



Returning the “Concussed “ Athlete to the Classroom

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Disclaimer

- I or my family members DO NOT have any relevant financial relationships that would bias the information that I will be presenting in this talk today!

Concussions in the News



Concussion rates by sport

The concussion rates per 100,000 athletic exposures (one athlete participating in one practice or game), based on two recent studies published in medical journals.

Football	60-76.8	Girls' basketball	16-18.6
Girls' soccer	33-35	Softball	11-16.3
Boys' lacrosse	30-46.6	Boys' basketball	11-21.2
Girls' lacrosse	20-31	Cheerleading	11.5
Boys' soccer	17-19.2	Girls' volleyball	5-8.6
Wrestling	17-23.9	Baseball	4.6-6

Source: "Sports-Related Concussion in Children and Adolescents," Pediatrics 2010; "Assessment and Management of Sport-Related Concussions in United States High Schools," American Journal of Sports Medicine. 2011.



Presentation Objectives

- 1. Provide a current definition of a concussion and the effects it has on a student-athlete.
- 2. Provide the “Return to Play Guidelines / Step Progression”.
- 3. Identify the academic variations of concussion management as detailed in state concussion legislation.
- 4. Provide comprehensive “Return to Academics-Members of the Team and Step Progression”.

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Concussion Management 2017

- What we THINK we Know!
 - Good assessment tools
 - Athletes are safer with proper techniques – specific to sport and age
 - Recognition for athletes, coaches, parents.
 - Rule Enforcement
 - No consensus by medical experts for specific age at which kids are safe to begin contact sports



Concussion Management 2017

- What we DON'T Know!
 - Concussion Threshold – person to person
 - Susceptibility to CTE
 - Best RTP
 - Return to Academics and Rehabilitation technique / Intervention for treatment of the concussed athlete



Points of Discussion – Returning the “Concussed” Athlete to the Classroom

- 1. What is a concussion?
- 2. How does a concussion affect an athlete
- 3. Return to Play Laws / Guidelines
- 4. Academic Variations in State Laws
- 5. Members of the Team
- 6. Return to Academic Recommendations
- 7. Future / Conclusion



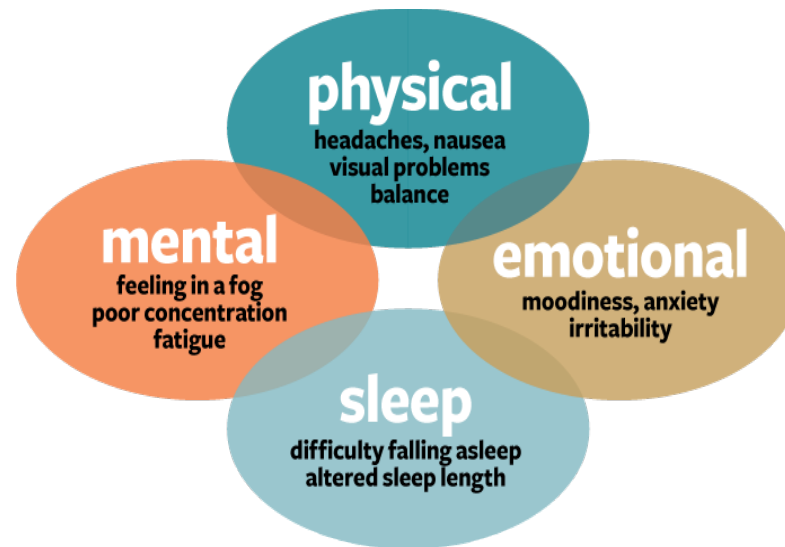
1. What is a concussion?



Definition of a Concussion / Traumatic Brain Injury

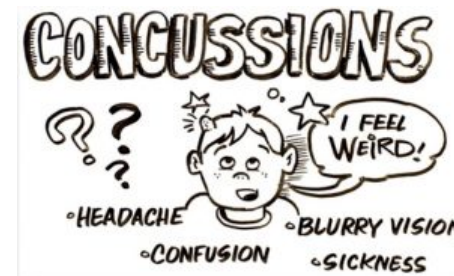
- An injury affecting the brain, induced by direct or indirect biomechanical forces.
- Common Features
 - Rapid onset of usually short-lived neurological impairment, which resolves quickly.
 - Acute clinical symptoms that usually reflect a functional disturbance rather than structural.
 - A range of clinical symptoms that may or may not involve loss of consciousness (LOC).
 - Routine neuro-imaging are typically normal.

2. How does a Concussion Affect an Athlete?



How does a concussion affect an athlete

- 1. The affects of a concussion on an athlete can differ from athlete to athlete.
- 2. There are some short / long term effects that may diminish over a period of time.
- 3. Because a child's brain is still developing, their outcome / recovery will be different than an adult.
- 4. As the child's brain adapts to the injury, certain deficits may become more evident.



Possible Deficits that may affect the Athlete

- Cognitive Effects
 - Memory – both Short / Long T
 - Attention
 - Concentration
- Speech / Language Effects
 - Word retrieval
 - Difficulty in Comprehension
 - Difficulty with Verbalization
- Behavioral Effects
 - Frustration with the Injury
 - Low Self-esteem, Depression, Abnormal behaviors & outbursts



Factors affecting School Performance at ALL AGES

1. Elementary School

- More likely to complain of physical problems or misbehave in response to a cognitive overload, fatigue and other concussion symptoms.

2. Middle School

- Peer relations are VERY important, can be very sensitive on “being different”. May try to minimize symptoms,

3. High School

- Often very busy, may be taking AP classes with multiple extra-curricular activities. Prioritizing and reducing overall demands becomes essentially important to reduce concussive symptoms.

3. Return to Play Laws / Guidelines



Brains Worldwide Calls for Passage of Canada's First Concussion Legislation

Rowan's Law

What is #RowansLaw ?
Proposed legislation would introduce concussion protocols and awareness initiatives of concussions in youth sports and other activities.

Read more by visiting Link Above:
Concussion Policy & the Law
Sports Industry News & Analysis



Return to Play Laws / Guidelines

- Between 2009 – 2014, lawmakers successfully enacted legislation throughout the USA that targeted various aspects of sports-related concussions in youth mandating that they be removed from play if a concussion is suspected and **NO SAME DAY** return!!
- Return to play **ONLY** after being cleared by a healthcare provider and provide education to athletes, coaches and parents!

Recommended RTP Progression

- Step-wise Progression.
- Resolution of all S/S.
- Return to Baseline scores on Pre-Season tests
- Signed release by a Health-Care Provider.

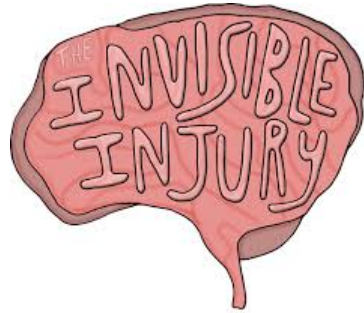
Recommended RTP Step-wise Progression

1. S/S free at Rest for a minimum of 24 hours S/P injury.
2. S/S free following exertion- 20-30 minutes of cardio: walking / stationary biking.
3. S/S free following 30 minutes of cardio activity and sports-specific agility drills. Resume regular weight-lifting activities.
4. Participate in non-contact practice drills, Intense non-contact sports-specific agility drills. (Confer with MD prior to entering Stage 5)
5. Participate in FULL practice. If contact sport, controlled practice permitted.
6. Resume FULL Participation in Competition

Return to Play Laws / Guidelines

- The goal of these state laws was to promote concussion safety and awareness in sports but they **DO NOT** address the GREATER challenge confronting the student-athlete; **RETURN TO LEARNING or the CLASSROOM!!!!**

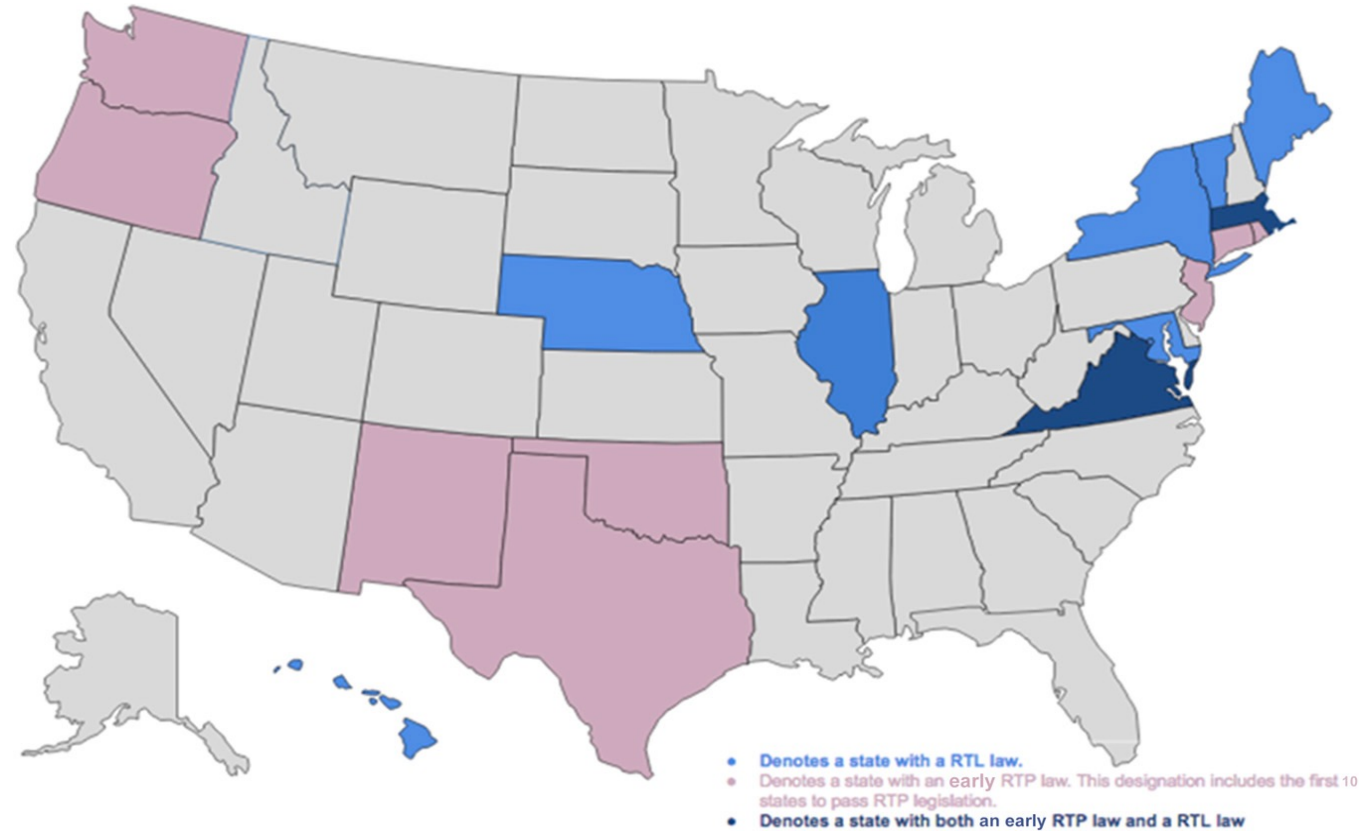
4. Academic Variations in State Laws!



Academic Variations in State Laws!

- Return to Academic laws are uncommon. They are only currently present in 8 states.
- 75% of these laws hold the school responsible for Return to Academic management.
- No laws provided guidance on support of students with persistent post-concussive symptoms.
- Only 1 state law recommended an evidence-based standard for Return to Academics.

Return to Academics Laws by State om 2016



State with Return to Academic Laws and Content

- **Illinois**

- Responsible for RTA Laws – **School and District.**
- Required RTA Education of School Personnel – **NO!**
- Required RTA Policy – **Yes, established by schools.**
- Specific Standards for RTA Protocol – **Yes, based on peer-reviewed scientific evidence & consistent with CDC guidelines.**
- Other Actions -**School establish a concussion oversight team & designate RTA Coordinator.**
- Does the statute apply to all students? – **All students regardless of concussion mechanism or setting.**

- **Massachusetts**

- Responsible for RTA - **Laws-School and District**
- Required RTA Education of School Personnel- **No**
- Required RTA Policy – **Yes, established by schools & school districts**
- Specific Standards for RTA Protocol – **Yes, must include physical / cognitive rest “as appropriate”. Must include a communication plan between school, health care providers and family.**
- Other Actions – **School MUST designate RTA coordinator. For each student, school personnel & health care provider must develop a written academic re-entry plan.**
- Does the statute apply to all students? – **No, statute’s school is student-athletes.**

State with Return to Academic Laws and Content

- **Maryland**

- Responsible for RTA Laws – **State.**
- Required RTA Education of School Personnel – **Yes, for school coaches only.**
- Required RTA Policy – **Yes, established by state Department of Education.**
- Specific Standards for RTA Protocol - **No**
- Other Actions - **No**
- Does the statute apply to all students? – **Yes, scope not clearly delineated but appears to apply students with diagnosed head injury.**

- **Maine**

- Responsible for RTA Laws - **School & state.**
- Required RTA Education of School Personnel - **No.**
- Required RTA Policy – **Yes, established by state Commissioner of Education.**
- Specific Standards for RTA Protocol – **No.**
- Other Actions – **No.**
- Does the statute apply to all students? - **Unclear, statute mandates management of concussions and other head injuries in “school” activities & athletics. Unclear whether student’s mechanism of injury would also need to be in this context.**

State with Return to Academic Laws and Content

- **Nebraska**

- Responsible for RTA Laws – **School.**
- Required RTA Education of School Personnel – **No.**
- Required RTA Policy – **Yes, established by schools.**
- Specific Standards for RTA Protocol – **Yes, protocol must recognize the student may need informal / formal accommodations, and monitoring by medical or academic staff.**
- Other Actions – **No.**
- Does the statute apply to all students? – **Unclear, statute mandates management of concussions and other head injuries in “school” activities & athletics. Unclear whether student’s mechanism of injury would also need to be in this context.**

- **New York**

- Responsible for RTA Laws – **School and state.**
- Required RTA Education of School Personnel – **Yes, Coaches, nurses & school athletic personnel.**
- Required RTA Policy – **Yes, established by state Commissioners of Education & Health.**
- Specific Standards for RTA Protocol – **No.**
- Other Actions – **Schools & state departments of health & education must provide access to RTA guidelines.**
- Does the statute apply to all students? – **Yes, applies to all students regardless of concussion mechanism or setting.**

State with Return to Academic Laws and Content

- **Virginia**

- Responsible for RTA Laws – **District . State**
- Required RTA Education of School Personnel - **No**
- Required RTA Policy – **Yes, by school district & state BOE**
- Specific Standards for RTA Protocol – **Yes, MUST require schools to accommodate a gradual re-entry on the recommendations of the health-care provider.**
- Other Actions - **NO**
- Does the statute apply to all students ?– **No, statute mandates insertion of RTA protocol into school P&P for concussion management in student-athletes.**

- **Vermont**

- Responsible for RTA Laws – **School.**
- Required RTA Education of School Personnel – **No!**
- Required RTA Policy – **Yes, by Schools.**
- Specific Standards for RTA Protocol – **No.**
- Other Actions – **No.**
- Does the statute apply to all students? – **No, scope is student-athlete**

Academic Variations in State Laws!

CONCLUSION!!

- State laws are vague and offer scant legal guidance regarding Return to Academics
- There is an OPPORTUNITY for legislative action when it comes to Return to Academics.
- There is a DEFINITE need for better integration of laws and research, so the laws reflect existing best-practice recommendations and remain current as the evidence base develops!!!

5. Members of the Team



- Questions that **NEED** to be answered:
 1. When should student return to school?
 2. Should the workload be altered?
 3. Which accommodations, if any, should be implemented?
 4. Which school activities should be restricted?

The Student-Athlete / Family Team

1. The Student
2. The Parents / Guardians / Grandparents
3. Peers
4. Teammates
5. Other family members and friends

The Medical Team

- Team Members:

- ED Department
- PC / Family MD's
- Concussion Specialists
- Psychologist
- Neuropsychologist
- ATC
- School Physician
- School Nurse

1. All Healthcare providers who provide both initial and on-going clinical management of a concussion, may vary from state-to-state.
2. Concussion management varies depending on the experience of the healthcare provider.
3. Emergency departments should give INITIAL guidelines on return to school until the student-athlete can be evaluated by a PCSM or Concussion Specialist.
4. Written recommendations, ie: cognitive rest, play an important role in concussion management.

School Physical Activity Team

- Academic
 - Teachers
 - School Counselors
 - School Psychologist
 - School Nurse
 - Social Worker
 - School Administrators
- Physical/Activity
 - ATC
 - Coach
 - PE Teacher
 - Playground Supervisor
 - School Nurse

Return to School Process

- 1. Medical providers / school personnel should be specifically trained in managing the “concussed” student.
- 2. Initial medical evaluation should assess symptoms and set-up restrictions / accommodations.
- 3. The School team should monitor the student’s into academic support / accommodations.
- 4. Communication between ALL teams is essential.
- 5. Daily monitoring of S/S should be done. Any concerns should be voiced to all “TEAMS” members.

6. Return to Academic Recommendations



What to look for when a student returns to school after a concussion

- Increased problems paying attention or concentrating.
- Increased problems remembering or learning new tasks.
- Need longer time to complete assignments/tasks
- Difficulty organizing tasks or shifting between tasks.
- Greater irritability.
- Inappropriate or impulsive behavior in the classroom.
- Less ability to cope with stress.
- More emotional.
- Fatigue.
- Difficulty dealing with the school environment. (Light/noise)
- Physical Symptoms. (headache, nausea, dizziness)

Recommended Accommodations to Assist in Concussion Recovery

1. Shortened classes and school day.
2. Fewer activities that MAY require exertion (PE/Band)
3. Allow frequent breaks / rest periods (Nurse's Office)
4. If S/S worsen, allow REST break.
5. Reduction of work load / shorter assignments.
6. More time to complete assignments.
7. Individual tutoring or a peer help.
8. Preferential classroom seating.
9. Fewer or postponement of tests.
10. Extra time to complete assignments or tests.
11. Quiet room to complete assignments or tests.
12. Avoidance of noisy areas (cafeterias auditoriums, sporting events, shop or music class.

Return-to-School Program Timetable

- Recovery is INDIVIDUALIZED process.
- 5 Step Program.
- Must complete the GSC daily.
- Must report in daily to either the school nurse or the school's athletic trainer.



Return to School – Stage 0

No Return/ Stay Home

ACTIVITY LEVEL

- Maintain low-level cognitive / physical activity.
- No prolonged concentration tasks.
- Low cognitive / physical activity.
 - No or Minimal- TV, video games, computer use, texting or loud music.
- As symptoms improve, try reading or math challenge task for 10–30 min; assess for symptom increase!

CRITERIA TO ADVANCE-STEP 1.

- Student can sustain concentration for 30 min before significant symptom exacerbation.
- Symptoms reduce or disappear with cognitive rest breaks.

Return to School – Stage 1

Return to School/Partial Day (1-3 hours)

ACTIVITY LEVEL

- Attend 1 to 3 classes / day.
- Rest periods designed throughout the day, as needed.
- Minimal expectations.
- No TESTS or HOMEWORK!

CRITERIA TO ADVANCE-STEP 2

- Student can sustain concentration for 30 min before significant symptom exacerbation.
- Symptoms reduce or disappear with cognitive rest breaks.

Return to School – Stage 2

Full Day/Maximal Support Required throughout the Day

ACTIVITY LEVEL

- Attend most classes with 2-3 rest breaks spread throughout the day!
- Minimal amount of homework (<60 minutes)
- Minimal-to-moderate expectations
- No Tests Still!

CRITERIA TO ADVANCE-STEP 3.

- Student can sustain concentration for 30 min before significant symptom exacerbation.
- Symptoms reduce or disappear with cognitive rest breaks.

Return to School – Stage 3

Return to Full Day/Moderate Supports-GSC during Day

ACTIVITY LEVEL

- Attend all classes with 1-2 rest breaks (< 30 minutes).
- Begin to take quizzes.
- Moderate homework assignments given (60-90 minutes).
- Design a schedule to make-up all missed assignments / tests.

CRITERIA TO ADVANCE-Step 4.

- Continued symptom improvement.
- No more than ONE rest break during the entire school day.

Return to School – Stage 4

Return to Full Day / Minimal Supports Needed

ACTIVITY LEVEL

- Attend all classes with 0-1 rest breaks (<30 mins.)
- Begin modified test taking.
- Increased homework load (90 + minutes).
- Moderate-to-maximum expectations to complete assignments.

CRITERIA TO ADVANCE-Step 5

- No Active Symptoms.
- No Symptoms with both cognitive / physical exertion during the school day.

Return to School – Stage 5

Full Return – No Supports Needed

ACTIVITY LEVEL

- Full class schedule.
- No Rest Breaks
- Maximum expectations for school work
- Begin to address school work that needs to be made up during this Stage!

CRITERIA TO ADVANCE

- **Not Applicable.**

7. Future / Conclusion

- 1. Additional research needs to continue to improve the “Return to Play” guidelines.
- 2. Evidence-based studies need to be completed and published to bring the “Return to Academics” programs to the forefront in concussion management.
- 3. Academic variations need to be included in state regulations as they pertain to concussion management.
- 4. When treating the concussed athlete, we ALL must create the safest possible environment and provide open lines of communications to all involved parties.



Thank You!



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Sports Safety 101: Concussions



Look for
signs and
symptoms.



When in
doubt,
sit it out.



Back to play,
when the
doctors say.

NATIONAL
ATHLETIC
TRAINING
MONTH

**YOUR PROTECTION
IS OUR PRIORITY**

MARCH 2017

