How every family, school and medical 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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Third Edition 2018

In November of 2013, the American Academy of Pediatrics released a Clinical Report on Returning to Learning Following a Concussion (PEDIATRICS Volume 132, Number 5, November 2013) "based upon expert opinion and adapted from a program in Colorado". The program referenced in the AAP Clinical Report is REAP!

The Arkansas Department of Education is pleased to introduce the Arkansas version of the REAP Concussion Management Program. REAP provides the most up-to-date information surrounding concussion management incorporating the latest research with current state, national, and international consensus guidelines. The REAP manual is used across the country as a guide to collaborate and coordinate care for a child who has sustained a concussion.

Concussion, a type of brain injury, is a common occurrence in children and youth; both athletes and non-athletes. After being diagnosed with a concussion, many students return to school directly following the injury. It is crucial for the family, school, and healthcare team to establish a plan for learning while the brain is healing. REAP brings together the principles for Return to Play, outlined by the Arkansas concussion law and weaves together the unique specific relationships, roles, expertise, and resources around each student that will support their health, academics, and families as they recover from concussion.

The Division of Elementary and Secondary Education is proud to support Special Education Resource Consultants across the state including therapists with an expertise in brain injury. Special thanks to all stakeholders involved in the development of this document and for making concussion recovery a priority for children in Arkansas schools.



Stacy Smith
Deputy Commissioner,
Arkansas Division of Elementary
and Secondary Education

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REAP,® which stands for **Remove/Reduce • Educate • Adjust/Accommodate • Pace,** is a **community-based model for Concussion Management** that was developed in Colorado. The early origins of REAP stem 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.



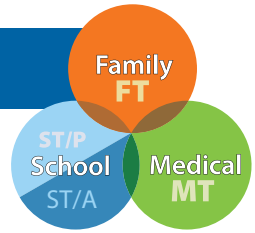
The benefits of good concussion management spelled out in REAP are known throughout communities in Colorado, nationally and internationally. REAP has been customized and personalized for various states and continues to be the "go-to" guide from the emergency department to school district to the office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

Download a digital version of this publication at **REAPconcussion.com**

Endorsed by:

MINDSOURCE BRAIN INJURY NETWORK

Community-Based, Interdisciplinary Concussion Management Team



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

FT	Family Team	Student, Parents; may include Friends, Grandparents, Primary Caretakers, Siblings and others…	For more specific information, download parent fact sheets from the various "Heads Up" Toolkits on the CDC website: https://www.cdc.gov/headsup/parents/index.html

» Pay close attention to the sections in LIGHT BLUE

ST/P	School Team Physical	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: https://www.cdc.gov/headsup/highschoolsports/index.html

» Pay close attention to the sections in DARKER BLUE

ST/A	School Team Academic	Teachers, Counselors, School Psychologists, School Social Workers, Administrators, School Neuropsychologists and others…	For more specific information, download the free "Heads Up to Schools: Know Your Concussion ABCs" from the CDC website: https://www.cdc.gov/headsup/schools/index.html

» Pay close attention to the sections in GREEN

MT	Medical Team	Emergency Department, Primary Care Providers, Nurses, Concussion Specialists, Neurologists, Clinical Neuropsychologists & others…	For more specific information, download the free "Heads Up: Brain Injury in your Practice" from the CDC website: https://www.cdc.gov/headsup/providers/index.html



Table of Contents

How to Use This Manual 1
Concussion Myths 2
Did You Know 3
Team Members 4
REAP Timeframe 5
Remove/Reduce 6
Educate 7
Adjust/Accommodate 8
Pace 11
Special Considerations 13
Resources 14
Appendix 15
Symptom Checklist
Teacher Feedback Form

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Common Concussion Myths...

TRUE or FALSE?

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

False! In 2012, approximately 430,000 Emergency Department (ED) visits resulted from sports and recreation-related mild traumatic brain injuries (mTBI).[1] 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 – from bicycle and playground accidents.

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.

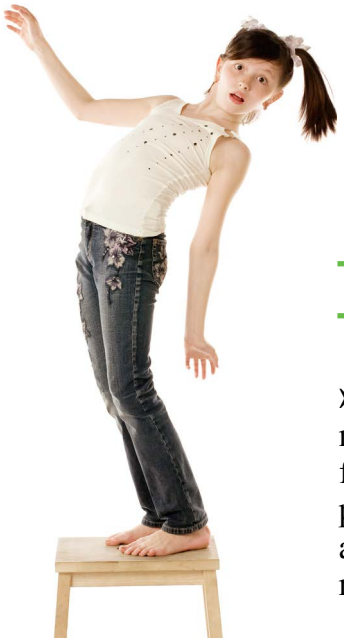
False! Current medical advice is that it is not dangerous to allow a child to sleep after a hit to the head IF the child has been medically evaluated and more serious complications have been ruled out. Once a medical evaluation results in the diagnosis of concussion and not something more serious, then 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 present as (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.[2] REAP sees the first four weeks post-injury as a "window of opportunity" to maximize positive outcomes. Research shows that the average recovery time for a child/adolescent is about 28 days, slightly longer than the average recovery time for an adult.[3]

» 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 Medical 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 Medical Teams mobilize immediately to maximize recovery during the entire four week "window of opportunity."

Note from
Matt Sewell Ed.S.
Director of Special
Programs, DESE

"When a child experiences a brain injury, there are many factors that are vital to recovery which schools must consider to assist with continued healing and learning. It is essential for schools to avoid any potential complications that may arise by employing a collaborative process known as an interdisciplinary team approach. This approach is especially important when returning to school. The student, family, healthcare providers, coaches, teachers, and support staff must work together to establish a common purpose, a specific plan, and set goals to effectively provide care and monitor progress for a student with a concussion. As a former school administrator, I experienced firsthand the importance of teaming to facilitate a student's successful transition back into the learning environment. By collaborating and communicating, the interdisciplinary team will have the collective skills required to meet the child's identified needs to promote healing and academic success."

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, request that he/she be allowed to "sit out" of sports, recess and physical education classes. 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 and quiet, 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.

Watch a short video regarding concussion information and facts: http://biane.org/audience/concussion/concussionsymptoms.html

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 The Medical 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 Medical 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 Medical 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 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.[4] Return to Activity differs from the progressive Graduated Return to Sport and it is not intended to take the place of the Graduated Return to Sport. Return to Activity happens prior to Graduated Return to Sport with the goal of contributing to asymptomatic status, thus allowing for the start of the Graduated Return to Sport. Widely applied, Return to Activity is a positive term used to encourage people recovering from concussion to stay engaged in their own physical, cognitive and emotional rehabilitation.

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

Who will be on the Family Team (FT)? Who from the family will watch, monitor and track the emotional and sleep/energy symptoms of the concussion and how will the Family Team communicate with the School and Medical Teams?

Who will be on the School Team/Physical (ST/P)? Who at the school will watch, monitor and track the physical symptoms of the concussion? Who is the ST/P Point Person?

Who will be on the School Team/Academic (ST/A)? Who at the school will watch, monitor and track the academic and emotional effects of the concussion? Who is the ST/A Point Person?

Who will be on the Medical Team (MT)? How will the MT get information from all of the other teams and who with the MT will be responsible for coordinating data and updates from the other teams?

» REAP suggests the following timeframe:

	TEAM	Week 1	Week 2	Week 3 & Week 4
FT	Family Team* Help child understand he/she must be a "honest partner" in the rating of symptoms	• Impose rest. • Assess symptoms daily – especially monitor sleep/energy and emotional symptoms.	• Continue to assess symptoms (at least 3X week or more as needed), monitor if symptoms are improving. • Continue to assess symptoms and increase/ decrease stimulation at home accordingly	• Continue with all assessments (at least 2X week or more as needed). • Continue to assess symptoms and increase/ decrease stimulation at home accordingly.
ST/P	School Team/Physical Coach/AT/School Nurse (Assign 1 point person to oversee/ manage physical symptoms)	• REMOVE from all play/physical activities! • Assess physical symptoms daily, use objective rating scale. • AT: assess postural-stability (see NATA reference in RESOURCES). • School Nurse: monitor visits to school clinic. If symptoms at school are significant, contact parents and send home from school.	• Continue to assess symptoms (at least 3X week or more as needed). • AT: Continue postural-stability assessment, as needed. • 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 ideally be at school daily for full days. See ADJUST/ ACCOMMODATE section.	• Continue with all assessments (at least 2Xweek or more as needed). • AT: Continue postural-stability assessment, as needed. • 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 ideally be at school daily for full days. See ADJUST/ ACCOMMODATE section.
ST/A	School Team/Academic Educators, School Psychologist, Counselor, Social Worker (Assign 1 point person to oversee and manage academic and emotional symptoms)	• REDUCE (do not eliminate) all cognitive demands. • Meet with student periodically to create academic adjustments for cognitive/emotional reduction no later than Day 2/3 and then assess again by Day 7. • Educate all teachers on the symptoms of concussion. • See ADJUST/ACCOMMODATE section.	• Continue to assess symptoms (at least 3X week or more as needed) and slowly increase/ decrease cognitive and academic demands accordingly. • Continue academic adjustments, as needed.	• Continue to assess symptoms (at least 2X week or more as needed) and increase/decrease cognitive and academic demands accordingly. • Continue academic adjustments, as needed. • Assess if longer term academic accommodations are needed (May need to consider a 504 Plan or IEP beyond 4+weeks).
MT	Medical Team	• Assess and diagnose concussion. • Assess for head injury complications, which may require additional evaluation and management. • 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." • 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 parent and/or physical therapist). • Monitor that symptoms are improving throughout Week 1 – not worsening in the first 48 to 72 hours.	• Continue to consult with school and family teams. • Follow-up medical check including: comprehensive history, neurologic exam, detailed assessment of mental status, cognitive function, gait and balance.	• Continue to consult with school and home teams. • Consider referral to a Specialty Concussion Clinic if symptoms are especially problematic or long. • It is best practice that a medical professional be involved in the management of each and every concussion, not just those covered by legislation.

*Family should sign a Release of Information so that School Team and Medical 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:



Zack Towers

June 25, 1994 - February 19, 2014

In the fall of 2012, Zack Towers was a senior football player at Star City High School. He was diagnosed with a concussion after complaining of headaches following a football game. He gradually returned to play. On senior night, late in the third quarter he made a tackle and went to the sideline, collapsed, and began having a seizure. He was taken to the hospital where he was found to have a brain bleed and had emergency surgery. Zack never fully recovered. He required round the clock care, had a trache-ostomy, and battled neurological storms. He passed away 15 months later.

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[5]. The concussed brain is in a vulnerable state, and even a minor impact can result in a much more 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, including 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.

FT	Family Team	**REMOVE** student/athlete from all physical activity immediately, including play at home (i.e. playground, bikes, skateboards), recreational, and/or club sports. **REDUCE** or limit home/social stimulation, including texting. 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.
ST/P	School Team Physical	**REMOVE** student/athlete from all physical activity immediately. Support **REDUCTION** of school demands and home/social stimulation. Provide encouragement to **REST** and take the needed time to heal.
ST/A	School Team Academic	**REMOVE** student/athlete from all physical activity at school, including PE, recess, dance class. **REDUCE** or limit school demands. Do not totally restrict academic expectations. (See ADJUST/ACCOMMODATE for Educators on pages 9-10). Encourage "brain REST" breaks at school.
MT	Medical Team	**REMOVE** student/athlete from all physical activity immediately. **RULE-OUT** more serious medical issues including severe traumatic brain injury. Consider risk factors – evaluate for concussion complications. Support **REDUCTION** of school demands and home/social stimulation. Encourage **REST** for the first few days followed by a gradual re-introduction of cognitive, social and home activities.

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 kids children/teens/students:

"When you have a concussion, you are like an iPhone 4, you are not an iPhone X. You are not broken, you are just not holding a charge long enough."

"When you have a concussion, 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 become the barometer of the concussion. If symptoms may be present for up to 4 weeks (albeit 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 while holding symptoms at bay. 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 in their own lives – socially, academically and at home – while we are waiting for the concussion to heal.

PHYSICAL
How a Person Feels Physically

- Headache/Pressure
- Blurred vision
- Dizziness
- Poor balance
- Ringing in ears
- Seeing "stars"
- Vacant stare/Glassy eyed
- Nausea
- Vomiting
- Numbness/Tingling
- Sensitivity to light
- Sensitivity to noise
- Disorientation
- 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
- Personality change
- Nervousness/Anxiety
- Feeling more "emotional"
- Irritability
- Sadness
- Lack of motivation

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

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

Do not worry that your child has symptoms for 1 to 4 weeks; it is typical and natural to notice symptoms for 1 to 4 weeks. You just want to make sure you are seeing slow and steady resolution of symptoms every day. 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.)



Medical Note from Dr. Michael Israel

"Current research indicates that the absolute and prolonged restrictions previously recommended for academic and athletic activities after a concussion are actually counterproductive to the overall recovery after an injury. We promote an "active rehabilitation" as individuals recover, with an immediate focus on a gradual and monitored return to both cognitive and physical stimuli. If we can quickly identify a patient's activity threshold, we can create an individualized plan to return them safely to both the classroom and athletic field."
Michael Israel, MD, Arkansas Children's Hospital Sports Medicine Clinic Director

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!

STEP THREE: ADJUST/ACCOMMODATE for PARENTS.

AFTER YOUR CHILD HAS RECEIVED THE DIAGNOSIS OF CONCUSSION by a healthcare professional, their symptoms will determine when they should return to school. As the parent, you will likely be the one to decide when your child goes back to school, because you are the one who sees your child every morning before school. Use the chart below to help decide when it is right to send your child back to school:

STAY HOME – EARLY SLEEP

If your child's symptoms are so severe that he/she cannot concentrate for even 10 minutes, he/she should be kept home on total bed rest – no texting, no driving, no reading, no video games, no homework, limited TV. It is unusual for this state to last beyond a few days. Consult a physician if this state lasts more than 2 days.

STAY HOME – LIGHT ACTIVITY

If your child's symptoms are improving but he/she can still only concentrate for up to 20 minutes, he/she should be kept home – but may not need total bed rest. Your child can start light mental activity (e.g. sitting up, watching TV, light reading), as long as symptoms do not worsen. If they do, cut back the activity and build in more REST.

TRANSITION BACK TO SCHOOL

When your child is beginning to tolerate 30 to 45 minutes of light mental activity, you can consider returning them to school. As they return to school:

- Parents should communicate with the school (school nurse, teacher, school mental health and/or counselor) when bringing the student into school for the first time after 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.

» GOING BACK TO SCHOOL

Julia's story

Julia was a junior at Central High School when she suffered a concussion while playing volleyball. Her school was cooperative in providing accommodations, but Julia and her family were uncertain of how long the accommodations would be needed. Julia's parents understood that she needed rest in order to heal, but did not realize how long healing could take. Julia continued to have headaches off and on through her senior year.

Julia sustained another concussion during her sophomore year of college and the repercussions were much more severe and long-lasting. "I felt the effects setting in almost instantly. For months after, I dealt with intermittent numbness in my arms and legs, severe difficulty staying awake during the day (often taking 3-4 hour naps) and inability to sleep at night, disorientation when exposed to loud noises, bright lights, or busy spaces. I could not retain information, nor could I process anything that I had read."

Julia's mother states, "I believe we must educate students, parents, and school personnel on the importance of proper precaution when a head injury occurs, even those that seem minor. The importance of resting the brain and avoiding further stress is not widely understood or practiced. Because students spend most of their day at school, our education system may be the most valuable resource we have in helping kids recover before resuming full schedules." **Lory Greer**

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**, Director of Pediatric Sports Medicine, Arkansas Children's Hospital and Medical Center

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, especially general education 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, especially if medical input is not forthcoming, timely, available or relevant. 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.

» Most Common "Thinking" Cognitive Problems Post-Concussion

And suggested adjustments/accommodations

Areas of concern	Suggested Accommodations for Return-to-Learn (RTL)
Fatigue, specifically Mental Fatigue	• 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. • Allow for "PACING" – 5 to 10 minute eye/brain/water breaks in the classroom after periods of mental exertion. • Do not consider "quiet reading" as rest for all students. • Consider letting the student have sunglasses, headphones, preferential seating, quiet work space, passing in quiet halls, etc., as needed.
Difficulty concentrating	• REDUCE the cognitive load—it is a fact that smaller amounts of learning will take place during the recovery. • 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? • Be careful not to tax the student cognitively by demanding that all learning continue at the rate prior to the concussion.
Slowed processing speed	• Provide extra time for tests and projects and/or shorten tasks. • Assess whether the student has large tests or projects due during the 4-week recovery period and remove or adjust due dates. • Provide a peer notetaker or copies of teacher's notes during recovery. • Grade work completed—do not penalize for work not done.
Difficulty with working memory	• Initially exempt the student from routine work/tests. • Since memory during recovery is limited, the academic team must decide: What are the most important concepts for the student to know? • Work toward comprehension of a smaller amount of material versus rote memorization.
Difficulty converting new learning into memory	• Allow student to "audit" the material during this time. • 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. • Ease student back into full academic/cognitive load.
Emotional symptoms	• 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. • 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. • New research informs us of the impact a concussion can have on emotional well-being. Supportive psychological support, education, cognitive-behavioral strategies and stress reduction are all suggested for psychological rehabilitation.

STEP THREE: ADJUST/ACCOMMODATE for EDUCATORS (continued)

Typically, students' symptoms only require 2 to 3 days of absence from school. If more than 3 days are missed, call a meeting with parents and seek a medical explanation.

New research shows that students who rested for 1 to 2 days followed by a gradual return to activities (school, socializing) had fewer reported symptoms then students who took 5 days of strict rest.[7]

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:

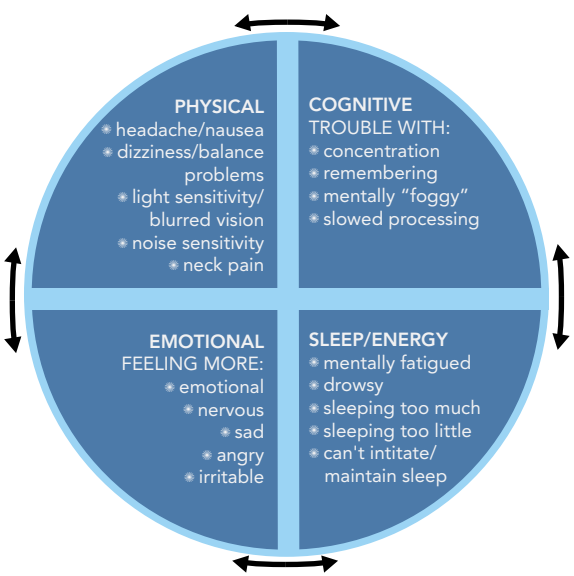
- "Strategic Rest"scheduled 15 to 20 minute breaks in clinic/quiet space (mid-morning; mid-afternoon, and/or as needed)
- Sunglasses (inside and outside)
- Quiet room/environment, quiet lunch, quiet recess
- More frequent breaks in classroom and/or in clinic
- Allow quiet passing in halls
- REMOVE from 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 [8]

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
- Allow student to start school later in the day
- Allow student to leave school early
- Alternate "mental challenge" with "mental rest"

Message to Educators

An inefficiently fueled brain leads primarily to:

- mental fatigue
- slowed processing speed
- difficulty learning new material (aka problems with short-term memory)

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 TLC.

How do you deal with a student's inability to get through in-class work due to slowed processing speed (perhaps due to ADHD)? 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 or postponement of work is less helpful to a student with a concussion unless it is used in combination with removal and reduction of in-class work/homework.

Adapted from GetSchooledOnConcussions.com [9]

» How do I get back to my sport?

A.K.A. How do I get "cleared" from this concussion?

While 70% of concussions will resolve in 4 weeks, a healthcare professional, whether in the Emergency Department or in a clinic, 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 period 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 100% symptom-free at home?

- ❍ Use the Symptom Checklist every few days. All symptoms should be at "0" on the checklist or at least back to the perceived "baseline" symptom level.
- ❍ Look at what the student/athlete 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/athlete is exposed to the loud, busy environment of home/social, mall or restaurants.

» Is the student 100% symptom-free at school?

- ❍ Your student/athlete 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 your child/teen doing homework; he/she should be able to complete homework as efficiently as before the concussion.
- ❍ In-school test scores should be back to where they were pre-concussion.
- ❍ School workload should be back to where it was pre-concussion.
- ❍ Symptoms should not return when the student/athlete is exposed to the loud, busy environment of school.

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

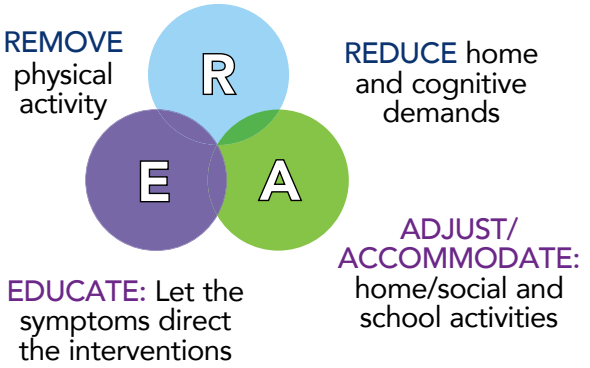
» If an athletic trainer (AT) or physical therapist (PT) is involved with the concussion, does the AT or PT feel that the student/athlete has reached his/her objective goals?

- ❍ Ask AT for feedback and/or 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:



… 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 (Return to Activity).

PARENTS and TEACHERS try to add in more home/social and school activities and test out those brain cells!

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

STEP FOUR: PACE

FAMILY TEAM Is the student/athlete 100% back to pre-concussion functioning?

SCHOOL TEAM/ACADEMIC Is the student/athlete 100% back to pre-concussion academic functioning

WHEN ALL FOUR TEAMS AGREE

that the student/athlete is 100% recovered, the MEDICAL TEAM can then approve the starting of the Graduated RTS steps. The introduction of physical activity (in the steps outlined in order below) is the last test of the brain cells to make sure they are healed and that they do not "flare" symptoms. This is the final and formal step toward "clearance" and the safest way to guard against a more serious injury.

MEDICAL TEAM approves the start of RTS steps

SCHOOL TEAM/PHYSICAL Often the AT at the school takes the athlete through the RTS steps.

If there is no AT available, the MEDICAL TEAM should teach the FAMILY TEAM to administer and supervise the RTS steps.

Graduated Return-to-Sport (RTS) Strategy

Recommended by The 2016 Berlin Consensus Statement on Concussion in Sport[3]

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	Restore confidence and assess functional skills by coaching staff
6	Return to sport	Normal game play	

NOTE: An initial period of 24 – 48 hours of both relative physical rest and cognitive rest is recommended before beginning the RTS 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.

International Consensus Statements have outlined this as a safe practice for professional athletes when returning to an organized sport; these steps might ideally also be applied as best practice when returning any person with a concussion back to a recreational sport/activity.

Rehabilitation Note

The 5th Consensus Statement suggests: After a brief period of rest during the acute phase (24-48 hours) after injury, patients can be encouraged to become gradually and progressively more active while staying below their cognitive and physical symptom-exacerbation thresholds (i.e., activity level should not bring on or worsen their symptoms). It is reasonable for athletes to avoid vigorous exertion while they are recovering. The exact amount and duration of rest is not yet well defined in the literature and requires further study.[3]

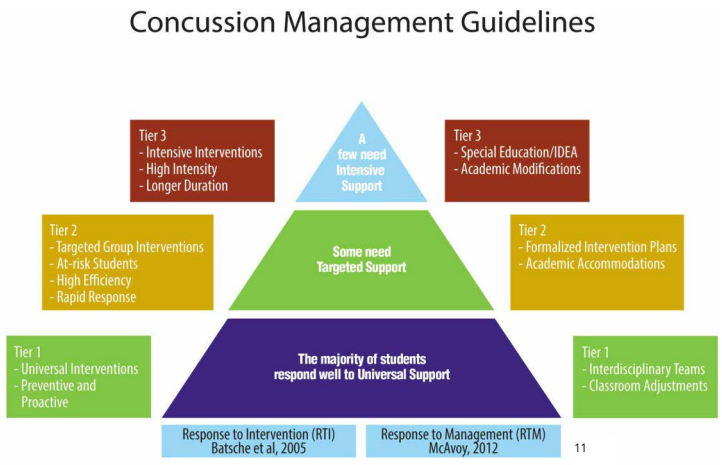
» Special Considerations

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

However, there remains the 30% of student/athletes who have on-going physical, cognitive, emotional or sleep/energy symptoms well beyond the 4 week mark. In those cases, the parent and medical professionals are advised to look to the school system for existing educational initiatives available to all students. A number of educational initiatives (Response to Intervention RTI; Multi-Tier System of Support MTSS) allow for ascending levels of supports for any student with a medical, psychological, behavioral or social condition impacting learning. Concussion, in theory, is a short-term, temporary condition that sometimes needs higher levels of educational support when it does not resolve in a timely fashion. Ascending levels of support suggest that good teaching and reasonable academic "adjustments" in the general education classroom are helpful to any and all students who struggle in an academic setting. Ascending levels of support are applicable to concussion. We have called this "Response to Management (RTM)."

With ascending levels of support, we maximize the student/athlete's recovery by focusing on good academic "adjustments" in the general education classroom.

A smaller percentage of students who struggle beyond the general education classroom may need a small amount of "targeted intervention" called academic "accommodation." Academic "accommodations" may be provided via a Health Plan, a Learning Plan, a 504 Plan.[10] 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 special education services (IDEA) 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/athlete with protracted recovery. Parents and medical professionals need to seek medical explanation and treatment for slowed recovery; educators need to continue to provide the appropriate supports and the school physical team needs to continue to keep the student/athlete out of physical play.



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.

WEEKS TO MONTHS: **Academic Accommodations**
Slightly longer accommodations to the environment/ learning to account for a longer than 4+ week recovery. Helps with grading, helps justify school supports for a longer time.

MONTHS TO YEARS: **Academic Modifications**
Actual changes to the curriculum/placement/ instruction.

Medical Note

"One size does not fit all when managing concussion and every injury will present a little differently depending on the individual. We often find that preexisting conditions such as attention problems, sleep disorders, or anxiety may be made worse following concussion. Knowing medical, developmental, and academic history, to include previous concussions, is critical to create an individualized plan that fits the student's specific needs. Careful and consistent monitoring of symptoms over time then allows us to make changes to the student's plan or to bring in other team members as needed to promote recovery."

Damon Lipinski, Ph.D., Neuropsychologist
Concussion Clinic Director
Schmieding Developmental Center

ARKANSAS RESOURCES

Arkansas Activities Association	ahsaa.org	501-955-2500
Arkansas Athletic Trainers Association	aataonline.com	
Arkansas Brain Injury School Support Program	arbraininjury.org	501-319-7333
Arkansas Children's Hospital Concussion Clinic	archildrens.org	501-364-1100
Arkansas Children's Hospital Sports Medicine Clinic	archildrens.org	501-364-1100
Arkansas DESE	dese.ade.arkansas.gov	501-682-4475
Schmieding Developmental Center Concussion Clinic	sdcpediatrics.uams.edu	479-750-0125
Trauma Rehabilitation Resources Program	atrp.ar.gov	1-855-767-6983

NATIONAL RESOURCES

Brainline	brainline.org	703-998-2020
Centers for Disease Control	CDC.org	
Center for Brain Injury Training and Research (CBIRT)	CBIRT.org	541-346-0593
Get Schooled on Concussions	getschooledonconcussions.com	
National Association of Athletic Trainers	nata.org	214-637-2206
National Association of State Head Injury Administrators	nashia.org	
National Federation of State High School Associations	nfhs.org	317-972-6900

REFERENCES

1. Coronado VG, Haileyesus T, Cheng TA, et al. Trends in sports- and recreation-related traumatic brain injuries treated in US emergency departments: The National Electronic Injury Surveillance System-All Injury Program (NEISS-AIP) 2001-2012. *The Journal Of Head Trauma Rehabilitation.* 2015;30(3):185-197.
2. 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
3. McCrory P, Meeuwisse W, Dvorak J, et al. Consensus statement on concussion in sport—the 5th international conference on concussion in sport held in Berlin, October 2016. *Br J Sports Med* Published Online First: 6 March 2017. doi:10.1136/ bjsports-2017-097699
4. 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.
5. Cantu RC. Second impact syndrome. *Clin Sports Med.* 1998; 17:37-44.
6. 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 doi:10.1542/peds.2013-2867
7. 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
8. McAvoy K., 2012, Return to Learning: Going Back to School Following a Concussion. nasponline.org/publications/cq/40/6/return-to-learning.aspx
9. Get Schooled On Concussions website: www.GetSchooledOnConcussions.com
10. Wrightslaw, Section 504 and IDEA: Basic Similarities and Differences, Rosenfeld, SJ. www.wrightslaw.com/advoc/articles/504_IDEA_Rosenfeld.html.
11. McAvoy K., 2011, Providing a Continuum of Care for Concussion using Existing Educational Frameworks. *NABIS Brain Injury Professional.* Volume 9 Issue 1.
12. 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.

The 2013 Colorado version of the REAP publication is available in Spanish upon request.

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

All questions or comments and requests for in-services/ trainings can be directed to:

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  Karen@GetSchooledOnConcussions.com

REAP thanks:
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For review and feedback on the development of Arkansas REAP.

» Symptom Checklist

Name: _____ Assessment Date: _____

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

Pathways of Concern	Symptoms	Severity Rating						
			Mild	Mild	Moderate	Moderate	Severe	Severe
A	I feel like I'm going to faint	0	1	2	3	4	5	6
V	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
O	Things look blurry	0	1	2	3	4	5	6
	I see double	0	1	2	3	4	5	6
H	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
C	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
N	I have neck pain	0	1	2	3	4	5	6
S/E	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
Cog	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
E	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: _____								

Pathways of concern: A=Autonomic, V=Vestibular, O=Oculomotor, H=Headache (Migraine &Non-Migraine), C=Cervicogenic, N=Neck Strain, S/E=Sleep/Energy, Cog=Cognitive, E=Emotional

Regular symptom progress monitoring is recommended as best practice.

» Teacher Feedback Form

Date _____

Student's Name _____

Date of Concussion_____

Student: You have been diagnosed with a concussion. It is your responsibility to gather data from your teachers before you return to the doctor for a follow-up visit. A day or two before your next appointment, 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?
			❑ Yes ❑ No Date: Signature:
			❑ Yes ❑ No Date: Signature:
			❑ Yes ❑ No Date: Signature:
			❑ Yes ❑ No Date: Signature:

Regular academic progress monitoring is recommended as best practice.

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The following are excerpts from the Arkansas Concussion Act

Ark. Code Ann. § 6-18-710

§ 6-18-710. Student athlete concussion education

(b) The General Assembly finds that:

(1)(A) Concussion is one of the most commonly reported injuries in children and adolescents who participate in sports and recreational activities.

(b) (5) The Arkansas Activities Association is a recognized national leader in the development and implementation of concussion protocols for student athletes in grades seven through twelve (7-12); and

(6) It is necessary to establish concussion protocols substantially similar to those developed and implemented by the Arkansas Activities Association to protect all student athletes in Arkansas.



Listed below are the revised 2020 Arkansas Activities Association Concussion Guidelines

1. Every coach and registered volunteer must receive training on concussions once every three years per Arkansas Law.
2. Every student athlete and parent/guardian must read and sign a "Concussion Fact Sheet for Athletes and Parents". (These forms should be kept annually for each sport)
3. Any student athlete who is "suspected" by their school's personnel, school medical staff, or game official of having a concussion should not return to play or practice on the same day per Arkansas Law.
4. Any student athlete suspected of having a concussion should be evaluated by a qualified healthcare professional (QHP) trained in the signs, symptoms, and management of a concussion prior to returning to practice or play: (Neuropsychologist, MD, DO, Advanced Practice Nurse, Certified Athletic Trainer, or Physician Assistant).
5. Any student athlete that has been clinically diagnosed by a QHP with a concussion must then be medically cleared prior to beginning the Graduated Return to Play Protocol (GRTP).
6. The 5 step (Day) GRTP protocol for delayed return to play:
   - Student athlete must exhibit a resolution of concussion symptoms back to or near pre-injury baseline levels for a minimum of "24 hours" prior to the student athlete being cleared by their QHP to initiate and proceed through the GRTP
   - If school is in session: the student athlete that has been diagnosed with a concussion MUST attend a FULL DAY of school (within the normal school year) without symptoms or classroom modifications prior to that athlete beginning the GRTP (student athletes that are only attending a partial day or currently have classroom modifications in place due to their concussion are not eligible to begin GRTP)
   - If school is not in session: (Summer, Fall, Winter, Spring Breaks, AMI or a regularly scheduled non-school day) the GRTP may be administered by the direction of the QHP overseeing the student athlete's healthcare
   - There should be at least 24 hours between each step of the GRTP
   - If any symptoms significantly increase during these activities, stop the workout immediately
   - The student athlete should then rest until symptoms return back to or near pre-injury baseline levels for 24 hours then return to the previously completed stage of the GRTP
   - If symptoms persist or worsen, seek medical attention by referring the student athlete back to the QHP that is oversee ing their healthcare
   - Once the student athlete has successfully completed the 5-day GRTP they are eligible to return to full participation on Day 6. (not eligible to return to play on the 5th day of the protocol)
   - In the absence of a Certified Athletic Trainer a designated school employee may administer the GRTP under the AAA Guidelines set forth by this document and following the direction of the QHP in charge of the student athlete's healthcare
   - The GRTP paperwork must be fully completed, signed, dated by the individual that completes the step wise protocol.
   - THE ARKANSAS ACTIVITIES ASSOCIATION SPORTS MEDICINE ADVISORY COMMITTEE RECOMMENDS THAT THE SCHOOL THEN KEEPS THE MEDICAL RELEASE FORMS FOR A MINIMUM OF 3 YEARS FOR DOCUMENTATION

GET SCHOOLED ON CONCUSSIONS

GetSchooledOnConcussions.com

To learn more about sports safety in Arkansas, visit the Arkansas Activities Association Webpage at *ahsaa.org*

For helping recovering from a sports-related injury, visit the Arkansas Children's Hospital Sports Medicine Clinic at *archildrens.org/programs-and-services/orthopedic-clinic/sports-medicine?journey=symptoms*

Arkansas Children's
HOSPITALS · RESEARCH · FOUNDATION

For assistance transitioning back to school following a concussion or other brain injury, please contact the Arkansas Brain Injury Support Program at *arbraininjury.org*

Arkansas Brain Injury Support Program

For professional development and resources to assist school personnel with addressing the needs of the whole child in the school setting, contact School Health Services at *dese.ade.arkansas.gov/Offices/learning-services/school-health-services*

SCHOOL HEALTH SERVICES
Creating and Sustaining a Healthy School Culture

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