

How every family, school and healthcare professional can implement a Community-Based Concussion Management Program

# REAP® The Benefits of Good Concussion Management

# REAP®

Remove/Reduce  
Educate  
Adjust/Accommodate  
Pace

Authored by Karen McAvoy, PsyD

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Fourth Edition



## Welcome to REAP!

The REAP concussion management protocols have been recognized as the gold standard for an interdisciplinary approach to return to school, return to learn, and return to play following a brain injury, including concussion. These protocols have been successfully implemented across more than 16 states.

The Brain Injury Association of Nebraska and the Nebraska Department of Education are proud to collaborate with Dr. Karen McAvoy to ensure that families across Nebraska have access to essential information for optimizing outcomes for students who have sustained a concussion. The REAP protocols have been updated to incorporate the latest recommendations and best practices, including those from the 6th International Conference on Concussion in Sport (Amsterdam 2022) and the American Academy of Pediatrics.

REAP stands out for its ease of implementation and use by families, schools, and the medical community. Our commitment is to ensure that every family in Nebraska can access REAP, enabling effective recovery and smooth reintegration into educational and sports activities after a brain injury. This essential tool is designed for use by families, school personnel, and medical professionals to support a successful recovery and return to normal activities.

REAP is authored by: Karen McAvoy, PsyD

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Fourth Edition, 2024

**REAP**,<sup>®</sup> which stands for **Remove/Reduce • Educate • Adjust/Accommodate • Pace**, is a **community-based model for Concussion Management** that was developed in Colorado. REAP stems from the dedication of one typical high school and its surrounding community after the devastating loss of a freshman football player to “Second Impact Syndrome” in 2004. The author of REAP, Dr. Karen McAvoy, was the psychologist at the high school when the tragedy hit. As a School Psychologist, Dr. McAvoy quickly pulled together various team members at the school (Certified Athletic Trainer, School Nurse, Counselors, Teachers and Administrators) and team members outside the school (Students, Parents and Healthcare Professionals) to create a safety net for all students with concussion. Under Dr. McAvoy’s direction from 2004 to 2009, the interdisciplinary team approach evolved from one school community to one entire school district. Funded by an education grant from MINDSOURCE Brain Injury Network in 2009, Dr. McAvoy sat down and wrote up the essential elements of good interdisciplinary team concussion management and named it REAP thereby creating a model for concussion management that can be utilized by any community.



**The benefits of good concussion management spelled out in REAP are known throughout communities in Colorado, nationally and internationally.** REAP has been customized and personalized for various states and continues to be the “go-to” guide from the emergency department to school district to the office clinic waiting room.

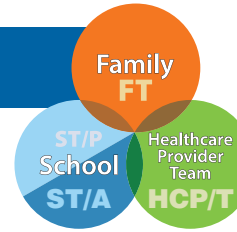
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# How to use this Manual

Because it is important for each member of the Interdisciplinary Concussion Management Team to know and understand their part and the part of other members, this manual was written for all of the teams. As information is especially pertinent to a certain group, it is noted by a color.

» Pay close attention to the sections in **ORANGE**

<b>FT</b>	<b>Family Team</b>	Student, Parents, Guardians, Family Friends and others...	For more specific information, download parent fact sheets from the various "Heads Up" Toolkits on the CDC website: <a href="https://www.cdc.gov/heads-up/index.html">https://www.cdc.gov/heads-up/index.html</a>
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» Pay close attention to the sections in **LIGHT BLUE**

<b>ST/P</b>	<b>School Team Physical</b>	Coaches, Certified Athletic Trainers (AT), Physical Education Teachers, Playground Supervisors, School Nurses and others...	For more specific information, download the free "Heads Up: Concussion in High School Sports or Concussion in Youth Sports" from the CDC website: <a href="https://www.cdc.gov/heads-up/training/index.html">https://www.cdc.gov/heads-up/training/index.html</a>
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» Pay close attention to the sections in **DARKER BLUE**

<b>ST/A</b>	<b>School Team Academic</b>	Teachers, Counselors, School Nurses, School Psychologists, School Social Workers, Administrators, School Speech/Language Pathologists and others...	For more specific information, download the free "Heads Up to Schools: Know Your Concussion ABCs" from the CDC website: <a href="https://www.cdc.gov/heads-up/training/school-professionals.html">https://www.cdc.gov/heads-up/training/school-professionals.html</a>
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» Pay close attention to the sections in **GREEN**

<b>HCP/T</b>	<b>Healthcare Provider Team</b>	Emergency Department, Primary Care Providers, Nurses, Concussion Specialists, Neurologists, Clinical Neuropsychologists, Physical Therapists, Occupational Therapists, Speech Language Pathologists and others ...	For more specific information, download the free "Heads Up: Brain Injury in your Practice" from the CDC website: <a href="https://www.cdc.gov/heads-up/hcp/providers/index.html">https://www.cdc.gov/heads-up/hcp/providers/index.html</a>
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# Common Concussion Myths...

TRUE or FALSE?

Loss of consciousness (LOC) is necessary for a concussion to be diagnosed.

**False!** In 2020, 6.8% of children had experienced symptoms of a concussion or brain injury in their lifetime. The percentage of children who had ever had symptoms of a concussion/brain injury increased with age, from 2.0% in children aged <5 years to 12.2% in children aged 12–17.<sup>1</sup> Most concussions do not involve a loss of consciousness. While many students receive a concussion from sports-related activities, numerous other concussions occur from non-sports related activities – i.e., from motor vehicle and from bicycle and playground accidents.<sup>2,3</sup>

TRUE or FALSE?

A concussion is just a “bump on the head.”

**False!** Actually, a concussion is a traumatic brain injury (TBI). The symptoms of a concussion can range from mild to severe and may include: confusion, disorientation, memory loss, slowed reaction times, emotional reactions, headaches and dizziness. You can't predict how severe a concussion will be or how long the symptoms will last at the time of the injury.

TRUE or FALSE?

A parent should awaken a child who falls asleep after a head injury.

**False!** Current medical advice is that it is not dangerous to allow a child to sleep after a hit to the head IF the child has been medically evaluated and more serious complications have been ruled out. Once a medical evaluation results in the diagnosis of concussion and not something more serious, then the best treatment is to allow the child to sleep.

TRUE or  
FALSE?

A concussion is usually diagnosed by neuroimaging tests (i.e. CT scan or MRI).

**False!** Concussions cannot be detected by neuroimaging tests: a concussion is a “functional” not “structural” injury. Concussions are typically diagnosed by careful examination of the signs and symptoms after the injury. Symptoms during a concussion are thought to be due to an ENERGY CRISIS in the brain cells. At the time of the concussion, the brain tries to protect itself by decreasing blood flow to injured areas. Because of the injury there is not enough “fuel” (sugar/glucose) delivery to keep brain cells (neurons) working normally – for playing and for thinking. Over time, this blood flow returns to normal as symptoms improve. While a CT scan or an MRI may be used after trauma to the head to look for bleeding or bruising in the brain, it will be read as “normal” with a concussion. A negative scan does not mean that a concussion did not occur.





## Did You Know...

» **More than 70% of concussions resolve successfully** if managed well within the first four weeks post-injury.<sup>4</sup> REAP sees the first four weeks post-injury as a “window of opportunity” to maximize positive outcomes.

» **REAP works on the premise that a concussion is best managed by an Interdisciplinary Team** that includes: the Student/Athlete, the Family, various members of the School Team and the Healthcare Provider Team. The unique perspective from each of these various teams is essential!

» **The first day of the concussion is considered Day One.** The first day of recovery also starts on Day One. REAP can help the Family, School and Healthcare Teams mobilize immediately to maximize recovery during the entire four week “window of opportunity.”

» **REAP is concussion guidance for ALL students, not just for athletes.** Schools have an obligation to support all students post-concussion (regardless of how they sustain their concussion) and while it is advised that all students with a concussion seek health care, schools are obligated to support all students even if their families choose not to seek medical care.

Medical note  
Dr. Mark Howerter,  
Chief Medical  
Officer, Columbus  
Community Hospital

“The team approach to concussion care is vital to appropriate care of the concussed student. It begins with recognition by coaches, athletic trainers, or teammates. Once recognized, these students require an appropriate medical workup and follow up. Once diagnosed as a concussion, the critical part is then coordination with school multidisciplinary teams on the academic side as well as with trainers and coaches on the athletic side. The ultimate goals are to facilitate healing and mitigate further harm.”

## Message to Parents

To maximize your child’s recovery from concussion, double up on the R’s: **REDUCE** and **REST!** Insist that your child rest, especially for the first few days following the concussion and slightly cut back extra-curricular and social activities over the four week recovery period. Some symptoms of concussion can be so severe on the first day or two that your child may need to stay home from school. When your child returns to school, he/she should “sit/out” of any high risk physical activities. Work with your Interdisciplinary Concussion Management Team to determine when your child is ready to return to physical activity, recess and/or PE classes (see PACE).

Don’t let your child convince you he/she will rest “later” (after the prom, after finals, etc.). Rest must happen immediately! The school team will help your child reduce their academic load [see Adjust/Accommodate]. However, it is your job to help to reduce sensory load at home. Advise your child/teen to:

- Avoid loud group functions (games, dances)
- Limit, (do not fully restrict) video games, text messaging, social media and computer screen time
- Limit, (do not fully restrict) reading and homework

A concussion will almost universally slow reaction time; therefore, driving should not be allowed pending medical approval or until a parent has made the effort to supervise driving again.

Plenty of sleep, quiet, and restful activities after the concussion maximizes your child’s chances for a great recovery!

When should your child go back to school? See page 8.

# EVERY Member of Every Team is Important!

Every team has an essential part to play at certain stages of the recovery



**First** The School Team/Physical (coach, AT, playground supervisor) and/or the Family Team (parent) have a critical role in the beginning of the concussion as they may be the first to **RECOGNIZE** and **IDENTIFY** the concussion and **REMOVE** the student/athlete from play.

**Second** Healthcare Provider (HCP) Team then has an essential role in **DIAGNOSING** the concussion and **RULING-OUT** a more serious medical condition.

**Third** For the next 1 to 4 weeks the Family Team and the School Team/Academic will provide the majority of the **MANAGEMENT** by **REDUCING** social/home and school stimulation.

**Fourth** When all **FOUR** teams decide that the student/athlete is 100% back to pre-concussion functioning, the HCP Team can approve the Graduated Return to Sport (RTS) steps. See the *PACE* page.

**Finally** When the student/athlete successfully completes the RTS steps, the HCP Team can determine final "clearance."

Throughout this book, the terms Return to School, Return to Learn, Return to Activity and Return to Sport are used distinctly and intentionally. However, because they all start with the words "Return to ...", there is much confusion. These definitions will help:

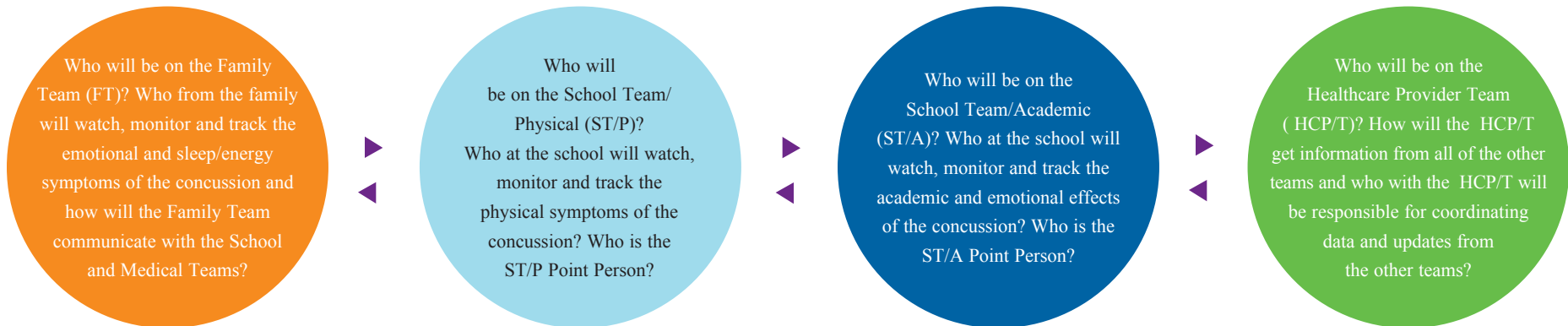
**Return to School** is defined as the process of the student physically walking back into a school setting. The decision to send a child to school on any given day is directed by the parent, often with HCP input, and is dependent upon the student's ability to manage symptoms well enough to be physically and cognitively present in the classroom to listen and learn [See 'Adjust/Accommodate for Parents' on Page 8].

**Return to Learn** is defined as the process by which educators help students with concussion maximize learning while minimizing symptom flare-ups. A successful Return to Learn plan is directed by educators, especially general education teachers, who have knowledge and skill in differentiated instruction to meet the needs of all students regardless of medical, psychological, learning, behavioral or social conditions [See 'Adjust/Accommodate for Educators' on Page 9].

**Return to Activity** is defined as the process of encouraging a person with a concussion to begin to add in sub-symptom threshold levels of physical and cognitive activity **WHILE** still in the recovery phase. A gradual re-introduction of cognitive, social and cardio activity (safe aerobic activity under close supervision) has been found to be therapeutic.<sup>5</sup> The 2022 guidelines have now incorporated early sub-threshold exercise into steps 1, 2A, 2B and 3 of the Graduated Return to Sport/Play (GRTS/P) steps. GRTS/P steps 4, 5 and 6 now start "after the resolution of any symptoms, abnormalities in cognitive function and any other clinical findings related to the current concussion, including with and after physical exertion"<sup>6</sup> [See page 12].

**Graduated Return to Sport** is the process of progressively returning athletes back to sport once they are 100% symptom-free [See 'PACE' on page 12].

An "Interdisciplinary Team" = Adults who provide multiple perspectives of the student/athlete AND who provide multiple sources of data to gauge recovery status



# TIMEFRAME

## » REAP suggests the following timeframe:

TEAM	Week 1	Week 2	Week 3 & Week 4
<b>FT</b> Family Team* Help child understand he/she must be a "honest partner" in the rating of symptoms	<ul style="list-style-type: none"> <li>Impose rest – healthcare provider-guided rest, if a HCP is involved.</li> <li>Check in on symptoms periodically – especially monitor sleep/energy and emotional symptoms.</li> <li>Return child to school, communicate with school RN/health tech/teacher so the school can help student manage symptoms and provide academic supports.</li> </ul>	<ul style="list-style-type: none"> <li>Continue to check in on symptoms weekly, monitor if symptoms are improving.</li> <li>Continue to check in on symptoms and increase/decrease stimulation at home accordingly.</li> </ul>	<ul style="list-style-type: none"> <li>Continue to check in on symptoms weekly.</li> <li>Continue to check in on symptoms and increase/decrease stimulation at home accordingly.</li> </ul>
<b>ST/P</b> School Team/Physical Coach/AT/School Nurse (Assign 1 point person to oversee/manage physical symptoms)	<ul style="list-style-type: none"> <li>REMOVE from high risk activities; encourage light non-contact cardiovascular activities (e.g. brisk walk, stationary bike, feet on the ground, no jumping and stay off anything with wheels.<sup>7</sup></li> <li>Assess physical symptoms weekly, use objective rating scale.</li> <li>Monitor visits to school clinic. If symptoms at school are significant, contact parents to coordinate a plan of action.</li> <li>A school that uses an electronic concussion flag system may put the flag up.</li> </ul>	<ul style="list-style-type: none"> <li>Continue to assess symptoms weekly.</li> <li>School Nurse: Continue to monitor visits to school clinic. Work with student to manage symptoms by taking "pacing" and "strategic rest" breaks so student can be at school daily for full days. See ADJUST/ACCOMMODATE section.</li> </ul>	<ul style="list-style-type: none"> <li>Continue with all assessments weekly.</li> <li>School Nurse: Continue to monitor visits to school clinic. Work with student to manage symptoms by taking "pacing" and "strategic rest" breaks so student can be at school daily for full days. See ADJUST/ACCOMMODATE section.</li> <li>* Once a concussion has been "cleared", schools that use an electronic concussion flag system can put down the flag.</li> </ul>
<b>ST/A</b> School Team/Academic Teachers, School Psychologist, Counselor, Social Worker, School Nurse (Assign 1 point person to oversee and manage academic and emotional symptoms)	<ul style="list-style-type: none"> <li>REDUCE (do not eliminate) all cognitive demands.</li> <li>Meet with student to create academic adjustments for cognitive/emotional reduction.</li> <li>Educate all teachers on the symptoms of concussion.</li> <li>See ADJUST/ACCOMMODATE section.</li> </ul>	<ul style="list-style-type: none"> <li>Continue to evaluate symptoms weekly and slowly increase/decrease cognitive and academic demands accordingly.</li> <li>Continue academic adjustments, as needed.</li> <li>Monitor for downstream emotional (depression/anxiety) sequelae</li> </ul>	<ul style="list-style-type: none"> <li>Continue to evaluate symptoms weekly and increase/decrease cognitive and academic demands accordingly.</li> <li>Continue academic adjustments, as needed.</li> <li>Assess if longer term academic accommodations are needed (may need to consider a 504 Plan beyond 4+ weeks).</li> <li>Continue to monitor for emotional (depression/anxiety) sequelae</li> </ul>
<b>HCP/T</b> Healthcare Provider Team MD/DO/NP/PA/AT/PT/OT/SLP	<ul style="list-style-type: none"> <li>Assess and diagnose concussion.</li> <li>Assess for head injury complications, which may require additional evaluation and management.</li> <li>Recommend return to school with academic adjustments once symptoms are improving and tolerable, typically within 48 to 72 hours. Do NOT hold students out of school until they are totally "symptom-free."</li> <li>Educate student/athlete and family on the typical course of concussion and the need for rest with gradual re-integration of "activity" (school, home and social stimulation, light cardio exercise under the supervision of HCP, outpatient PT and/or parent).</li> <li>Monitor that symptoms are improving throughout Week 1 – not worsening in the first 48 to 72 hours.</li> </ul>	<ul style="list-style-type: none"> <li>Continue to consult with school and family teams.</li> <li>Follow-up medical check including: comprehensive history, neurologic exam, detailed assessment of mental status, cognitive function, gait and balance.</li> </ul> <p>Schools have increasing levels of support for students who struggle academically. Allow schools to go through their process, do not write prescriptions for 504 Plans or IEPs. See SPECIAL CONSIDERATIONS.</p>	<ul style="list-style-type: none"> <li>Continue to consult with school and home teams.</li> <li>Consider referral to a Specialty Concussion Clinic if symptoms are especially problematic or long.</li> <li>It is best practice that a medical professional be involved in the management of each and every concussion, not just those covered by legislation.</li> </ul>

\*Family should sign a Release of Information so that School Team and HCP Team can communicate with each other as soon as possible.

» Don't be alarmed by symptoms – symptoms are the hallmark of concussion. The goal is to watch for a slow and steady improvement in symptoms over weeks. **It is typical for symptoms to be present for up to three to four weeks.** If symptoms persist at Week 4+, see SPECIAL CONSIDERATIONS.



## » Once a concussion has been diagnosed:



### Brady's Story

Brady Beran excelled in academics and was an exceptional football and soccer athlete at Lincoln East High School. At 16, Brady tied a Nebraska state soccer record with 13 consecutive shutouts as a goalie. He planned to play college soccer for Creighton University. But that all changed on September 24th, 2004 while playing high school football.

In the first quarter Brady was injured and helped off the field. He sat out a few plays and then returned to the game. During the third quarter of the game he had a helmet-to-helmet collision. He was helped off the field a second time and after getting to the sidelines, he collapsed. Brady was rushed to Bryan West Trauma where he underwent immediate surgery to stop a brain hemorrhage. The odds were stacked against him with a less than 5% chance of surviving surgery.

Brady did survive the surgery and was placed in a medically-induced coma. After several days, he was taken off the coma medicine, but complications set in, and he did not wake from the coma until five weeks later. Brady spent the next 5 months undergoing intensive therapy learning to walk, talk, eat, and care for himself again. He continued ongoing therapy for the next four years.

As Brady, his family, coaches, and teammates look back at his behavior after the first injury in the first quarter they noticed things weren't right, but didn't know enough to identify it as a concussion at the time. In 2012, Brady testified in front of the Legislative Health and Human Services Committee of Nebraska about the importance of educating players, parents, and coaches about the signs and symptoms of concussion so players don't return to the field with a concussion. He stated if he and those around him had only known, things could have turned out much different for him.

Brady says due to the grace of God, a lot of hard work, and support from family and friends, he has had an amazing recovery. In 2012, Brady married his wife, Amber. Brady, Amber, and their daughter live in Shawano, Wisconsin, where Brady works for Thrivent Credit Union Call Center.

Recent guidelines indicate that the introduction of light cardio activity, while the student is still symptomatic, can be therapeutic and promote recovery. However, introducing early cardio activity at school will be limited by an individual school's/district's capacity to have trained staff available to monitor student safety. Ultimately, a school/district has the prerogative to deny rehabilitative cardio activity (meaning while still symptomatic) in a school setting based upon their own level of school resources, staff availability and physical space.

**STEP ONE: REMOVE** student/athlete from all physical activities.  
**REDUCE** school demands and home/social stimulation.

**The biggest concern with concussions** in children/teens is the risk of injuring the brain again before recovery. This is called "Second Impact Syndrome," and it is thought to occur when an already injured brain takes another hit resulting in possible massive swelling, brain damage and/or death<sup>7</sup>. The concussed brain is in a vulnerable state, and a minor impact can result in a severe injury with risk of permanent brain damage, or rarely, even death. Therefore, once a concussion has been identified, it is critical to **REMOVE** a student/athlete from ALL physical activity, in PE classes, dance, active recess, recreational and club sports until medically cleared.

Secondly, **while the brain is still recovering**, all school demands and home/social stimulation should be reasonably **REDUCED** (not eliminated completely) and then slowly brought back up over 4 weeks. Reducing demands on the brain will promote **REST** and will help recovery.

<b>FT</b>	<b>Family Team</b>	<p><b>REMOVE</b> the student from high-risk physical activities immediately, including play at home (e.g playground, bikes, skateboard), recreational and/or club sports; encourage light non-contact cardiovascular exercise (e.g brisk walk, stationary bike) as long as there is no risk of further head impact.</p> <p><b>REDUCE</b> or limit home/social stimulation. Do not totally restrict electronics and social activities; make a reasonable home plan.</p> <p>Encourage <b>REST</b> for the first few days followed by a gradual re-introduction of cognitive, social and home activities.</p>
<b>ST/P</b>	<b>School Team Physical</b>	<p><b>REMOVE</b> the student from high risk physical activities; encourage light non-contact cardiovascular activities (e.g. brisk walk, stationary bike, feet on the ground, no jumping, climbing and stay off anything with wheels).</p> <p>Support <b>REDUCTION</b> of school demands and home/social stimulation.</p> <p>Provide encouragement to <b>REST</b> and take the needed time to heal.</p>
<b>ST/A</b>	<b>School Team Academic</b>	<p><b>REMOVE</b> student from high risk physical activity at school, in PE, recess, dance class.</p> <p><b>REDUCE</b> or limit school demands. Do not totally restrict academic expectations. (See <b>ADJUST/ACCOMMODATE</b> for Educators on pages 9-10).</p> <p>Encourage "brain <b>REST</b>" breaks at school.</p>
<b>HCP/T</b>	<b>Healthcare Provider Team</b>	<p><b>REMOVE</b> the student from high risk physical activities; encourage light non-contact cardiovascular activities (e.g. brisk walk, stationary bike, feet on the ground, no jumping, climbing and stay off anything with wheels).</p> <p><b>RULE-OUT</b> more serious medical issues including severe traumatic brain injury. Consider risk factors – evaluate for concussion complications.</p> <p>Support <b>REDUCTION</b> of school demands and home/social stimulation.</p> <p>Encourage <b>REST</b> for the first few days followed by a gradual re-introduction of cognitive, social and home activities.</p>



**STEP TWO: EDUCATE** all teams that symptoms tell the story of the recovery of the concussion.

**After a concussion**, the brain cells are temporarily inefficient. A helpful way for students, parents and teachers to think of a concussion is as an “energy crisis” not as something scary like a bruise or a bleed. Here are two energy management scripts to use with your children/teens/students:

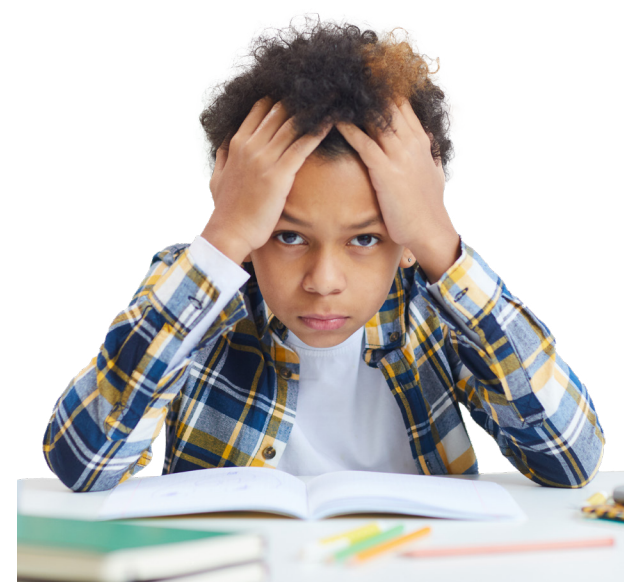


You are like a smart phone that is 3 upgrades behind or with a very “spotty” battery. You are not broken, you’re just not holding a charge well.



You are like a car with a small gas tank. You can get out of the garage (go to school, socialize with friends) but you need to ‘do, then fuel.’ The symptoms function like an indicator light on the car’s dashboard. When they ‘flare’, they are simply a signal of how well you have been managing your energy levels.

Symptoms are the barometer of the concussion. Symptoms may be present for up to 4 weeks (hopefully decreasing daily/weekly); it is our duty to teach our children how to “pace their energy so they can control their symptoms” – that is the best way for them to stay engaged in school and life. Learning to manage symptoms is an active approach to rehabilitation! Doing cognitive and home activities in smaller amounts followed by eye/brain/water intake breaks (5 to 10 minutes)... “do, then fuel”... is how the school and home plan can be rehabilitative and not restrictive. It is unreasonable to ask a child/teen to never text or watch TV over 4 weeks. It is unreasonable to ask a teacher to never ask a student to read or look at a computer or complete some in-class schoolwork or homework over 4 weeks. If we want our children/teens/students to be engaged in their own recovery, we have to keep them reasonably engaged – socially, academically and at home – while we are waiting for the concussion to heal.



**Medical Note from Mark Halstead, MD**

“It is important to emphasize with students that making the brain work will not make the brain injury worse. Symptoms may worsen, but that is the way our body gives feedback that it is reaching a limit for what we are doing at that time, not a sign of a worsening injury. Pacing with academic and physical activity and responding to symptom flares by reducing activity and/or taking a break is the current best practice for concussions.”

– Mark Halstead, MD (Director, Sports Concussion Clinic – St Louis Children’s Hospital)

**IMPORTANT**

All symptoms of concussion are important; however, monitoring of physical symptoms, within the first 48 to 72 hours is critical! If physical symptoms worsen, especially headache, confusion, disorientation, vomiting, difficulty awakening, it may be a sign that a more serious medical condition is developing in the brain.

**SEEK IMMEDIATE MEDICAL ATTENTION!**

**PHYSICAL**  
How a Person Feels Physically

- |                          |                      |
|--------------------------|----------------------|
| Headache/Pressure        | Nausea               |
| Blurred vision           | Vomiting             |
| Dizziness                | Numbness/Tingling    |
| Poor balance             | Sensitivity to light |
| Ringing in ears          | Sensitivity to noise |
| Seeing “stars”           | Disorientation       |
| Vacant stare/Glassy eyed | Neck Pain            |

**COGNITIVE**  
How a Person Thinks

- Feel in a “fog”
- Feel “slowed down”
- Difficulty remembering
- Difficulty concentrating/easily distracted
- Slowed speech
- Easily confused

**EMOTIONAL**  
How a Person Feels Emotionally

- |                          |                    |
|--------------------------|--------------------|
| Inappropriate emotions   | Irritability       |
| Personality change       | Sadness            |
| Nervousness/Anxiety      | Lack of motivation |
| Feeling more “emotional” |                    |

**SLEEP/ENERGY**  
How a Person Experiences Their Energy Level and/or Sleep Patterns

- |                        |                          |
|------------------------|--------------------------|
| Fatigue                | Drowsiness               |
| Excess sleep           | Sleeping less than usual |
| Trouble falling asleep |                          |

Do not worry that your child has symptoms for 1 to 4 weeks; it is typical and natural to notice symptoms for up to 4 weeks. Make sure you are seeing slow and steady resolution of symptoms. To monitor your child’s progress with symptoms, chart symptoms periodically (see TIMEFRAME on page 5) and use the Symptom Checklist (see APPENDIX). In a small percentage of cases, symptoms from a concussion can last from weeks to months. (See SPECIAL CONSIDERATIONS on page 13.)

## STEP THREE: ADJUST/ACCOMMODATE for PARENTS.

AFTER YOUR CHILD HAS RECEIVED THE DIAGNOSIS OF CONCUSSION, HOW DO THEY RETURN TO SCHOOL, RETURN TO LEARN AND EVENTUALLY RETURN TO PLAY?

In REAP, the term Return to School is not interchangeable with Return to Learn... and both have to happen successfully before Return to Sport/Play:

## RETURN TO SCHOOL

**Return to School** is defined as the process of the student physically walking back into a school setting; aka, their "seat" in a "seat". The decision to send a child to school on any given day is directed by the parent, often with HCP input, and is dependent upon the student's ability to manage symptoms.

Some students have minimal symptoms; some students have intense symptoms after a concussion. That is why a step-up approach to returning your child physically to school is not one-size fits all. Typically, after a few days of relative rest at home, a child/adolescent will be ready to return to school. It is not expected that symptoms will be gone at that point, just that symptoms can be managed at school.

Parents: DO NOT hold your child at home due to symptoms for the duration of the concussion.

HCP Providers: DO NOT advise parents to keep students home from school

until they are "symptom-free".

Holding students out of school disrupts their development; it can make them feel socially isolated, get them off-track academically, make them feel "sicker" than they are and eventually can lead to downstream development or exacerbation of depression, anxiety and school avoidance.

Returning to school on "partial" days can be disruptive to students, parents and teachers. Being in school, preferably full days, allows the student to hear instruction, to passively listen and learn. This will provide an option for teachers to remove and reduce some in-class work and homework based upon the fact that the student was at least present in class to hear the content.

Failure to RETURN TO SCHOOL, predictably & full-days, impacts the school's ability to provide a robust RETURN TO LEARN plan.

## RETURN TO LEARN

**Return to Learn** is defined as the process by which educators, preferably classroom teachers, help students with concussion maximize learning while minimizing symptom flare-ups.

A student with a concussion who has returned **physically** to school, all day, every day, can now be supported by their school team for the duration of the concussion.

Return to Learn refers to the "magic" provided by general education teachers who adjust the environment in the classroom (preferential seating, audiobooks, buddy notes) and who adjust the workload (group presentation instead of individual report, a collage instead of an essay, even problems

instead of even + odd problems). These Return to Learn "gifts" cannot be given to students who have not heard instruction (i.e. students who have been absent). It is also impossible for teachers to eventually assess mastery of material and to give a fair grade if the student has missed a lot of school.

Falling grades post-concussion are usually the result of either: a parent's/HCP's failure to RETURN a child to SCHOOL (due to anxiety about symptoms) or a teacher's failure to provide a RETURN TO LEARN plan.

A quick RETURN TO SCHOOL, followed by a supportive RETURN TO LEARN are necessary requirements prior to starting steps toward RETURN TO SPORT/PLAY.

## TRANSITION BACK TO SCHOOL

When returning a student to school:

- Parents should communicate with the school (school nurse, health tech, teacher, school mental health and/or counselor) on the student's first day back to school following the concussion.
- Parents and the school should decide together the level of academic adjustment needed at school depending upon:

- ✓ The severity of symptoms present
- ✓ The type of symptoms present
- ✓ The times of day when the student feels better or worse
- The child **MUST** sit out of physical activity – gym/PE classes, highly physically active classes (dance, weight training) and physically active recess until medically cleared.
- Consider removing child from band or music if symptoms are provoked by sound.

Medical  
Note

"Some of the latest research regarding return to learn reveals the importance of getting students back into the classroom early on. For the most part, students do better if they return to school after one or two days off. Depending on their symptoms they may require some temporary accommodations such as a shortened school day or altered academic load. A delayed presentation can also occur. Commonly the student can be injured on a Friday night, do very little physically or mentally over the weekend then becomes symptomatic (often with headache and dizziness) when they return to school on the following Monday." – Dr. Kody Moffatt, Sports Medicine Division Chief, Children's Nebraska

» GOING BACK  
TO SCHOOL

Sophie is a 5th grade private-school student, who sustained a concussion in PE when she was struck in the face and then in the back of the head while playing dodgeball. When Sophie's mother picked her up from school, Sophie stated, "I just don't feel right". Despite seeking specialized medical care, Sophie experienced several months of headaches, dizziness, problems with balance, nausea, confusion, difficulty concentrating and remembering, and difficulty sleeping. Academic accommodations were implemented which included shortened school days, reduced assignments, taking rest breaks by putting her head on her desk or going to the office, not attending assemblies or activities with loud noises. Sophie said the accommodation that helped her the most was attending school for half days because she was so exhausted. Her mother said the resource that helped her the most was being referred to a medical provider experienced in the management of concussions. Sophie also attended physical therapy for vestibular rehabilitative exercises to help with her dizziness symptoms.

**STEP THREE: ADJUST/  
ACCOMMODATE for EDUCATORS.**



**School Team Educators**

**Return to Learn (RTL)**

RTL refers to a teacher’s ability to help a student with a concussion learn to “pace” levels of energy in order to maximize learning while minimally contributing to symptom flare-ups. A RTL plan is most robust when teachers, are empowered to make educational decisions for their students hourly, daily and weekly, as they see fit. While medical input may be helpful in an RTL plan, teachers need not wait for medical input/“clearance”/approval to apply or remove academic adjustments. RTL recommendations provided by healthcare providers are “suggestions,” not mandates. Schools may accept or reject outside RTL suggestions based upon its educational soundness, feasibility and alignment with school policy/protocol and the appropriateness in the educational setting.

» **Most Common “Thinking” Cognitive Problems Post-Concussion**

**And suggested adjustments/accommodations**

Areas of concern	Suggested Accommodations for Return-to-Learn (RTL)
<p><b>Fatigue, specifically Mental Fatigue</b></p>	<ul style="list-style-type: none"> <li>• Schedule “strategic” rest periods. Do not wait until the student’s over-tiredness results in an emotional “meltdown.” Proactively adjust the schedule to incorporate a 15-20 minute rest period 1X mid-morning and 1X mid-afternoon, as needed. Wean back breaks when no longer needed.</li> <li>• Allow for “PACING” – 5 to 10 minute eye/brain/water breaks <u>in the classroom</u> after periods of mental exertion.</li> <li>• Do not consider “quiet reading” as rest for all students.</li> <li>• Consider letting the student have sunglasses, headphones, preferential seating, quiet work space, passing in quiet halls, etc., as needed.</li> </ul>
<p><b>Difficulty concentrating</b></p>	<ul style="list-style-type: none"> <li>• REDUCE the cognitive load—it is a fact that smaller amounts of learning will take place during the recovery.</li> <li>• Since learning during recovery is compromised, the academic team must decide: What is the most important concept for the student to learn during this recovery?</li> <li>• Be careful not to tax the student cognitively by demanding that all learning continue at the rate prior to the concussion.</li> </ul>
<p><b>Slowed processing speed</b></p>	<ul style="list-style-type: none"> <li>• Provide extra time for tests and projects and/or shorten tasks.</li> <li>• Assess whether the student has large tests or projects due during the 4-week recovery period and remove or adjust due dates.</li> <li>• Provide a peer notetaker or copies of teacher’s notes during recovery.</li> <li>• Grade work completed – do not penalize for work not completed; consider exemption of non-essential work without penalty whenever possible.</li> </ul>
<p><b>Difficulty with working memory</b></p>	<ul style="list-style-type: none"> <li>• Initially exempt the student from routine work/tests.</li> <li>• Since memory during recovery is limited, the academic team must decide: What are the most important concepts for the student to know?</li> <li>• Work toward comprehension of a smaller amount of material versus rote memorization.</li> </ul>
<p><b>Difficulty converting new learning into memory</b></p>	<ul style="list-style-type: none"> <li>• Allow student to “audit” the material during this time.</li> <li>• REMOVE “busy” work that is not essential for comprehension. Making the student accountable for all of the work missed during the recovery period (4 weeks) places undue cognitive and emotional strain on him/her and may hamper recovery.</li> <li>• Ease student back into full academic/cognitive load.</li> </ul>
<p><b>Emotional symptoms</b></p>	<ul style="list-style-type: none"> <li>• Be mindful of emotional symptoms throughout! Students are often scared, overloaded, frustrated, irritable, angry and depressed as a result of concussion. They respond well to support and reassurance that what they are feeling is often the typical course of recovery.</li> <li>• Watch for secondary symptoms of depression – usually from social isolation. Watch for secondary symptoms of anxiety – usually from concerns over make-up work or slipping grades.</li> <li>• Research informs us that a concussion can have an impact on emotional well-being. Supportive psychological support, education, cognitive-behavioral strategies and stress reduction are all suggested for psychological rehabilitation.<sup>12</sup></li> </ul>

## STEP THREE: ADJUST/ACCOMMODATE for EDUCATORS (continued)

Typically, **students' symptoms only require a few days of absence** from school. If more than a few days are missed, call a meeting with parents and seek a medical explanation.

Research shows that students who rested for a few days followed by a gradual return to activities (school, socializing) had fewer reported symptoms than students who took 5 days of strict rest.<sup>13</sup>

More rest has not been proven to be the fastest, easiest way to recover from a concussion! A reasonable amount of rest, followed by a measured increase in home and school activities (activities that do not overly exacerbate symptoms) seems to be the formula for better concussion recovery.

### PHYSICAL:

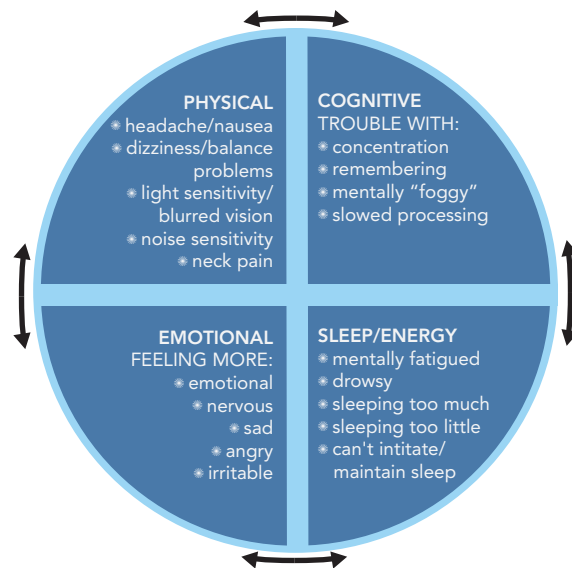
- "Strategic Rest" scheduled 15 to 20 minute breaks in clinic/quiet space (mid-morning; mid-afternoon, and/or as needed)
- Sunglasses (inside and outside)
- Quiet room/environment, quiet lunch, quiet recess
- More frequent breaks in classroom and/or in clinic
- Allow quiet passing in halls
- REMOVE from PE, physical recess, & dance classes without penalty
- Sit out of music, orchestra and computer classes if symptoms are provoked

### EMOTIONAL:

- Allow student to have "signal" to leave room
- Help staff understand that mental fatigue can manifest in "emotional meltdowns"
- Allow student to remove him/herself to de-escalate
- Allow student to visit with supportive adult (counselor, nurse, advisor)
- Watch for secondary symptoms of depression and anxiety usually due to social isolation and concern over "make-up work" and slipping grades. These extra emotional factors can delay recovery.

## Symptom Wheel

Suggested Academic Adjustments



Read "Return to Learning: Going Back to School Following a Concussion" at [nasponline.org/publications/cq/40/6/return-to-learning.aspx](https://nasponline.org/publications/cq/40/6/return-to-learning.aspx)<sup>14</sup>

### COGNITIVE:

- REDUCE workload in the classroom/homework
- REMOVE non-essential work
- REDUCE repetition of work (i.e. only do even problems, go for quality not quantity)
- Adjust "due" dates; allow for extra time
- Allow student to "audit" classwork
- Exempt/postpone large test/projects; alternative testing (quiet testing, one-on-one testing, oral testing)
- Allow demonstration of learning in alternative fashion
- Provide written instructions
- Allow for "buddy notes" or teacher notes, study guides, word banks
- Allow for technology (tape recorder, smart pen) if tolerated

### SLEEP/ENERGY:

- Allow for "Pacing" – 5 to 10 minute eye/brain/water rest breaks in the classroom (i.e. eyes closed, head on desk) after periods of mental exertion
- Alternate "mental challenge" with "mental rest"

## Message to Educators

An inefficiently fueled brain leads primarily to:

- mental fatigue (aka a need for Symptom Management)
- slowed processing speed (aka a need for Workload Management)
- problems with short-term memory (aka difficulty learning new material otherwise known to educators as Mastery and Grades)

How do you deal with mental fatigue in your classroom already (perhaps due to mono or family stress)? You might offer more rest breaks or some extra tender loving care (TLC).

How do you deal with a student's inability to get through in-class work due to slowed processing speed? If you teach math, you might assign every other problem. If you teach social studies, you might have the student listen with supplemental buddy notes.

What do you do if a student with seizures has been physically or cognitively unavailable to learn and now is scheduled to take a test? You might offer them the option of an oral presentation.

You see, the key to supporting a student with a concussion is **"differentiated instruction,"** a tool already within your repertoire! If you know how to help students with mental fatigue, slowed processing speed and short-term memory problems, you know how to support students with a concussion.

The best academic adjustment you can offer a student with a concussion is: REMOVAL of non-essential in-class work/homework and a REDUCTION of semi-essential in-class work/homework.

Extension and postponement of work is not a helpful tool for a student who struggles with cognitive inefficiencies for weeks to months (whether that be due to concussion, trauma or COVID). With slowed processing speed, incomplete work will not be able to be made-up long after the fact. It must be removed and reduced. Focus on a reasonable amount of current essential work.

Adapted from [GetSchooledOnConcussions.com](https://getschooledonconcussions.com)<sup>15</sup>



# » How do I get back to physical activity and life?

While 70% of concussions will resolve in 4 weeks, a healthcare professional cannot predict the length of time or the course of recovery from a concussion. In fact, a healthcare professional should never tell a family that a concussion will resolve in X number of days, because every concussion is different and each recovery time-frame is unique. The best way to assess when a student/athlete is ready to start the step-wise process of "Returning-to-Sport" is to ask these questions:

## » Is the student/athlete symptomatically 100% back to baseline at home?

- Use the Symptom Checklist. All symptoms should be back to the pre-concussion "baseline" symptom level.
- Look at what the student is doing. At home, he/she should be acting the same way as before the concussion, doing chores, interacting normally with friends and family.
- Symptoms should not return when the student is exposed to the loud, busy environment of home/social, mall or restaurants.

## » Is the student symptomatically 100% back to baseline at home?

- The student should be handling school work at the same level as before the concussion.
- Use the Teacher Feedback Form (APPENDIX) to see what teachers are noticing.
- Watch the student doing homework; he/she should be able to complete homework the same as they did before the concussion.
- In-school tests and school workload should be where they were pre-concussion; academic adjustments should be generously provided and weaned back as soon as they are no longer needed. However, not all make-up work needs to have been made up prior to clearance of the concussion.
- Symptoms should not return when the student is exposed to the loud, busy environment of school.

## » If the school or HCP has used neurocognitive testing, are scores back to baseline or at least reflect normative average and/or historical baseline functioning?

## » If an athletic trainer (AT), physical therapist (PT) or occupational therapist (OT) is involved in the concussion, does the AT, PT or OT feel that the student has reached his/her objective goals? If the student visits with the school nurse/health tech weekly, are symptoms back to (historic report of) baseline?

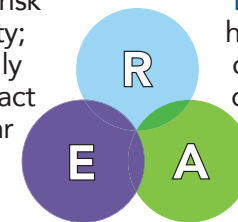
- Perform serial administrations of the Symptom Checklist.

## » Is the student off all medications used to treat the concussion?

- This includes over-the-counter medications such as ibuprofen, naproxen and acetaminophen, which may have been used to treat headache or pain.

**If the answer to any of the questions is "NO," stay the course with management and continue to repeat:**

**REMOVE** high risk physical activity; encourage only light, non-contact cardiovascular activities



**REDUCE** home and cognitive demands

**EDUCATE:** Let the symptoms direct the interventions

**ADJUST/ ACCOMMODATE:** home/social and school activities

**... for however long it takes for the brain cells to heal!**

The true test of recovery is to notice a steady decrease in symptoms while noticing a steady increase in the ability to handle more rigorous home, social and school demands.

PARENTS and TEACHERS – try to add in more home/social and school activities to test out those brain cells. It is safe to test out the durability of the brain cells by allowing your child to go to a movie or allowing your student to attempt a quiz. You do not need to wait until a child/student has been "medically" cleared back to sport before you start adding back in home and school expectations. In fact, adding back in safe home and school demands must come before the start of graduated return to sport/play steps. So try it!

Once the answers to the questions above are all "YES," turn the page to the PACE page to see what to do next!



### Graduated Return-to-Sport (RTS) Strategy – A minimum of 24 hours between steps

Step	Exercise Strategy	Activity at each step	Goal
1	Symptom-limited activity	Daily activities that do not exacerbate symptoms (e.g. walking).	Gradual reintroduction of work/school
2	Aerobic Exercise 2A – Light (up to approximately 55% of max HR) then 2B – Moderate (up to approximately 70% maxHR)	Stationary cycling or walking at slow to medium pace. May start light resistance training that does not result in more than mild and brief exacerbation* of concussion symptoms.	Increase heart rate
3	Sport-specific exercise	Sport-specific training away from the team environment (e.g. running, change of direction and/or individual training drills away from the team environment). No activities at risk of head impact.	Add movement, change of direction
Steps 4-6 should begin after the resolution of any symptoms, abnormalities in cognitive function and any other clinical findings related to the current concussion, including with and after physical exertion.			
4	Non-contact training drills	Exercise to high intensity, including more challenging training drills (e.g. passing drills, multiplayer training), can integrate into a team environment.	Resume usual intensity of exercise, coordination and increased thinking
5	Full contact practice	Participate in normal training activities.	Restore confidence and assess functional skills by coaching staff
6	Return to sport	Normal game play.	

\* Mild and brief exacerbation of symptoms (i.e. an increase of no more than 2 points on a 0-10 point scale for less than an hour when compared with the baseline value reported prior to physical activity) within 24 hours of injury, with progression through each subsequent step, typically taking a minimum of 24 hours. If more than mild exacerbation of symptoms (i.e. more than 2 points on a 0-10 scale) occurs during Steps 1-3, the athlete should stop and attempt to exercise the next day. Athletes experiencing concussion-related symptoms during Steps 4-6 should return to Step 3 to establish full resolution of symptoms with exertion before engaging in at-risk activities. Written determination of readiness to RTS should be provided by an HCP before unrestricted RTS as directed by local laws and/or sporting regulations.  
HCP, healthcare professional; maxHR, predicted maximal heart rate according to age (i.e. 220-age).

#### Rehabilitation Note

The 6th consensus statement suggests: Recommending strict rest until complete symptom resolution is not beneficial to patient recovery. The revised return to sport strategy includes stages 1-3 that fall under concussion treatment/rehabilitation and may be done when a patient has symptoms. Stages 4-6 assists patients in returning to full competition. During the first three stages, patients are encouraged to become progressively more active, as long as it only exacerbates symptoms mildly and symptom exacerbation resolves upon cessation of the activity. Stages 4-6 should be done following resolution of concussion-related symptoms and impairments. Tamara Valovich McLeod, PhD, ATC, FNATA, FNAT, FNAP, Chair, Department of Athletic Training, A.T. Still University

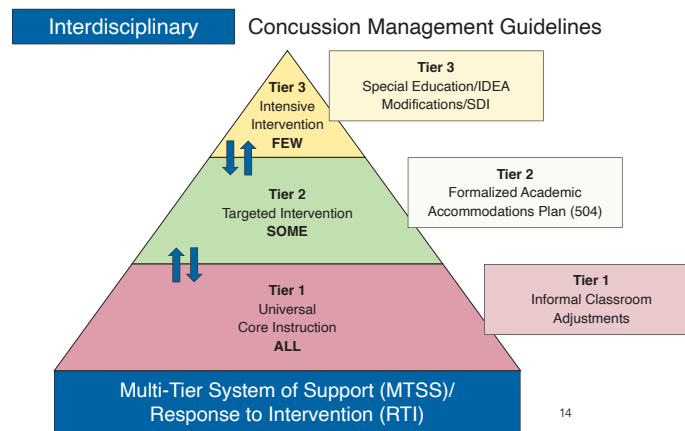
## » Special Considerations

We now know, 70% of concussions will resolve within 4 weeks.

However, there remains a subset of students, around 30%, who continue to experience physical, cognitive, emotional or sleep/energy symptoms beyond the 4 week mark. In those cases, parents are encouraged to explore existing educational programs within the school system. Various initiatives, such as Response to Intervention (RTI) and Multi-Tier System of Support (MTSS), offer increasing levels of support for students experiencing conditions that impact their learning. While concussion is typically a short-term condition, in some instances, it may require elevated levels of educational support if symptoms persist. The concept of ascending levels of support underscores the importance of effective teaching methods and reasonable academic adjustments in the general education classroom for all students facing academic challenges.

For weeks 1-4 of a concussion, we maximize the student's recovery by focusing on robust academic "adjustments" in the general education classroom.

A smaller percentage of students who struggle beyond 4+ weeks may need a small amount of "targeted intervention" called academic "accommodation." Academic "accommodations" may be provided via a Health Plan, a Learning Plan, and/or a 504 Plan.<sup>16</sup> It is still hoped that the accommodations for learning, behavior or concussions are temporary and amenable to intervention but may take months (instead of weeks) for progress to show. Lastly, in the rare event that a permanent "disability" is responsible for the educational struggle, the student may be assessed and staffed into Specially Designed Instruction, also known as special education services (IDEA) for a traumatic brain injury (TBI) and provided an IEP (Individualized Education Program). This would constitute an extremely small number of students with a concussion. The interdisciplinary teams need to continue to work together with the student with protracted recovery. Parents and HCPs need to seek medical explanation and treatment for "persist-



ing symptoms"; educators need to continue to provide the appropriate supports and the school physical team needs to continue to keep the student out of physical play. Due to the cumulative effect of multiple concussions, schools are advised to keep track of number and trajectory of concussions/TBI's throughout a child's entire academic career.

Words Matter: Use these terms intentionally: Adjustments/ Accommodations/Modifications

### DAYS TO WEEKS: Academic Adjustments

Informal, flexible day-to-day adjustments in the general education classroom for the first 3 to 4 weeks of a concussion. Can be lifted easily when no longer needed. Considered Tier 1 of MTSS/RTI.

### WEEKS TO MONTHS: Academic Accommodations

Slightly longer accommodations to the environment/ learning to account for a longer than 4+ week recovery. Helps with grading and helps justify school supports for a longer time. Considered Tier 2 of MTSS/RTI.

### MONTHS TO YEARS: Academic Modifications

Actual changes to the curriculum/placement/instruction. Considered Tier 3 of MTSS/RTI. Student must need Specially Designed Instruction (SDI).

## Medical Note

Any condition that was present prior to the injury, such as a history of headaches/migraines, learning/ attentional problems, emotional diagnoses, can get amplified during a concussion due to the energy crisis of a concussion. Additionally, new research is finding that we must be especially cognizant that a concussion may be contributing to or bringing on higher levels of depression, anxiety and behavioral/ emotional responses in children and adults.<sup>12</sup>

Students who have experienced multiple concussions, a recent prior concussion or who exhibit symptoms with less force may be at risk for long-term complications. Studies indicate that individuals who suffer one concussion are at an increased risk of sustaining future concussions.<sup>17</sup>

Retirement from sport: If the burden of one concussion or each successive concussion is significant, the family, school and medical teams should discuss retirement from sport.

## Resources

Brain Injury Association of NE

[biane.org](http://biane.org)  
844-423-2463

Centers for Disease Control (CDC)

[CDC.gov](http://CDC.gov)  
1-800-CDC-INFO

National Athletic Trainers Association (NATA)

[nata.org](http://nata.org)  
NATA's Statement on Sport-Related  
Concussion <https://bit.ly/3XbnrsV>

National Federation of State High School Associations

[Sports Medicine \(nfhs.org\)](http://SportsMedicine(nfhs.org))  
317-972-6900

Nebraska Department of Education

[School Health Services – Nebraska  
Department of Education](http://SchoolHealthServices-NebraskaDepartmentofEducation)  
402-471-2471

Nebraska School Activities Association (NSAA)

[nsaahome.org](http://nsaahome.org)

NE State Athletic Trainers' Association

[www.nsata.org](http://www.nsata.org)

## Concussion Management Training

Coaches Training: free, online coach-training sessions

[Concussion in Sports Course \(nfhslearn.com\)](http://ConcussioninSportsCourse(nfhslearn.com))  
<https://dhhs.ne.gov/Pages/Concussion.aspx>  
317-972-6900Return to Learn Training  
Get Schooled On Concussions  
A website FOR Educators, BY educators[https://www.GetSchooledOnConcussions.com/  
nebraska/](https://www.GetSchooledOnConcussions.com/nebraska/)  
Password: TACTnebraska2020**Please Note:**

This publication is not a substitute for seeking medical care. REAP is available for customization in your state.

All requests for in-services/trainings can be directed to the Brain Injury Association of Nebraska at [info@biane.org](mailto:info@biane.org)

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## REFERENCES

- National Center for Health Statistics, National Health Interview Survey, 2022. <https://www.cdc.gov/nchs/nhis.htm>
- Meehan W, et al. Mechanism, Symptoms, and Management: High School Concussions in the 2008-2009 Academic Year. *Am J Sports Med.* 2010; 38(12):2405-2409
- Castile L, et al; The epidemiology of new versus recurrent sports concussions among high school athletes, 2005–2010. *British Journal of Sports Medicine* 2012;46:603-610
- Zemek et al., Clinical Risk Score for Persistent Postconcussion Symptoms Among Children With Acute Concussion in the ED. *JAMA.* 2016;315(10):1014-1025. doi:10.1001/jama.2016.1203
- Leddy JJ, Sandhu H, Sodhi V, Baker JG, Willer B. Rehabilitation of Concussion and Post-concussion Syndrome. *Sports Health.* Mar 2012;4(2):147-154.
- Patricios JS, Schneider KJ, Dvorak J, et al. *Br J Sports Med.* 2023;57:695–711.
- Cantu RC. Second impact syndrome. *Clin Sports Med.* 1998; 17:37-44.
- Halstead ME, McAvoy K, Devore, CD et al. Clinical Report, Returning to Learning Following a Concussion, 2013, [www.pediatrics.org/cgi/doi/10.1542/peds.2013-2867](http://www.pediatrics.org/cgi/doi/10.1542/peds.2013-2867) doi:10.1542/peds.2013-2867
- Leddy JJ, Burma JS, Toomey CM, et al. Rest and exercise early after sport-related concussion: a systematic review and meta-analysis. *Br J Sports Med* 2023;bjsports-2022-106676.
- Macnow T, Curran T, Tolliday C, et al. Effect of screen time on recovery from concussion: a randomized clinical trial. *JAMA Pediatr* 2021;175:1124–31.
- Cairncross M, Yeates KO, Tang K, et al. Early postinjury screen time and concussion recovery. *Pediatrics* 2022;150:e2022056835.
- Ledoux et al., JAMA Network Open 2022; 5(3):e221235 doi: 10.1001/jamanetworkopen.2022.1235
- Thomas DG, Apps, JN, Hoffman RG et al., Benefits of Strict Rest After Acute Concussion: A Randomized Control Trial. *PEDIATRICS* Volume 135, number 2, February 2015
- McAvoy K., 2012, Return to Learning: Going Back to School Following a Concussion. [nasonline.org/publications/cq/40/6/return-to-learning.aspx](http://nasonline.org/publications/cq/40/6/return-to-learning.aspx)
- Get Schooled On Concussions website: [www.GetSchooledOnConcussions.com](http://www.GetSchooledOnConcussions.com)
- Wrightslaw, Section 504 and IDEA: Basic Similarities and Differences, Rosenfeld, S.J. [www.wrightslaw.com/advoc/articles/504\\_IDEA\\_Rosenfeld.html](http://www.wrightslaw.com/advoc/articles/504_IDEA_Rosenfeld.html).
- Giza CC, Kutcher JS, Ashwal S et al. Summary of evidence-based guideline update: evaluation and management of concussion in sports: Report of the Guideline Development Subcommittee of the American Academy of Neurology. *Neurology.* 2103 Jun11;80(24):2250-7.



## » Symptom Checklist

Name: \_\_\_\_\_ Assessment Date: \_\_\_\_\_

Date of Injury: \_\_\_\_\_ Time of Injury 2-3 Hrs 24 Hrs 48 Hrs 72 Hrs Daily Weekly

Symptoms		Severity Rating					
		Mild	Mild	Moderate	Moderate	Severe	Severe
I feel like I'm going to faint	0	1	2	3	4	5	6
I'm having trouble balancing	0	1	2	3	4	5	6
I feel dizzy	0	1	2	3	4	5	6
It feels like the room is spinning	0	1	2	3	4	5	6
Things look blurry	0	1	2	3	4	5	6
I see double	0	1	2	3	4	5	6
I have headaches	0	1	2	3	4	5	6
I feel sick to my stomach (nauseated)	0	1	2	3	4	5	6
Noise/sound bothers me	0	1	2	3	4	5	6
The light bothers my eyes	0	1	2	3	4	5	6
I have pressure in my head	0	1	2	3	4	5	6
I feel numbness and tingling	0	1	2	3	4	5	6
I have neck pain	0	1	2	3	4	5	6
I have trouble falling asleep	0	1	2	3	4	5	6
I feel like sleeping too much	0	1	2	3	4	5	6
I feel like I am not getting enough sleep	0	1	2	3	4	5	6
I have low energy (fatigue)	0	1	2	3	4	5	6
I feel tired a lot (drowsiness)	0	1	2	3	4	5	6
I have trouble paying attention	0	1	2	3	4	5	6
I am easily distracted	0	1	2	3	4	5	6
I have trouble concentrating	0	1	2	3	4	5	6
I have trouble remembering things	0	1	2	3	4	5	6
I have trouble following directions	0	1	2	3	4	5	6
I feel like my thinking is "foggy"	0	1	2	3	4	5	6
I feel like I am moving at a slower speed	0	1	2	3	4	5	6
I don't feel "right"	0	1	2	3	4	5	6
I feel confused	0	1	2	3	4	5	6
I have trouble learning new things	0	1	2	3	4	5	6
I feel more emotional	0	1	2	3	4	5	6
I feel sad	0	1	2	3	4	5	6
I feel nervous	0	1	2	3	4	5	6
I feel irritable or grouchy	0	1	2	3	4	5	6

Other: \_\_\_\_\_

Weekly symptom progress monitoring is recommended as best practice.

# » Teacher Feedback Form

Date \_\_\_\_\_

Date of Concussion \_\_\_\_\_

Student's Name \_\_\_\_\_

**Student:** you have been diagnosed with a concussion. It is your responsibility to gather data from your teachers. A day or two before your next doctor's appointment or at the request of your school nurse/health tech, go around to all of your teachers (especially the CORE classes) and ask them to fill in the boxes below based upon how you are currently functioning in their class(es).

**Teachers:** Thank you for your help with this student. Your feedback is very valuable. We do not want to release this student back to physical activity if you are still seeing physical, cognitive, and emotional or sleep/energy symptoms in your classroom(s). If you have any concerns, please state them below.

1. Your name 2. Class taught	Is the student still receiving any academic adjustments in your class? If so, what?	Have you noticed, or has the student reported, any concussion symptoms lately? (e.g. complaints of headaches, dizziness, difficulty concentrating or remembering, more irritable, fatigued than usual etc.?) If yes, please explain.	Do you believe this student is performing at his/her pre-concussion learning level?
			<input type="checkbox"/> Yes <input type="checkbox"/> No Date: Signature:
			<input type="checkbox"/> Yes <input type="checkbox"/> No Date: Signature:
			<input type="checkbox"/> Yes <input type="checkbox"/> No Date: Signature:
			<input type="checkbox"/> Yes <input type="checkbox"/> No Date: Signature:

Weekly academic progress monitoring is recommended as best practice.



# CONCUSSION MANAGEMENT



**CONCUSSION IDENTIFIED** Identification/Notification of a student's concussion may come from Parent, Student, Secretary, Health Tech, Nurse, Teacher Athletic Trainer, Administrator or Other

- = Family Team
- = Medical Team
- = School Physical Team
- = School Academic Team

## STEP 1

### REMOVE/REDUCE

**REMOVE** student/athlete from high risk physical activities. **REDUCE** school demands and home/social stimulation. See page 6 of the REAP Manual for details.

#### REMOVE/REDUCE (school)

**Remove** the student from high risk physical activities; encourage light non-contact cardiovascular activities (e.g. brisk walk, stationary bike, feet on the ground, no jumping, climbing and stay off anything with wheels).

Teachers should **Reduce**/cut back academic demands to keep symptoms at bay.

#### REMOVE/REDUCE (family)

- **Remove** the student from high-risk physical activities immediately, including play at home ( e.g playground, bikes, skateboard), recreational and/or club sports; encourage light non-contact cardiovascular exercise (e.g brisk walk, stationary bike) as long as there is no risk of further head impact.
- **Reduce** or limit home/social stimulation. Do not totally restrict electronics and social activities; make a reasonable home plan. Encourage rest for the first few days followed by a gradual re-introduction of cognitive, social and home activities.

## STEP 2

### EDUCATE

all teams that symptoms tell the story of the recovery of the concussion. See page 7 of the REAP Manual for details.



#### COMMUNICATE WITH AND EDUCATE PARENTS AND SCHOOL PERSONNEL



#### EDUCATE

Assigned person in the school team communicates about the student's concussion to pertinent school personnel and discusses expectations with student.

Assigned person sets a health condition alert in the district documenting system for a concussion.

#### EDUCATE

Assigned person in the school team sends a standardized concussion letter to guardians:

- Affirming student has a concussion or concussion symptoms
- Stating that the school has a plan for supporting students with concussions
- Outlining school's expectations of the student and family

## STEP 3

### ADJUST/ACCOMODATE

Educators: See pages 9 & 10 of the REAP Manual for details. Symptom Checklist and Teacher Feedback Form in Appendix of REAP Manual. Parents: See page 8 of the REAP Manual.

Begin once weekly conversational monitoring with student:  
• Symptom Review • Academic Review • Mental Health Check-in

Enter specific school personnel email addresses into NE TACT [password: TACTnebraska2020] notify and communicate about concussion information and distribute information on TIER 1 fluid academic adjustments.

- **TIER 1** fluid adjustments begin. **ACADEMIC ADJUSTMENTS** are heavily front loaded and slowly removed as symptoms improve.
- Each student may experience symptoms differently, therefore, different adjustments may be needed.

#### Parents Return to School

**MEDICAL CLEARANCE IS NOT NEEDED FOR RETURN TO SCHOOL**

- Medical confirmation is NOT needed to begin supporting a student with a reliable history of a hit to the head and symptoms.
- Generally most students are able to Return to School within 24-48 hours following an injury even with symptoms that are tolerable, intermittent and amenable to rest.



#### REPEAT WEEKLY CONVERSATIONAL SYMPTOM, ACADEMIC & MENTAL HEALTH REVIEWS FOR 4-6 WEEKS OR UNTIL READY TO MOVE TOWARD CLEARANCE



## STEP 4

### PACE

Pace includes the Criteria toward Clearance. (page 11) & the Graduated Return to Play steps (See page 12 of REAP Manual for details)

**CRITERIA TOWARD CLEARANCE AND RETURN TO PLAY** When symptom reviews are back to baseline (per school nurse, ATC)

When academics/behaviors are back to pre-concussion levels in classroom (per teacher) When symptom/behaviors are back to baseline at home (per parent/guardian)

#### Return to Play:

When student is back to baseline in above areas, the medical professional can approve the start of the Return to Play (RTP) process Steps 4-6.

When RTP completed, the school team(s) can resolve the health condition alert in documenting system.

All student-athletes must have written & signed clearance from a licensed medical professional before returning to play.

Students who are non-athletes should follow best practices and seek clearance by a medical provider and complete a return to play process.

If student is still experiencing symptoms after 4+ weeks, refer to the school problem solving team for continued academic supports via TIER 2 academic accommodations.

**ACADEMIC ACCOMMODATIONS ARE TIER 2 SUPPORTS.**

# Nebraska Concussion Awareness Act Overview:

Effective July 1, 2012, this law requires schools and organized youth sports programs serving children 19 years and under to provide concussion training to coaches and educate athletes and parents about concussion risks. Key requirements are:

- 1. Education:** Youth athletes, coaches, and parents must receive concussion information.
- 2. Removal from Play:** Coaches will remove youth athletes from play under any reasonable suspicion of concussion.
- 3. Return to Play:** Youth athletes cannot return to play until they receive written clearance from a healthcare professional and written parental approval.
- 4. 2014 Amendment:** Schools must have a **Return to Learn** protocol for students recovering from concussions.

## Frequently Asked Questions About Nebraska Concussion Awareness Act:

### Who can clear an athlete?

- A licensed health care professional (physician, licensed practitioner under physician supervision, athletic trainer, or neuropsychologist)
- A qualified, state-recognized individual to provide health care services and training in evaluating and managing pediatric traumatic brain injuries

### What do schools and sports organizations need to do?

- Provide concussion training for coaches.
- Give annual concussion information to athletes and parents before practices/competitions.
- Notify parents/guardians of any suspected concussion and actions taken.
- Establish a "Return to Learn" protocol for recovering students, with academic adjustments as needed.

### When should an athlete be removed from play?

- If a coach or licensed healthcare professional suspects a concussion, the athlete must be removed and cannot return until cleared.

### When can the athlete return to play?

- After evaluation, written clearance from a licensed healthcare professional, and written parental permission.

### Who keeps a record of the clearance and permission?

- The school or sports organization

### What about liability?

- The law does not create or modify liability for schools, districts, or organizations.

To view the Concussion Awareness Act within Nebraska Revised Statute sections 71-9101 to 71-9106 go to: <https://bit.ly/3zbEWkL>



[GetSchooledOnConcussions.com](https://www.getschooledonconcussions.com)

Return to Learn post-concussion guidance provided to Nebraska schools via the Teacher Acute Concussion Tool (TACT)



**TACT™**

To get RTL in your school/district/state, contact: [TACT@GetSchooledOnConcussions.com](mailto:TACT@GetSchooledOnConcussions.com)



**NASHIA**