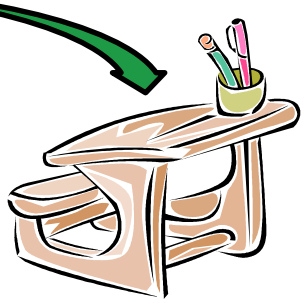
RETURN TO LEARN: BRIDGING THE GAP FROM CONCUSSION TO THE CLASSROOM



What is a Concussion?

A concussion is a type of **traumatic brain injury** (TBI) caused by a bump, blow, or jolt to the head or by a hit to the body that causes the head and brain to move rapidly back and forth. This sudden movement can cause the brain to bounce around in the skull, stretching and damaging the brain cells and creating chemical changes in the brain. (Center for Disease Control and Prevention 2017)

Concussion Facts

Concussions occur from falls, motor vehicle accidents, playground and bicycle accidents, and sports related incidents.

Most concussions (90%) occur without loss of consciousness!

Children and teens with a concussion should not return to sports or recreational activities on the same day the injury occurred. **When in doubt, sit them out!**

Repeated mild TBIs occurring over an extended period can result in cumulative neurological and cognitive deficits. Those who have had a concussion in the past are at risk of having another one. Some people may find it takes longer to recover if they have another concussion. If repeated concussions occur within hours, days, or weeks of the first injury, the results can be catastrophic or fatal.
(Center for Disease Control and Prevention 2017)

Why Are Concussions Such a Big Deal?

A CONCUSSION IS A BRAIN INJURY!!

Health care professionals may describe a concussion as a “mild” brain injury because concussions are usually not life threatening. Even so, their effects can be serious and can change the way the brain normally works. (Centers for Disease Control & Prevention 2017)

After a concussion, the cells of the brain temporarily are inefficient in providing energy for the brain. This can limit the ability of the brain to process information efficiently and quickly because of a decrease in mental energy/stamina.

These changes can lead to a set **of symptoms affecting cognitive, physical, emotional and sleep functions** that can adversely affect children and adolescents in various aspects of their lives, including home, school, social relationships, and sports/recreation. (Ransom et al 2015)

After a concussion, the child or adolescent may not appear to be ill or physically injured. In fact, they may "look" just fine. **A concussion is an invisible injury.** Even though there is no physical appearance of illness, a concussion can affect a student's learning capabilities.

While a student is symptomatic, returning to full-time academics or play 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 makes symptoms worse! A gradual return to activity (academic and sports) is recommended.

As the chemistry of the brain returns to normal, the symptoms begin to subside and for most people resolve within 1 – 4 weeks.

If symptoms worsen or persist beyond four weeks, consult with parents regarding a referral to a health care professional for further evaluation.

Management of a concussion is best accomplished through communication and collaboration among parents, the school team, and the health care provider.

Symptoms of Concussion

Symptoms of TBI/Concussion that may affect school performance fall into four categories:

- Thinking/Cognitive/Remembering Symptoms
- Sleep Symptoms
- Physical Symptoms
- Emotional/Mood Symptoms

Students report the following symptoms:

(Centers for Disease Control & Prevention 2017)

Thinking/Cognitive/Remembering Red Flags

Look for increased difficulty with:

- Thinking clearly
- Concentrating, staying on task
- Remembering new information
- Slowed response or processing of information (feeling slowed down, sluggish, hazy, foggy or groggy)
- Reduced academic performance

Sleep Red Flags

Sleep symptoms tend to last longer than other symptoms. Look for increased:

- Drowsiness
- Sleeps more than usual
- Sleeps less than usual
- Difficulty falling asleep
- Fatigue – tired, having no energy

Physical Red Flags

Look for increased difficulty with:

- Headaches or “pressure” in the head
- Fuzzy, blurred, or double vision (visual problems)
- Balance problems
- Dizziness
- Nausea or vomiting
- Sensitivity to light
- Sensitivity to noise
- Numbness or tingling
- Does not “feel right”

Social Emotional Red Flags

Look for increased difficulty with:

- Irritability
- Sadness
- More emotional than usual
- Changes in mood
- Nervousness
- Anxiety

Symptoms Observed by Teachers and School Professionals

- Appears dazed or stunned
- Is confused about events
- Answers questions slowly
- Repeats questions
- Can’t recall events prior to or after the hit, bump, or fall
- Shows behavior or personality changes
- Forgets class schedule or assignments

Concussion Management

- Once a concussion has been diagnosed by a healthcare professional, managing the concussion is best accomplished by creating a support system for the student.

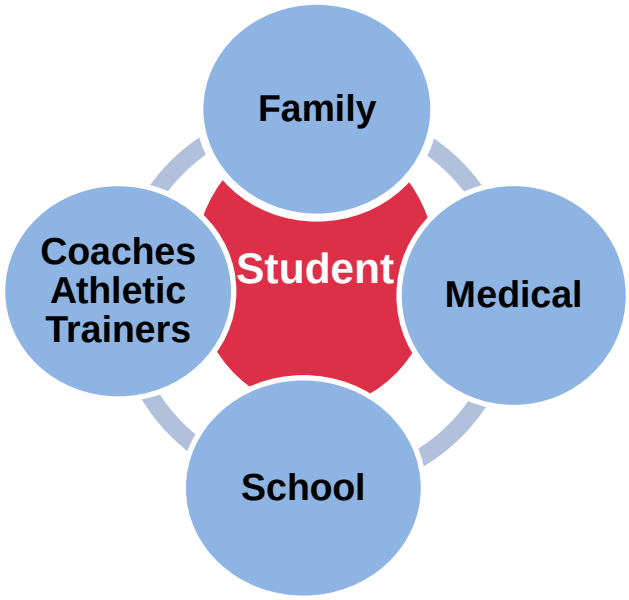
- Students do not need to be symptom free to return to school and do not need medical clearance to return to school following a concussion. Best practice indicates that it is important for a student to return to school as soon as symptoms are "tolerable, intermittent and amenable to rest." (Halstead et al, 2013)

- **Best practice also indicates that the student should return to school with a RELEASE OF INFORMATION SIGNED BY THE PARENTS that allows for two-way communication between school personnel and the healthcare provider.** (McAvoy, 2012)

- **The health care provider identifies the symptom manifestations of the injury and communicates that information to the school.**

- **The Return to Learn progression is under the purview of the school; education personnel translate the symptom information and health issues into adjustments, accommodations and supports at school to optimize learning for the student.**

- **Active, ongoing communication and collaboration** among parents, school personnel, coaches, athletic trainers, and healthcare providers in overseeing both the return to academics and return to play progressions is essential for the recovery process**. A multidisciplinary team with the student as the center of focus is recommended!**



Recommended Best Practice for Nebraska Schools

Nebraska law requires each school district to create **a protocol (concussion management policy and procedures)** to be followed when a student sustains a concussion and return to school. The Nebraska Concussion Awareness Act (Amended 2014) provides that for Return to Learn (School) the school is required to:

Establish a return to learn protocol for students that have sustained a concussion. The return to learn protocol shall recognize that students who have sustained a concussion and returned to school may need informal or formal accommodations, modifications of curriculum, and monitoring by medical or academic staff until the student is fully recovered.

Recommended best practice for supporting a concussed student:

- **Training is provided** for all school staff, coaches, parents, and students/athletes about concussion as a mild traumatic brain injury and concussion management;
- The **school district establishes** one or several **Concussion Management Teams**, i.e., one per school building, depending upon the district's needs;
- Utilizing the **infrastructure already in place**, the school district may add one or two individuals knowledgeable about brain injury to the existing Student Assistance Team (SAT) and this expanded team can assume the duties of the CMT.

Concussion Management Team Membership

Members may include:

Health Care Professional*
Parent(s)*
School Administrator (Superintendent, Principal, Assistant Principal*)
Athletic Director
Athletic Trainer
Coach
School Nurse
*Essential members

Speech-Language Pathologist
School Psychologist
School Counselor
Occupational Therapist
Physical Therapist
Student Athlete
General/Special Education Teachers

- Just as **every concussion is different,** the **resources and personnel that are available at each school are unique**; the school district determines the individuals that carry out the responsibilities of the CMT.
- **Membership will vary based upon the local school district structure and needs!**

Concussion Management Team (CMT) Responsibilities

The school administrator appoints a CMT Contact Person.
CMT Contact Person **notifies the CMT members and the concussed student's teachers when a student referral is received. Communication among school staff monitoring symptoms and academic progress is essential.**
Evaluation and symptom report from the health care provider are shared with CMT.
Designated CMT members meet with student and parents upon return to school and assess the student's symptoms. Symptoms are shared with CMT and student's teachers.
CMT members and parents design the Return to Learn Plan. Adjustments/accommodations are made to classwork based on symptoms identified by health care professional or reported by student.
Monitor symptoms at least weekly using the Post-Concussion Symptom Checklist or SAFE-CHild Screener for the appropriate age level. Document increase/decrease in severity of symptoms.
Monitor academic progress at least weekly utilizing the Academic Monitoring Tool. Document academic progress.
Parents monitor symptoms daily at home utilizing Post-Concussion Symptom Checklist or SAFE-CHild Screener for appropriate age level; communicate with CMT.
As symptoms subside, adjust, and readjust expectations and academic adjustments/accommodations.
CMT and parents agree student is symptom free. If no symptom or academic monitoring is needed, student returns to academics full time with no adjustments or accommodations.
Medical clearance is not needed for the student to return to academics full time without supports.
CMT keeps records re: **Date of Concussion; Student Age and Grade; Gender; Cause of Injury (which sport if athlete); Grades Before/After Injury; Recovery Time.**
Document the concussion in the student's educational record.

Gradual Return to School

(Consensus Statement on Concussion in Sport – the 5th International Conference on Concussion in Sport held in Berlin, October 2016)

Objective	Activity	Goal of each Step
1. After Concussion Diagnosis: rest at home for 24-48 hours may be necessary	Typical activities during the day if symptoms are not increased, e.g., reading, texting, screen time – Start with 5 minutes and gradually increase	Gradual return to typical activities
2. School Related Activities	Homework, reading or other cognitive activities outside of the classroom – increase to 30 minutes before symptoms worsen	Increased tolerance to cognitive work
3. Return to School	Gradual introduction of schoolwork. May need to begin with partial day or with several rest breaks during day	Increase academic activities
4. Return to School Full Day	Gradually progress to full day of school activities; Moderate supports provided in response to symptom status (presence, absence or increase in symptoms) during day; Use progress monitoring to assess intervention effectiveness; adjust types and intensity of supports as symptoms subside	Increase academic activities and expectations for productivity; few rest breaks
5. Return to School Full Day Without Supports	Full day of school activities can be tolerated with no rest breaks or recurrence of symptoms	Return to full-time academic activities; no supports needed

Every student and every concussion is different! No two concussions are the same!

The amount of time needed between the injury and the commencement and completion of Return to Learn activities will vary between students and should be guided by symptom status.

Student is excused from PE, sports, “contact” activities at recess during recovery.

The Return to School progression should be allowed to progress over time and as symptoms subside. A **minimum** of 24 hours should elapse between each step of the Return to School progression.

Prolonged Symptoms

Zemek, et al, 2016 indicate that 70% (+/-) of students recover from concussions within 4 weeks.

At the same time, symptoms typically persist for up to 4 weeks.

If symptoms have not resolved in 4 weeks, discuss with parent; student may need to return to the health care provider for further evaluation and recommendations. **School and medical personnel are encouraged to maintain communications and work collaboratively during a student's recovery period.**

- A Health Care Plan may be developed for the student and monitored by the school nurse or athletic trainer regarding the return to PE and playground activities.
- When symptoms continue beyond 4 weeks, prolonged in-school support is required.
- Student supports may be coordinated and provided through an MTSS/RtI Plan, a Health Plan or a 504 Plan. A small percentage of students may require a referral for special education.
- **Contact the regional BIRSST members** for consultation on strategies, adjustments and accommodations for concussed students in the classroom.

Brain Injury Regional School Support Teams (BIRSST)

- Nebraska has five regional BIRSST teams located throughout the state.
  - Refer to the attached **map** for **BIRSST team locations and contacts.**

- BIRSST teams can assist school districts by:
  - Providing information on concussions and brain injury to parents, students, and school staff
  - Providing training and consultation for Concussion Management Team
  - Identifying strategies to support student success
  - Consulting on assessment and programming for students with moderate to severe brain injury

Rest and Exercise for the Concussed Student

Rest has been widely recommended during recovery from concussion. The basis for recommending physical and cognitive rest for managing a concussion is that rest may ease discomfort during the acute recovery period by alleviating post-concussion symptoms and/or that rest may promote recovery by minimizing energy demands on the brain following concussions.

Currently, there is insufficient evidence that prescribing complete rest achieves these objectives.

Recent research found no benefit to "strict rest" beyond two days. Students randomly assigned to 5 days of strict rest vs. 1 – 2 days of rest followed by a gradual return to activities (school and social activities) had a poorer outcome (higher symptoms over a longer period). (Thomas, et al 2015)

Thus, after a brief period of rest (24 - 48 hours), students are encouraged to become gradually and progressively more active if physical and cognitive activity does not bring on or cause symptoms to worsen. (Consensus Statement on Concussion in Sport – Berlin, October 2016)

The American Academy of Pediatrics Clinical Report on Returning to Learning recommends that a student return to school when symptoms are "tolerable, intermittent and amenable to rest. (Halstead 2013)

Students do not need to be "symptom-free" to return to school/learn.

Early research on monitored exercise programs suggests that best outcomes occur with a gradual reintroduction of physical, cognitive, and social activity **of moderate intensity** throughout recovery, **but with no contact activities**.

Riding a stationary bicycle or walking on the track may be a starting point and the level of exertion is increased as tolerated with no increase of symptoms. The amount of rest and exercise is individualized for each student based on the symptoms displayed.

Please refer to the Graduated Return to Sport Strategy on page 11 for guidance on returning an athlete to normal game play.

Return to Learn before Return to Play! If a student athlete continues to receive academic adjustments due to a presence of any symptoms, they should be considered symptomatic and not be allowed to return to normal training activities or normal game play.

Graduated Return to Sport Strategy

(Consensus Statement on Concussion in Sport – the 5th International Conference on Concussion in Sport held in Berlin, October 2016)

Stage	Aim	Activity	Goal of each step
1	Symptom-limited Activity	Daily activities that do not provoke symptoms	Gradual reintroduction of work/school activities
2	Light Aerobic Exercise	Walking or stationary cycling at slow to medium pace; No resistance training	Increase heart rate
3	Sport-specific Exercise	Running or skating drills; No head impact activities	Add movement
4	Non-contact Training Drills	Harder training drills, e.g., passing drills; May start progressive resistance training	Exercise, coordination and increased thinking
5	Full Contact Practice	Following medical clearance, participate in normal training activities (NE Concussion Awareness Act 2012	Restore confidence and assess functional skills by coaching staff
6	Return to Sport	Normal game play	Normal game play

- An initial period of 24–48 hours of both relative physical rest and cognitive rest is recommended before beginning the Return to Sport progression.
- There should be at least 24 hours (or longer) for each step of the progression.
- If any symptoms worsen during exercise, the athlete should go back to the previous step. Resistance training should be added only in the later stages (stage 3 or 4 at the earliest).
- If symptoms are persistent (e.g., more than 10–14 days in adults or more than 1 month in children), the athlete should be referred to a healthcare professional who is an expert in the management of concussion.

TIPS for Teachers

Symptoms of concussion often create learning difficulties for students. Immediately after diagnosis of a concussion, an individualized plan for learning adjustments should be initiated with a gradual, monitored return to full academics as symptoms clear. Classroom adjustments should be fluid and flexible. They need to be added immediately and removed as soon as they are no longer needed.

Typical classroom adjustments and accommodations include:

- Reduce non-essential course workload;
- Decrease or excuse non-essential homework;
- Allow breaks during the day, i.e., rest in quiet area;
- Allow additional time to complete assignments;
- Provide instructor's notes, outline, study guide for student or peer notes;
- Avoid over-stimulation (noise and light);
- Allow extra time on projects and tests;
- Focus on quality not quantity;
- Frontload interventions upon student's return to school;
- Increase expectations as symptoms begin to fade;
- Testing or completion of major projects during recovery is individualized for each student based on symptom status;
- For Nebraska state tests, consider a medical waiver for the concussed student;
- Keep in mind that some students may have pre-existing conditions such as ADHD or learning disabilities that may affect reporting on a symptom checklist and academic progress.

Tips for Parents

- Parents play a key role in maximizing the child's recovery from a concussion.
- Parents take student to ER or contact the child's healthcare provider immediately after the concussion.
- After the diagnosis of a concussion by the healthcare professional, parents monitor symptoms and activities at home. Rest and restriction of activities is individualized for each student based on the symptoms displayed.
- Parents enforce rest, both physical and cognitive, and ensure that the child receives sufficient sleep and engages in activities that do not cause jerking of the head immediately after a concussion.
- The student may have symptoms that interfere with concentration and may need to stay home from school to rest for a day or two. Parents are urged to work with school personnel and health care providers in modifying the amount of time spent participating in watching TV, playing video games, working/playing on the computer, texting, use of cell phone, blowing on a musical instrument or piano lessons.
- Light mental activities can resume if symptoms do not worsen. When the student can tolerate 30-45 minutes of light mental activity, a gradual return to school/academics can commence.
- Parents monitor and track symptoms at home and communicate regularly with the school Concussion Management Team (CMT)

- Parents sign Permission for two-way Release of Information between the medical provider and the school district so information about the child's symptoms and academic progress can be shared.
- Parents may request information on concussions from the school CMT.
- Parents are aware of academic adjustments in the school setting.
- When the CMT and family agree that the student is symptom free and attending school full-time with no academic adjustments or accommodations, the parent delivers medical clearance from the healthcare provider to the CMT and the parent provides written permission for the Return to Play Progression to begin. (Nebraska Concussion Awareness Act 2012)

Post-Concussion Symptom Checklist

Name: _____ **Date:** _____

Time: _____ **Please indicate how much each symptom is bothering you.**

	Symptoms	None	Mild		Moderate		Severe	
PHYSICAL	Headache	0	1	2	3	4	5	6
	Nausea	0	1	2	3	4	5	6
	Vomiting	0	1	2	3	4	5	6
	Balance Problems	0	1	2	3	4	5	6
	Dizziness	0	1	2	3	4	5	6
	Blurry or double vision	0	1	2	3	4	5	6
	Sensitivity to Light	0	1	2	3	4	5	6
	Sensitivity to Noise	0	1	2	3	4	5	6
	Pain other than headache Specify:	0	1	2	3	4	5	6
THINKING/ COGNITIVE	Feeling “in a fog”	0	1	2	3	4	5	6
	Feeling Slowed Down	0	1	2	3	4	5	6
	Difficulty concentrating	0	1	2	3	4	5	6
	Difficulty Remembering	0	1	2	3	4	5	6
SLEEP ISSUES	Trouble Falling Asleep	0	1	2	3	4	5	6
	Fatigue or low energy	0	1	2	3	4	5	6
	Drowsiness	0	1	2	3	4	5	6
EMOTIONAL	Feeling more Emotional than usual	0	1	2	3	4	5	6
	Irritability	0	1	2	3	4	5	6
	Sadness	0	1	2	3	4	5	6
	Nervousness	0	1	2	3	4	5	6

- Do symptoms worsen with physical activity? **Yes**_____ **No**_____ **N/A** _____
- Do symptoms worsen with thinking/cognitive activity? **Yes**_____ **No**_____ **N/A** _____
- I feel: the **SAME** ___ **WORSE** ___**or BETTER** ___than yesterday. (Circle one)
- What symptom is bothering you most today? _____

Adapted from Oregon Concussion Awareness and Management Program (OCAMP)
http://media.cbirt.org/uploads/files/sport)s_concussion_management_guide.pdf
Arthur Maerlander, Research Associate Professor, Director of Clinical Research, Center for Brain, Biology and Behavior, University of Nebraska, Lincoln