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Robert P. Astorino
Westchester County Executive

Sherlita Amler, MD, Commissioner
Department of Health

2016 CHILDREN'S CAMP WORKSHOP

A presentation by the Westchester County Department of Health

April 21, 2016

County Executive Robert P. Astorino uses three guideposts (The Three P's) to manage Westchester County:

- **Protect Taxpayers**
- **Preserve Essential Services**
- **Promote Economic Growth**

Agenda

Introduction, NYS Injury/Illness Statistics, and 2015 Camp Season Recap

Mario Polvere, Chief Sanitarian, WCDH

Commissioner of Health Remarks and Emerging Public Health Threats

Dr. Ada Huang, Deputy Commissioner, Disease Control WCDH - Communicable Diseases

Current Trends in Concussion

Mark Herceg, PhD, Commissioner, Westchester County Department of Mental Health

7-2 Amendments: Justice Center Regulations
Camp Application: Amusement Devices, Odds & Ends
New and Selected Camps: Overview
Q & A

Mario Polvere, Chief Sanitarian, WCDH

Current Trends in Concussion: From Baseline to Post Injury Management

Mark Herceg, PhD

Commissioner, Westchester County Department of Mental Health

Chair, Westchester County Concussion Task Force

Lecturer, Dept of Epidemiology & Community Health, New York Medical College

Asst. Prof of Psychology in Clinical Neurology, Weill-Cornell Medical College

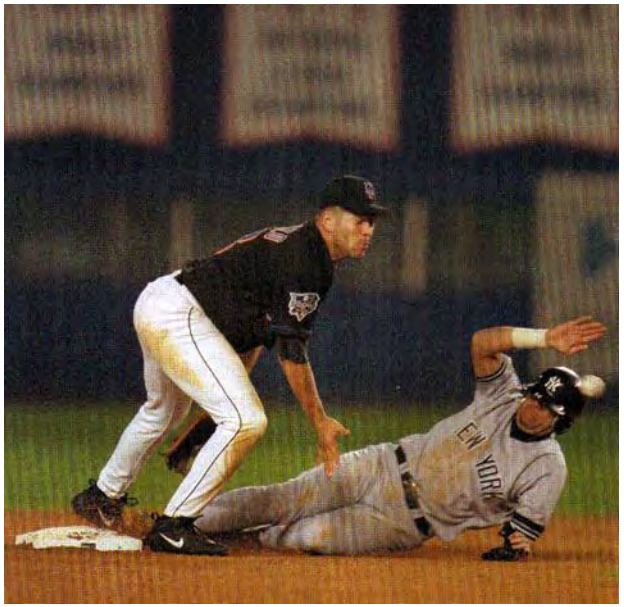
Westchestergov.com Robert P. Astorino Westchester County Executive

Epidemiology

- Centers for Disease Control and Prevention (CDC) estimates 300,000 sports-related concussions occur per year
  - 100,000 in football alone
- An estimated 1.6-3.8 million sports related brain injuries in 2006
- **8 HS football deaths 2013 due to TBI**
- An estimated 45 million children & adolescents participate in organized & recreational sports
- Sports provide positive physical, intellectual & social development, but unfortunate risks, including TBI or SCI

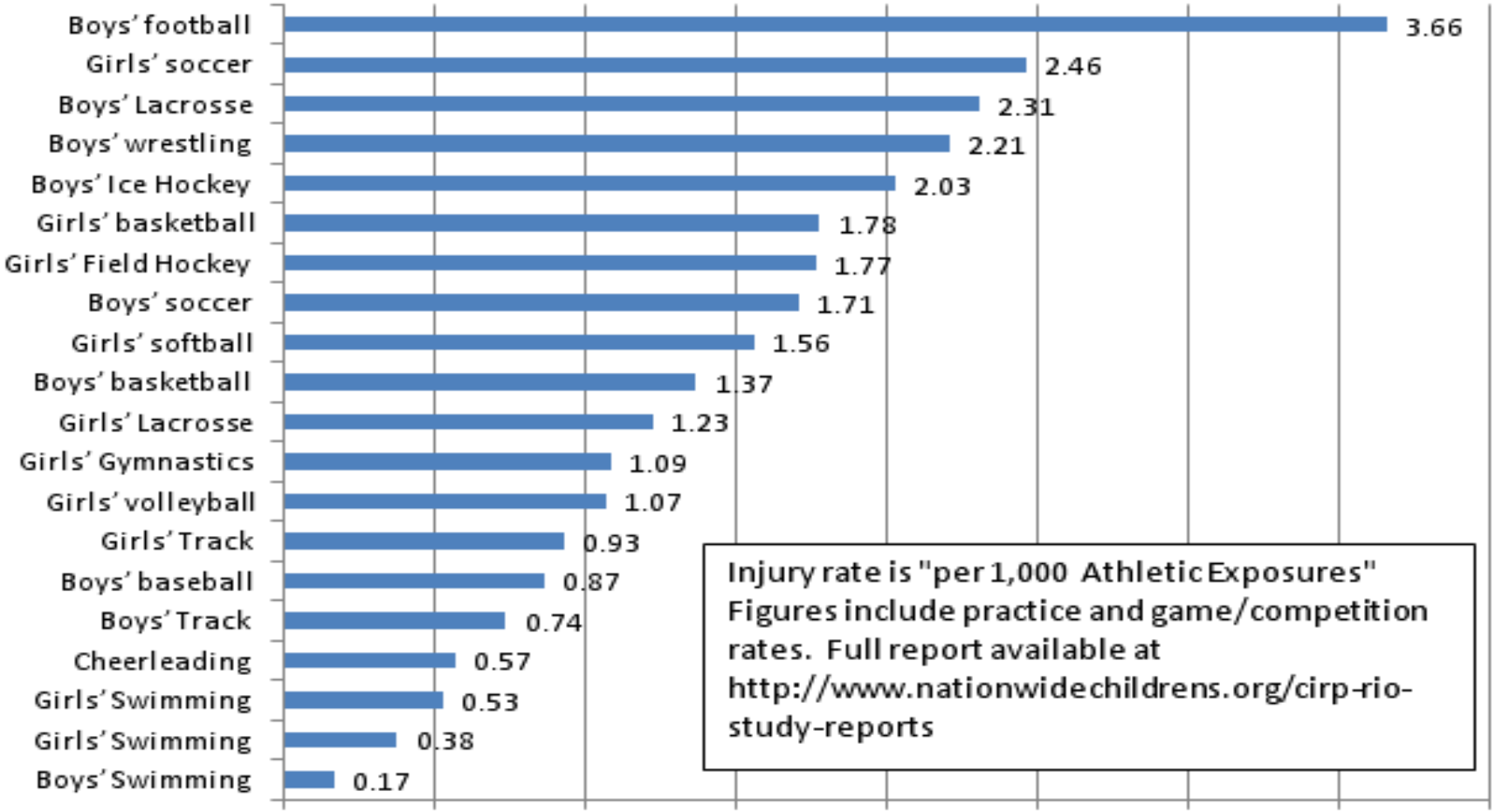
Epidemiology

- Risk of concussion in football is 4-6 times higher in players with a previous concussion
- Girls more susceptible (neck?)
  - Soccer
  - Basketball
- A concussed athlete 3X more likely to get another
- Genetic predisposition - APOE promoter gene



High School Sports Injury Rates by Sport, 2011-12

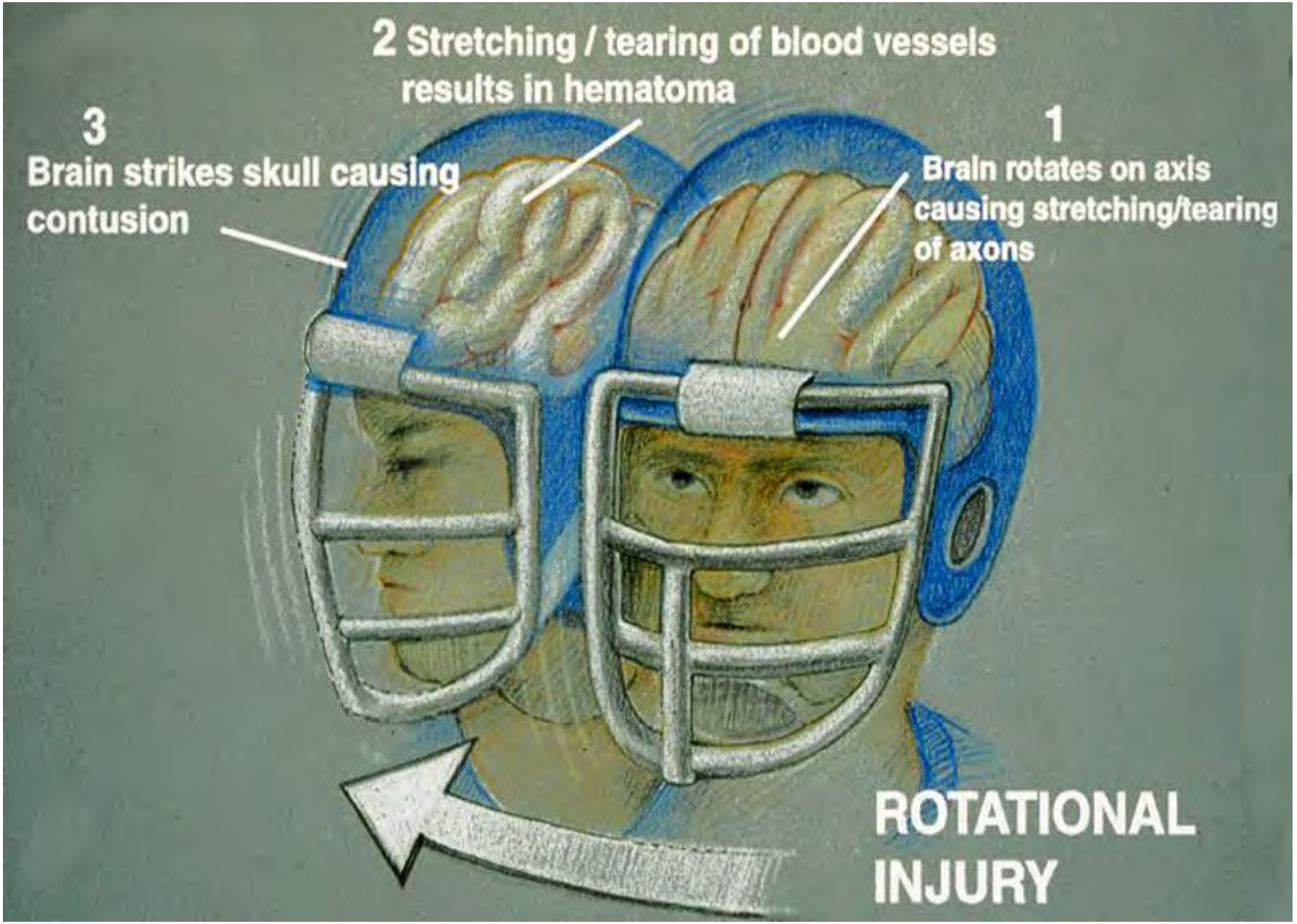
NATIONAL HIGH SCHOOL SPORTS-RELATED INJURY SURVEILLANCE STUDY

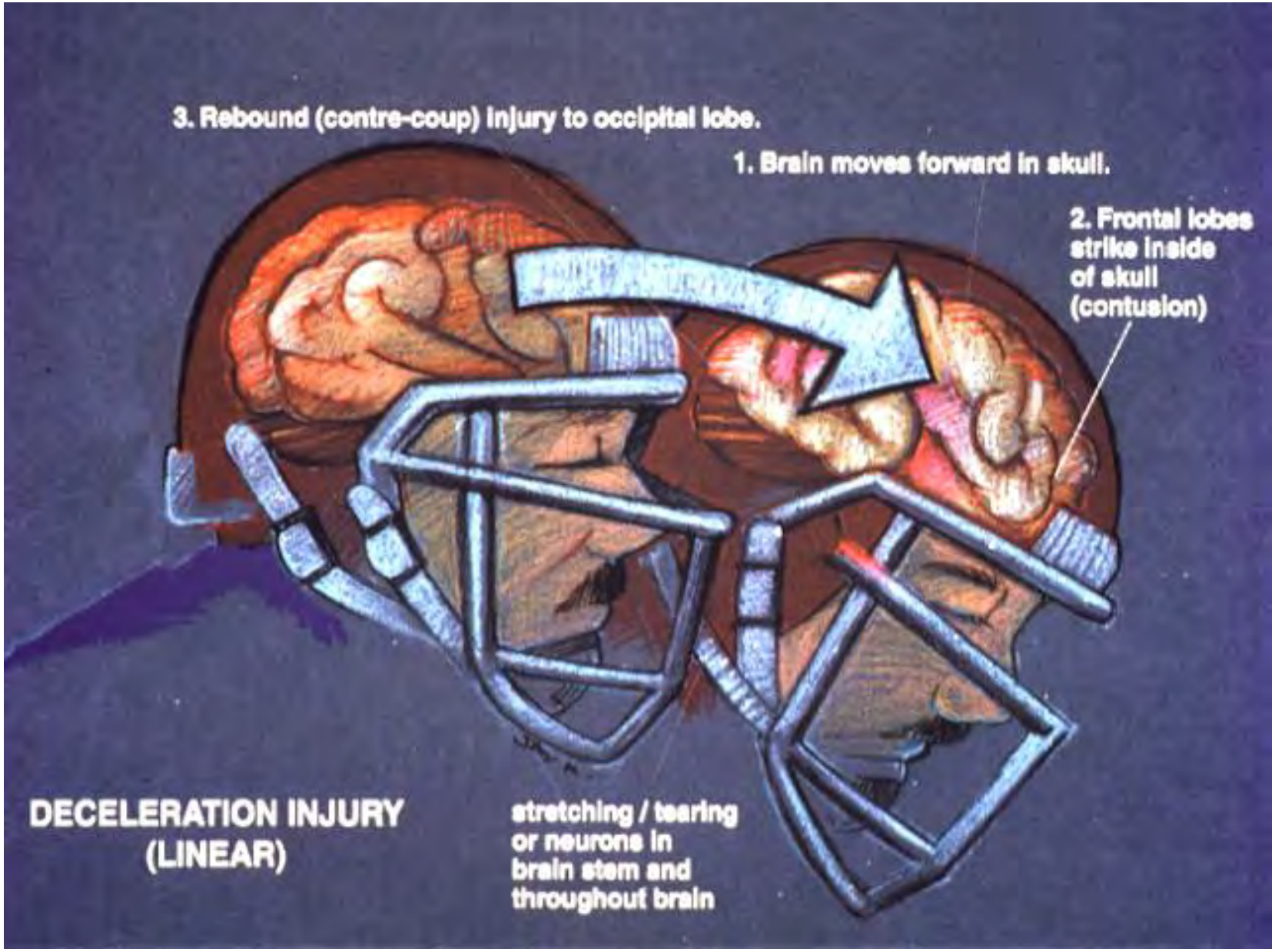


Epidemiology

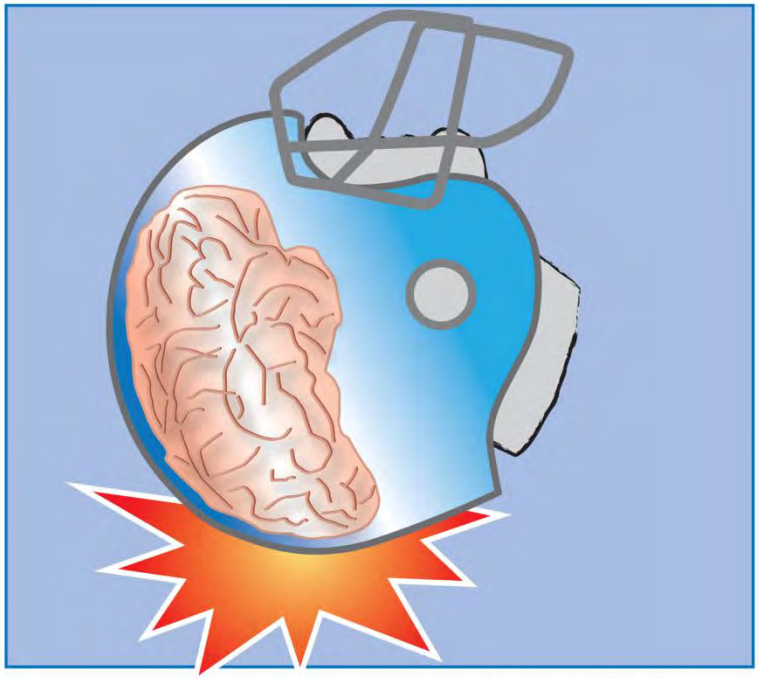
Factors associated with recovery:

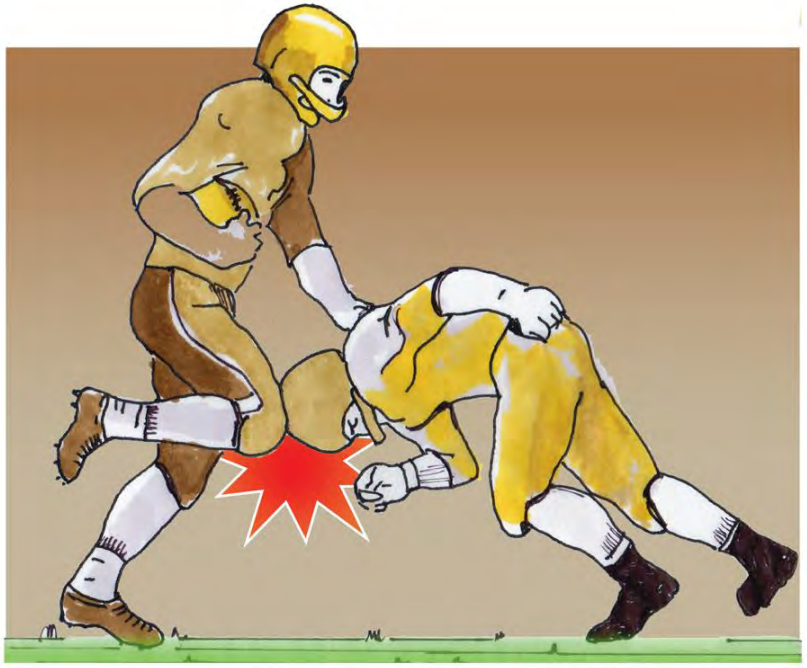
- Previous history of concussion
- Early posttraumatic headache
- Fatigue/fogginess
- Early amnesia, alteration in mental status or disorientation
- Age
- Prior history headache
- Dizziness


2 Stretching / tearing of blood vessels results in hematoma
3
Brain strikes skull causing contusion
1
Brain rotates on axis causing stretching/tearing of axons
ROTATIONAL INJURY

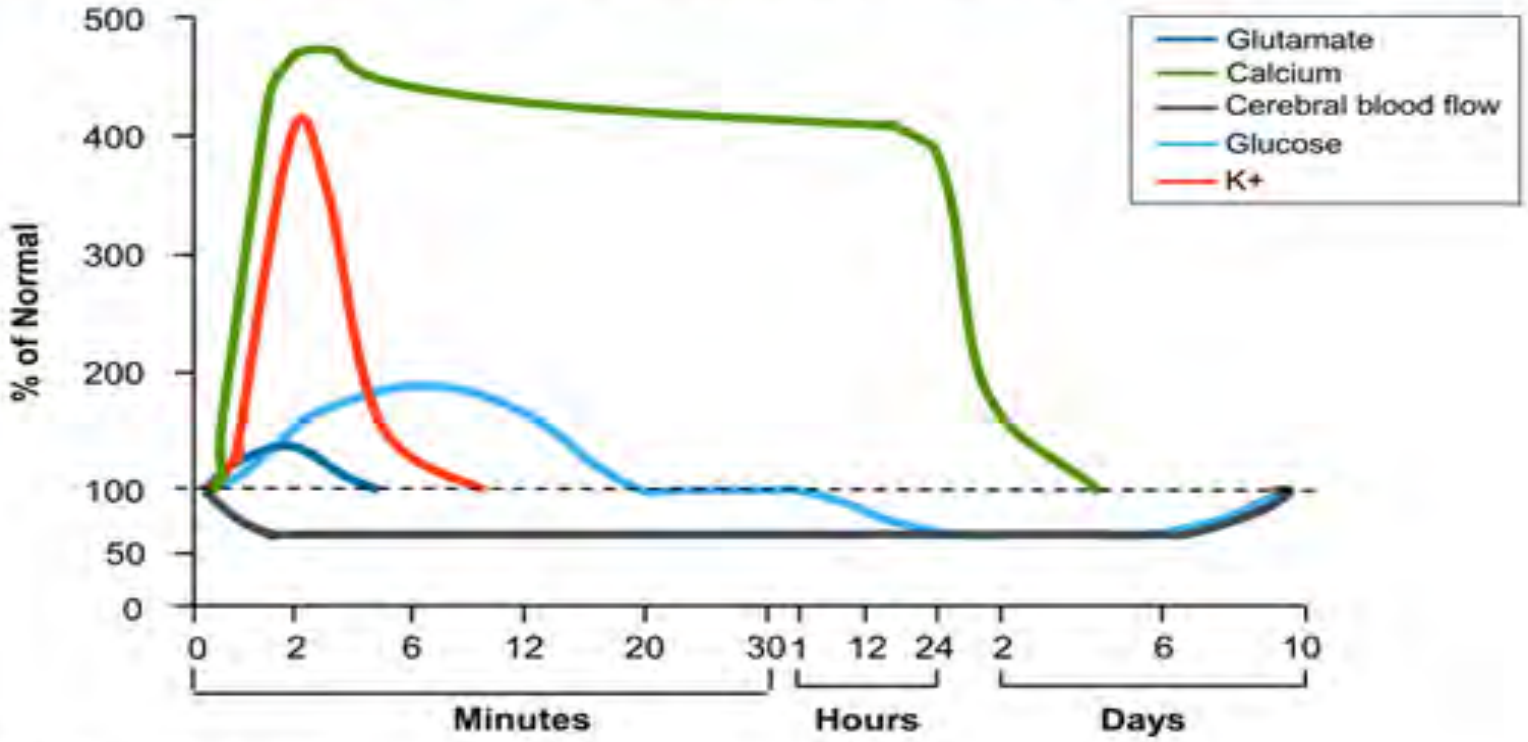

3. Rebound (contre-coup) injury to occipital lobe.
1. Brain moves forward in skull.
2. Frontal lobes strike inside of skull (contusion)
DECELERATION INJURY (LINEAR)
stretching / tearing or neurone in brain stem and throughout brain

Impact Deceleration



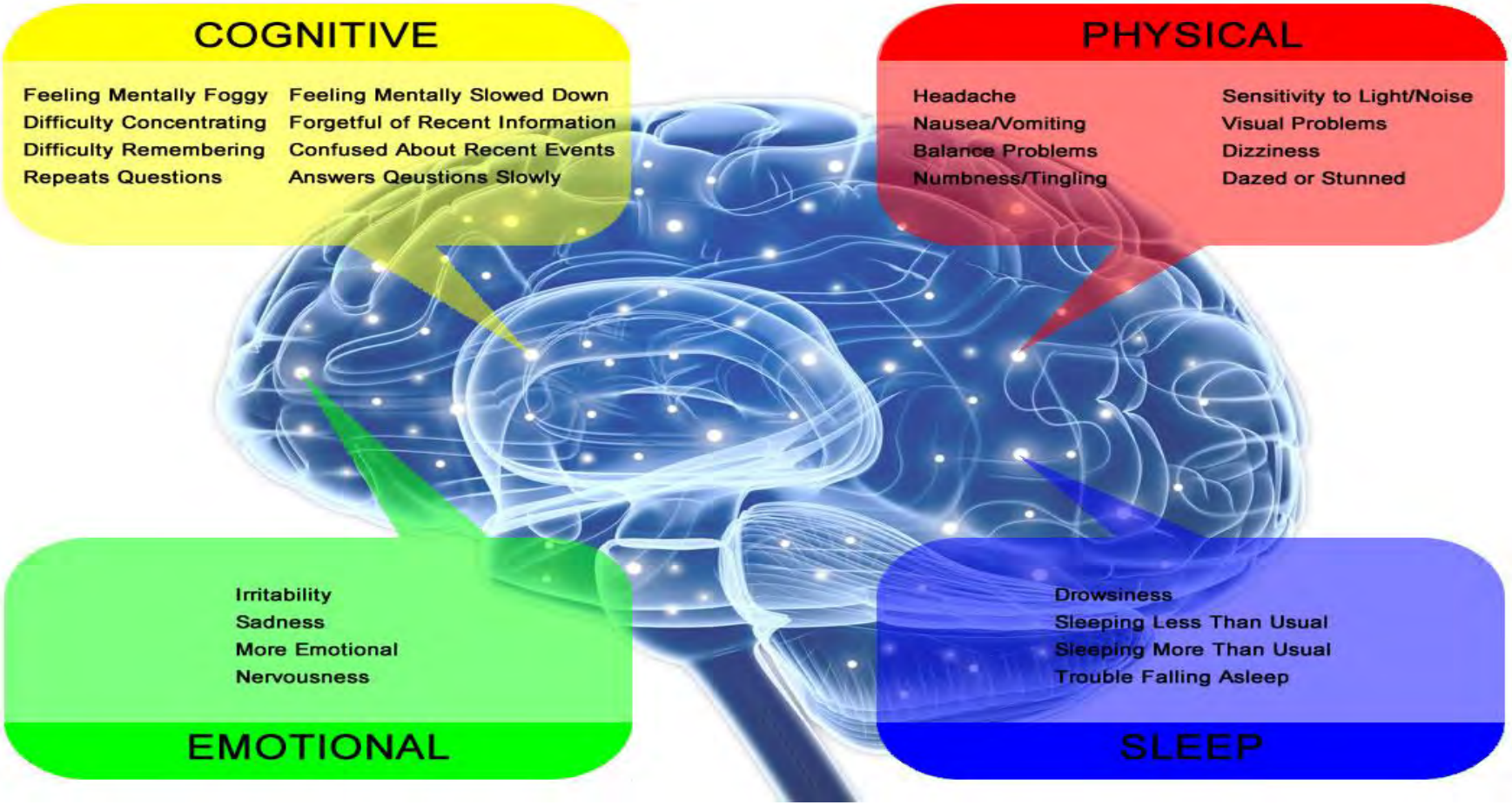


Neurometabolic Cascade Following Cerebral Concussion/mTBI



From Giza CC, et al.[10]

Clinical Symptoms/Presentation



Signs/Symptoms

Initially:

- Dazed/confused/stunned
- Answers questions slowly
- Can't state where they are or most recent event
- LOC
- Moves clumsily/unsteadily/wobbly
- Head "hurts"
- Rolling eyes, unfocused

What to Do If A Concussion Occurs

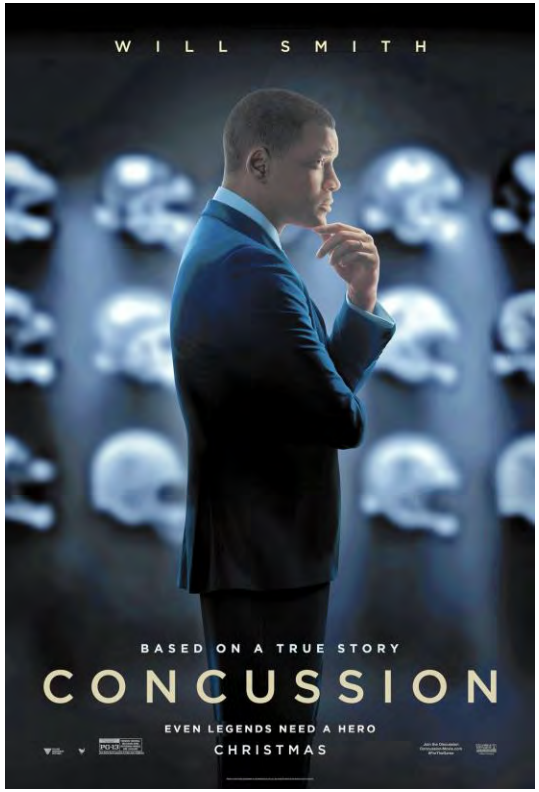
1. Remove the athlete from play immediately.

2. Ensure that the athlete is evaluated by a health care professional **experienced** in evaluating for concussion.

3. Inform the athlete's parents or guardians about the possible concussion. Provide fact sheet.

4. Keep the athlete out of play the day of the injury and until a health care professional, experienced in evaluating for concussion, says they are symptom-free and it's OK to return to play.


Jeffrey T. Barth PhD
Chief, Neurocognitive Section


WILL SMITH
BASED ON A TRUE STORY
CONCUSSION
EVEN LEGENDS NEED A HERO
CHRISTMAS

University of Virginia Study of Mild Head Injury in Football:

Baseline & Post Concussion Neurocognitive Assessment

"SLAM"

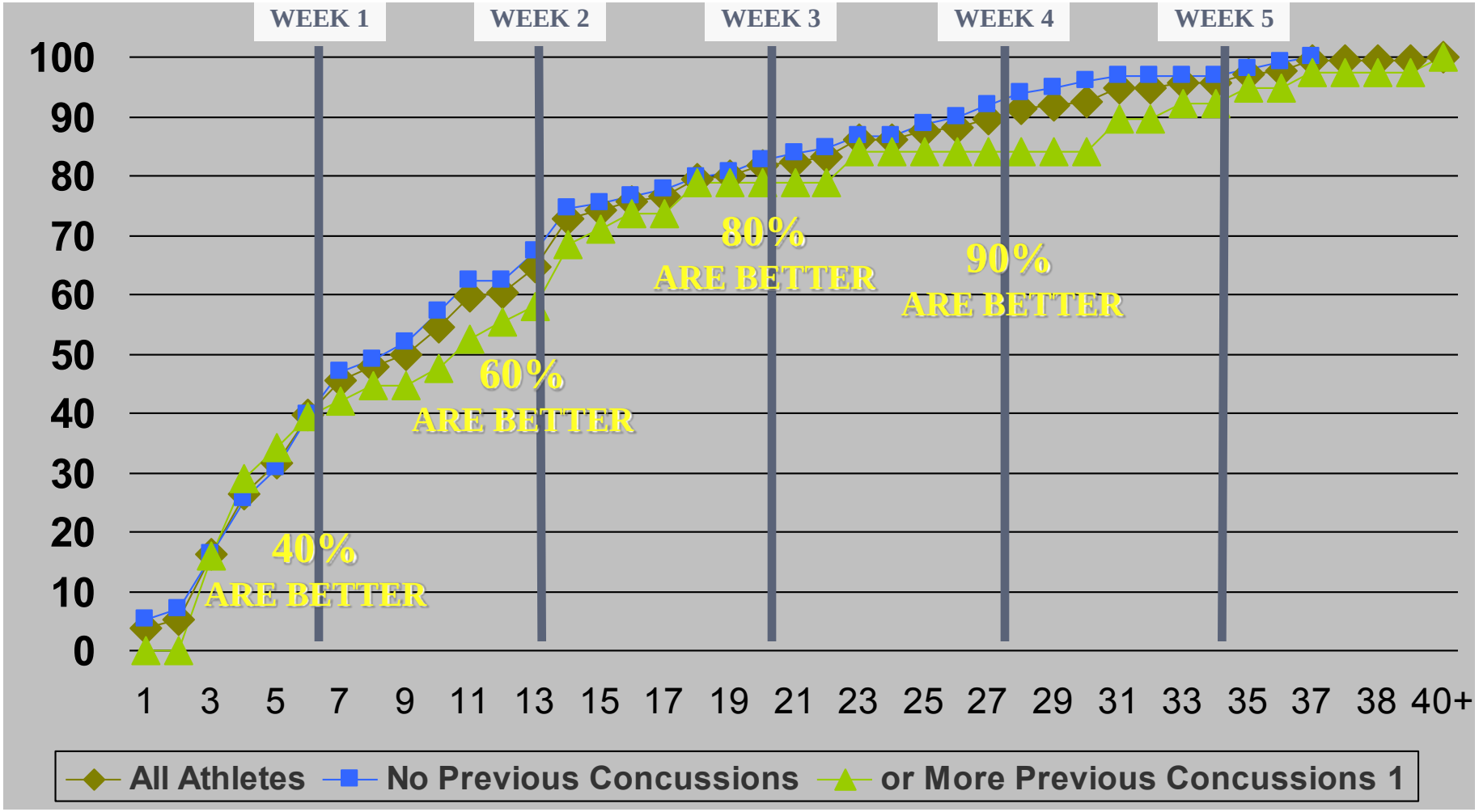
Sports as a Laboratory Assessment Model

Dr. Jeffrey Barth 1989

UVA Mild Head Injury in Football (Barth, et al., 1989)

- 10 University Prospective Study (n=2350)
- 195 Concussions
- 107 Student/Red Shirt Athlete Controls
- Single Concussion:
  - Attention and Complex Problem Solving Deficits
  - Inability to Take Advantage of Practice Effect
  - 5 to 10 Day Recovery Curve
- **Virtually every college, high school, and professional study since the UVA study has found similar recovery curves following mild concussion (3 to 10 day recovery times)**

Recovery From Sports Concussion:
How Long Does it Take in HS Football Players?



N=134 HS Football Athletes

Collins et al., 2006, Neurosurgery

Does Gender Matter?

Soccer:

A 2007 JAT found that the concussion rate for girls was 68 percent higher than boys

A 2011 study found that the concussion rate for girls in HS soccer (0.35 per 1000 participations by an athlete in a practice or competition or athlete exposures (AEs) was **double** that of boys (.017 per 1000 AEs)

A 2013 study by Safe Kids Worldwide and the Consumer Product Safety Commission found that girls in soccer were **more likely** than boys to be seen in hospital ER's as a proportion of all sports-related injuries.

Recovery and Gender

- High school and college female athletes report:
  - more post-injury symptoms after concussion
  - perform worse than male athletes on post-concussion tests of visual memory
- A 2007 study found longer recovery times for HS girls than boys
- A 2009 study found that girls with a previous history of concussions reported more and different concussion symptoms (particularly headache)
- Concussions aren't just a concern for high school football players; they can happen to athletes playing all types of sports

Pre-Season to Post-Injury

- Medical Exam/Physical
- Baseline
- Sideline
- Post-concussion
- When asymptomatic then RTP & RTL
- If symptoms remain, treatment

Sideline and "In Theater" Screening

- Standardized Assessment of Concussions (SAC) (McCrea, Kelly, Kluge, Ackley, and Randolph, 1997)
- Military Acute Concussion Evaluation (MACE) 2000s
- King Devick (1976-recently for sideline concussion eval)

Sideline Evaluation

- As important as the baseline is, a sideline assessment RIGHT AFTER a concussion is sustained perhaps even more vital.
- Provides ***on the spot*** information.
- Can be computerized (tablet) or paper and pencil.
- Most universally accepted test is SCAT3 for ages 13 and over or CHILD SCAT 3 for children for ages 5-12.

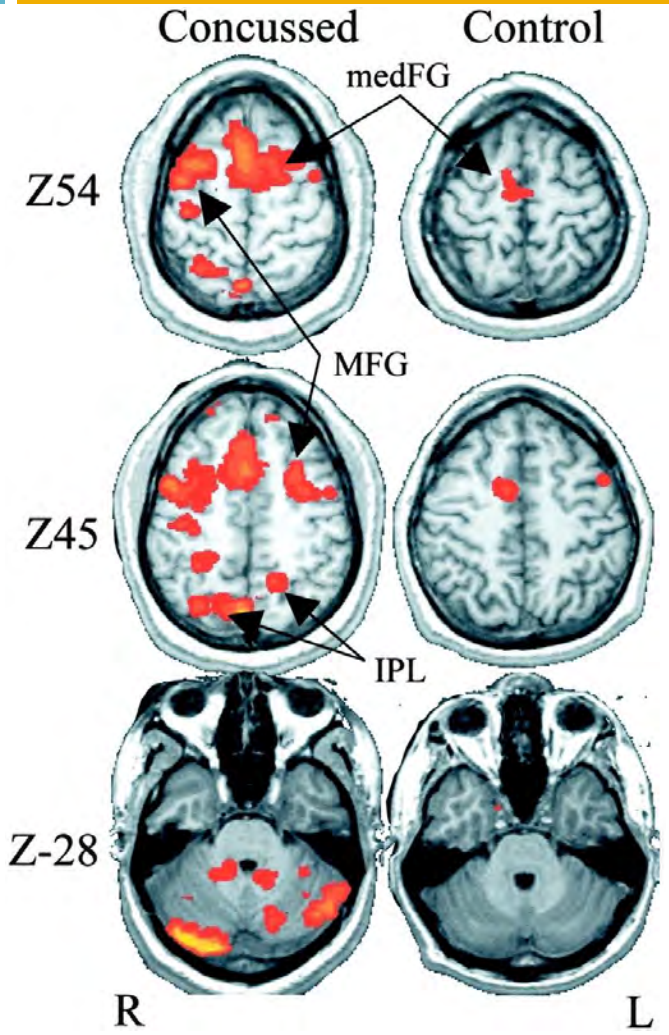
Caution re: Assessments

- There is **NO** single test for concussion.
- It is misleading when someone says they "passed" a concussion test.
- U of Florida 2014 found:
  - KD alone: 79% accurate (ocular motor)
  - KD + SAC: 85 % accurate (ocular motor + cognition)
  - KD + SAC + BESS: 100% accurate (ocular motor + cognition + balance)
- Diagnosis of concussions remains a **clinical** process--tests are components of that process.

Neuroimaging

- Traditional structural neuroimaging
  - CT
  - MRI
- Newer structural neuroimaging
  - DTI
- Functional and metabolic scanning
  - PET
  - SPECT
  - fMRI
  - MRS

fMRI and TBI



Computerized Assessments

- Neurocognitive concussion management starts with a proper and valid baseline.
- Brief computerized neurocognitive screen has become norm and quite an indu$try.

Computerized Assessments

CNS Vital Signs®

ImPACT™

axon SPORTS
POWERED BY COGSTATE

Usefulness of Neuropsychological Testing

Echemendia et al (2013 Brit Journal of Clin Med) conducted a 12 year literature review of 2600 articles/studies to assess:

- Computerized tests are useful in the evaluation & management of concussion
- Brief cognitive tools are **NOT** substitutes for formal neuropsychological assessment
- **Insufficient** evidence to recommend the widespread routine use of baseline neuropsychological testing
- Psychological factors may complicate and prolong recovery from concussion in some athletes
- Neuropsychologists play an important role within the context of a multifaceted-multimodal approach to manage sports-related concussions

IMPACT

- Measures athletes symptoms (mood, sleep, dizziness, HA)
- Verbal/Visual memory, PS and RT
- Assists clinicians and athletic trainers in making RTP decisions- NOT for RTL
- Produces a summary report of test results
- Automatically stores data from repeat testing
- Can be administered online for individuals or groups
- Approximately 20 minutes

Issues with Computerized Assessment

- Many tests now available on-line at home.
- Students misunderstand questions without guidance.
- Assessments do not take into account potential emotional, personality or learning issues.
- Computerized testing ≠ thoroughness yet used for 504/IEP.
- Rarely do schools/programs/clinics consult with NP for baseline or post injury interpretation.
- Test setting/supervision.

The American Journal of Sports Medicine, Vol. 42, No. 2
DOI: 10.1177/0363546513509225

Age and Test Setting Affect the Prevalence of Invalid Baseline Scores on Neurocognitive Tests

Jonathan D. Lichtenstein,*† PsyD, MBA, Rosemarie Scolaro Moser,† PhD, and Philip Schatz,‡ PhD
Investigation performed at the Sports Concussion Center of New Jersey, Lawrenceville, New Jersey

Study Design: Cross-sectional study; Level of evidence, 3.

Methods: A total of 502 athletes between the ages of 10 and 18 years completed preseason baseline neurocognitive tests in "large" or "small" groups. All athletes completed the online version of ImPACT (Immediate Post-Concussion Assessment and Cognitive Testing). Baseline test results that were "flagged" by the computer software as being of suspect validity and labeled with a "++" symbol were identified for analysis. Participants were retrospectively assigned to 2 independent groups: large group or small group. Test administration of the large group occurred off-site in groups of approximately 10 athletes, and test administration of the small group took place at a private-practice neuropsychology center with only 1 to 3 athletes present.

Conclusion: Younger athletes tend to exhibit a greater prevalence of invalid baseline results on neurocognitive computerized tests than older youth athletes; the prevalence increases when testing is conducted in a large group and nonclinical setting.

Keywords: concussion testing; baseline testing; validity; neurocognitive testing; group administration; pediatric concussion; ImPACT

AJSM PreView, published on April 30, 2014 as doi:10.1177/0363546514531732

The Relation Between Testing Environment and Baseline Performance in Child and Adolescent Concussion Assessment

Christopher G. Vaughan,*† PsyD, Elyssa H. Gerst,‡ BS, Maegan D. Sady,† PhD, Julie B. Newman,† PhD, and Gerard A. Gioia,† PhD
Investigation performed at Children's National Health System, Rockville, Maryland, USA

Study Design: Cohort study; Level of evidence, 3.

Methods: A total of 939 participants (aged 5-18 years), including 313 tested individually and 626 tested in a group setting, matched on age, sex, and attention-deficit/hyperactivity disorder status, were administered concussion baseline assessment using the desktop version of the Immediate Post-Concussion Assessment and Cognitive Testing and a new pediatric measure, the Multimodal Assessment of Cognition & Symptoms for Children. Cognitive performance, symptom reports, and rates of invalid performance were compared between settings.

Children given a baseline assessment in a group setting performed no differently than children tested individually when standardized administration procedures were used by trained test administrators

Recommended Test Conditions

- Make every effort to minimize distractions.
- The use of cardboard privacy carrels (3-sided, 17 inches high) placed around each computer is recommended in order to create a more private, distraction-free environment.
- Staff must be trained in standardized test administration.
- The examiners must be present throughout the entirety of the test sessions.

Recommended Testing Conditions

- Instructions should be scripted and consistent
- **Group size**: No greater than **15** individuals, with smaller group sizes depending on age.
- The child-to-examiner ratio in group testing environments should be capped at 6-to-1, often with 2 or more proctors for 8 to 12 kids.
- Younger children ages 5 or 6 should receive 1-to-1 or 2-to-1 instruction.
- Instructions should be quietly read to younger children, or those who exhibit any difficulty understanding task instructions.

Pre-Existing Personality & Emotional Factors

Study: Relationship Between Psychological Distress & Baseline Sports-Related Concussion Testing

Bailey, et al *Clinical Journal of Sport Medicine* 2010 Jul;20(4):272-7

47 college football players

Concussion Resolution Index
PAI

Sig correlations among CRI scores and:

Aspects of somatic concern
Depression
Anxiety
Substance abuse
Suicidal ideation

What Does That Mean?

- Higher PAI symptom endorsement associated with poorer CRI performance
- Psychological distress had a moderate to large effect on baseline concussion testing
- Findings heighten the clinical importance of screening for psychological distress during baseline and post-injury concussion evaluations
- If the brain is complex, how can a 20 min test accurately capture everything?

Effect of LD & ADHD on Baseline Testing

Herceg, Wojtowicz, Iverson, (2015) submitted manuscript

International Neuropsychology Society, Annual Meeting Boston 2016

- LD and ADHD are considered to be important risk factors or modifiers for concussion assessment and management.
- These days, many involved in concussion management are not aware of the implications these risk factors have on assessment results.

Pre-season Concussion Testing in High School Students with Academic Difficulties or Attention Deficit Hyperactivity Disorder

Mark Herceg, Ph.D.[1], Magdalena Wojtowicz, Ph.D.[2-4], and Grant L. Iverson, Ph.D.[2-4]

[1]Neuropsychology Department, Burke Rehabilitation Hospital, White Plains, NY;
[2]Departments of Psychiatry and [2]Physical Medicine and Rehabilitation, Harvard Medical School;
[3]Red Sox Foundation and Massachusetts General Hospital Home Base Program; [4]MassGeneral Hospital for Children Sport Concussion Program

Objective

Learning disabilities and attention deficit hyperactivity disorder (ADHD) are considered to be important risk factors or modifiers for concussion assessment and management. The purpose of this study was to examine cognition and symptom reporting in high school students with academic difficulties or ADHD.

Method

143 high school athletes competing in contact sports completed baseline pre-season testing with ImPACT®, the King-Devick test (K-D), and the Standardized Assessment of Concussion (SAC). ImPACT® was administered in a group setting in a computer lab. The K-D and SAC were administered individually on the following day.

Students were identified as having academic difficulties (i.e., received special education, repeated a grade, or a diagnosed learning disability) or ADHD based on their self report.

Results

Mean age was 15.4 (SD=1.2) and 78 were boys (54.5%). The majority of sample had zero self-reported past concussion (n=123; 82.6%). 21 (14.1%) had one past concussion, 2 (1.3) had two past concussions, and 3 (2.0) had three or more past concussions.

Table 1. Comparing performance on baseline measures in student athletes with academic problems (special education, repeated a grade, or learning disability) or ADHD to healthy controls.

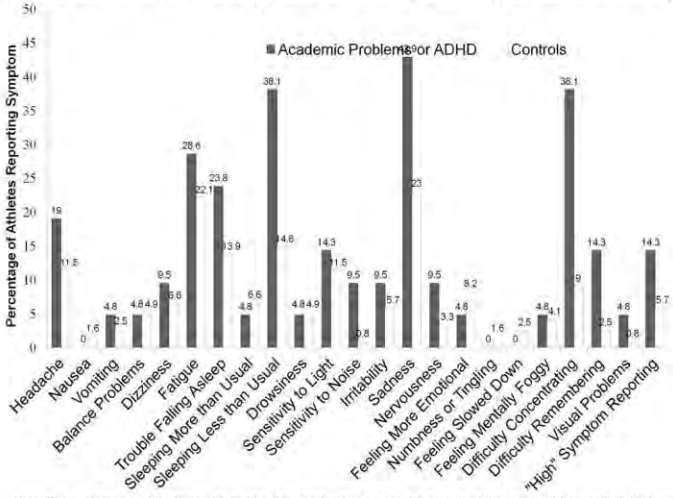
	n	K-D	SAC	Verbal Memory	Visual Memory	Visual Motor	Reaction Time	Total Symptoms
Academic Problems/ADHD M (SD)	21	51.14 (8.67)	25.19 (2.21)	83.24 (11.01)	71.05 (10.58)	33.86 (7.28)	.64 (.09)	6.10 (6.43)
Controls M (SD)	122	45.40 (6.96)	25.94 (2.07)	84.76 (10.58)	74.46 (13.65)	38.20 (6.31)	.60 (.07)	2.86 (5.31)

Students with academic problems or ADHD performed significantly more poorly on the King-Devick test ($U(1)=726$; $p=.003$; $d=.79$), on the ImPACT® Visual Motor Speed Composite ($U(1)=805.00$; $p=0.007$; $d=.79$), and they reported more symptoms at baseline ($U(1)=815.5$; $p=.005$; $d=.59$).

There were no significant differences between group on SAC scores or the ImPACT® Verbal Memory, Visual Memory, and Reaction Time Composite scores (ps>.05).

Results cont'd

Figure 1. Comparing performance on baseline measures in student athletes with academic problems (special education, repeated a grade, or learning disability) or ADHD to healthy controls.



Note: The percentages of students who endorsed the symptom as present is presented (i.e., score of 1 or greater). High symptom reporting for boys: Total score 13 or greater. High symptom reporting for girls: Total score 21 or greater. Source: Lovell MR, Iverson GL, Collins MW, et al. Measurement of symptoms following sports-related concussion: reliability and normative data for the post-concussion scale. *Appl. Neuropsychol.* 2006;13(3):166-74.

High school students with academic problems or ADHD were more likely to report "sleeping less than usual" ($\chi^2(1)=6.56$, $p=.01$), difficulty concentrating ($\chi^2(1)=14.15$, $p<.001$), and difficulty remembering ($\chi^2(1)=6.23$, $p=.01$).

Conclusions

To our knowledge this is the first study to examine performance on three different pre-season baseline measures in high school students with academic difficulties or ADHD.

High school students with academic difficulties or ADHD performed more poorly on the King-Devick test, the Visual Motor Speed Composite of ImPACT®, and they reported more symptoms at baseline.

For electronic copies of the handout, contact mwojtowicz@mgh.harvard.edu

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Editor-in-Chief: James I. Ausman, MD, PhD University of California, Los Angeles, CA, USA

Original Article

Recovery from sports-related concussion: Days to return to neurocognitive baseline in adolescents versus young adults

Scott L. Zuckerman, Young M. Lee, Mitchell J. Odom, Gary S. Solomon[1], Jonathan A. Forbes[1], Allen K. Sills[1]

Vanderbilt University School of Medicine, [1]Vanderbilt Sports Concussion Center and Department of Neurological Surgery, Medical Center, Nashville, TN, USA

Utilizing a reliable change index (RCI) set at the 80% confidence interval, raw change scores equal to or greater than

8.75 points for verbal memory,
13.55 points for visual memory,
0.06 points for reaction time,
4.98 points for processing speed,
9.18 points for PCSS

….met criteria for a statistically significant change.

Any difference between post-concussion score and baseline less than these values was defined as a <u>return to baseline</u>

Conclusions: Our results in this clinical research study show that in SRC, athletes 13-16 years old take longer to return to their neurocognitive and symptom baselines than athletes 18-22 years old.

Key Words: Age, concussion, immediate post-concussion assessment and cognitive testing, mild traumatic brain injury, sports

Post Concussion Syndrome: What is This?

ICD-10 Criteria for Postconcussional Syndrome:

- Must endorse symptoms in at least **3** domains
  - Physical
  - Emotional
  - Cognitive
  - Insomnia
- Other domains not considered: Excessive worry over symptoms and intolerance for alcohol.

Post-Concussion Syndrome

- More common in females than males.
- Pre-injury mental health problems are a major risk factor.
- It is associated with or influenced by traumatic stress.
- Persistent symptoms at 1 or 3 months are a risk factor for persistent symptoms at 1 year.
- Easy to misdiagnose in people with depression, anxiety, PTSD, and chronic pain.

Who has Post Concussion Symptoms: Iverson, et al (2015)

The Database:

- 32,855 student athletes from the state of Maine
- Age range: 13-18
- No athlete reported sustaining a concussion in the past 6 months.
- What percentage of boys and girls meet ICD-10 Criteria for a Post-Concussion Syndrome During Baseline Preseason Testing?

Boys = 19.7% Girls = 28.2%

Graded Return to Play Protocol – Zurich 2012		
Rehabilitation stage	**Functional exercise at each stage of rehabilitation**	**Objective of each stage**
1. No Activity	Complete physical and Cognitive Rest.	Recovery
2. Light aerobic exercise	Walking, Swimming, Stationary Bike, HR<70% Maximum	Increased heart rate
3. Sport Specific Exercise	Skating or Running Drills without contact.	Add Movement
4. Non Contact training	More complex Drills without contact.	Exercise, coordination and cognitive load.
5. Full Contact	Normal Training	Restore confidence
6. Return to Play	Game Play	

Rest Following Injury - How Much and for How Long?

Critical Questions

- How do we define "rest"?
- How long should an athlete rest?
- How do we define gradual resumption of activities?
- How much rest is too much rest?
- When should we begin active rehabilitation?

What Is The Rationale For Rest?

- The injured brain might be in a state of neurometabolic crisis.
- Assuming that neurometabolic crisis involves an "energy crisis," then vigorous activity might compound or magnify the energy crisis.
- Passing another mechanical force through the injured brain, while it is in a state of neurometabolic crisis, might result in magnified pathophysiology.

Is Rest after Concussion the "Best Medicine?"

Silverberg and Iverson concluded that bed rest exceeding **three days** is not recommended and gradual resumption of pre-injury activities should begin as soon as tolerated.

Journal of Head Trauma Rehabilitation 2012

Possible Harm of Prolonged Rest

- Falling behind in school with increased associated stress
- Physical de-conditioning and evolving exercise intolerance
- Nocebo effects (expectation of sickness as a cause of sickness)
- Somatic preoccupation and Cognitive Hypochondriasis
- Depression

Basic Principles

Initial Weeks Following Injury (and sometimes months following injury)

Focused, Evidence-Based Treatment for Specific Symptoms and Problems

- Medications
- Neuro-ophthalmologic evaluation/treatment
- Physical Therapy
- Vestibular Rehabilitation
- Exercise
- Psychological Treatment

Effects on Learning

- In majority of cases, there is minimal impact.
- However, it can adversely impact:

1. participation
2. ability to learn new information
3. follow through with assignments
4. concentrate and take notes at same time
5. reduced speed of reading
6. inability to do multi-step math problems

When is a Student Ready to Return to School?

- May or may not parallel returning to play.
- Appropriate physical AND cognitive levels need to be achieved.
- Health and school professionals collaboratively can make determination about a student's readiness.
- Once deemed ready, school professional MUST monitor the student closely.

CTE

- Today, the neuropathology of CTE is more well described
- Postmortem description of CTE has had great impact on public policy and awareness
- Misinformation and mis-reporting by media continues to fuel fear.
- *Talking with parents of high school football players about chronic traumatic encephalopathy: a concise summary.* Love & Solomon. American Journal of Sports Medicine 2015 May;43(5):1260-4
- **The public thinks that the science of CTE is far more advanced than it really is.**

CTE: What We Do Know

- NOT prolonged-post concussion exposure
- NOT the cumulative effect of concussions
- NOT a brain injury "per se"… it is a ***neurodegenerative disease-*** *Dr. Stern, BU Brain Bank*

CTE: What We Need To Know

- **Is it common?** We just don't know yet.
- 90 of 94 FB players in BU-VA-CLF brain bank had CTE.
- Biased?
- Mayo (2015) less biased but……..
- Why do some get it and others not?
- Not everyone who hits their head will get it.

Westchester County Concussion Task Force

"The implementation of the 2011 New York State Concussion Management and Awareness Act, which legislated school districts to implement certain standards of care... was a step in the right direction, **but gaps in the institutional response to concussion still exist.**"

Brain Injury Association of New York State

Why Safer Sports and Task Force

- Evaluate how districts and youth programs manage/address concussions.
- **NOT** about singling out districts/programs/clinics that do this poorly, but also identifying ones that do it well.
- Despite every state having a concussion law, loop holes remain.

CIC? CBIS? CPR?

Task Force Members

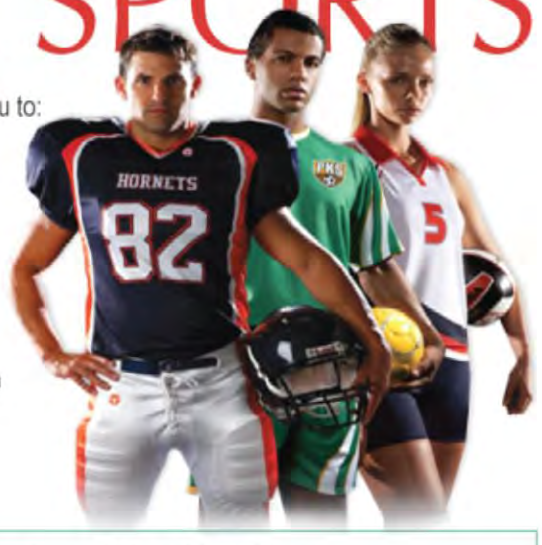
- Pediatricians
- Pediatric Neurologist
- Pediatric Neurosurgeon
- Psychologists
- Athletic Trainers
- Athletic Directors
- Parks & Recreation
- Orthopedic Surgeon
- Physical Therapists
- Vestibular Therapists
- School Nurse
- Section 1 Safety
- BOCES staff
- Superintendents
- County Departments

Robert P. Astorino
Westchester County Executive presents:

Parents
Coaches
School Administrators
Athletic Trainers
Health Care Professionals
Youth Athletes

First Annual Conference on Concussions

SAFER SPORTS



This **FREE** conference will teach you to:

- Recognize the signs and symptoms of sports concussions
- Know the importance of proper sideline, baseline and post-injury assessment
- Navigate specific treatment options
- Get back on the field and in the classroom in good health

When: Thursday, August 20 • 5:30-8:30 p.m.

Where: Westchester County Center—198 Central Ave., White Plains

Please RSVP to Deetra Santos by email at dys1@westchestergov.com or call (914) 995-5245.

Refreshments will be served.

Featuring prominent concussion experts including:

Dr. Steven Flanagan, *Director, NYU Langone Concussion Center, NYC*

Dr. Barry D. Jordan, *Assistant Medical Director, Burke Rehabilitation Hospital, White Plains*

Dr. Gerry Gioia, *Division Chief of Neuropsychology, Children's National Health System, Washington, D.C., and contributing author to CDC Heads Up tool kit*

Dave Byrnes, ATC, *President, Section One Athletic Trainers Society and Yorktown High School Athletic Trainer*

Dr. Mark Herceg, *Westchester County Commissioner of Community Mental Health*

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Robert P. Astorino, County Executive
Mark Herceg, Ph.D., Commissioner
Department of Community Mental Health

safer communities

The Westchester County Concussion Task Force has developed a collaborative response to address the gaps with 10 Best Practices.

10 Best Practices:

Recommended by the Westchester County Concussion Task Force

1. START WITH AWARENESS
Formally educate parents, student-athletes, coaches, appropriate school personnel and youth sports programs about the symptoms, risks and proper treatment of concussions.

2. BUILD A TEAM
Encourage schools and youth sports organizations to have a designated concussion management team (CMT) that brings together experts trained in concussions. The team should meet or communicate regularly. At a minimum, the CMT should include, but not be limited to, an athletic trainer, physician, nurse, athletic director and school/neuropsychologist.

3. REPORT WHAT YOU KNOW
Ensure that all concussions are reported along with any lasting symptoms from the field or playground to parents, first responders, medical professionals, school administrators and teachers. Concussions do not just happen in a game; they can happen in gym class or at recess.

4. ASSESS SITUATIONS IMMEDIATELY
Use athletic trainers to conduct sideline assessments that can be compared to baseline behavior, in order to capture concussions in real time as they occur.

5. DON'T "ONE STOP" SHOP FOR ANSWERS
Districts and youth programs should provide referrals to specialists (neurologists, physical therapists, neuro-ophthalmologists, neuropsychologists), as needed, to treat specific symptoms. One provider should not be the "one stop shop" for all symptoms.

1 2 3 4 5 6 7 8 9 10

6. UNDERSTAND THE BIG PICTURE
Ensure everyone involved understands the impact a concussion can have on the behavioral, academic, emotional and physical maturation of young children.

7. STAY CURRENT
Health care providers evaluating children and adolescents must maintain a current level of understanding in the area of the diagnosis, treatment and management of sports-related concussions.

8. ENCOURAGE TRAINING
Ensure that properly trained professionals, such as athletic trainers, are available to conduct sideline tests and that the results are reviewed and interpreted by a neuropsychologist or school psychologist.

9. BEWARE OF SINGLE ANSWERS
Schools, youth programs, parents, and students need to be aware that concussions are a clinical diagnosis, and that it takes more than a single or brief computerized test to understand the extent of an injury.

10. FOCUS ON RETURN TO LEARN
As important as return to play is for a child, it is more important that schools have a return to learn plan (RTL) to address issues children face as they return to the classroom after an injury. Returning to the classroom does not always parallel returning to play.

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Robert P. Astorino
Westchester County Executive

Sherlita Amler, MD, Commissioner
Department of Health

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