



QUALIFYING STUDENTS WITH TBI FOR SERVICES: LOOKING BEYOND NUMBERS

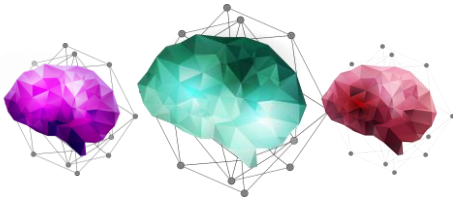
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DISCLOSURES

- No relevant financial or nonfinancial relationships to disclose.



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LEARNING OUTCOMES

- Name at least three common deficits associated with TBI.
- Provide an explanation as to why only evaluating language is not sufficient to qualify students with a TBI for services.
- Name three assessment tools to use with students with a TBI.

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MATCH IT!
Sample C:

Fun Things to Do as a Fourth Grader
I love being a fourth grader. There is so many fun things you can do. If you're lucky you get a nice book you can do even more fun stuff. There's alot of things to do like field trips! You can go to places like parks, movie theaters, civic centers, and more fun places! When you get back from field trips you can do more stuff. I like to read because it makes you imagine things go wild and that's fun. Usually on Fridays we go to activities and plays. I like playing games like Around The World. I usually play with friends or classmates. After school we do a little bit of work and go to P.E. We play games like Dodge Ball, Kick Ball, Kick Out, and lots more! Oh recess I love to do that. You get to go outside and play on the playground, it also gives your brain a break from work. When you go back in you can get on your computer and play games. There is all kinds of websites you can get on like Yogi, Game Witch, Kidzads, Biz, and lots of more fun games! It's really enjoy being a fourth grader, but you only get to be one for some people. I enjoy being a 4th and I hope you do. Have a great time being a fourth grader!

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GLASGOW COMA SCALE

Response	Score
Eye Opening Response	
Eyes open spontaneously	4 Points
Eyes open to verbal command, speech, or stimuli	3 Points
Eyes open to pain (not applied to face)	2 Points
No eye opening	1 Point
Verbal Response	
oriented	5 Points
Confused conversation, but able to answer questions	4 Points
Inappropriate responses, words incomprehensible	3 Points
Incomprehensible sounds or speech	2 Points
No verbal response	1 Point
Motor Response	
Obeys commands for movement	6 Points
Purposeful movement to painful stimulus	5 Points
Withdraws from pain	4 Points
Abnormal (spastic) flexion, decorticate posture	3 Points
Extensor (rigid) response, decarbrate posture	2 Points
No motor response	1 Point

Minor Brain Injury = 13-15 points, Moderate Brain Injury = 9-12 points, Severe Brain Injury = 3-8 points

Source: <http://www.hopkins.com/edu/epi/management/clinical-related-complications/neurologic/braininjury/braininjury-management/braininjury-management.cfm>

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BRAIN INJURY STATS FOR CHILDREN

- ~ 640,000 TBI related emergency department (ED) visits
- ~ 18,000 TBI related hospitalizations
- ~ 1,500 TBI related deaths for children 14 years & younger
- ~ 325,000 TBI related ED visits due to sports & recreational activities

*Activities with the highest number of visits = football, bicycling, basketball, playground activities, soccer

*More than 61% of children with mod to severe TBI experience a disability

www.cdc.gov (2018 Report to Congress)



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BRAIN INJURY STATS

- Approximately 2.5 million students with TBI in the US educational system annually (Lundine, 2017)
- 27,000 kids with TBI served under IDEA
 - Has ranged from 25,000 to 27,000 from 2008 – present

(National Center for Education Statistics, 2018-2019)

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WHY UNDERIDENTIFICATION?

- Lack of hospital-school communication
- Lack of awareness among educators
- Parent-educator relationships
- More obvious when the deficits are severe
- Lack of physical deficits
- Inefficient/inappropriate testing
- Documentation
- Inconsistent care
- Department of Education – TBI is a “low incidence” educational disability

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COMMON ISSUES AFTER BRAIN INJURY

- Sensory and Motor
- Attention and Concentration
- Processing Speed
- Memory
- Visual-Spatial
- Language
- Social Skills
- Behavioral
- Executive Functions
- Emotional (sadness, irritability)



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COMMON ISSUES AFTER BRAIN INJURY

- Most reported TBI sequelae re: school performance:
 - Progressive lag in academic achievement
 - Executive dysfunction
 - Social/behavioral problems

(Glang, Ebel, Tyler, & Todd, 2012)

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COMMON ISSUES AFTER BRAIN INJURY

- No two injuries are the same!
- Some effects are immediate, others aren't obvious until demands increase
- Earlier injuries usually associated with poorer outcomes
- Academic performance may be inconsistent across domains
- Rapidly changing needs and recovery
- Mild TBI (Concussion):
 - 1 MILD TBI – TYPICAL FULL RECOVERY WITHIN 4 MONTHS
 - APPROXIMATELY 14%-21% MAY DEMONSTRATE PERSISTENT SYMPTOMS FOR MONTHS AFTER THE INJURY (Lundberg, Covic, & Brown, 2019)

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EXECUTIVE FUNCTIONS

- Task initiation
- Self-awareness
- Attentional control
- Time management
- Organization
- Planning
- Working memory
- Goal setting
- Mental flexibility



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EXECUTIVE FUNCTIONS

- Impairments are a result of damage to the frontal lobe
- Students may be seen as defiant, lazy, not caring about their work
- Students with executive dysfunction may:
 - Be impulsive
 - Be disorganized
 - Take a long time to respond to questions
 - Not be able to initiate tasks on their own
 - Have poor social judgment
 - Require constant cueing and reminders, even on the most routine of tasks
 - Have limited attention to tasks
 - Struggle with switching gears
 - Be late and unprepared for class
 - Not get the big picture

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EXECUTIVE FUNCTIONS

Mimetic-Ideational Information Processing:

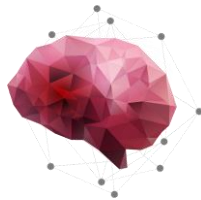
- Mental dress rehearsal
- Trial and error learning without risk
- Rehearsal & improvement – can try something out and pre-experience the emotion & risk, then change behavior quickly

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COGNITIVE-COMMUNICATION DISORDER

▪ ASHA defines cognitive-communication disorders as difficulty with any aspect of **communication** that is affected by disruption of **cognition**. Some examples of **cognitive** processes include: attention, memory, organization, problem solving/reasoning, and executive functions.

▪ Affects activities of daily living, academic performance, and work performance



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SOCIAL SKILLS

- Affect daily living and quality of life
- Impaired social function is the most disabling result of a TBI (Sengle, Conditto, & Noble-Pearse, 2012)
- Students with social skills deficits after a TBI may:
 - Have difficulty interpreting nonliteral/figurative language
 - Not understand sarcasm
 - Have difficulty navigating the dating world
 - Have difficulty interpreting nonverbal communication
 - Be disinhibited
- Social skills deficits can have a negative effect on reading comprehension and written language

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QUALIFYING STUDENTS

- Typical:
 - School psychologist evaluation (WISC-V, etc.)
 - SLP evaluation (language tests)
 - Teacher report
 - Classroom observation
- IQ score



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IDEA

"Traumatic brain injury" means an acquired injury to the brain which is caused by an external physical force and which results in total or partial functional disability or psychosocial impairment, or both, that adversely affects a student's educational performance. The term applies to open or closed head injuries resulting in impairment in 1 or more of the following areas:

- (a) Cognition
- (b) Language
- (c) Memory
- (d) Attention
- (e) Reasoning
- (f) Behavior
- (g) Physical functions
- (h) Information processing
- (i) Speech

(2) The term does not apply to brain injuries that are congenital or degenerative or to brain injuries induced by birth trauma.

(3) A determination of disability shall be based upon a full and individual evaluation by a multidisciplinary evaluation team, which shall include an assessment from a family physician or any other approved physician as defined in 1978 PA 346, MCL 333.1101 et seq.

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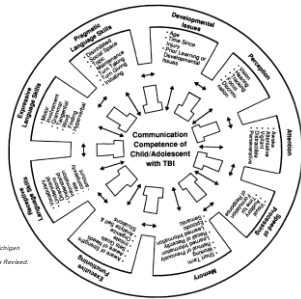
MSHA GUIDELINES

- Knowing that a student is eligible for speech and language service secondary to TBI, SLPs do not need standardized assessment scores for eligibility as the student qualifies under the area of related service, although standardized testing may be helpful for treatment planning

Michigan Speech-Language Hearing Association. (2006). Michigan Speech-Language Guidelines: Suggestions for Eligibility, Service Delivery, and Exit Criteria Revised. Lansing, MI. Author.

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MSHA



Michigan Speech-Language Hearing Association (2006). Michigan Speech-Language Guidelines: Suggestions for Eligibility, Service Delivery, and Exit Criteria Revised. Lansing, MI. Author.

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QUALIFYING STUDENTS - PROBLEMS

- IQ scores are not related to executive functions (Ardilio, Pineda, & Rosselli, 2000)
- Language tests – typically look at the form of language (usually preserved)
- Quiet environment
- Learning new skills is more difficult than regaining "lost" skills
- Rate of recovery
- Current assessments focus on discrete cognitive functions – students with TBI will most likely show deficits in situations requiring generalization of previously learned information, retention of information over time, and focusing and monitoring attention (Ylvisaker, 1998)

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QUALIFYING STUDENTS

- Interdisciplinary teams: physicians, athletic trainers, nurses, PT, OT, neuropsychologists, teachers, support staff, SLP, counselors, etc.
- Curriculum based assessments/Non-standardized assessments
- Teacher and parent reports/surveys
- Standardized tests:
 - Pediatric Test of Brain Injury; ages 6-16
 - S-FAYRES (Functional Assessment of Verbal Reasoning and Executive Strategies – Student Version); ages 12-19
 - CASL-2 (Comprehensive Assessment of Spoken Language, Second Edition); ages 3-21
 - Behavioral Assessment of the Dysexecutive Syndrome for Children (BADS-C); ages 8-16
- On-going, dynamic assessment and frequent monitoring
- Self-reporting measures
- Neuropsychological Report
- Education

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NEUROPSYCHOLOGISTS

- Psychologists who specialize in understanding how injuries of the brain affect cognitive functions and behaviors.
- Help clarify an individual's strengths and weaknesses in the context of a learning or developmental disability, medical event, or psychiatric condition.
- Use standardized tests, information about premorbid functioning, and well-developed norms to compare individuals to a peer group to determine if a weakness is an actual deficit.
- Look at different domains of cognitive functioning, psychosocial history, medical history, and personality/mood factors that might be contributing to the current issues.
- Use findings to make recommendations to keep clients safe and moving towards individual goals.

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MILD TBI

- Reliance on 1 assessment may not detect subtle changes following a mild TBI (Brown et al, 2019).
- Collaboration with an interdisciplinary team
- Curriculum-based assessment/Non-standardized assessments
- CDC Recommendations:
 - Battery of assessments
 - Neurocognitive assessment
 - Self-report measures
 - Post-Concussion Symptom Inventory-2
 - Behavior Rating Inventory of Executive Functions-2
- Best predictor of academic problems = self-reported symptom severity and executive dysfunction measures (Ransom et al, 2016)
- Education

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MODERATE TBI

- Collaboration with an interdisciplinary team
- Curriculum-based assessment/Non-standardized assessments
- Self-report measures
- Battery of cognitive assessments/neuropsychologist evaluation
- Assistive technology
 - Wisconsin Assistive Technology Initiative (WATI)
- Education



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SEVERE TBI

- Collaboration with an interdisciplinary team
- Functional communication assessment
 - Functional Communication Profile-Revised
- AAC assessment
- Assistive technology
- Curriculum-based assessment/Non-standardized assessments
- Neuropsychological evaluation/cognitive assessments
- Education

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RESOURCES

- Colorado Department of Education
 - The Brain Check Survey www.cokidswithbraininjury.com
- Michigan Speech-Language Guidelines: Suggestions for Eligibility, Service Delivery, and Exit Criteria Revised; 2006
- Neuro-QOL (<http://www.healthmeasures.net/explore-measurement-systems/neuro-qol>)
- CDC HEADS UP Program
- Michigan TBI online learning (<http://www.mtbtitraining.org>)



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Thank you!

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