

SRC, MTBI, AND HEAD TRAUMA:

Important Recent Findings 2019


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- Knowledge that will change your thinking about concussions
 - Continual evolution of thinking about diagnosis, treatment, and management
 - Necessary assertion that we all need to be universal in our approach
 - Need to 'filter' out claims and cures



Outcomes !

We have no idea

PRE-MORBID CONDITIONS

Cognitive – Learning Disabilities, ADHD, Dyslexia

Psychologic – Depression, Anxiety, OCD, Mood Disorders

Take Home – Pre-morbid mental state is a significant factor in concussion recovery, especially in youth

Collins MW, Grindel SH, McKeag DB, JAMA 282 (10), 1999

Desai N, Wiebe DJ, et al, CJSM 29 (5), 2019

PRESCRIBED EARLY EXERCISE IN POST-CONCUSSION RECOVERY

Ignoring the injury 70's – 80's

Recognizing injury with RTP w/o s&s 80's – 90's

Protocols with RTP after NP equilibration and 'closet' rx – 00's – 10's

Leddy JJ et al, CJSM 29 (5), 2019 – **prescribed early aerobic exercise**

Resulted in earlier recovery 8 v. 23 days (cognitive and psychologic)

Decrease in prolonged recovery incidence

Take home – **Early functional return** is important

EXPOSURE?

How many mTBIs in a contest? How common is it?

Answer – depends

Virginia Tech and Purdue University – used force transducers (HITS) to measure head impacts in football practices – arbitrary definition 60 ntn

10-12 'events'/practice

Indiana University(McKeag) – did NP testing on preseason HS football team
63% of players had measurable change; all had nl NP tests within 12 hours

Take home – What is the exposure? Is it significant?

LIMITATIONS OF NP TESTING

NP testing has reached a dangerous level of use/misuse

Not just considered a tool to add to a clinical evaluation; it is THE tool

Sensitivity and specificity vary

Definition of concussion is not agreed upon

Control data varies

Protocols make it difficult to be anything but absolute in rx

Untoward factors influence results – mental state, fatigue

Take home – Reliability and validity are not mapped, especially for different age groups, cultural groups, and settings

LONG TERM OUTCOMES

CTE? – where are we?

Concern – mTBI as a risk factor for dementia

LoBue C, Munro C, et al, Journal of Alzheimer's Disease 70, 2019 –

Review – sustaining a TBI does not result in worse dementia outcomes with aging

Take home – jury is still out – genetic polymorphisms and predisposition IL-6R CC

Need to understand CTE better

PARTICIPATION – OUTCOME OF PUBLIC PERCEPTION?

- Decrease in overall sports participation – first time
 - Decrease in football, basketball, baseball
 - Football – down 9.5%; Population – up 7.5%
 - Political, cultural divide – ‘red’ states – decrease 6.1%
‘blue’ states – decrease 15.7%
- > 50% American public believe FB to be unsafe (include high-profile athletes)

AGE AT FIRST EXPOSURE

AFE – risk factor for poor concussion outcomes
Current concern with introduction of certain sports to youth

Brett BL, Huber DL, et al, Sports Health 11 (4), 2019
No correlation of AFE (<12 yo) to poor mTBI outcome

Take home – Settle down, everyone
“Death of Football” greatly exaggerated

SPORT MOTIVATION

- Indicator of concussion reporting (yet to be published – 2020)
- 50-70% of all 'concussions' in sport go unreported/undetected/undiagnosed
- Why?
- Autonomous motivation (1 point Δ = 11.5 Δ in reporting)
vs. controlled motivation (1 point Δ = 8.1 Δ in reporting)

Take Home – Perhaps screening athletes by **motivation** will identify those
“at-risk”



There continue to be “gaps” in our mTBI understanding

Everything is not absolute or relevant to protocol use or consensus statements

We need guidance more than rules

Que: Clinical wisdom

“If you don’t know where you are going, You’ll end up someplace else” – Yogi Berra