

# Return to School Following Brain Injury: Promising Practices and Current Research.

Melissa McCart Ed.D.



I have no financial disclosures that would be a potential conflict of interest with this presentation.

# Who is CBIRT?

A Center associated with the University of Oregon-  
Established in 1993

Legislative and policy work

Conducts research and training to improve the lives of  
children and adults with TBI

Oregon TBI TEAM

OCAMP (Oregon Concussion Awareness and Management  
Program)

Promising and evidence-based practices for students and  
people with TBI

# Objectives

TBI implications for Returning to School



Educator Training



Family Support

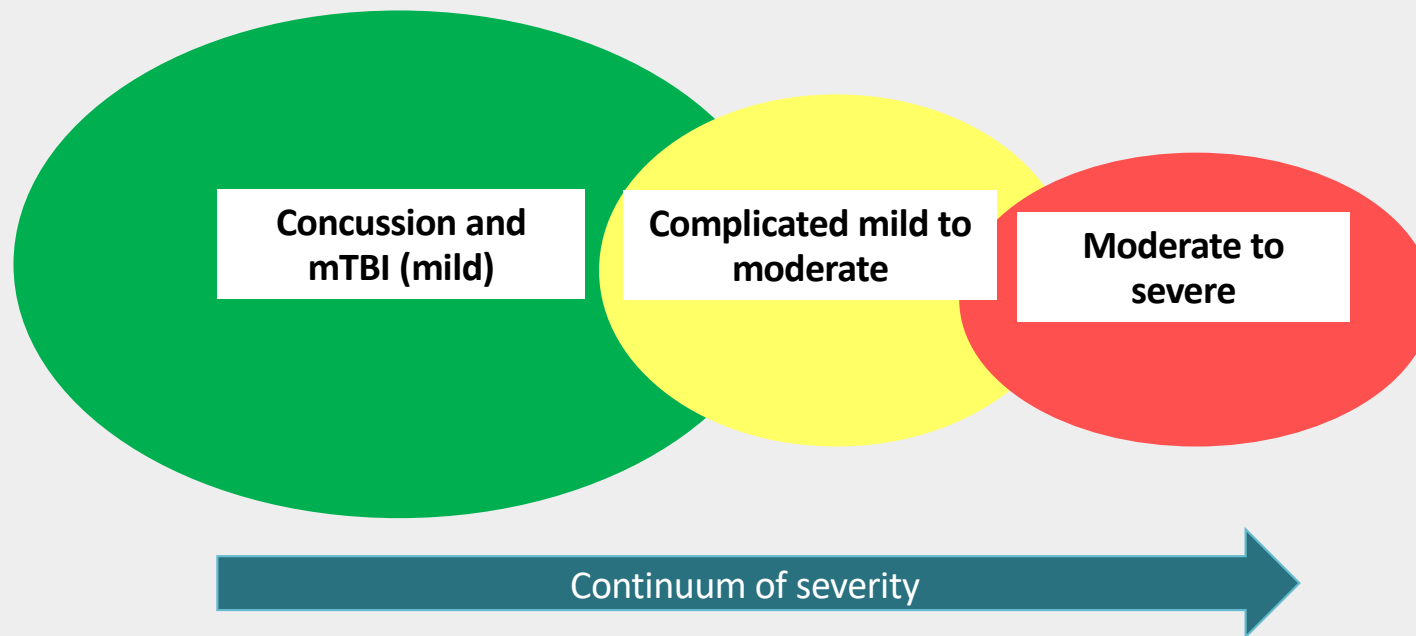


Collaboration



# Implications of TBI on Students?

# Brain Injury Severity Continuum



# TBI Impacts All Aspects of Functioning

N = 526 parents of children hospitalized for TBI (Hawley et al. 2004)

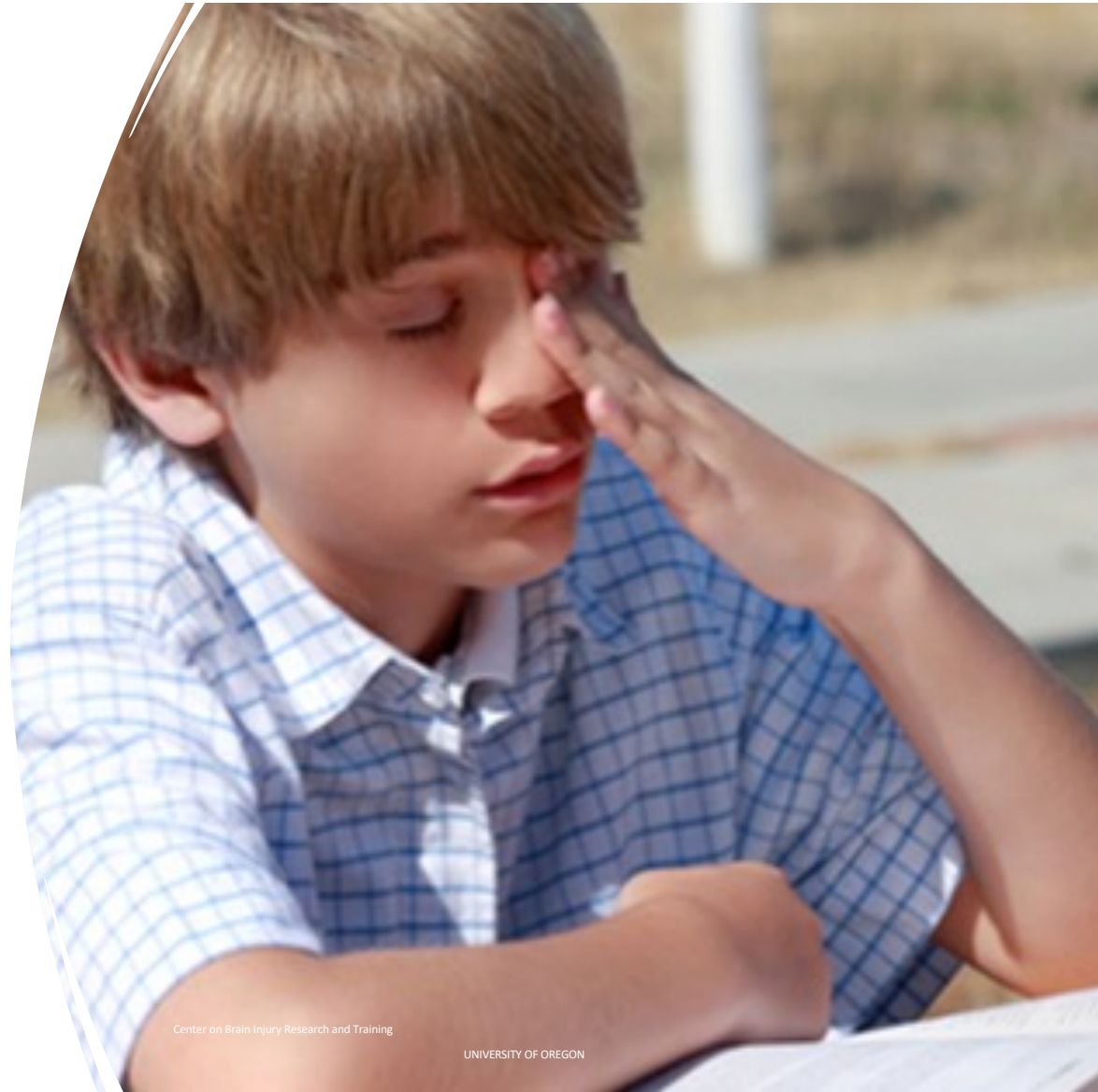
Behavioral, emotional, memory and attention problems reported by:

- 33% severe injuries
- 25% moderate injuries
- 10-18% of mild injuries

# Cognitive Consequences

---

- Problems with attention, working memory and executive function skills
- Inconsistent learning profiles
- Speech and communication difficulties



# Behavioral Consequences

- Impulsivity, poor self-regulation
- Anger issues and aggression
- Depression, anxiety, internalizing symptoms
- Post traumatic stress disorder
- Apathy and withdrawal





## Social Consequences

- Social skill and social problem-solving deficits
- Impaired emotion recognition
- Changes in peer relationships
- Lack of participation
- Difficulties making and maintaining friendships
- Social isolation

# Academic Outcomes

---

More severe injuries associated with more significant academic problems

- 79% of children with severe injuries failed a grade or received special education services (Ewing-Cobbs et al., 1998)

Even children with milder injuries are at risk

- 14% of children with mTBI needed support services at school 12 months post injury (Rivara, Koepsell, Wang et al., 2012)
-



# Developmental Issues

Especially when a child is injured at a young age, problems may not be apparent until later (Anderson et al., 2009; Anderson et al., 2010; Catroppa et al., 2008)

Children with complicated mild – moderate injuries needed more support services as they were further from injury (Prasad, et al., 2016)

# Growing into disability

Two days before her first birthday she was in a head on collision. We didn't realize anything was wrong until she started kindergarten and had a horrible time concentrating and learning.

*-- Kansas parent*

# RTS

Social

Physical

Learning



Cognition

Health

Language

# RTL



A woman with dark hair, wearing a blue patterned top, is shown in a thoughtful pose with her hand to her chin. Above her head is a thought bubble containing the word "Adulthood".

**Adulthood**

## Long Term Outcomes

---

Low rates of:

- Enrollment in post-secondary education
- Employment
- Independent living
- High rates of criminal behavior and incarceration

# Implications of TBI on Families?

# Effects of brain injury on families

Increased distress

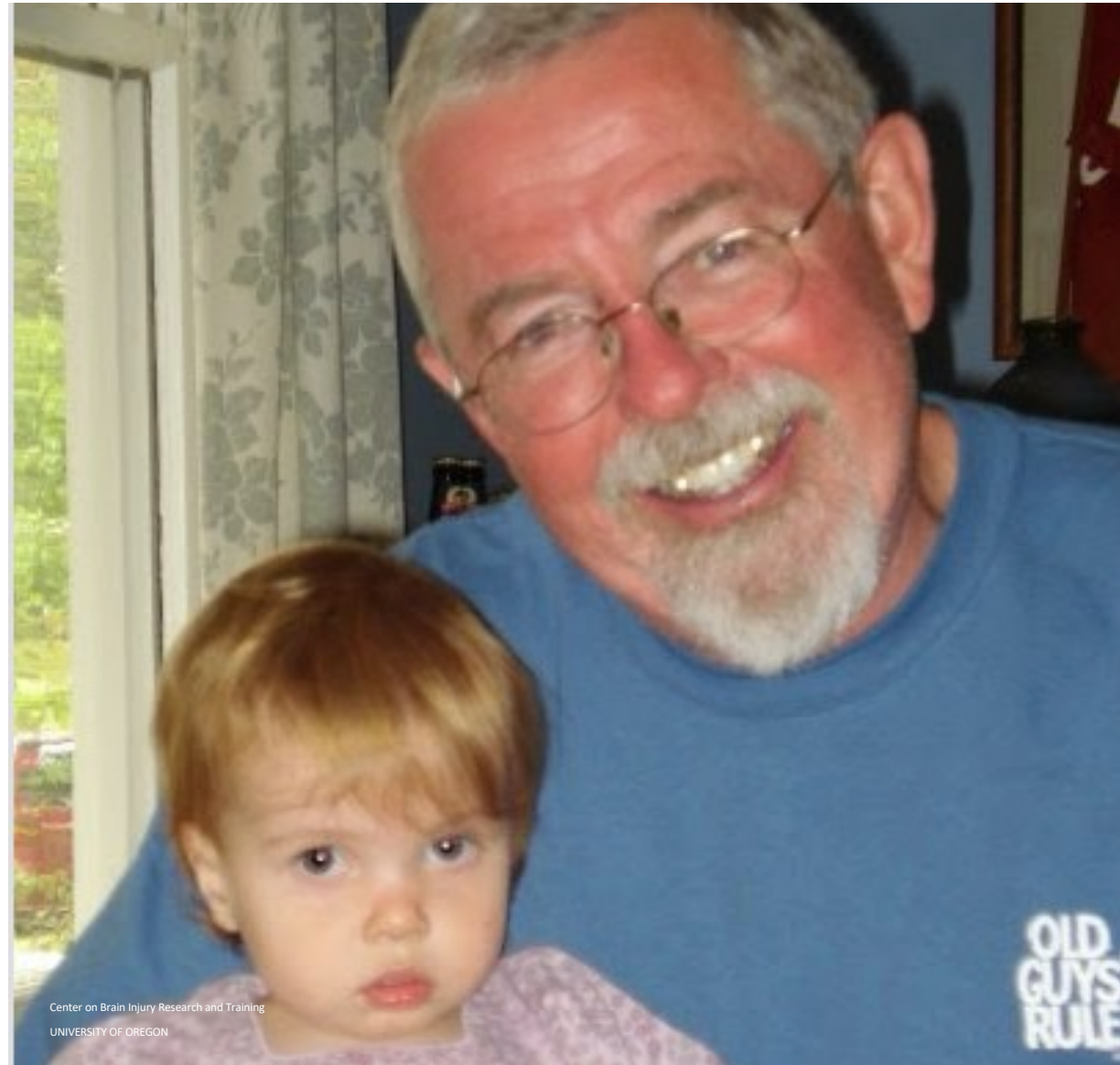
Parental anxiety and depression

Deterioration in family functioning that may persist many years following the injury

Financial strain

We need tools for working with clients outside the walls of the hospital or clinic, in the environments where they go to school, live and work.

-- Mark Ylvisaker

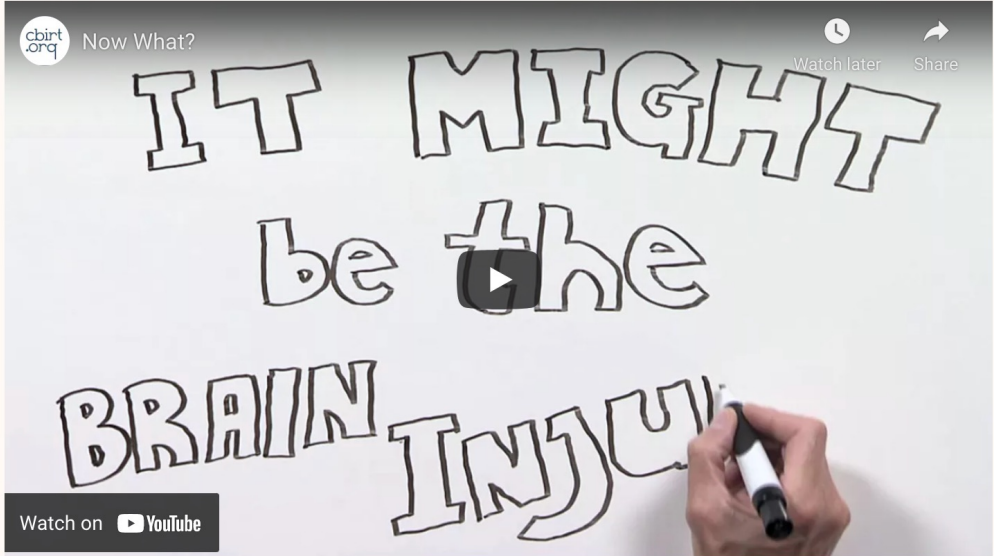




# Family Web

---

[cbirt.org/family-support](http://cbirt.org/family-support)



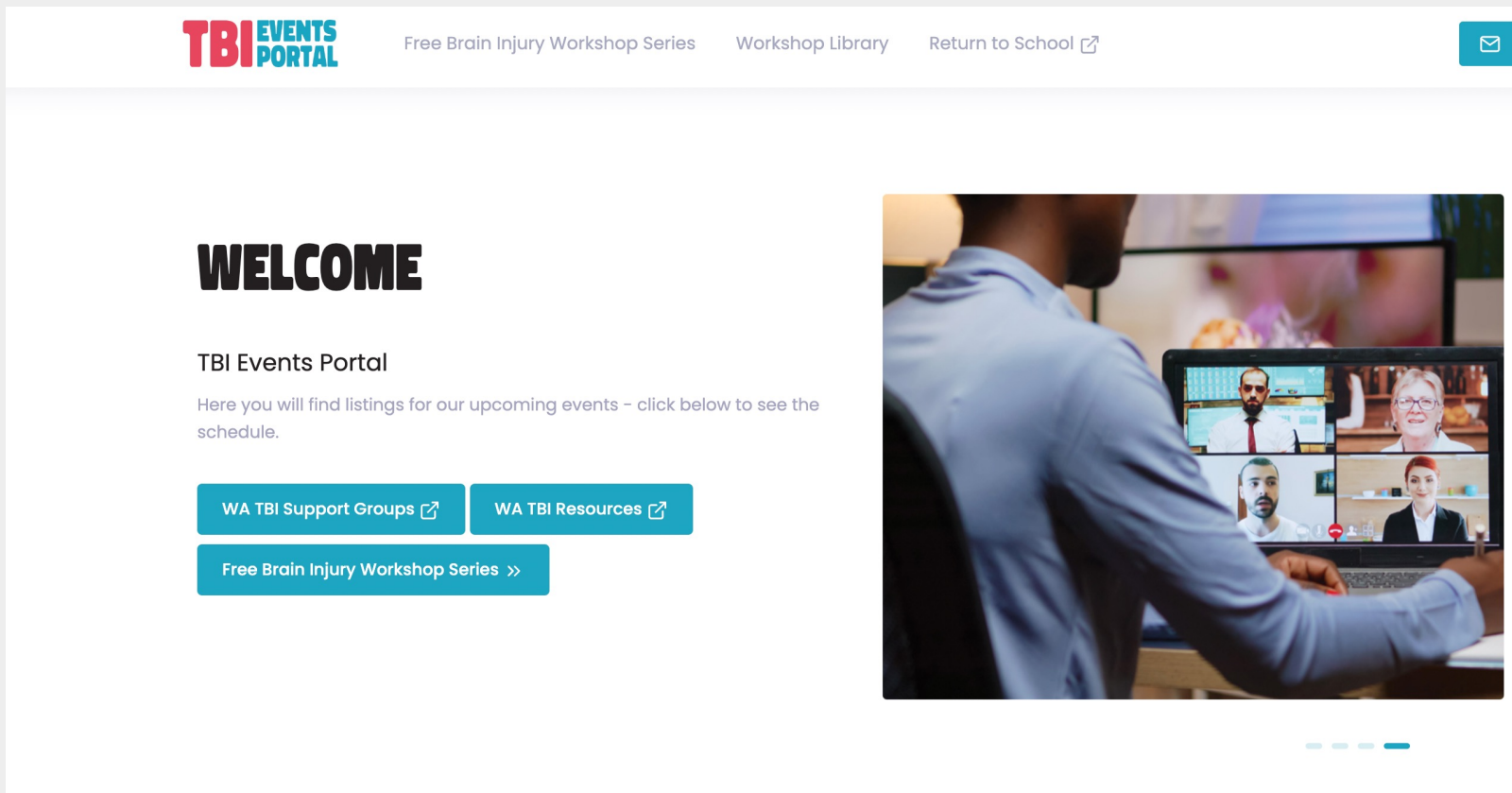
cbirt.org Now What? Watch later Share

IT MIGHT  
be the  
BRAIN INJURY

Watch on YouTube

- ∨ Care for the Caregiver
- ∨ Communication
- ∨ What's in Your ToolBox?
- ∨ The Home Environment
- ∨ Creating Routines Using Lists and Schedules
- ∨ Problem Solving

<https://tbieventsportal.org/>



The screenshot shows the homepage of the TBI Events Portal. At the top left is the logo "TBI EVENTS PORTAL" in red and blue. To the right of the logo are three navigation links: "Free Brain Injury Workshop Series", "Workshop Library", and "Return to School" with an external link icon. In the top right corner is a blue square button with a white envelope icon. The main content area features a large "WELCOME" heading in bold black text. Below it is the text "TBI Events Portal" and a paragraph: "Here you will find listings for our upcoming events - click below to see the schedule." There are three teal buttons: "WA TBI Support Groups" with an external link icon, "WA TBI Resources" with an external link icon, and "Free Brain Injury Workshop Series" with a right-pointing arrow. On the right side of the page is a large image of a person in a light blue shirt looking at a laptop screen displaying a video conference with four participants. Below the image are four small teal dots, with the second one from the left being larger and darker, indicating the current slide in a carousel.

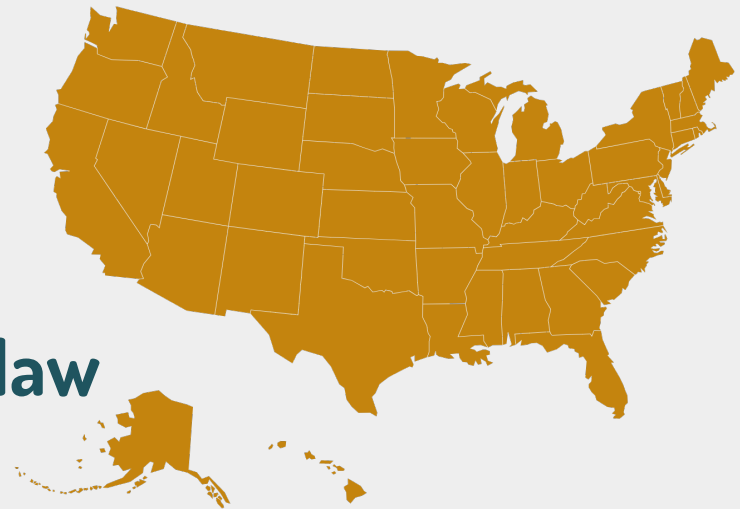
# Overview: Return to School Laws

## All 50 states have a Return-to-Play law that includes...

1. Education
2. Removal from play
3. Return to play

## 11 states have a Return-to-School law

- Some apply to only student athletes
- Few have directives included
- Few have supports built in



# Return to School: HB 4140





The goal is to not let a temporary injury alter a student's life trajectory!


# Advocating for Children & Youth



- Return-to-School legislation (2020)
- Requires Immediate Temporary Accommodations upon a concussed student's return to school.
- Went into effect August 2021



# This Bill will have positive impact on students with brain injury because...



It provides the opportunity for an injury that typically is short term to not end up being a life trajectory altering event.

It allows students to maintain their future life trajectory unhindered as they recover from brain injury.

It provides temporary short term supports that students need and that the special education system does not cover because the special education system is designed to support students who have long term educational need.

Best Practices  
are defined by  
evidence-based  
research

Standard forms will provide consistency in the application of the accommodations.

Integration of the Immediate Temporary Accommodations Plan (ITAP) are necessary to ensure that the accommodations are initiated immediately after the school is informed of the student's mTBI.

**Enrolled**  
**House Bill 4140**

Sponsored by Representatives NERON, MEEK, Senators HASS, THOMSEN; Representatives ALONSO LEON, CLEM, HELM, KENY-GUYER, MITCHELL, NOSSE, PILUSO, POWER, PRUSAK, REARDON, SALINAS, SANCHEZ, SCHOUTEN, SOLLMAN, WILDE, WITT, ZIKA, Senators BOQUIST, DEMBROW (Presession filed.)

**Section 1.** ODE must develop and distribute an accommodation form to distributed and used in schools for students who need support following a brain injury.

**Section 2.** Took affect August 2021

**Section 3.** Available for use by school employees, parents, guardians and students.

**Section 4.** Can be used when a student has a documented brain injury.



# Guided Credible History Revision to Oregon Administrative Rules



# Credible History



In the case that medical documentation either cannot be obtained or when the individual did not seek medical attention, the following elements will help school personnel to establish a credible history of TBI.

*Article*

**UNDER IDENTIFICATION OF STUDENTS WITH LONG TERM  
DISABILITY FROM MODERATE TO SEVERE TBI: ANALYSIS OF  
CAUSES AND POTENTIAL REMEDIES**

**Drew A. Nagele**

Philadelphia College of Osteopathic Medicine

**Stephen R. Hooper**

University of North Carolina-Chapel Hill

**Kristin Hildebrant**

Disability Rights Ohio, Columbus, Ohio, 43215;

**Melissa McCart**

Center on Brain Injury Research and Training, University of Oregon

**Judy L. Dettmer**

MINDSOURCE - Brain Injury Network, Colorado Department of Human Services

**Ann Glang**

Center on Brain Injury Research and Training, University of Oregon

Total TBI Identified in USA 14,102 (2013 data)

Accurately identified in USA: 32%

Average correctly identified by state: 19-75%

# Why do we need this? Examples.



Requiring medical documentation of TBI for students to be eligible for special education services can be a significant barrier to effective identification and service delivery.

(Dettmer, Ettel, Glang, & McAvoy, 2014)

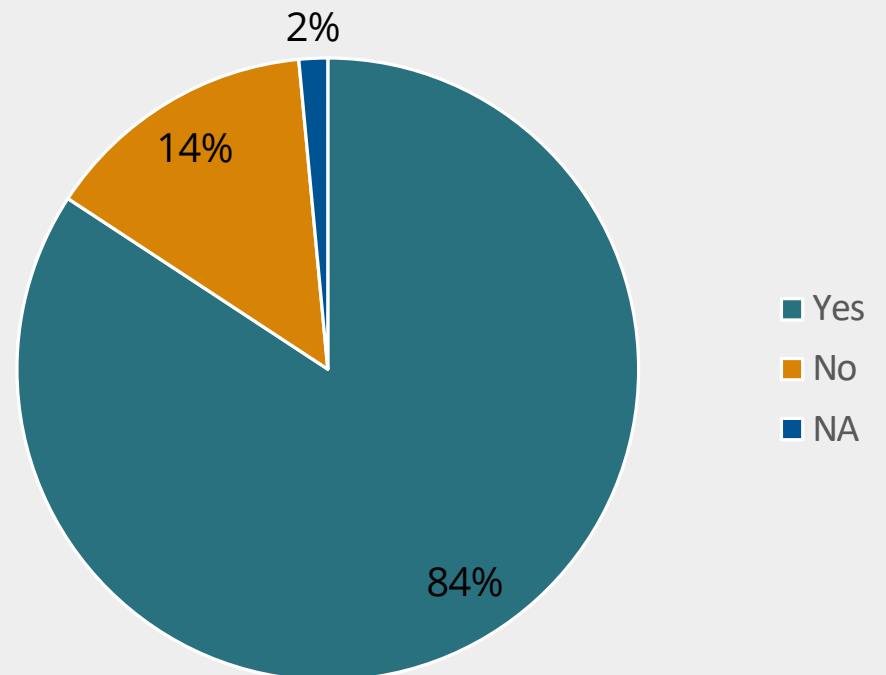


# Survey of Stakeholders

# Educator Survey Data

Have you ever experienced difficulty obtaining  
medical statement?

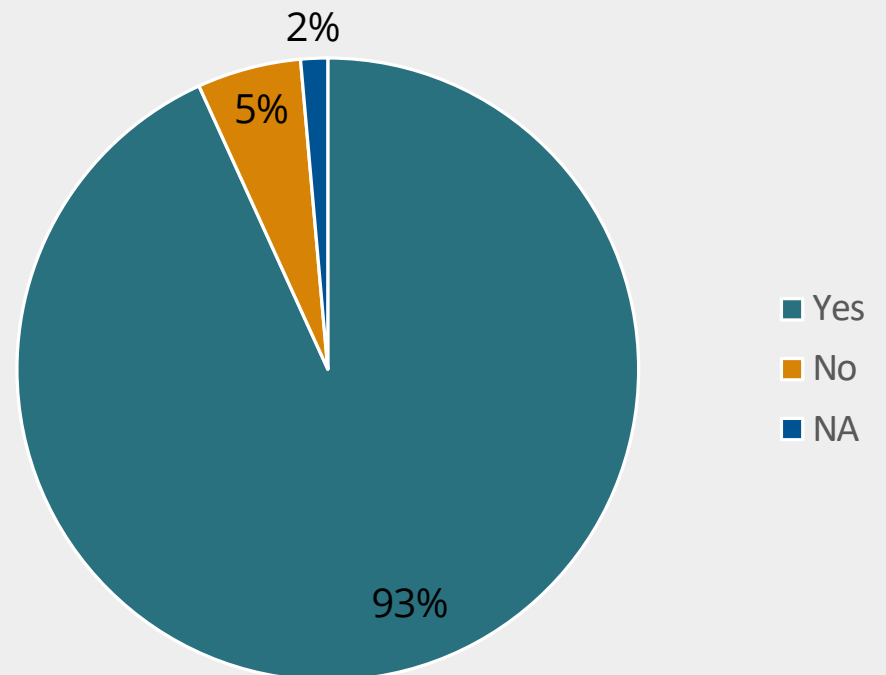
67 Responses



# School Psychologist Data

Have you ever experienced difficulty obtaining  
medical statement?

59 Responses



**MEDICAL DOCUMENTATION** of a traumatic brain injury

OR

A **SIGNIFICANT HISTORY** of one or more traumatic brain injuries reported by a reliable and credible source and/or corroborated by numerous reporters

Eligible for special education under Traumatic Brain Injury

**EDUCATIONAL IMPACT**

# What are Oregon's IEP Numbers Before and After Implementing the Credible History Process?

## Before Credible History

**260** identified students 3-21yo eligible for TBI services under IDEA out of the **5200** that should need services.

**5%** of the students who should need assistance.

## After Credible History

**312** students 3-12 were identified as eligible for TBI services

**14**-Early ed

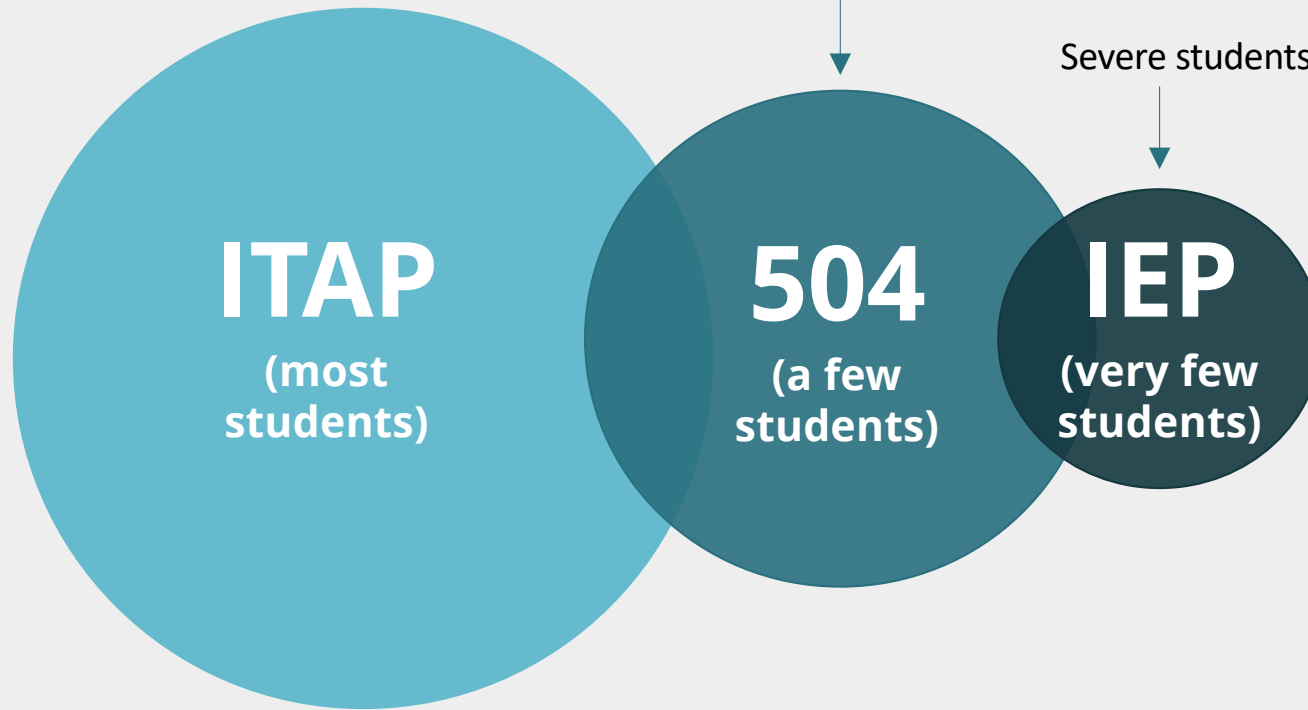
**298**-school age

**How does it all fit  
together?**

Most students enter here.

Sustained impact students enter here.

Severe students enter here.



# Educator Readiness





## Teacher Training in TBI survey of educators

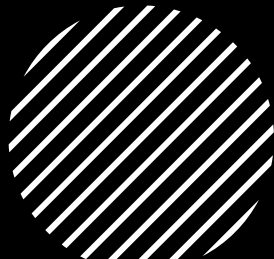
N = 352

Special educators (62%)

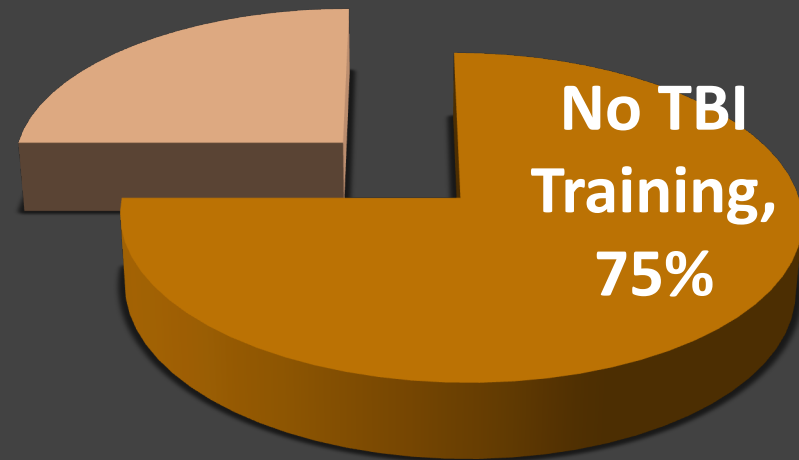
general educators (38%)

75% had master's degree

Ettel, Glang, Todis, & Davies, 2016



### Percentage with prior TBI Training






## School Psychologist Training in TBI

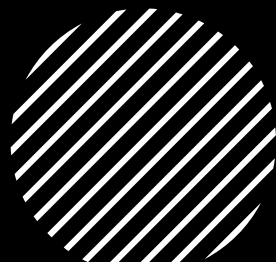
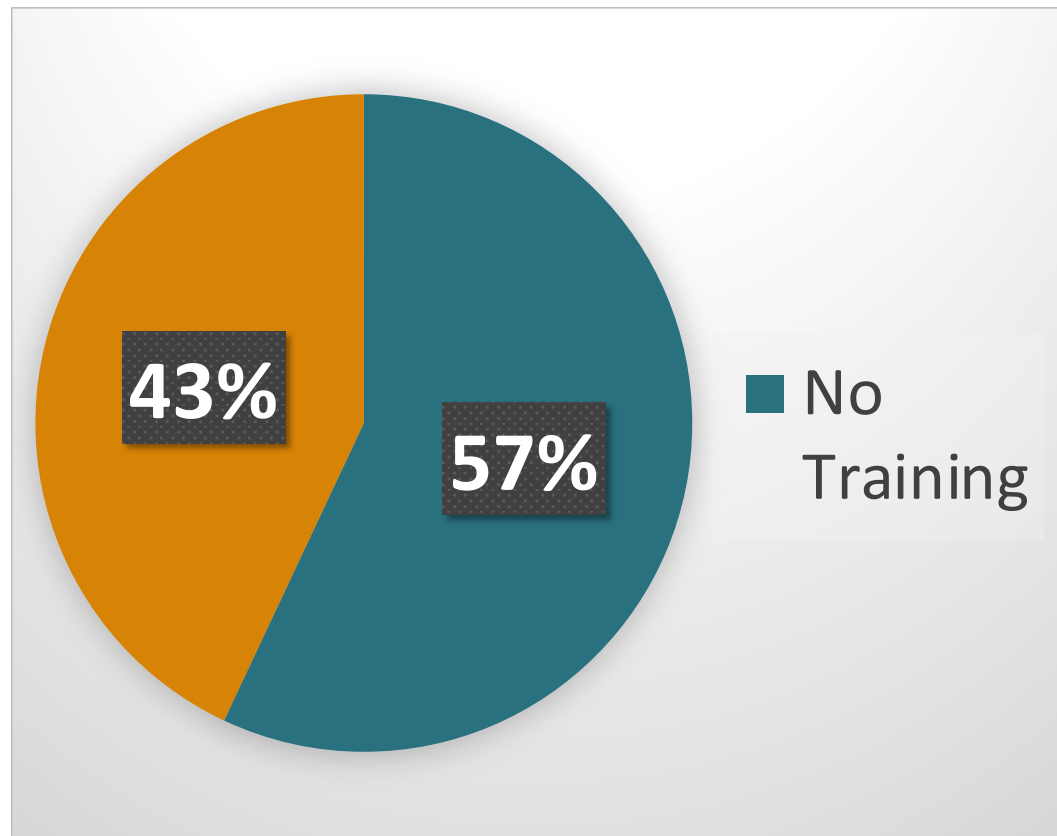
---

- Survey (N= 232)
- 88% had worked with student with TBI
- 78% held masters degree or higher

Glang, McCart, Moore & Davies  
(2016)



Percent of  
School  
Psychologists  
with prior  
TBI training



# School Psychologists rated themselves...

48% were qualified to differentiate between students with TBI and students with other disabilities

47% were able to provide a school with information about TBI

27% felt comfortable serving as an IEP case manager

**For years at least 34 years we have been documenting the need for educator training.**

New struggles are emerging...

- lack of release time
- lack of finances
- lack of time



# Professional Development/ Training

# Concussion in the Classroom: Best Practices for Student Success

The screenshot shows the 'learn cbirt' website. The header includes navigation links: About, Overview, Instructors, FAQ, Contact, and CBIRT.org. The main content area features a large image of a classroom with the course title 'In the Classroom after Concussion: Best Practices for Student Success'. Below the title, a paragraph describes the course as an online program for educators working with students with brain injury, listing target audiences like classroom teachers, special educators, and school psychologists. It also states the total course time is 10 hours (10 PDUs) and can be completed at one's own pace. To the right, there is a login form with an email field containing 'agnes\_wolfe@soesd.k12.or.us', a password field with dots, and a 'SIGN IN' button. Below the login form is an 'OR' separator and a 'BUY NOW' button. A list of course inclusions follows, including evidence-based strategies, 9 modules, 21 lessons, 23 supplemental resources, video interviews with real educators, professionally produced instructional videos, and a multi-state study proof of effectiveness. At the bottom left, a 'What Will I Learn?' section is partially visible with a 'Help' button and an information icon.

learn cbirt

About Overview Instructors FAQ Contact CBIRT.org

## In the Classroom after Concussion: Best Practices for Student Success

**In the Classroom after Concussion** is an online course that provides helpful information, practical strategies and resources for educators working with students with brain injury. *For:* Classroom teachers, special educators, school psychologists, counselors, therapists, and administrators

**Total course time:** 10 hours (10 PDUs). Work at your own pace, on your own schedule.

agnes\_wolfe@soesd.k12.or.us

.....

SIGN IN

OR

BUY NOW

Includes:

- Evidence-based instructional strategies
- 9 Modules
- 21 Lessons
- 23 Supplemental Resources
- Video Interviews with Real Educators
- Professionally produced instructional videos
- Proven effective with educators in a multi-state study

What Will I Learn?

Help

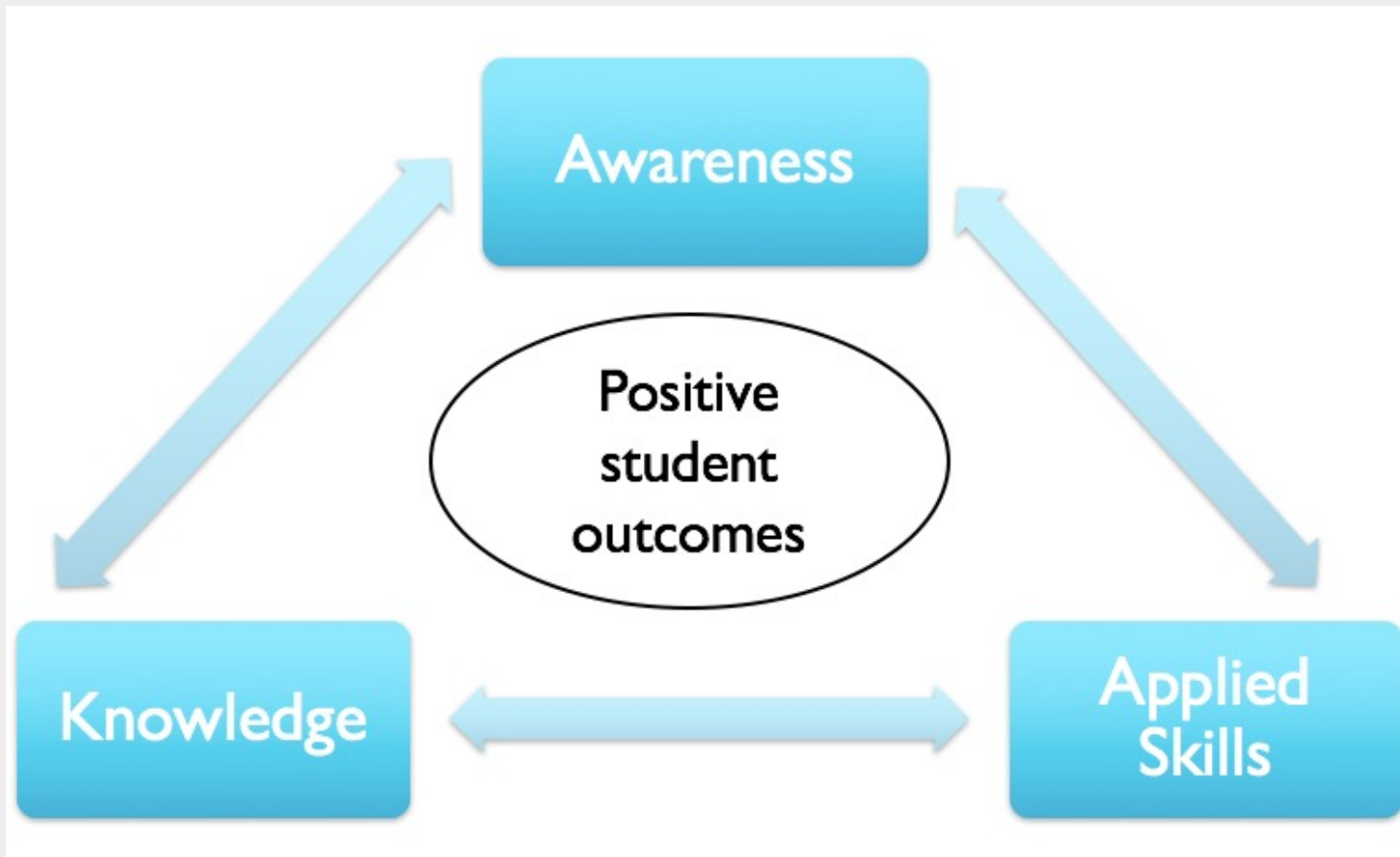
How brain injury differs from other disabilities

# Concussion in the Classroom: Best Practices for Student Success



- Target: What's different about TBI?
- Topics identified by educators
- Focused on classroom teachers





# Content Development

Literature on  
evidence-based  
strategies

LearNet content

Interviews with  
educators

Partnership: CO,  
OH, OR, PA, AL  
state  
representatives

Ongoing input  
from Educator  
Advisory Panel and  
consultants

# Instructional Design

- Information: text, video testimonials
- Resources: printable forms, links, case studies
- Skills training: interactive video

# Home Page Topic Options

## Return to School

- How is Brain Injury Different from Other Disabilities?
- Return to School After Concussion

## Screening and Services

## Accommodations and Modifications

## Classroom Strategies

## Promoting Social Interactions

## Behavioral

## Transition

## Parental Communication

## Resources

# RCT Evaluation

Randomized controlled trial

N = 100 classroom teachers (Oregon/Ohio)

Randomly assigned to either *In the Classroom (Intervention)* or *LEARNet (Control)*

5 hours total content

# Evergreen Evaluation

Quasi experimental study

N=81

All online without supervision

(real world application)

# Outcome Measures-RCT and Quasi Experimental

- Knowledge-SS results
- Skill application-SS results
- Self-efficacy-SS results



[Returntoschool.org](http://Returntoschool.org)  
[Learn.cbirt.org](http://Learn.cbirt.org)



# Health Care to School Transition and Collaboration

# Medical to School Professional Transition

## The Problem:

There is no “well-prepared and coordinated medical and school system in place, nor is there a framework for the immediate adoption of such a system.”

J Child Neurol. 2016 Jan; 31(1) 93-108

## Communication Breakdown

No link from hospital/medical care-school

- The parents usually bear the responsibility to educate school personnel about the effects of injury and disability

Lack of communication within school system

- Grade to grade, teacher to teacher, school to school

# Two Different Systems

Example: OT at school/OT at a care provider

- Care provider...Open more broadly
- School...Only available if the child has an IEP and the condition requires specially designed instruction.
- Communication is limited.

# The transition from hospital to school- regarded as a key factor in the educational success. Interesting Findings...

Todis, B., **McCart, M.**, & Glang, A. (2018). Hospital to school transition following traumatic brain injury: A qualitative longitudinal study. *NeuroRehabilitation*, 42(3), 269-276.

- *N=21*

## Two themes:

1. provision of hospital-school transition services is inconsistent and
2. teachers lack sufficient awareness of and training in TBI to implement hospital transition recommendations. Regardless of the type and quality of transition support, most educators in the students' schools remained unaware of the students' needs and how to meet them.

# Critical needs in merging the best medical practices with the best academic practices

1

We need REGULAR, ON-GOING COMMUNICATION between the medical provider, the family and the school; and,

2

We need a defined school mTBI Team that is skilled in TRANSLATING the student symptom profile into academic supports and accommodations.

Standard practices and forms can provide consistency in the application of the accommodations.

# Release of Information – Multiple providers

- Sports Concussion Clinic
- Behavioral Health
- Neurology
- Concussion Clinic
- TBI Team

## Authorization to Use and/or Disclose Educational and Protected Health Information

1. I authorize the following providers to use and/or disclose educational and/or protected health information regarding my child.

Student/Child's Name:

Date of Birth:

Other Names Used by Student/Child:

School or Program Name:

**Name and address of health care provider authorized to:**

- Send/disclose protected health information
- Received/use educational information

**Sports Concussion Clinic** (Michael Koester, MD and Ryann Watson-Stites, PhD)  
Slocum Center for Orthopedics and Sports Medicine  
55 Coburg Road, Eugene, OR 97401  
Phone: (541) 485-8111  
Fax: (541) 342-6379

**Brain Injury and Concussion Clinic** (BrICC)  
HEDCO Clinic University of Oregon Campus  
1655 Alder Street (17th & Alder)  
HEDCO Education Building, Suite 170  
Phone: (541) 346-0923  
Email: [ledbette@uoregon.edu](mailto:ledbette@uoregon.edu)

**Strong Integrated Behavioral Health** (Karyn Angell, PhD)  
66 Club Rd. #120, Eugene, OR 97401  
Phone: (541) 393-5983  
Fax: (541) 393-5984

**Center on Brain Injury Research and Training** (TBI Team)  
1600 Millrace Drive, Suite 202  
Eugene, OR 97403  
Phone: (541) 346-0593  
Email: [mccart@uoregon.edu](mailto:mccart@uoregon.edu)

**Oregon Neurology Associates** (Jeffrey Frank, MD)  
3355 Riverbend Dr. #410, Springfield, OR 97477  
Phone: (541) 868-9430  
Fax: (541) 868-9450

Other:

---

---

---

---

**Name and address of school/EI/ECSE program authorized to:**

- Send/disclose educational information
- Received/use protected health information



# Accommodations available in the Classroom

## Accommodations & Modifications in the Classroom for a Student with a Traumatic Brain Injury

Student: \_\_\_\_\_ Teacher: \_\_\_\_\_ Grade: \_\_\_\_\_ Date: \_\_\_\_\_ Birth Date: \_\_\_\_\_

Presenting Concerns: \_\_\_\_\_

Persons Responsible for Providing Selected Items: \_\_\_\_\_

Directions: Circle the challenges that affect your child or student. Check the accommodations that may be helpful.

### Environment

- Post class rules
- Post daily schedule
- Give preferential seating
- Change to another class
- Change schedule (most difficult in morning)
- Eliminate distractions (visual, auditory & olfactory)
- Modify length of school day
- Provide frequent breaks
- Provide a quiet work place
- Maintain consistent schedule
- Provide system for transition

### Transitions

- Specified person to oversee transition between classes or end of day
- Advanced planning for transition between grades/schools
- Modified graduation requirements
- Assistance with identifying post-secondary supports
- Identification of community resources for persons with brain injury

### Method of Instruction

- Repeat directions
- Circulate teacher around room
- Provide visual prompts
- Provide immediate feedback
- Point out similarities to previous learning & work
- Use manipulative materials
- Teach to current level of ability (use easier materials)
- Speak clearly
- Pre-teach or reteach
- Use peer tutor or partner
- Use small group instruction
- Use simple sentences
- Use individualized instruction
- Pause frequently
- Use cooperative learning
- Encourage requests for clarification, repetition, etc.
- Use examples relevant to student's life
- Demonstrate & encourage use of technology

### Behavioral Needs

- Early interventions for situations that may escalate
- Teach expected behavior
- Increase student academic success rate
- Learn to recognize signs of stress
- Give non-verbal cues to discontinue behavior
- Reinforce positive behavior
- Set goals with student
- Use social opportunities as rewards
- Teach student to use advance organizers at beginning of lesson
- Role play opportunities
- Use proactive behavior management strategies
- Daily/weekly communication with parents
- Modification of non-academic tasks (e.g., lunch or recess)
- Time & place to regroup when upset
- Additional structure in daily routine
- Frequent specific feedback about behavior

### Assistive Technology

- Multimedia software
- Electronic organizers
- Shortcuts on computers
- Concept mapping software
- Accessibility options on computer
- Proofreading programs
- Alternative keyboards
- Voice output communication devices and reminders
- Enlarged text or magnifiers
- Recorded text & books
- Specialized calculators
- Picture & symbol supported software
- Talking spell checker & dictionary
- Computer for responding & homework
- Use of communication devices
- Word predicting programs
- iPad/tablet
- Smart Phone

[https://cbirt.org/sites/cbirt.org/files/resources/classroomaccommodations\\_ocamp.pdf](https://cbirt.org/sites/cbirt.org/files/resources/classroomaccommodations_ocamp.pdf)

**Dr. Gioia  
identifies “key  
themes” of well-  
prepared and  
coordinated  
medical and  
school systems**

“All medical providers and key school personnel should be **TRAINED** for their **SPECIFIC ROLE** in the support of the student with mTBI, with a focus on manifestations in the school setting.”

“A school mTBI team must be defined, skilled in **TRANSLATING** the student symptom profile into academic supports / accommodations.”

“Regular, on-going **COMMUNICATION** occurs between the family, medical provider, student and school regarding the student’s symptom status and progress.”

## **Best Practices are defined by evidence- based research**

Standard forms will provide consistency in the application of the accommodations.

Integration of the Immediate Temporary Accommodations Plan (ITAP) or Concussion Accommodations Plan (CAP), are necessary to ensure that the accommodations are initiated immediately after the school is informed of the student's mTBI.

# More Research

Anderson, Daniel, Jeff M. Gau, Laura Beck, Deanne Unruh, Gerard Gioia, Melissa McCart, Susan C. Davies, Jody Slocumb, Doug Gomez, and Ann E. Glang. "Management of return to school following brain injury: an evaluation model." *International journal of educational research* 108 (2021): 101773.

Lundine, J. P., Todis, B., Gau, J. M., McCart, M., Wade, S. L., Yeates, K. O., & Glang, A. (2021). Return to school following TBI: educational services received 1 year after injury. *Journal of head trauma rehabilitation*, 36(2), E89-E96.

Todis, B., McCart, M., & Glang, A. (2018). Hospital to school transition following traumatic brain injury: a qualitative longitudinal study. *NeuroRehabilitation*, 42(3), 269-276.

Glang, A. E., McCart, M., Slocumb, J., Gau, J. M., Davies, S. C., Gomez, D., & Beck, L. (2019). Preliminary efficacy of online traumatic brain injury professional development for educators: an exploratory randomized clinical trial. *The Journal of Head Trauma Rehabilitation*, 34(2), 77-86.

McCart, M., Glang, A. E., Slocumb, J., Gau, J., Beck, L., & Gomez, D. (2020). A quasi-experimental study examining the effects of online traumatic brain injury professional development on educator knowledge, application, and efficacy in a practitioner setting. *Disability and rehabilitation*, 42(17), 2430-2436.

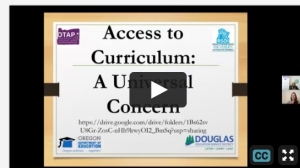
# Resources

# Returntoschool.org

## Webinars

Search

Go



### Access to Curriculum: A Universal Concern

Debra Fitzgibbons, Oregon Technology Access Program Coordinator

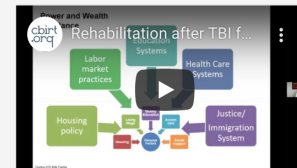
[Copy link](#)



### Service Delivery in the Healthcare and Educational Systems following TBI: Gaps in Care

Angela Ciccia, PhD, CCC-SLP

[Copy link](#)



### Rehabilitation after TBI for Latinx Children and Adolescents: The Role of Schools and other Support Systems

Nathalia Jimenez, MD, MPH

[Copy link](#)

# Welcome to learn.cbirt.org

the online resource portal for the [Center on Brain Injury Research and Training](#)

If you are currently working through a CBIRT course, you can continue your progress [here](#)

## In the Classroom after Concussion: College

What college faculty need to know about brain injury

 Open access - no account needed

This is a 1-module, online course that provides information about the academic impacts of concussion in college students, what academic and environmental accommodations can help, and the role college faculty play in supporting college students with brain injury.

[View course](#)







cbirtonline

Message



39 posts

87 followers

38 following

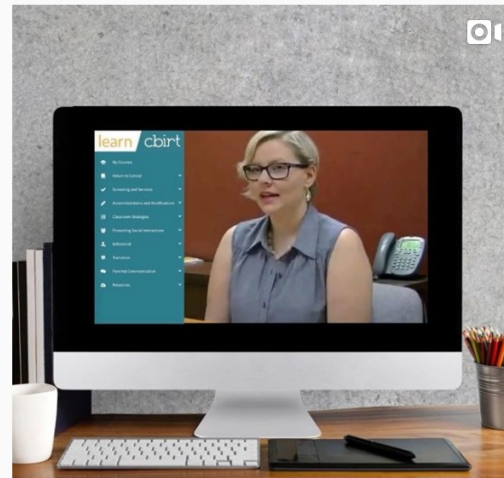
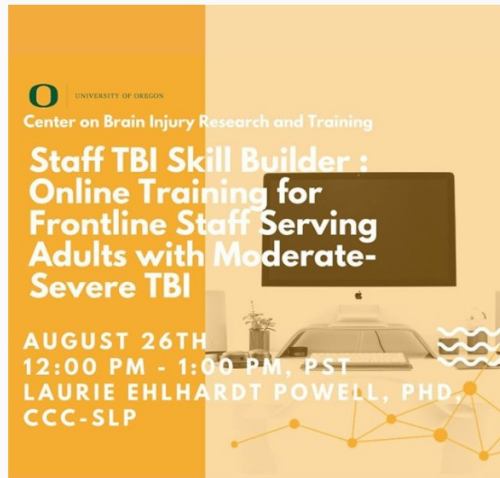
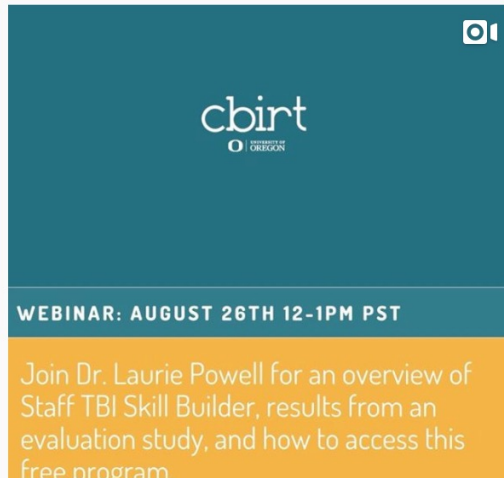
CBIRTonline

uoregon.zoom.us/webinar/register/WN\_sxC9Bnr4TrGblszQmKM4nQ

Followed by haarphd, nnagnalg, tbitalk +10 more

POSTS

TAGGED




# LinkedIn


[Doctor of Education - Develop the mindset to impact students, influence teachers &](#)

Thursday, November 4th 3pm PST

Register now!




Free webinar!



## CBIRT | Center on Brain Injury Research and Training, University of Oregon

Dedicated to research and training to improve the lives of children and adults with traumatic brain injury.

Research · Eugene, Oregon · 58 followers

 **A** Ann & 4 other connections work here · 6 employees

[✓ Following](#) [Visit website](#) [More](#)

[Home](#) [About](#) [Posts](#) [Jobs](#) [People](#) [Videos](#)

# Join the Conversation

Like our Facebook page and receive updates on news and research related to traumatic brain injury, upcoming CBIRT events, and new resources!!!



CBIRT - Center on  
Brain Injury  
Research & Training  
at University of  
Oregon  
@CBIRTonline



The Center on Brain Injury  
Research and Training



UNIVERSITY OF  
OREGON





cbirt

The Center on Brain Injury  
Research and Training

Melissa McCart / [McCart@uoregon.edu](mailto:McCart@uoregon.edu) / 541-346-0597