Bridging the Gap From

Concussion to Classroom

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Goals and Objectives

- Provide an overview of concussion and review concussion information and data specific to Nebraska.
- Define Return to Activity.
- Identify the members of the concussion management team.
- Identify resources that are available within schools to assist those returning to activity following a concussion.

A Little Bit About Me…

Undergraduate & Graduate

Admin Degree

Professional Experience

- **Speech-Language Pathologist**
- **Special Education Supervisor**
- **Southeast Region BIRSST Chair**
- **American Speech-Language-Hearing Association**

Most Recently…

- Nebraska Brain Injury Resource Network for Children and Youth
- Special thanks to:
  - Nova Adams, Madonna Rehabilitation Hospital
  - Cindy Brunken, Lincoln Public Schools
  - Rose Dymacek, Nebraska Department of Education
  - Michelle Hawley-Grieser, Parent
  - Kate Jarecke, Brain Injury Association of Nebraska
  - Rusty McKune, The Nebraska Medical Center

Current Definitions of Concussion…

- Zurich 2012
  - Concussion is a brain injury and is defined as a complex pathophysiological process affecting the brain, induced by biomechanical forces.
  - Features:
    - May be caused by direct blow to the head or elsewhere on the body.
    - Typically results in a rapid onset of short lived impairment. In some cases, signs and symptoms may evolve over minutes to hours.
    - Functional disturbance, not a structural injury.
    - May or may not involve a loss of consciousness.

Current Definitions of Concussion…

- AAN- 2013
  - A clinical syndrome of biomechanically induced alteration of brain function, typically affecting memory and orientation, which may involve loss of consciousness.

Incidence of TBI and Concussions in Nebraska

2001-2011:

- TBI visits to EDs increased 62% for those 19 and younger
- Total rate of TBI visits increased by 57%
  - Age 9 and under = playground and biking
  - 10-19 year olds = football, biking, soccer, basketball
- The most frequent causes of TBI in school age students include falls, automobile accidents, shaken baby, and sports related injuries. Lincoln Public Schools (2011)

Incidence of Sports Related Concussion in Nebraska for 2011

Age Group	Inpatient (Admitted)	ED visit	Other
0-4 year olds	0	<5	0
5-14 year olds	<5	152	20
15-19 year olds	<5	205	21

Nebraska Department of Health and Human Services, March 29, 2013

Why are Concussions Such a Big Deal?

Concussions are Brain Injuries

Why are Concussions Such a Big Deal?

MILD → SEVERE

Why are Concussions Such a Big Deal?

- New research indicates that young athletes are particularly vulnerable to the effects of concussion/TBI
  - ✓ Youth are at increased risk for repeat injury and disability.
- 90% of second injuries occur within 10 days of the first because students return to regular activities too soon.
- After one brain injury, the risk for a second injury is three times greater; after the second injury, the risk for a third injury is eight times greater.

Why are Concussions Such a Big Deal?

- Concussion symptoms usually clear up after a few days, but may last for several months.
- Returning to play or full time academics before symptoms have cleared can result in prolonged recovery time or risk of further injury.
  - Ignoring the symptoms and trying to "tough it out" often make symptoms worse.

Why are Concussions Such a Big Deal?

- A concussion is not just an athletic issue; it is also an educational issue.
- A concussion can interfere with:
  - School Work and Social Interactions
  - Short and Long Term Memory
  - Concentration and Organization

Why are Concussions Such a Big Deal?

- Rest is critical after a concussion because it helps the brain heal.
- In the first few days following a concussion, complete cognitive and physical rest are needed for the brain to heal.
- In most cases, the symptoms typically subside after a few weeks if the student's life activities are adjusted.

Why are Concussions Such a Big Deal?

- A small percentage of concussed students will continue to have symptoms lasting for more than 4 weeks.
  - ✓ In those cases, academic adjustments will need to remain in place longer or may have to be strengthened with the introduction of a SAT plan, a 504 plan, or an IEP.

Behavior Changes Related to Brain Injury and Concussion

- Agitation (Excessive Restlessness)
- Lack of cooperation
- Inability to tolerate frustration
- Aggression, anger or hostility
- Emotional lability (extreme and inappropriate fluctuations in mood)
- Distortions of reality
- Obsessions or compulsions
- Loose associations
- Tangentiality (answers to questions are obliquely related or completely unrelated).
- Egocentrism
- Decreased social skills
- Lack of initiation and motivation
- Perseveration (repeating an idea or action over and over)
- Disinhibition
- Impulsivity

Physical Changes Related to Brain Injury and Concussion

- Headache
- Blurred Vision/Double Vision/Visual Field Cuts
- Problems with Balance and Coordination
- Ringing in Ears
- Seeing Stars
- Vacant Stare
- Nausea/Vomiting
- Numbness/Tingling
- Sensitivity to Light
- Sensitivity to Noise
- Disorientation
- ✓ Tremors
- ✓ Spasticity
- ✓ Seizures
- ✓ Problems with Articulation
- ✓ Changes in sensory perception

Impact on Classroom Performance

- Motivation
- Organization
- Self-Awareness
- Sensorimotor Skills
- Memory Challenges
- Attention
- Fatigue
- Behavior and Emotion Regulation

Return to Activity...

Returning to Activity...

A return to activity plan is composed of two parts and should be considered a medical decision with input from all members of a defined concussion management team.

1. Return to Academics- a gradual return to school and academic requirements implemented by the teaching staff.
2. Return to Play- a gradual return to sports implemented by the athletic staff.

Orcas, 2011 pg. 30

Return to Activity...

- Return to Learn- Still developing in Nebraska
  - Nebraska Brain Injury Resource Network for Children and Youth (NeBIRN)
    - ✓CDC
    - ✓Colorado REAP Program
    - ✓Oregon Center for Applied Science (ORCAS)
- Return to Play- In Part Legislated
  - LB 260- The Concussion Awareness Act

Return to Play...
Concussion Awareness Act Quick Facts

- Introduced: January 11, 2011
- Passed: April 8, 2011
- Effective Date: July 1, 2012
- Key Provisions
  - Education
  - Removal From Play
  - Clearance by a Licensed Health Care Provider

Returning to Activity:
The Big Picture

- Following a concussion, there needs to be a period of both cognitive and physical rest.
- Return to Activity must be gradual. Both the return to academics, and when appropriate, the return to play progression should be allowed to progress over time and as symptoms subside.
- A concussion management team developed by the school should closely monitor and communicate progress to teachers, administrators, coaches, parents and medical personnel.
- Every concussion is different. The amount of time needed between the injury and the commencement of return to activities will vary not only between students, but also

Return to Activity Restrictions

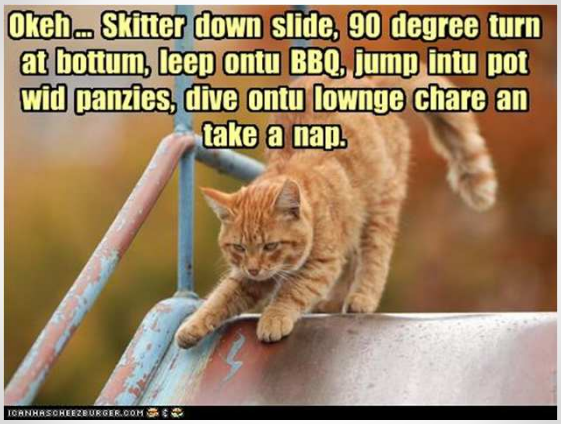
- Watching TV
- Playing video games
- Texting
- Working/playing on the computer
- Driving
- Reading
- Studying for or taking a test
- Using a cell phone
- Piano lessons

Centers for Disease Control & Prevention (CDC)

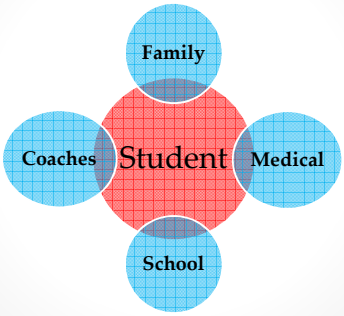
Return to Learn...

Patient/ Brain Injury → Physician/ Licensed Health Care Professional → School

Immediate access to a process that will facilitate understanding and success.



Return to Learn...



Return to Learn

- A concussion is a medical event.
- Management is best accomplished through communication between parents, the school and the healthcare providers collaborating to manage the concussion and oversee both the return to academics and return to play progressions.
  - ✓ Best to have student return to school with a signed release of information to ensure communication between the school and the healthcare provider.

Supporting Students Following Concussion

- Requires a collaborative approach
- Most people with a concussion recover quickly in the first day/weeks following the event…. But for some individuals, symptoms may last longer.
- Recent studies have even shown that when young athletes recovering from concussions return to the full-time demands of academics too soon, their symptoms actually worsen.

Supporting Students Following Concussion

- It is best to reduce the student's class load immediately after the injury.
- Progression back into academics is an individual decision because all concussions are different.
- It is well worth providing a maximum adjustment to the academic expectations initially to avoid complications and a prolonged recovery.

Supporting Students Following Concussion

- A concussion is not like the flu where students can complete school-work while at home. They must have rest.
- As the student is returning to school, teachers can provide accommodations for any challenges with learning.

Concussion Management Best Practice

- Statewide model for hospital to school transition care for students is in place
- Each school district has in place:
  - Concussion management policy
  - A trained Concussion Management Team
- Effective policy on concussion management incorporates:
  - ✓ Knowledge about concussion as a mild traumatic brain injury (TBI)
  - ✓ Training for all coaches, athletes, parents, and school staff about concussion management

Concussion Management Best Practice

- Nebraska law requires a specified Return-to-Play Protocol.
- Equally important in the academic setting is a Return to Activity policy…
  - ➢Return to Play AND Return to Learn Protocols

The Concussion Management Team

Concussion Management Team Membership

Members May Include:

- Health Care Professional
- School Administrator/ Athletic Director
- Parent
- Teacher
- Athletic Trainer
- School Nurse
- Coach
- Speech-Language Pathologist
- School Psychologist
- School Counselor
- Occupational Therapist
- Physical Therapist
- Special Education Teacher

Concussion Management Team Responsibilities

After notification of a student's concussion, the team should:

1. Assess the student's needs;
2. Design an intervention plan;
3. Monitor the effectiveness of the plan;
4. Adjust and readjust until the student no longer has special needs resulting from the condition.

McAvoy, 2011

Returning to Activity

- Return to Learn must precede Return to Play.
- Can't thoroughly treat the athlete unless you first treat the student.
  - ✓ If a student-athlete continues to receive academic adjustments due to the presence of any symptoms, they should still be considered symptomatic and not be allowed to resume physical activity. This includes PE class.

Return to Activity

Return to Academics

- Step 1- Home- Total Rest
- Step 2- Home- Light Mental Activity
- Step 3 School- Part Time
- Step 4 School- Part Time
- Step 5 School- Full Time
- Step 6 School- Full Time

Return to Play

- Step 1- No physical activity while there are symptoms
- Step 2- Light Aerobic Activity
- Step 3- Sport-specific exercise
- Step 4- Non-Contact Training Drills
- Step 5- Full Contact Practice
- Step 6- Return to Play

Adapted from Oregon Concussion and Management Program and Slocum Sports Concussion Program

Return to Academics- A Closer Look

Steps	Progression	Description
1	HOME- Total Rest	• Stay at Home, No Driving • No Mental Exertion (Computer, Texting, Homework)
2	HOME- Light Mental Activity	• Stay at Home, No Driving, No Prolonged Concentration. • Up to 30 Minutes of Mental Exertion
Progress to next level when able to handle up to 30 minutes of mental exertion without increase in symptoms		
3	School- Part Time • Maximum Accommodations • Shortened Day/Schedule • Built-in Breaks	• Modify rather than postpone academics • Extra time, extra help, and modification of assignments. • No significant classroom or standardized testing • Provide quiet place for scheduled mental rest.
Progress to next level when able to handle up to 30-40 minutes of mental exertion without increase in symptoms		

Adapted from Oregon Concussion and Management Program and Slocum Sports Concussion Program

Return to Academics- A Closer Look

Steps	Progression	Description
4	School- Part Time • Moderate Accommodations • Shortened Day/Schedule	• Moderate decrease of extra time, help and modified assignments. • Modified classroom testing. • Modified standardized testing.
Progress to next level when able to handle up to 60 minutes of mental exertion without increase in symptoms		
5	School- Full Time • Minimal Accommodation	• Continued decrease of extra time, help and modification of assignments. • May require support in academically challenging subjects • No standardized tests, routine tests OK
Progress to next level when able to handle all class periods in succession without increase in symptoms AND receives medical clearance for full return to academics and athletics.		
6	School Full Time • Full Academics • No Accommodations	• Attends all classes • Full homework

Adapted from Oregon Concussion and Management Program and Slocum Sports Concussion Program

Return to Academics- Things to note…

- Progression is individual- students may start at any step and remain there as long as necessary.
- Return to the previous step if symptoms increase.
- When symptoms continue beyond 2-3 weeks, prolonged in school support is required.
  - ✓ Consider requesting a SAT or 504 meeting to plan and coordinate student supports.

Return to Play- A Closer Look

Steps	Progression	Exercise
1	No physical activity as long as there are symtpoms.	• Complete Physical Rest.
Progress to Step 2 when cleared by medical provider and 100% symptom free for 24 hrs.		
2	Light Aerobic Activity • Increase heart rate • Light to moderate exercise that does not require cognitive attention or high degree of concentration.	• 10-15 minutes of exercise, no resistance training. •Walking •Swimming •Exercise Bike
Progress to Step 3 when symptom free for 24 hours after step 2 activities. If symptoms return, go back to Step 2.		
3	Sport Specific Exercise • Add movement • Increased attention to coordination required.	• 20-30 minutes of supervised play, low risk activities. •Running in gym, on field or treadmill •NO weightlifting •NO head impact activities •NO helmet or other equipment.
Progress to Step 4 when symptom free for 24 hours after step 3 activities. If symptoms return, go back to step 3.		

Return to Play- A Closer Look

Steps	Progression	Exercise
4	Non-contact training drills • Exercise, coordination • Athletes sport without risk of head injury	• Progression to more complex training drills- run/jump as tolerated. • May start progressing resistance training • Non-Contact training in full equipment
Progress to Step 5 when symptom free for 24 hours after step 4 activities. If symptoms return, go back to step 4.		
5	Full Contact Practice • Normal training activities after medical clearance. • Restores Confidence • Functional skills assessed by coaching staff	• Full contact practice/training
Progress to Step 6 when symptom free for 24 hours after step 2 activities. If symptoms return, go back to Step 5.		
6	Return to Play	• Normal game play with no restrictions

Adapted from Oregon Concussion and Management Program and Slocum Sports Concussion Program and the recommendations from the 4th Consensus Statement on Concussion in Sport, Zurich 2012- British Journal of Sports Medicine (2013) 250-258.

Return to Play- Things to note…

- Concussion Management Team should be aware of the state laws and which healthcare providers may clear a student.
- To begin the return to play progression:
  - ✓ Student must be symptom free;
  - ✓ Student should have no academic accommodations in place;
  - ✓ Student must be cleared by a health care provider.
- Student may spend 1-2 days at each step before advancing.
- If post concussion symptoms occur at any step, stop activity and have the Concussion Management Team

Common Academic Accommodations

- ✓Allow rest breaks during school in quiet location
- ✓Reduce course and work load
- ✓Focus on essential material, quality vs. quantity
- ✓Decrease homework
- ✓Avoid overstimulation, cafeteria and noisy hallways
- ✓Allow student to wear sunglasses or baseball cap to help with light sensitivity
- ✓Provide preferential seating

cbirt.org

Common Academic Accommodations

- ✓Allow additional time to complete in-class assignments
- ✓Provide student with instructor's notes or help student obtain quality notes from other students
- ✓Allow student to audio record lectures for later playback
- ✓Provide both oral and written instructions; clarify instructions
- ✓For lectures, provide student with an outline or study guide when available

cbirt.org

Test Accommodations

- ✓Allow additional time to complete tests.
- ✓Provide for completion of tests in a quiet, individual environment with the goal of minimizing distractions.
- ✓Administer long examinations in a series of shorter segments with breaks allowed between sections.
- ✓Allow oral examinations and assist student in having responses scribed, if needed.
- ✓Assess knowledge using multiple-choice instead of open-ended questions.

cbirt.org

Test Accommodations

- ✓Allow student to clarify and explain responses on exams (and assignments).
- ✓Permit student to keep a sheet with mathematic formulas for reference, unless memorizing the formulas is required.
- ✓Permit student's use of a calculator.
- ✓Permit the student to utilize a dictionary and thesaurus in writing test responses.
- ✓If two exams are scheduled on the same day, allow student to reschedule one for another day.

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PE Accommodations

- ✓Avoid re-injury
- ✓Avoid physical and mental over-exertion
- ✓Avoid over-stimulation (noise and light)
- ✓Minimize exertion at first, then increase activity gradually as tolerated
- ✓In complicated cases, some physical activity may promote recovery
- ✓Don't substitute mental activity for physical activity

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Return to Learn...

Patient/ Brain Injury → Physician/ Licensed Health Care Professional → School

Immediate access to a process that will facilitate understanding and success.

Brain Injury Regional School Support Teams (BIRSST)

- Contact a Brain Injury School Support Team (BIRSST) member when you have a student who needs assistance transitioning into the classroom after a brain injury.
- Team members can help identify strategies to support student success:
  - ✓ Offer guidance regarding Return to Activity for a particular student
  - ✓ Support for students struggling with new identities
  - ✓ Methods to reintegrate students with their peers
  - ✓ Information on brain injury and resources
  - ✓ Training and consultation for Concussion Management and SAT Teams.

Brain Injury Regional School Support Consultation Teams (BIRSST)

BIRSST Region Contacts

- Western Region: Marg Dredla at ESU 13 (MDredla@esu13.org
- Central Region: Patrice Fellers at ESU 10 (pfeller@esu10.org)
- Northeast Region: Cathy Schroeder at ESU 1 (cschroeder@esu1.org)
- Southeast Region: Cindy Brunken at Lincoln Public Schools (cbrunk@lps.org)
- Metro Region: Andrea McDonald at Bellevue Public Schools (andrea.mcdonald@bpsne.net)
- For more information: Rose Dymacek, Brain Injury Advisory Council (rose.dymacek@nebraska.gov)

Services in Schools

- Student Assistance Process
- 504 Plan
- Special Education Services

Services in Schools

Student Assistance Process

- 1st step
- Student Assistance Team (SAT)
  - ✓ Develops, implements, and documents a plan of accommodations, modifications, and/or intervention strategies to support the student and assist the teacher in the provision of general education
  - ✓ Evaluates the success of the plan periodically and adjusts the plan, if needed.
  - ✓ If the SAT feels that all viable alternatives have been explored, and the student's needs are not being met, a referral for multidisciplinary evaluation is completed.
- Goal: to meet the student's needs without special education

Services in Schools

- **504 Plan- Section 504 of the Rehabilitation Act of 1973**
  - Focus is non-discrimination. Its initial purpose was to provide meaningful access to the public schools for students with disabilities.
  - 504 team determines that a student is disabled.
    - Disabled for 504 purposes means the student
      - ✓ (1) has a physical or mental impairment which
      - ✓ (2) substantially limits
      - ✓ (3) one or more major life activities.
    - If the team determines that the student is eligible for a Section 504 Plan, then the team should identify specific accommodations that will support equal opportunity for the student.

Services in Schools

Special Education Services

- If the SAT exhausts all options, it refers the student to the multidisciplinary team (MDT) for evaluation.
- The MDT assesses the educational and developmental abilities and needs of the student and determines if the student has a disability and needs special education services according to the criteria established in NDE Rule 51.
- If the student does qualify for special education services, an Individual Education Program (IEP) is developed for the student by an IEP team.
- If the student does not qualify for special education services, the SAT develops a plan to assist the teacher(s) in the provision of regular education.

NDE Rule 51 Definition of TBI

TBI:

- an acquired injury to the brain **caused by an external physical force** resulting in total or partial functional disability or psychosocial impairment, or both that adversely affects a child's educational, or in the case of a child below age five, a child's developmental performance.

NDE Rule 51 Definition of TBI

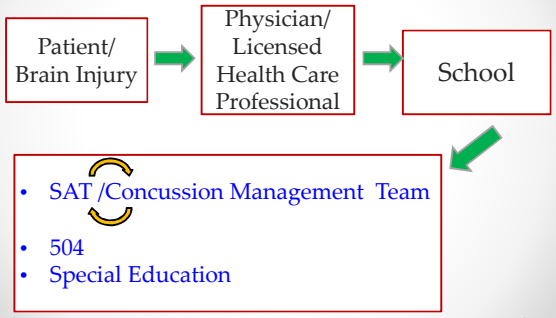
- The TBI category includes **open or closed head injuries** resulting in impairments in one or more areas, such as:
  - cognition; language; memory; attention; reasoning; abstract thinking; judgment; problem solving; sensory, perceptual, and motor abilities; psychosocial behavior; physical functions; information processing; and speech.

Acquired Brain Injury

• The TBI category does <u>not</u> include brain injuries that are congenital or degenerative, or brain injuries induced by birth trauma.

• A student with an acquired brain injury may receive services under a different disability category such as Other Health Impairment (OHI).

Return to Learn...



Sample Return to Learn Protocol

1. Concussion Occurs
   - Incident at school sporting event
   - Incident observed in other school situation
   - Incident at home or in community
2. Parent is notified and encouraged to seek medical advice.
3. Medical confirmation of concussion is obtained.
4. Parent signs release of information form allowing the school to be notified of the concussion.

Sample Return to Learn Protocol

5. Medical provider contacts Brain Injury Regional School Support Team (BIRSST) contact person.
6. BIRSST member contacts the school and offers information and assistance to parents and educators.
7. School Concussion Management Team (academics) informs educators of cognitive, behavioral and emotional symptoms of concussion and works with SAT to coordinate academic accommodations during recovery (up to 3 weeks).
8. School academic team gathers and tracks data from teachers monitoring student progress and symptoms during recovery.

Sample Return to Learn Protocol

9. School Academic Team communicates progress/recovery results back to CMT point person on regular basis.
10. Family tracks and regularly reports progress on physical, cognitive, and emotional symptoms to CMT.
11. Family, Academic and Coaches agree student is symptom-free without medication and function is "back to baseline" on academic and neurocognitive measures.
12. Final medical clearance from Medical Provider is given based on successful completion of Zurich Guidelines in consultation with CMT and following guidelines of NE Concussion Awareness Act.

What Can I Do Now?

- ✓Educate
- ✓Communicate
- ✓Collaborate

→
- ➢Parents
- ➢Schools
- ➢Physicians

Resources

- Brain Injury Regional School Support Consultation Teams (BIRSST)
- Nebraska Brain Injury Advisory Council www.braininjury.ne.gov
- Brain Injury Association of Nebraska www.biane.org
- Nebraska Department of Education
- Center on Brain Injury Research and Training www.cbirt.org
- Brainline for Kids www.brainline.org
- Centers for Disease Control and Prevention www.cdc.gov
- ORCAS- Brain 101 www.brain101.orcasinc.com
- Colorado Dept of Education www.cde.state.co.us/HealthandWellness/BrainInjury.htm

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