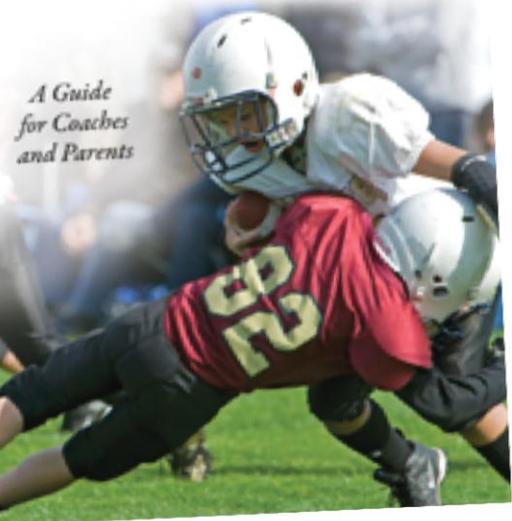


Christopher Nowinski
HEAD GAMES
Football's Concussion Crisis



WILLIAM P. MEEHAN III, MD

Kids, Sports, and Concussion



*A Guide
for Coaches
and Parents*



Concussion and Our Kids

AMERICA'S LEADING EXPERTS
HOW TO PROTECT YOUNG ATHLETES
AND KEEP SPORTS SAFE

ROBERT CANTU
AND MARK HYMAN

Throwaway Players



The Concussion Crisis
From Pee Wee Football to the NFL

Gay Culverhouse
Former President of the Tampa Bay Buccaneers



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Activity

Committee on Sports-Related Concussions in Youth

Type: Consensus Study
 Topics: Children, Youth and Families, Education, Public Health
 Boards: Board on Children, Youth, and Families

Activity Description

An IOM committee will conduct a study on sports-related concussions in youth, from elementary school through young adulthood, including military personnel and their dependents. The committee will review the available literature on concussions, in the context of developmental neurobiology, in terms of their causes, relationships to hits to the head or body during sports, and the effectiveness of protective devices and equipment. The committee will also review concussion risk factors, screening and diagnosis, treatment and management, and long-term consequences.

Dates and agendas for future open sessions of the committee will be posted on this web page. Please click the "Sign Up Now" button on the right hand side of this page to sign up for the project list serv. You may email us at YouthSportsConcussions@nas.edu if you have any questions.

Funding for the study was provided to the CDC Foundation by the National Football League.

Stay up to date!

Receive regular emails about the IOM's work.

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Committee Members

- Robert Graham, Chair
- Frederick Rivara, Vice Chair

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Study Staff

- Morgan A. Ford, Study Director

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return to play safely

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Document	Description	Post Date
	Computerized Cognitive Baseline Testing - a Best Practice for Concussion Management Axon Sports 2012 Workshop	Feb 29, 2012
	Concussion: Notification Form (Aug 2011)	Feb 02, 2012
	Concussion: Procedure and Protocol (Aug 2011)	Feb 02, 2012

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Head Games: The coach and head injury

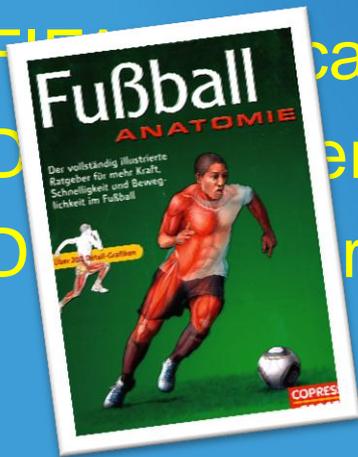


Donald T. Kirkendall

FIFA Medical Assessment and Research Centre

Director for Learning Health Care

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