

Brain Injury Quick Guide

**Information and Resources
For Teachers
&
School Staff**



July 2013

Acknowledgements

This guide is a product of the Governor's Advisory Council on Brain Injuries, the Iowa Department of Public Health, Grant Wood AEA, Epilepsy Foundation of Iowa, and Brain Injury Alliance of Iowa.

The development of this guide was funded by Grant #H21MC06748 from the Department of Health and Human Services (DHHS) Health Resources and Services Administration, Maternal and Child Health Bureau. The contents are the sole responsibility of the authors and do not necessarily represent the official views of DHHS.

This is in the public domain. Please duplicate and distribute widely.

A special thanks to the following people and agencies for contributions in developing and writing the material for this project:

- Governor's Advisory Council on Brain Injuries - Cognitive Rehabilitation Task Force
- University of Iowa's Center for Disabilities and Development
- Renee Moravec, S.L.P – Grant Wood AEA; Governor's Advisory Council on Brain Injuries
- Geoffrey Lauer & Tasha Retz - Brain Injury Alliance of Iowa
- Roxanne Cogil - Epilepsy Foundation of Iowa
- Megan Hartwig - Iowa Department of Public Health



For more information call the Brain Injury Resource Network
1-855-444-6443

Table of Contents

Brain Injury Statistics	4
Levels of Brain Injury Severity	5
Basic Brain Anatomy	6
Challenges	8
Assessing & Addressing Behavior Challenges	9
Psycho-Social Challenges	10
Physical/Sensory-Motor Challenges	12
Perceptual Challenges (Visual & Auditory)	14
Attention Challenges	16
Memory/Learning Challenges	18
Executive Function Challenges	21
Communication/Language Challenges	22
Common Changes in Communication, Ear and Throat Function Following Brain Injury	23
Communication/Language Challenges: Word Finding	24
Communication/Language Challenges: Comprehension	26
Communication/Language Challenges: Pragmatic Language	28
Role of Technology	30
Incorporating Assistive and Adaptive Devices in the Classroom	32
Student Support Team	33
Recognizing Brain Injury when it Happens	35
Seizures	37
Important Tips to Remember	39
To Learn More	40
Helpful Books	41
Citations	42

Brain Injury Statistics

According to the Centers for Disease Control and Prevention, at least 1.7 million people sustain a traumatic brain injury (TBI) in the United States each year. Of those individuals, about 52,000 die, 275,000 are hospitalized, and 1.365 million are treated and released from an emergency department. The number of people with TBI who are not seen in a hospital or emergency department who received no care is currently unknown.

According to the Iowa Department of Public Health data from 1999 to 2010, the average number of annual TBI deaths in children 0 to 17 in Iowa was 541. Motor vehicle crashes were the number one cause followed by firearms and other causes. From 2008 to 2011 the average number of annual hospitalizations from TBI in children 0 to 17 in Iowa was 142. Falls was the number one cause of these hospitalizations followed by crashes and being struck by or against something as in a sports concussion. From 2008 to 2011 there was an average of 5,973 emergency department visits due to TBI in children age 0 to 17 in Iowa. The leading causes of the ED visits were falls, struck by or against an object and motor vehicle crashes. It is important to note that there is no way to track the number of children who may have sustained a mild traumatic brain injury and visited their pediatrician or family physician instead of the emergency room or hospital.

Please visit the following websites for more information:

- www.cdc.gov/traumaticbraininjury/statistics.html
- www.biaia.org
- www.idph.state.ia.us/ACBI

Levels of Brain Injury Severity

Brain Injuries can be mild, moderate or severe. Two things are important to remember: no two brain injuries are alike and just because a brain injury is mild it doesn't mean that there will not be ongoing symptoms that will affect the student in and outside of the classroom.

Mild Traumatic Brain Injury

- Loss of consciousness does not have to occur – the student may be dazed or confused.
- Loss of consciousness is very brief, usually a few seconds or minutes.
- Testing and scans of the brain may appear normal.
- Mild TBI is the most common (75% - 85%).
- 90% of individuals recover fully within 6-8 weeks, often within hours or days, but 10% experience ongoing deficits, which may not be evident immediately.

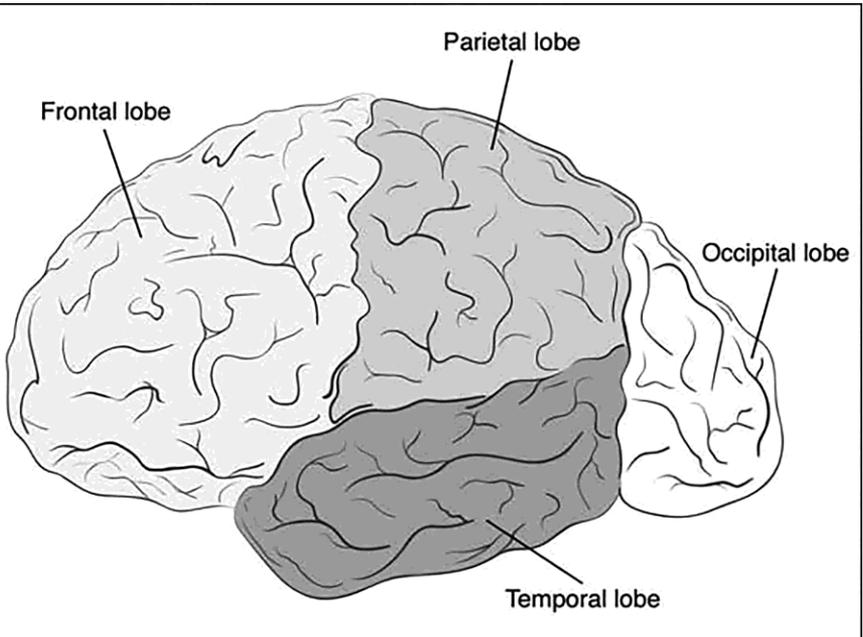
Moderate Traumatic Brain Injury

- Loss of consciousness lasts from a few minutes to a few hours.
- Confusion can last from days to weeks.
- Impairments in physical, cognitive, and/or behavioral functioning can last for months or may be permanent.
- Medical scans are positive for brain injury.

Severe Traumatic Brain Injury

- Coma or unconscious state may last for days, weeks or months.
- Impairments in physical, cognitive and/or behavioral functioning are usually permanent.

Basic Brain Anatomy



The Frontal Lobe is responsible for:

- Controlling attention
- Motivation
- Emotional control
- Guide/control social behavior
- Judgment
- Problem-solving
- Decision Making
- Expressive language
- Motor integration
- Voluntary movement

The Temporal Lobe is responsible for:

- Memory
- Receptive language
- Comprehension of language
- Musical awareness
- Sequencing skills

The Parietal Lobe is responsible for:

- Tactile perception (touch)
- Awareness of spatial relationships
- Academic skills (reading)

The Occipital Lobe is responsible for:

- Visual perception
- Visual input
- Reading (perception & recognition of printed words)

Challenges

There are many challenges for those with trauma to the brain. Even those with mild injuries often experience severe disability. Brain Injury is often referred to as a silent epidemic because there are often no physical symptoms. Individuals who have not experienced brain injury often do not grasp the challenges that individuals with brain injury experience.

In this guide, behaviors refer to functional changes including social, physical, communication, and cognitive.

- Students with brain injury are at greater risk for behavioral challenges.
- ALL behavior, even disruptive behavior, has a purpose.
- Students with brain injury often have significant emotional fluctuations including anger, frustration, crying or tantrums.
- Psycho-social, physical/sensory-motor, cognitive and communication challenges are often experienced.
- Behavior challenges WILL diminish if they are addressed systematically.
- When possible work with the child's medical team and/or Neuropsychologist.

Assessing & Addressing Behavior Challenges

Define the Behavior

Specifically define the behavior of concern so that you can quantify the behavior. Use descriptors that let you “see” and record “how often” it happens.

Weak example: the student is being defiant and refuses to comply with instruction.

Better example: the student demonstrates non-compliance by orienting his body away from the work area, physically looking away and/or changing topics of conversation.

Assessing the behavior helps us to answer the questions:

- Why is the behavior occurring?
- What purpose does the behavior serve?

Antecedent – Behavior – Consequences

Develop strategies using the A-B-C model. Take into account the child’s strengths, needs and preferences to develop successful adaptive strategies. For more information on the A-B-C model you can visit:

www.in.gov/fssa/files/ABC.pdf

Individuals with brain injury tend to respond better to positive consequences rather than negative!

Psycho-Social Challenges

Challenges

- Social involvement
- Self-awareness
- Awareness of social rules/roles
- Age appropriate behavior
- Self-esteem
- Self-control

Strategies

- Social groups that play games but have some structure to them are wonderful. You can help to direct the conversation and discuss any idioms or figurative language statements that are mentioned. Play games with a purpose; the game will depend on the student's age and abilities. Games can teach the students how to interact socially with peers. Social interaction skills can be lost after brain injury.
- Discuss the hidden rules for various situations. An example of a hidden classroom rule is that a single individual does not answer all of the questions a teacher poses in the classroom. Other students can answer too. Basically there are unwritten rules for behavior.
- Chart comparisons. This could include a graphic organizer of "unexpected" and "expected" behaviors in the classroom.
- Video others, or the individual, displaying correct behaviors.

- Self-monitor scales or charges.
- Provide activities that allow the student success.
- Create opportunities for the student to use their strengths.

Psycho-Social Challenges Case Study

The Challenge

Charlie, a kindergarten student, would leave his chair, walk around the room, and approach the teacher while she was instructing.

The Strategy

Hidden rules were explained and pictures were provided on a ring for the teacher to use as reminders. Each card on the ring had two pictures, one with “acceptable” behavior and one with “unacceptable” behavior in the classroom.

IEP/504 Plan Accommodations

Pictures and visuals will be provided to assist with classroom expectations.

Physical/Sensory-Motor Challenges

Challenges

- Vision and hearing deficits
- Strength and endurance/stamina
- Spatial coordination
- Speech

Strategies

Always look at the student as an individual and take into account which strategies they may need. Students with brain injury will often benefit from the following strategies and/or accommodations:

- Appropriate seating
- Extra time
- Access to curriculum with various technology devices
- Abbreviated assignments
- Partial days
- Allowing breaks

Physical/Sensory-Motor Challenges Case Study

The Challenge

Josh is a middle school student who had a stroke. Josh's vision is impaired and he walks with a limp. Josh also processes items slower now and is not turning in assignments on time like he used to do. He appears to be tiring at different times during the day.

The Strategy

Josh should be given preferential seating in the classroom. The steps for lengthy tasks should be broken down into smaller steps. Abbreviated assignments should be given, and/or extra time should be allowed on assignments and tests. Large print should be provided. Books may be read to him via a reader or text-to-speech device. A break will be provided in the morning and afternoon because of fatigue.

IEP/504 Plan Accommodations

Josh will be given extra time during tasks, activities, and evaluations. Josh should be seated close to the instructor. Assignments will be broken down and abbreviated if possible; if unable to abbreviate, allow extra time for completion. Readings, worksheets, and assignments should be provided in either large print or with a format that allows items to be read with a technology device. Breaks will be provided.

Perceptual Challenges

(Visual & Auditory)

Challenges

- Seeing an object in the periphery
- Perceiving space
- Recognizing objects (particularly if too much is presented too rapidly)
- Separating the object of focus from other stimuli in the area

Visual Perceptual Strategies

- Supplement visuals with auditory instruction (go with the student's strengths)
- Provide longer or repeated viewing
- Facilitate systematic approach to learning (step-by-step process)
- Use color, arrows, LARGE print, or other visual cues to orient to instruction
- Place materials within student's best field of vision (consult with ophthalmologist, occupational therapist or neuro-ophthalmologist if available)

Auditory Perceptual Strategies

- Limit environmental/background noise
- Give clear directions (check for understanding)
- Teach students to ask for clarification, repetition or instruction at a slower rate
- Preferential seating

Visual & Auditory Challenges Case Study

The Challenge

Jessica is a preschool student who is unable to see items clearly in the upper left quadrant. She does not always see items presented to her. When a story is read, specific items in pictures cannot be identified.

The Strategy

Jessica should always be seated close to the teacher in a position that allows her to see items on her right. A high contrast between the item and the background should be provided. Use large print, provide textured items she can trace and allow extra time for her to see the item. Draw attention to items by using a specific, preferred color or bright arrow to direct her gaze. Monitor the light in the background and within her line of vision. Monitor for over-stimulation.

IEP/504 Plan Accommodations

Jessica will be given clear and brief verbal cues to guide her to the task being presented. Preferential seating should be given so she is close to instruction. Busy visual backgrounds should be limited. High contrast pictures should be presented. Large print will be provided. Textures (touch), monitoring background light (visual), and repeated statements (verbal) should be used when providing input about new information.

Attention Challenges

Challenges

- Focusing, filtering out distractions
- Initiating tasks
- Maintaining attention
- Shifting from one task to another

Strategies

- Clearly define objective (the end result)
- Use short and concise instructions
- Use novel, unusual, or relevant stimuli in activities
- Space out more taxing activities between rest periods
- Schedule more demanding activities to occur during peak attention times
- Be alert to “drifting” (redirect promptly)
- Reduce physical distractions through structured environment (study carrel)
- Provide explicit verbal, visual, or physical redirects (touch shoulder, gesture to picture cue)

Attention Challenges Case Study

The Challenge

Sarah, a high-school student, injured her head when she fell from the top of a cheerleading pyramid. She is unable to filter out distractions and begins to get headaches when there is too much noise in the classroom.

The Strategy

Sarah has been moved close to the instruction but away from extraneous noise areas such as windows and doors. She sits close to classmates who are quiet and work hard. The teachers are monitoring the noise level in the classroom by keeping the students on task with planned activities with little unstructured time, except for the last few minutes of class when they are to be doing their homework. Sarah is to go to a quiet location for test-taking. Breaks for quiet rest in the clinic should be built into Sarah's day as she can fatigue easily. Sarah should be provided with a copy of the notes from the teacher via smart board, email, buddy or other system.

IEP/504 Plan Accommodations

Sarah should have preferential seating away from distractions. Noise levels should be monitored. Breaks should be built into her day. Notes should be provided to her. A quiet location during tests is necessary. Provide a list of what is expected for her to complete. Assignments may need to be abbreviated.

Memory/Learning Challenges

Challenges

- Recalling events/information from previous days
- Following a schedule
- Registering new information previously taught
- Holding several thoughts or intentions in mind at one time

Learning Strategies

- Make materials significant and relevant to student – in other words, keep information clear and to the point. Material may need to be repeated and explained in a manner that is specific to a student's task.
- Match student's learning style preference with instruction method
- Routinely summarize and restate information being taught
- Control amount of information being taught
- Use overlapping techniques (multimodality, repetition, rehearsal)
- Couple new information with previously learned information
- Utilize visual imagery, "chunking" techniques, association, and mnemonics
- Control the amount of information being taught. Lengthy verbal productions can become too much information to process, especially if there are no visual to accompany the information. Remember: visuals do not just mean pictures. Visuals could be written examples, highlighted words, and graphic organizers

Orientation Strategies

- Develop individualized schedule incorporating seating, cubby or locker, and desk
- Promote consistency with staff, materials, and physical arrangements out of school
- Use peer buddy for transitions
- Provide pro-active cues to help in preparing for transition (“In five minutes we will go to lunch.”)

Memory/Learning Challenges Case Study

The Challenge

Mary, age 6, needs structure. Her classroom has a schedule on the classroom door, but Mary never remembers to look at it or use it.

The Strategy

Set up an icon (picture) schedule with Velcro icons and place it on Mary’s desk. Have Mary remove an icon as she completes a task/activity/lesson or when it is time to move to the next activity. At first have an associate or teacher point briefly to the next icon on Mary’s schedule; then gradually eliminate the pointing as Mary learns to independently use her schedule.

IEP/504 Plan Accommodations

In order for Mary to remember to follow a schedule she will have a removable icon (picture) daily schedule on her desk.

Executive Function Challenges

Challenges

- Initiating or inhibiting behavior
- Monitoring one's own behavior
- Making decisions
- Planning activities
- Knowing where to start on a task
- Knowing what to do next
- Determining when the task is done

Strategies

- Explicitly redirect student back to task with support & guidance
- Use student's strongest learning modality to help them compensate for their weaknesses
- Limit the number of steps in a task
- Model & demonstrate step sequence
- Establish a routine and place for things at school & home
- Use different colored materials for different areas (example – a different colored binder for each class subject)

When a student shows difficult behavior or avoidance, understand they may find work difficult or frustrating.

Executive Function Challenges

Case Study

The Challenge

John, a sophomore – level 2, has difficulty starting any of his assignments or initiating tasks.

The Strategy

Hold a conference with John to talk about his not starting assignments or initiating tasks. Ask John to write down two ideas on how to start assignments. If John suggests something helpful, try to develop a strategy around it. To help John learn to initiate, the teacher will have John listen for his name and the word “start” (the teacher will state those words) – John’s name and “start” will cue him to pick up his pencil and start his assignment. The teacher will practice this in a mock setting several times then will use it in the classroom. Later the teacher will only use the word “start”. John can graduate to non-verbal cues and then gradually to eliminate cues.

IEP/504 Plan Accommodations

John will initiate tasks consistently with two-word verbal cueing, then one word cueing, non-verbal cueing and finally move to independent initiation.

Communication/Language Challenges

If a student cannot communicate or does not understand what you are communicating to them, it will be difficult if not impossible for them to learn.

Communication and language areas that are commonly affected after brain injury include:

- Language
- Social communication
- Articulation
- Voice

Location and severity of the brain injury determine how a student's functioning is affected. The impact of the specific brain injury can have a range of outcomes from mildly impeded to profoundly affected.

Two students with similar brain injuries will not have the same outcome!

Common Changes in Communication, Ear and Throat Function Following Brain Injury

- **Articulation:** the ability to produce accurate productions of sounds during speech. A common challenge with articulation is speech intelligibility.
- **Voice:** the ability to produce phonation at the level of the vocal folds for speech production.
- **Feeding:** the ability to chew and swallow one's food efficiently.
- **Hearing:** the ability to process auditory information in one's environment. Some common hearing challenges after brain injury include:
 - Differing degrees of hearing loss
 - Auditory distractions
 - Tinnitus

A Speech-Language Pathologist, Audiologist or Occupational Therapist may work with students after a brain injury to help mitigate these challenges.

Communication/Language Challenges: Word Finding

Word Finding: The ability to retrieve and produce a word during conversation or writing.

Word Finding Challenges

- Inaccurate use of vocabulary
- Late or incomplete writing tasks
- Heightened frustration during writing tasks
- Withdrawn or less verbal during social situations
- Use of fillers (um, uh, etc.) and non-descript words (this, those, things)

Word Finding Strategies

- Provide vocabulary lists, unit lists, chapter lists, etc.
- Provide opportunities for categorical practice
- Extend time or shorten length of writing tasks
- Provide breaks during long tasks
- Encourage self-advocacy
 - “I’m having trouble finding my words, give me a second.”
 - “Come back to me when I get my thoughts together, please.”

Word Finding Challenges Case Study

The Challenge

Suzie is a sixth grade student who is almost non-communicative in social situations.

The Strategy

Set up multiple group activities. Have Suzie first start to participate in the group activity by having a routine word or phrase to say consistently. After a week or two of practice, increase the number of routine words or phrases for Suzie to use. Next have Suzie choose a word or phrase (from a list) that she would like to use in the group. Continue the activity by eventually having Suzie make up a word or phrase that she would like to use. Continue this activity in group settings rewarding Suzie verbally or with a non-verbal cue each time she independently verbally participates in the group.

IEP/504 Plan Accommodations

Suzie will increase her verbalizations in social group settings by being given a routine word or phrase to use, increasing to independent verbalizing in those settings.

Communication/Language Challenges: Comprehension

Comprehension: The ability to understand spoken and written language.

Comprehension Challenges

- Misuse of question/answer forms
- Appearing to be highly distracted
- Appearing frustrated
- Exhibiting behavioral problems

Comprehension Strategies

- Use CLOZE statements.
- Practice a multimodal approach to teaching including:
 - Tactile/manipulatives
 - Visual/pictures
 - Kinetic/movement
 - Auditory/verbal
- Encourage the student to practice self-advocacy.
- Utilize technology when appropriate.
- Break tasks into smaller steps.

Comprehension Challenges

Case Study

The Challenge

Tim is a fourth grade student and has difficulty comprehending simple sentences and short paragraphs.

The Strategy

Use the CLOZE technique. Start out making up short sentences that Tim can read and explain or write down sentences that Tim uses in his own conversation. Choose one vocabulary word from each sentence and place a blank space in its place. Make a list of those words. Write three or four sentences leaving out the chosen vocabulary word for each sentence. Have Tim choose the correct word for each sentence from the word list. Once he starts having success, add a new vocabulary word to the list to place in a simple sentence then continue to gradually increase the difficulty.

IEP/504 Plan Accommodations

Tim will increase his vocabulary and sentence comprehension by using the CLOZE technique.

Communication/Language Challenges: Pragmatic Language

Pragmatic Language: The ability to understand the function, rules and roles during a social communication exchange.

Pragmatic Language Challenges

- Turn-taking
- Topic maintenance
- Appropriate tone of voice
- Understanding body language/facial expressions
- Keeping up with the speed and complexity of the conversation

Pragmatic Language Strategies

- Use visual reminders
- Use topic cards/visuals
- Engage students in using a rating scale for situation or person (self, teacher, etc.)
- Provide direct instruction tailored to the specific challenge

Pragmatic Language Challenges

Case Study

The Challenge

Billy, a four-year old, preschooler consistently interrupts activities by talking or shouting at inappropriate times. He does not seem to understand there is a social rule of turn-taking and that others have importance in social settings.

The Strategy

In a one-on-one setting Billy will be shown two icons – one with lips closed and one with mouth talking. The behavior for each picture will be demonstrated for Billy. The teacher or associate will then practice talking when he/she looks at the mouth talking and then he/she will be quiet when he/she looks at closed lips. Billy will then practice what to do when he sees each icon. Later he will respond appropriately to the icons in a group setting. Gradually the use of the icons will be decreased working toward turn taking independence.

IEP/504 Plan Accommodations

Billy will learn social turn-taking to improve his pragmatic language (social communication) in social settings.

Role of Technology

Like many things in this world, technology can be an integral part of life for children and youth who have experienced brain injury. There are many high tech and low tech devices that can be put in place to assist with daily tasks.

Low Tech:

- Pictures to show appropriate behaviors
- Lists to show what should be completed
- Planners and calendars can be used to keep track of a schedule
- Label makers can be used to print off words
- Seating adjustments can be made
- Contrasts on computer – changing the background and font color

High Tech:

- iPads and other tablets have many uses (recording, pictures of where you parked, text-to-speech, reminders, calendars)
- Dragon Naturally Speaking or other voice-to-text tools and applications
- Smart Pens that can record what is being said while notes are written
- Fusion and Alpha Smart tools, any item that is like a word processor, can allow a student to type information and send it to the teacher through infrared or emails

- Text-to-speech applications and devices that allow a text to be read out loud. Some can be used to read books, web pages, email and PowerPoint presentations
- Some students may have cochlear implants to compensate for hearing loss
- Some students may use a communication device



Incorporating Assistive and Adaptive Devices in the Classroom

The iPad and computers have been extremely useful for students. Below are some examples of how these devices have been used successfully in the classroom.

Carol is in elementary school. She has braces on her legs and is in a wheel chair. She has limited use of her hands and arms. The electric wheelchair allows her to move from the classroom to specials and lunch in a manner that allows her to keep up with her peers. She uses a communication device because her speech is limited. The iPad is available to her for spelling, accessing books, and she is being taught how to access pictures on the internet for a presentation she will make in the classroom.

Shane is a preschool student. He is medically fragile. Although he is in his home, he uses an iPad to communicate, look for books and have FaceTime with the preschool classroom weekly so he has a chance to have some social contact with his peers.

Drake is in high school. He uses the iPad for communication on an application that allows him to type his comments and then push a button that speaks what he has written. He can type notes for presentations and homework then send them to his teachers. Because of balance issues, he can access most of his textbooks electronically instead of carrying books for each of his classes.

Student Support Team

A support team is important for the success of a student with brain injury. Following is a list of common support team members and their role in helping the student reach their maximum potential.

Student - The person who is receiving instruction.

Student's Family - Usually the student's main support. It is important to remember that there are as many different kinds of families as there are students!

Peers - Friends and acquaintances at school and in the community, including classmates.

Teachers – Individuals who are responsible for teaching the student, this may include Special Education Teachers, and teachers for enrichment classes like music, art, P.E. or foreign language.

School staff – This may include Associates who may work directly with the student, a Guidance Counselor, Principal or other staff in the school building.

School Nurse - A medical professional in the school building, may administer medication and implementation of a student health plan.

AEA staff - Area Education Agency staff provide services and supports to students and school districts including improvement services for students, families, teachers, administrators and their communities.

OT - Occupational Therapists work with students to maintain independence in all areas of life.

PT - Physical Therapists help students who have injuries or illnesses improve their physical movement and may assist with pain management.

SLP - Speech Language Pathologists work with students on speech, language and cognition challenges.

Audiologist - Audiologists evaluate, diagnose, treat and manage hearing loss, tinnitus (ringing of the ears) and balance issues related to the ear.

Physician - A primary physician oversees a child or youth's medical care. This can include medical care related to the brain injury or routine vaccinations and illness. A child may or may not see a pediatrician.

Neurologist - A Neurologist is a part of the medical team. A Neurologist specializes in treating symptoms related to the brain and nervous system.

Neuropsychologist - A Neuropsychologist is a psychologist with special training to study brain-behavior relationships.

Neuro-ophthalmologist - A Neuro-ophthalmologist has a specialty in both Neurology and Ophthalmology; treating visual problems that are related to the nervous system.

Social worker/Case Manager - Social workers help to coordinate services that may happen during or outside of school, including working with respite care agencies and therapy services.

Direct Care Worker - Direct Care Workers provide 1:1 assistance including assistance with activities of daily living: bathing, dressing, grooming, eating, and toileting as well as help with transportation to school or help with homework or recreational activities.

Neuro-resource Facilitation - A service provided to Iowans with brain injury and their families to help them find and keep supports and services. This service is through the Brain Injury Alliance of Iowa.

Recognizing Brain Injury When it Happens

Falls are one of the principal causes of traumatic brain injury in children in Iowa. If you do witness a student have an accident or other medical situation that may affect their brain it is important to act quickly - getting help within an hour if possible and preferably less than 30 minutes.

According to the Centers for Disease Control and Prevention, symptoms of concussion or mild traumatic brain injury usually fall into four categories and may appear right away or may not be noticed for days or months after the injury.

Thinking/Remembering

- Difficulty thinking clearly
- Feeling slowed down
- Difficulty concentrating
- Difficulty remembering new information

Physical

- Headache
- Fuzzy or blurry vision
- Nausea or vomiting (early on)
- Dizziness
- Sensitivity to noise or light
- Balance problems
- Feeling tired, having no energy

Emotional/Mood

- Irritability
- Sadness
- More emotional
- Nervousness or anxiety

Sleep

- Sleeping more than usual
- Sleep less than usual
- Trouble falling asleep

It is important to remember that a student may look fine even though they are acting or feeling differently.

The CDC recommends seeking immediate medical assistance if a child has received a bump, blow or jolt to the head or body and:

- Has a headache that gets worse and does not go away
- Has weakness, numbness or decreased coordination
- Has repeated vomiting or nausea
- Has slurred speech
- Looks very drowsy or cannot be awakened
- Has one pupil larger than the other
- Cannot recognize people or places
- Becomes more and more confused, restless or agitated
- Has unusual behavior
- Loses consciousness
- Will not stop crying and cannot be consoled
- Will not nurse or eat

Seizures

Children who have sustained a brain injury may develop seizures or epilepsy after the injury. Seizures are more common in schools than they used to be and be scary the first time you or your students experience one.

Students have varying severity and frequency of seizures. Some students may have an average of one seizure a month, while other students may have a seizure every 15-20 seconds. It is important to remember that some seizures are not physically visible.

Schools need to provide a safe environment. The school's nurse is a necessity to assist in writing up a health plan for students with brain injury, especially those who are having seizures.

Strategies for the Student with Seizures

- If a student is having a seizure, keep them safe – **do not** put anything into their mouth during a seizure.
- Call the nurse if necessary.
- Provide a break for the student if needed after a seizure.
- After a seizure remind the student in a subtle way where they are and what task they were working on.
- Provide students with notes if necessary.

Seizures: What you Need to Know

Did you know:

- Most seizures are NOT medical emergencies
- Students are often NOT aware they are having a seizure and will not remember it happened
- Epilepsy is NOT contagious
- Epilepsy is NOT a form of mental illness
- Students vary rarely die or have an injury to the brain during a seizure
- A student CAN'T swallow his/her tongue during a seizure
- You should NEVER put anything in the mouth of someone who is having a seizure

Epilepsy can impact learning and behavior. Here are some things to keep in mind:

- Seizures may cause short-term memory problems
- After a seizure, coursework may have to be retaught
- Seizure activity, without obvious symptoms, may still affect learning
- Medications may cause drowsiness, inattention, concentration difficulties and behavior changes
- Students with epilepsy are more likely to suffer from low self-esteem

From *Managing Students with Seizures: What Teachers Need to Know*, Epilepsy Foundation of America, Inc. 2006.

Important Tips to Remember

- Brain injury cannot always be seen – just because a student doesn't have physical symptoms does not mean they don't have an injury.
- Be patient!
- Think outside the box.
- Focus on strengths.
- Every student with a brain injury is different.
- Individuals with brain injury tend to respond better to positive consequences rather than negative.
- Use neuropsychological testing or results if available to incorporate accommodations within the classroom.
- Non-verbal or written cues can be more helpful than verbal cues.
- Give as few instructions at one time as possible.
- Often students with brain injury take more time to process information than their peers. Give them extra time to respond.
- Following brain injury, any or all of a student's senses can be affected. Be aware of this before attributing behaviors or responses to simply negative behavior.
- Be knowledgeable about any medications a student might be taking and their side effects that might affect a student's behavior.
- Allow time for breaks and rest. Fatigue is one of the top concerns/problems students report after brain injury.
- Students with brain injury often do not have the ability to appropriately read social cues.
- Impulsivity is common after brain injury.
- Structure is often helpful for students with brain injury.

To Learn More...

Please visit the following websites about brain injury

- **Brain Injury Alliance of Iowa:** www.biaia.org
- **U.S. Brain Injury Alliance:** www.usbia.org
- **Brainline:** www.brainline.org
- **CDC Traumatic Brain Injury:**
www.cdc.gov/traumaticbraininjury/
- **Epilepsy Foundation of North/Central Illinois Iowa & Nebraska:**
<http://www.epilepsyheartland.org>
- **Health Resources Services Administration:**
<http://mchb.hrsa.gov/programs/traumaticbraininjury/index.html>
- **Governor's Advisory Council on Brain Injuries:** www.idph.state.ia.us/acbi
- **University of Iowa Children's Hospital – Center for Disabilities and Development:**
www.uichildrens.org/childrens-content.aspx?id=228531
- **Brain Injury Association of America:**
www.biausa.org
- **North American Brain Injury Society:**
www.nabis.org
- **Lash & Associates Publishing:**
www.lapublishing.com

Helpful Books

Following are books that may be helpful when working with a student with brain injury.

Coaching Students with Executive Skills Deficits

by Peg Dawson & Richard Guare

Executive Skills in Children and Adolescents: A Practical Guide to Assessment and Intervention

by Peg Dawson & Richard Guare

The Source for Executive Function Disorders (Ages 16 and up)

by Susan Phillips Keely

The Source for Traumatic Brain Injury Children & Adolescents

by Paul C. Lebbby, Ph.D. and Shana J. Asbell, Ph.D.

Signs and Strategies for Educating Students with Brain Injuries

by Sue Pearson, Gary Wolcott and Marilyn Lash

Citations

Centers for Disease Control and Prevention.
Concussion. Retrieved November 30, 2012, from
http://www.cdc.gov/concussions/signs_symptoms.html

*Managing Students with Seizures: What Teachers
Need to Know*, Epilepsy Foundation of America, Inc.
2006.