

2022 GWCO Congress



Concussion: Don't Just 'Shake It Off'

Robert Reed Jr OD

Concussion: Don't Just "Shake it Off"

Dr Robert Reed Jr OD

GWCO Congress

October 8, 2022– 1hr



TV
MA
LV



GOLF † Classic by 3 strokes over Henrik Stenson. Garcia: 12th career European Tour ESPN

**HOW I THOUGHT
I'D LOOK DURING
THE APOCALYPSE:**



HOW I REALLY LOOK:



**COVID
really
did
a
“number”
on
my
head!**

FINANCIAL DISCLOSURES & Disclaimer

Nobody pays me to
sell you their stuff.

I think you're so
important I want to
share with YOU.

If I offend somebody,
I'll apologize now...



Course objectives

Create a common language

Brain basics

How concussion works

Symptoms & diagnosing TBI

Optometric evaluation methods

Optometric treatment options

REAL patient cases

CLASS DESCRIPTION

Some areas of vision have always been the “home” of Optometry (glasses, eye exams, contact lenses).

Some areas are new domains (treating eye infections, diabetes, allergies, Meibomian gland disease). However, concussion is a “NEW” area Optometry is ideally suited & trained for. In fact, Optometry could be considered THE authority to go to for evaluation & management. Learn what’s up & what the fuss is all about.

Concussion's 'names'

Punch drunk

Getting your bell rung

Knocked silly

Knocked for a loop

See stars

Can't see straight

Coo-coo

Your clock cleaned

In a fog

Knocked into next week

Loopy

????

Common Language

Pre-quiz

- 1) How many symptoms does it take for a head injury to qualify as a concussion?**
- 2) Who's more susceptible to a concussion, a man or a woman?**
- 3) Wearing a helmet prevents concussion?**
- 4) Have experts identified the part of the brain where concussion occurs?**
- 5) Does genetics play a role in concussion?**

Common Language

Pre-quiz

- 6) Who takes longer to recover from a concussion?
Child * Adolescent * Adult
- 7) Can an X-Ray, MRI, or Cat Scan diagnose concussion?
- 8) Are concussions only caused by a direct blow to the head?
- 9) What is the only proven treatment for concussion?
- 10) Which of the 3 pain relievers is best to take for a headache after a concussion?
Aspirin * Tylenol * Advil

Just the Facts, Ma'am

Concussion Stats

2.5 – 4 million concussions a year

50-80% aren't reported or treated

80-90% will resolve in 7-10 days

Losing consciousness isn't necessary

20% chance per year under age 20

Under 20yo is longer to recover

2nd concussion doubles recovery time

40% who died <20yo had 2nd concussion

Vision Facts

Vision connected to 98% of brain

10% of vision works in the eye,

90% is brain process & interpret

**Visions #1 function is to connect
to the world, then keep you alive!**

Vision leads & directs the body

If vision is off, body won't recover

W I L L S M I T H



BASED ON A TRUE STORY

CONCUSSION

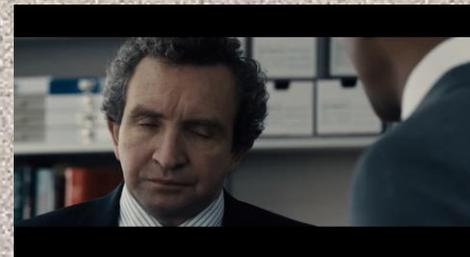
EVEN LEGENDS NEED A HERO

CHRISTMAS

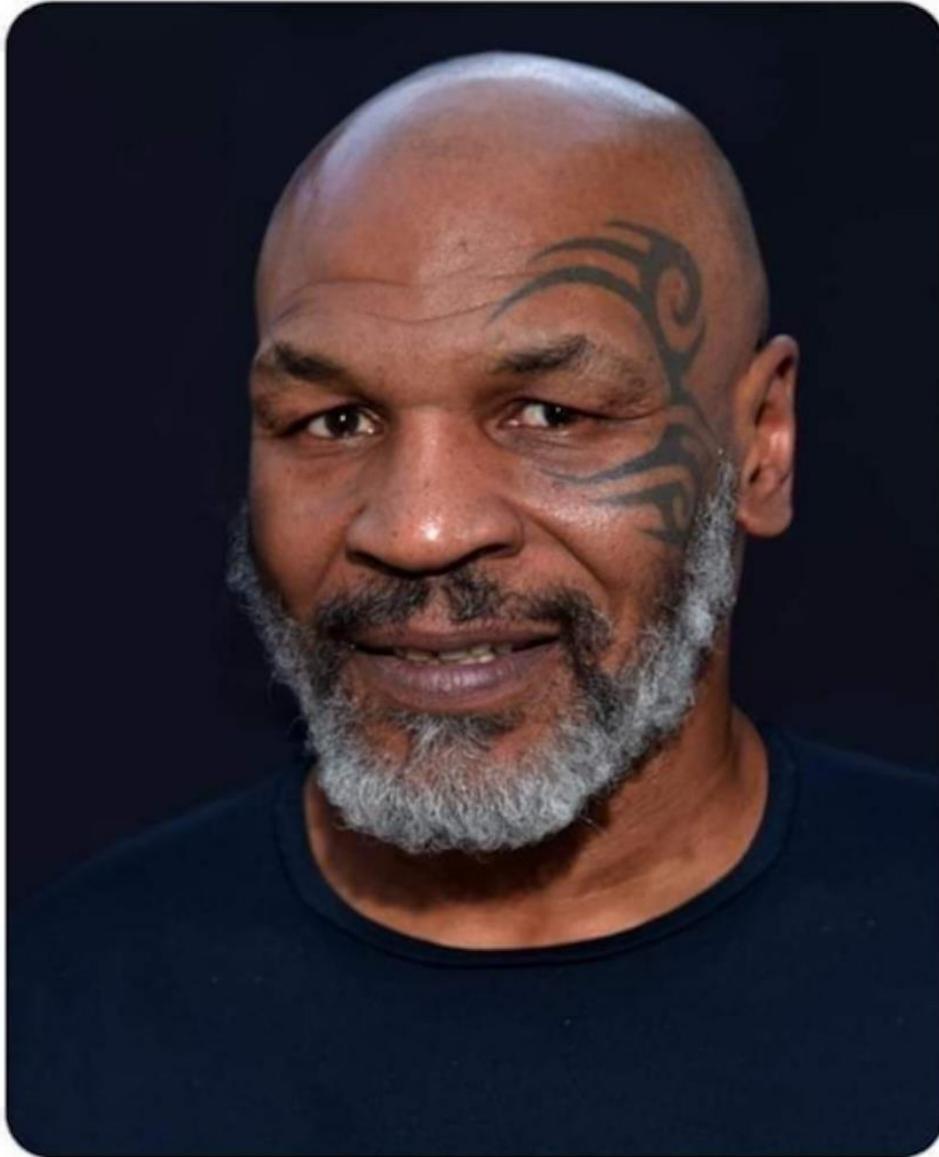
PG-13

Join the Discussion
Concussion-Movie.com
#ForTheGame

Homework Watch this movie

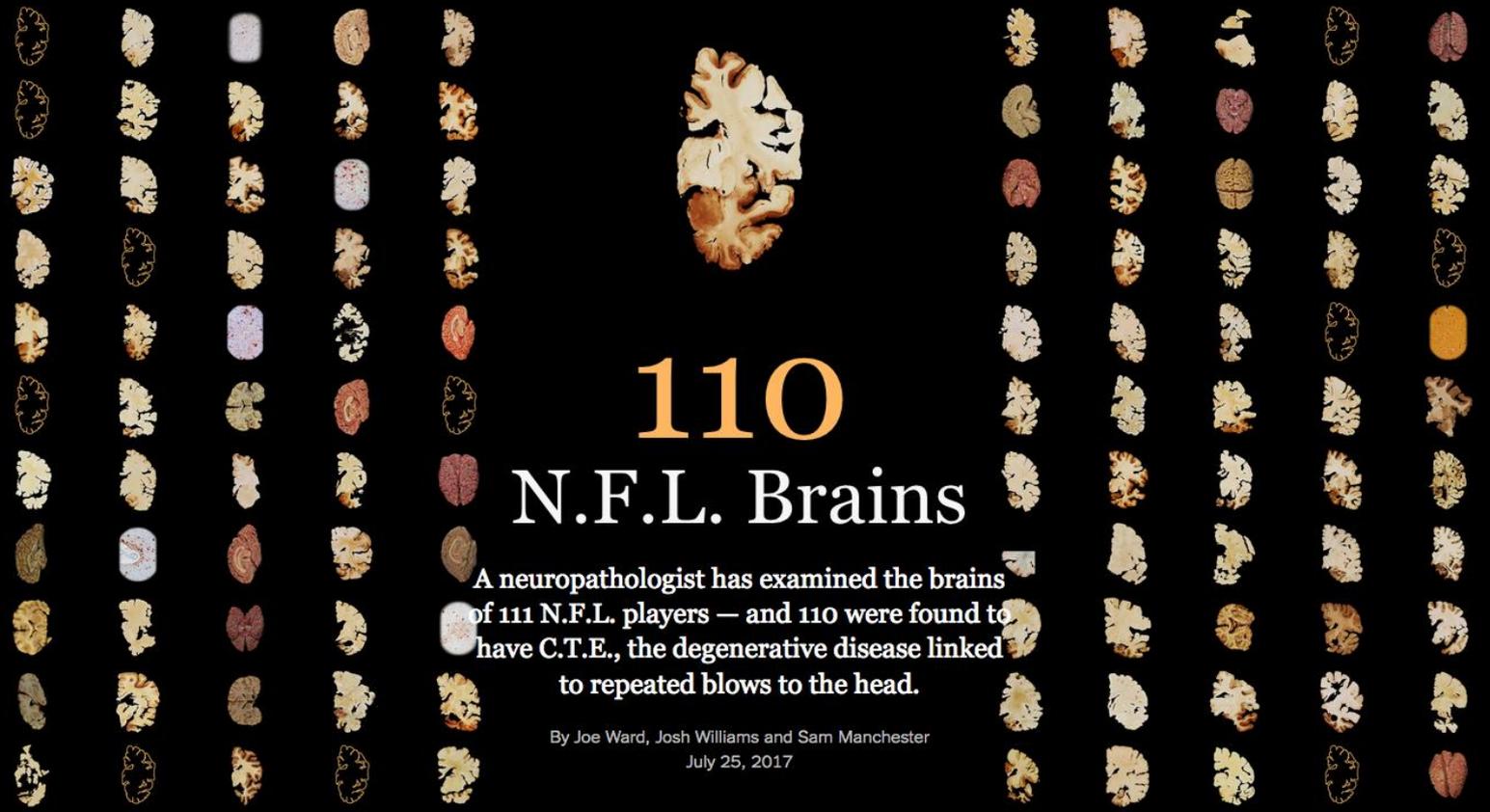


Next Year's Oscars Host



New York Times

July 25, 2017

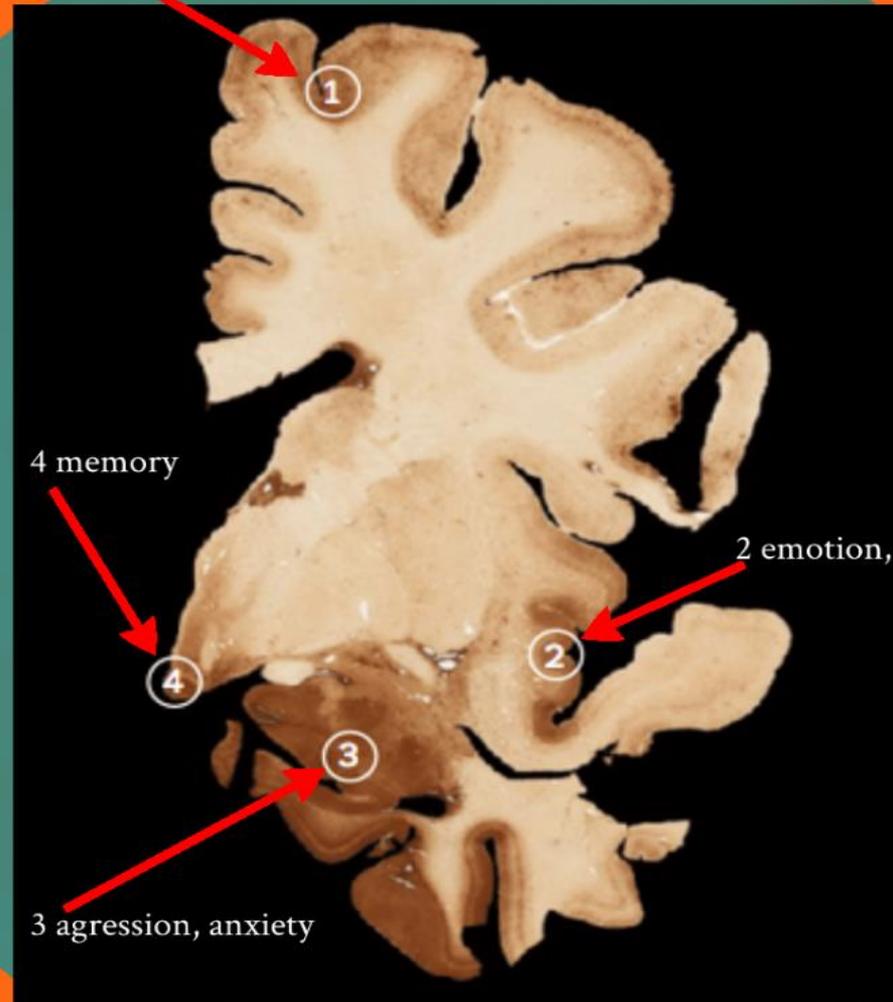


110
N.F.L. Brains

A neuropathologist has examined the brains of 111 N.F.L. players — and 110 were found to have C.T.E., the degenerative disease linked to repeated blows to the head.

By Joe Ward, Josh Williams and Sam Manchester
July 25, 2017

1 executive function, planning, reasoning



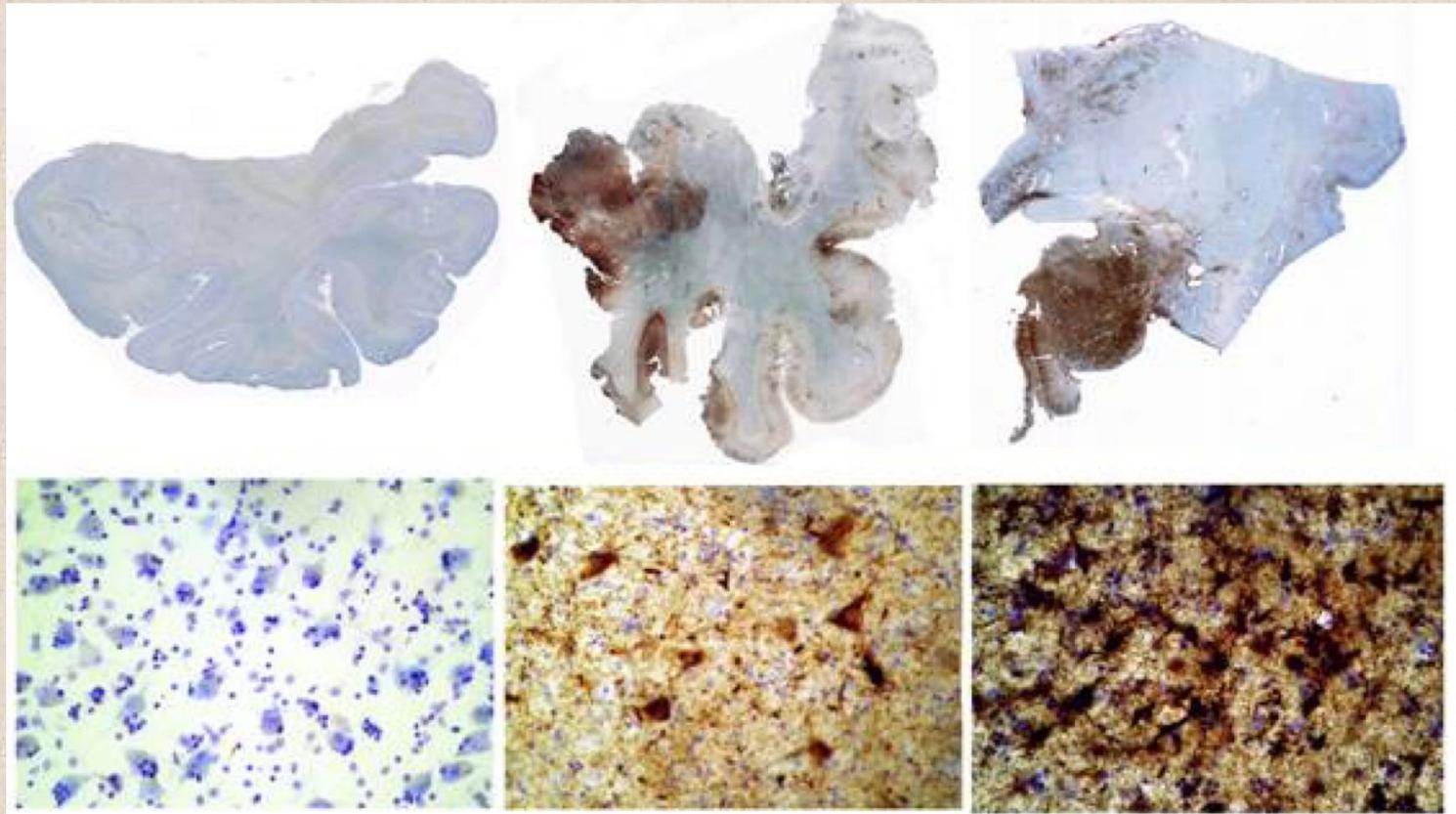
4 memory

2 emotion, self-awareness

3 aggression, anxiety

Ken Stabler's brain

Tau Proteins



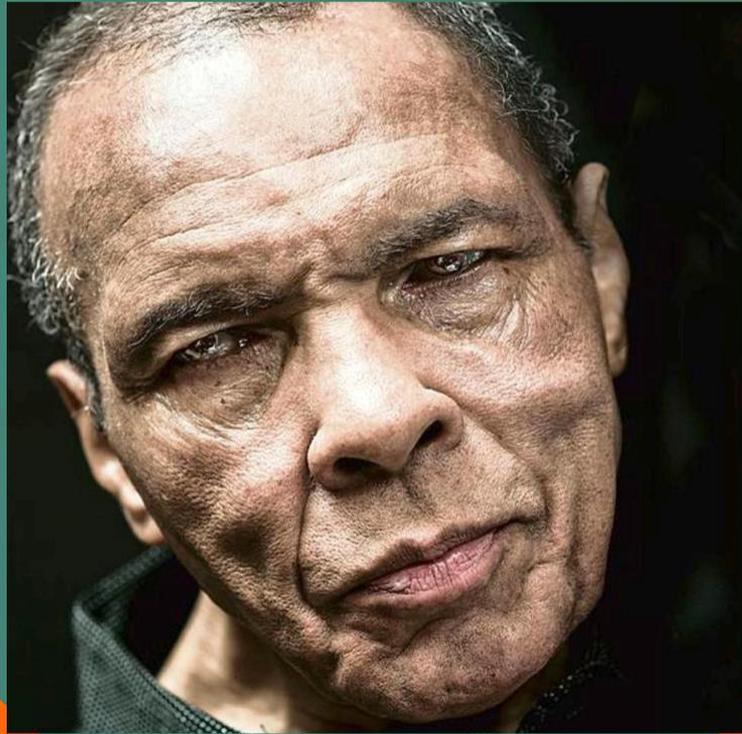
normal
age 65

football player
age 65

pro boxer
age 70

Ali

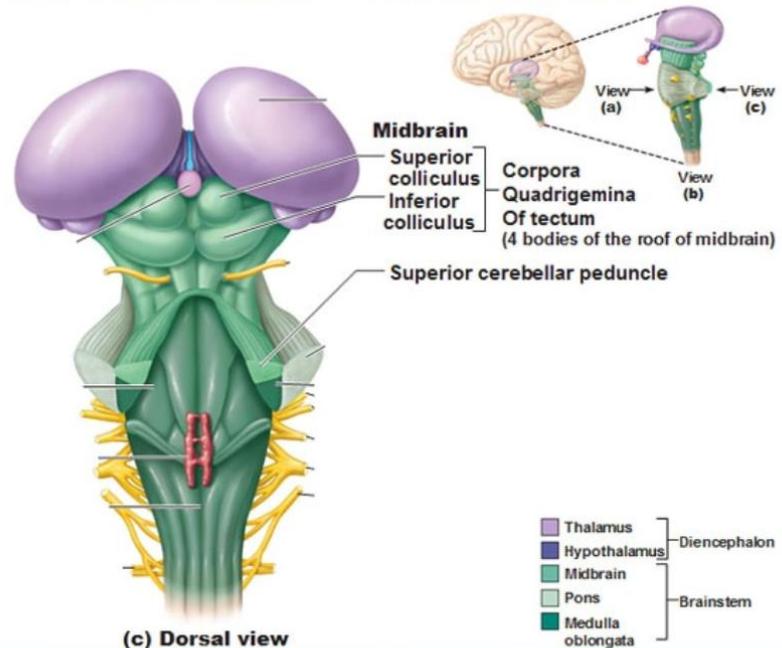
June 3, 2016(74) died



Brain Basics

life functions

The Brain Stem—The Midbrain



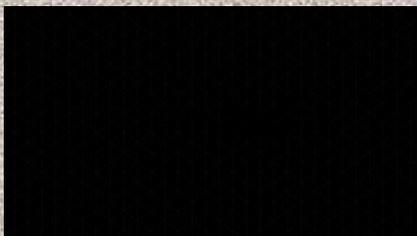
breathing, heart, swallow, reflexes, ANS,
loss of alertness, dizzy/vertigo,
balance(vestibular)

How concussion works

Types of concussions

Concussions are sometimes **graded** on the severity of their symptoms:

- **grade 0:** headache and difficulty concentrating
- **grade 1:** headache, difficulty concentrating, and a dazed feeling for less than a minute
- **grade 2:** grade 1 symptoms, with a longer period of feeling dazed, possibly accompanied by dizziness, confusion, amnesia, ringing in the ears, and irritability
- **grade 3:** loss of consciousness for less than a minute
- **grade 4:** loss of consciousness for longer than a minute



Dxing TBI

preliminary diagnosis priorities

TABLE C-1 Glasgow Coma Scale

Response Type	Response	Points
Eye Opening	Spontaneous: Eyes open, not necessarily aware	4
	To speech: Nonspecific response, not necessarily to command	3
	To pain: Pain from sternum/limb/supraorbital pressure	2
	None: Even to supraorbital pressure	1
Motor Response	Obeys commands: Follows simple commands	6
	Localizes pain: Arm attempts to remove supraorbital/chest pressure	5
	Withdrawal: Arm withdraws to pain, shoulder abducts	4
	Flexor response: Withdrawal response or assumption of hemiplegic posture	3
	Extension: Shoulder adducted and shoulder and forearm internally rotated	2
	None: To any pain; limbs remain flaccid	1
Verbal Response	Oriented: Converses and oriented	5
	Confused: Converses but confused, disoriented	4
	Inappropriate: Intelligible, no sustained sentences	3
	Incomprehensible: Moans/groans, no speech	2
	None: No verbalization of any type	1

Risky Sports/Activities

Football

Cheerleading

Soccer

Bicycles

Volleyball

Motorcycles

Rugby

Car accidents

Hockey

Military deployment

Boxing

School playgrounds

MMA

Elderly falls

Symptoms of TBI

Double vision

Blurred vision

Attention issues

Spatial disorientation

Memory problems

Pulling away from objects

Loss of consciousness

Slowed reaction time

Photophobia

Vomiting

Seeing things moving that are stationary

Headaches

Dizzy/nausea

Staring

Reading difficulty

Foggy thinking

Mood changes/anger

Insomnia

Balance issues

Ringing in ears

Slurred speech

Experience “concussion”

Try on various glasses to see how disruptive different levels of concussion can be

Diagnosing TBI

- ~~X-Ray, CAT scan, MRI~~
- SAC (Standardized assessment of concussion)
- CSI (Concussion symptoms inventory)
- SCAT (Sport concussion assessment tool)
- ACE (Acute concussion evaluation)
- ImPact Concussion Test
- Stick reaction test
- King-Devick cards

Stick Drop Test

3' long ½" dowel rod & standard hockey puck

Drill 5/8" hole in center of hockey puck

Attach dowel thru hole

Mark each inch starting from puck on stick

Subject is seated, arm supported

Hand open around puck

Tester drops stick, subject closes hand on rod

Measure distance stopped. 3 trials averaged

Test performed prior to season, in notebook.

Stick Drop Test

U of M study

200 students in sports tested before seasons started

48 had concussion during season (25%)

100% showed >15% larger number on test

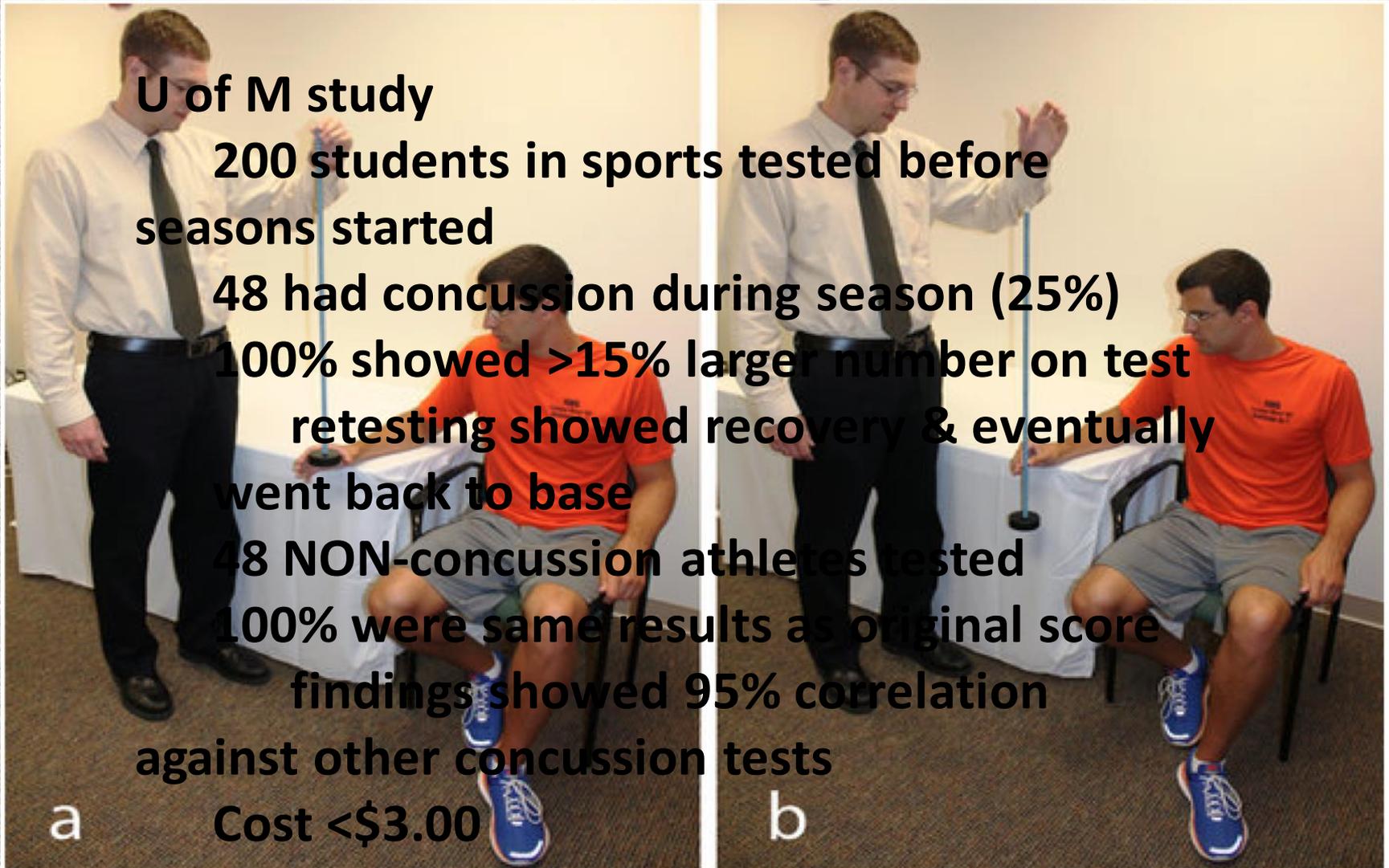
retesting showed recovery & eventually went back to base

48 NON-concussion athletes tested

100% were same results as original score

findings showed 95% correlation against other concussion tests

Cost <\$3.00



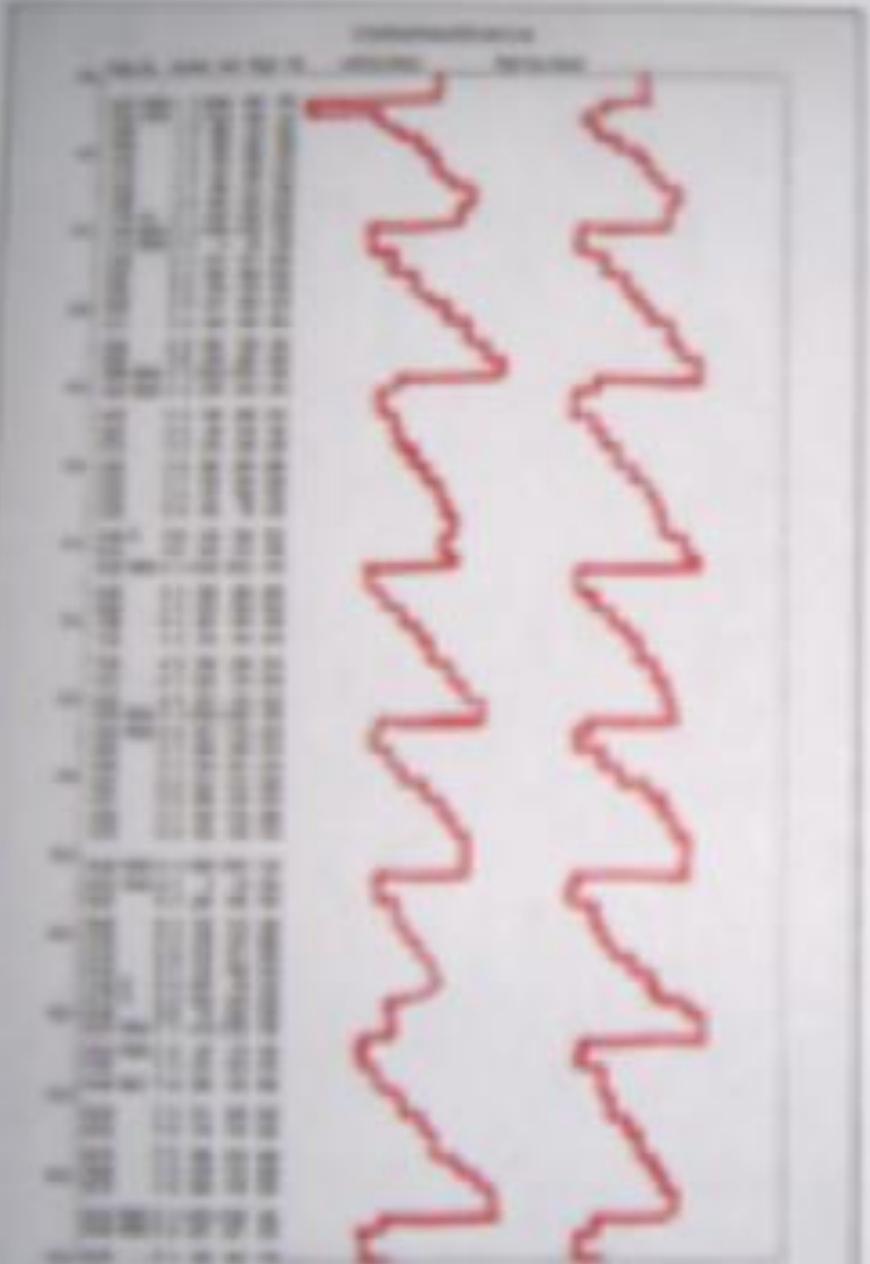
Dr. James T. Eckner of the University of Michigan administering the puck-and-dowel ruler test to check for a possible concussion. Dr. Steven Broglio

King - Devick Cards

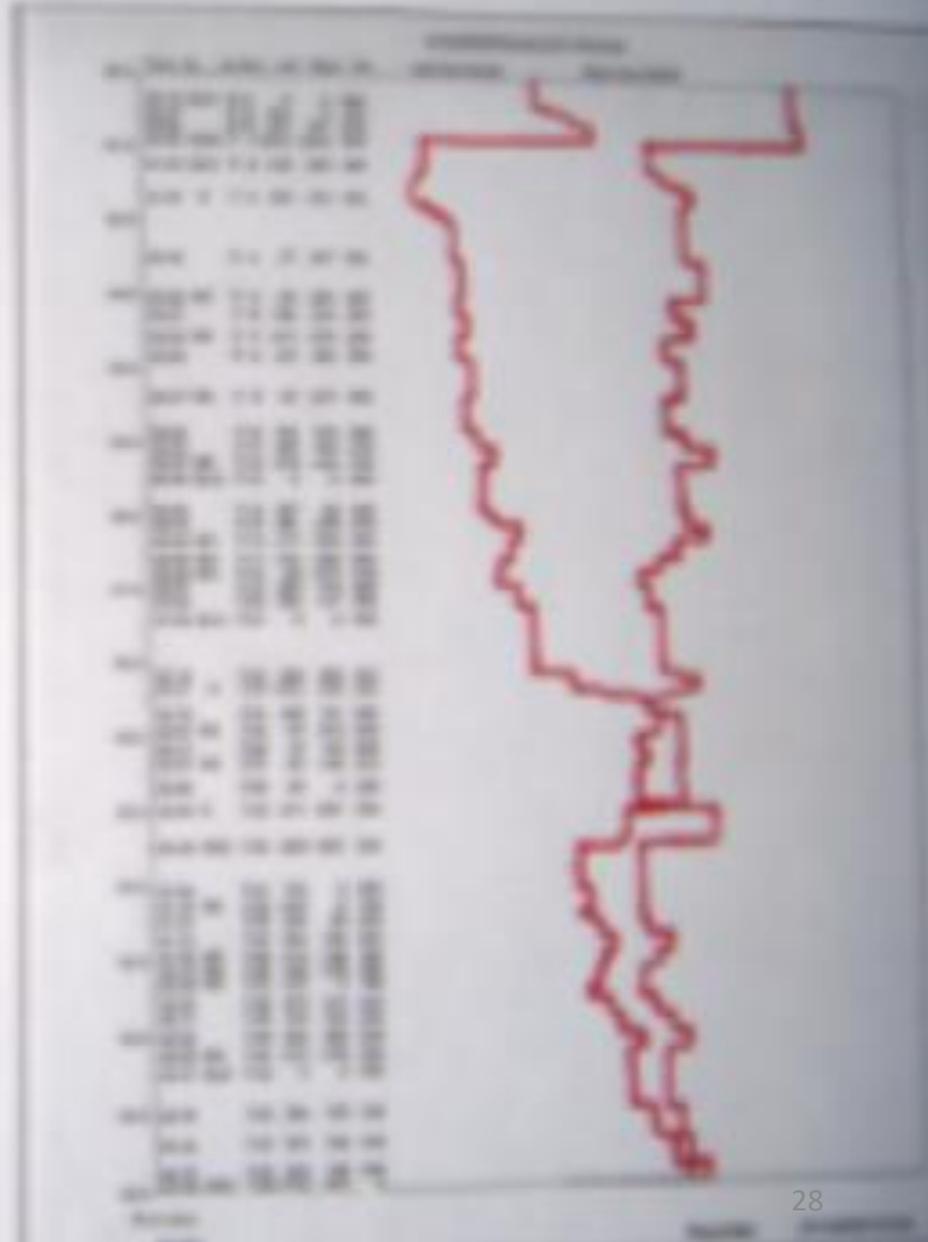
5 4 1 8 0
4 6 3 5 9
7 5 4 2 7
3 2 6 9 4
1 4 5 1 3
9 3 4 8 5
5 1 6 3 1
4 3 5 2 7

TEST III

Good reading eye movements



Poor reading eye movements



Concussion treatments

- Rest – phys

concussion diet



Vision Therapy

Hidden considerations

1/3 of people binocular system doesn't work, so eyes can't work together

1/3 of people binocular system isn't perfect, but "close enough" so brain makes up difference...after concussion, brain can't mask

1/3 of people binocular system works fine, but after concussion brain can't, so they have symptoms until brain recovers, or is re-trained.

Physical Therapy

know when to refer

RETURN TO ACTIVITY STRATEGY

CONSENSUS STATEMENT ON CONCUSSION



Patient examples

- **Morgan the cheerleader**
 - **Brett the UPS guy**
 - **Adam the jock**
- **Mason the mystery**
 - **Bob the doc**

MASON C.

HA

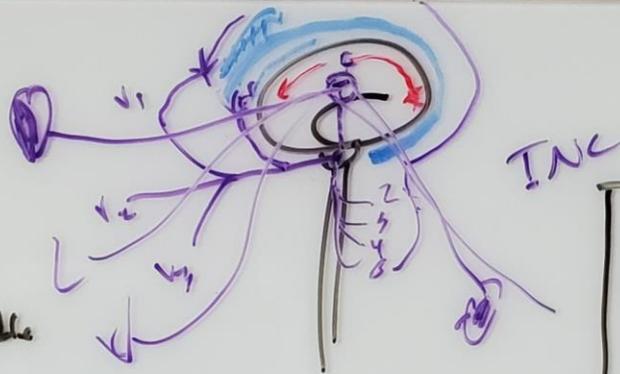
Nausea

[[

memory

Vision: Blurry/Double

Sleep



migraine
sleep
anxiety
& activity

Quartet

Pwly

HA's

motion
sickness

Neck

Fluoride

Migraine

PCP

Brother

AD man

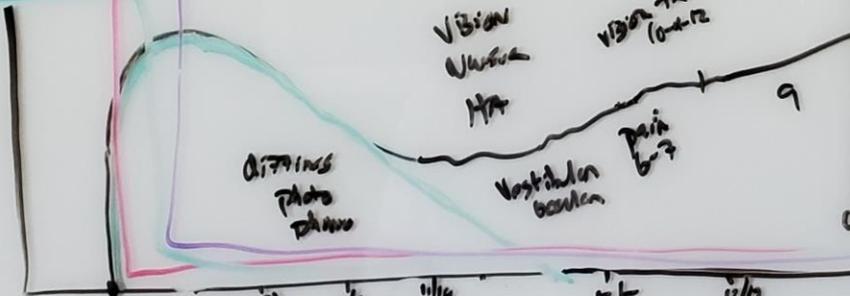
NEOS

critical

(Average
Score)

- ① ↑ hydration
- ② Mg Oxide 400 mg/d
Bz 400 mg/d
- ③ ↑ activity
- ④ Melatonin
- ⑤ Nor triptane 25mg

9th grade
FBall
workignout
Social



✓ done
Eyes/INC

1/2 1/4 1/16
1/8 1/2
Seat D
Series of Hitz(20)
HA + nausea
x 3 days

1/2
MRI
Normal

3 ✓
2 ✓
1 ✓

Emergency
Ajou
A. moving (GR?)



Post Quiz

- 1)T or F Concussions may be called many names, but all head injuries should be taken seriously.
- 2)T or F Unconsciousness is necessary for a head injury to be considered a concussion.
- 3)T or F Having a 2nd concussion before a first one has resolved may be fatal.
- 4)T or F Vision is connected to 98% of the brain, so if vision is off, the body will struggle to recover.
- 5)T or F There is a specific part of the brain that is affected by concussion.

Post Quiz

- 6) T or F There are 3 levels of Concussion.
- 7) T or F The brain damage from concussions occurs only from the initial head trauma.
- 8) T or F More than 1/2 of concussion symptoms directly involve vision issues.
- 9) T or F There are many versions of forms to evaluate concussion.
- 10) T or F Binasal occlusion helps the brain reconnect the body with the world.

Closing

**Thank you for all you do for the
profession, your office,
& your patients !!!**

Thank you for your valuable time

Remember your CE credit

Next Up:

Macular Degeneration: A New Breed