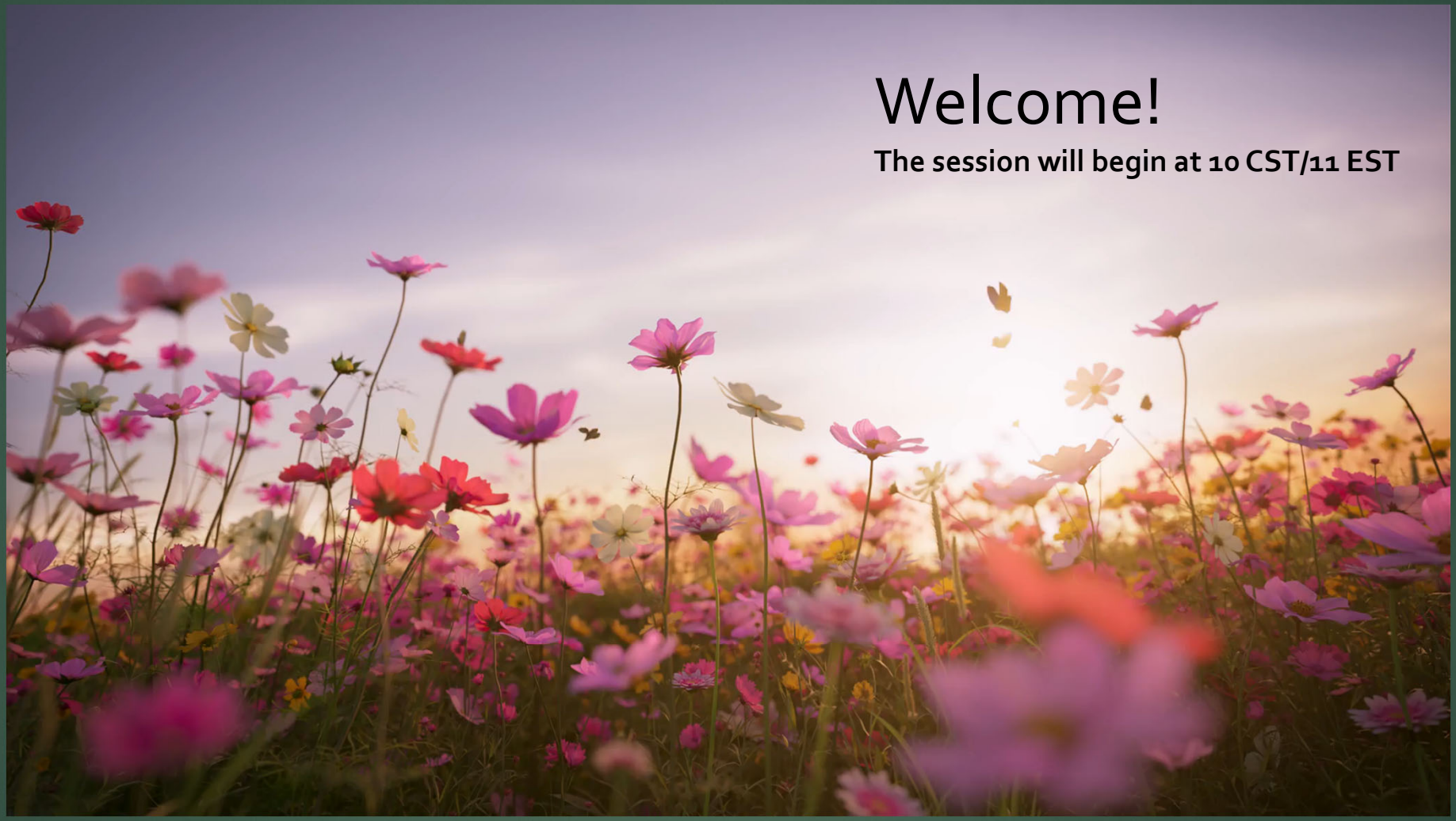

Welcome!
The session will begin at 10 CST/11 EST

Understanding Concussion and More Severe Brain Injury through Case Studies

Brain Links

Using Case Studies to Highlight Best Practice and Improve Outcomes in Brain Injury webinar series

Jennifer Rayman, Ed.S, CRC, CBIS
Certified Cognitive Screener
February 6, 2025

Brain Links is supported by the Administration for Community Living (ACL) of the U.S. Department of Health and Human Services under Grant No. 90TBSG0051-01-00 and in part by the TN Department of Health, Traumatic Brain Injury Program.

Brain Links

Family-friendly educational materials

Resources for return to school and work settings

Toolkits for healthcare providers, school nurses, families and service professionals

Tennessee Brighter Futures Collaborative

Statewide team of brain injury specialists

We equip professionals to better serve people with TBI with current research-based training and tools.

Brain Links

Tennessee Brighter Futures

Housekeeping

If you have questions, please enter them in the chat.

At the end of the session, please complete the survey for your certificate of attendance.

Following the session, materials and recording will be posted on our website – webinar page

Agenda

Concussion and more severe brain injury

Case Studies

a snapshot of three individuals

- ✓ Background & injury
- ✓ Current situation

- ✓ Resources that work & how to use them
- ✓ Next steps

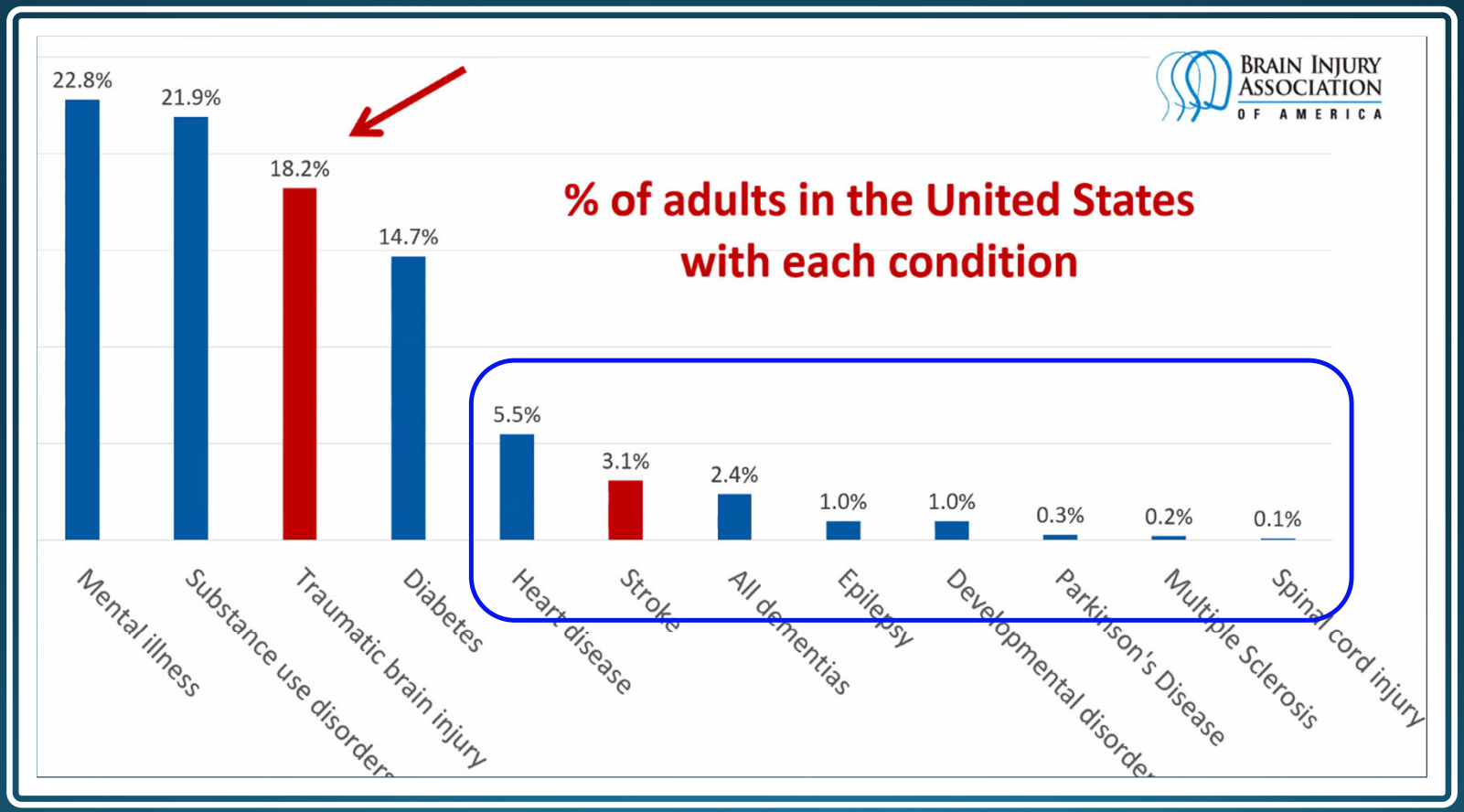
What is TBI?

A Traumatic Brain Injury is caused by a bump, blow or jolt to the head or body, or a penetrating head injury that disrupts the normal function of the brain.

A Brain Injury can be ACQUIRED in other ways: brain tumor, stroke, infection, surgery and drug overdose

CDC.org

How many people are living with TBI?



Brain Injury Association of America Congressional Brain Injury Taskforce Briefing 9.26.24 YouTube

Tennesseans with Brain Injury

IN 2022,
24,809 TENNESSEANS
had a TBI-related emergency department visit, hospitalization, or death.

2019 - 2023

APPROXIMATELY 8,000 PATIENTS PER YEAR

TBI REGISTRY

7,222 DISCHARGED TO

- **50%** HOME
- **38%** EXTENDED REHABILITATIVE CARE
- **9%** HOME UNDER SUPERVISED CARE
- **2%** ANOTHER HOSPITAL

TBI Annual Report 2024

Brain Injury Recognized as a Chronic Health Condition

Healthcare professionals will be more aware of the unique nature of TBI and the potential long-term outcomes/downstream effects. With education, patients could make choices to minimize decline.

Ex. With new symptoms, seek speech therapy, physical therapy, etc.

Additional health insurance benefits can be available for TBI (like other chronic conditions)

More resources focused on lifelong effects of TBI

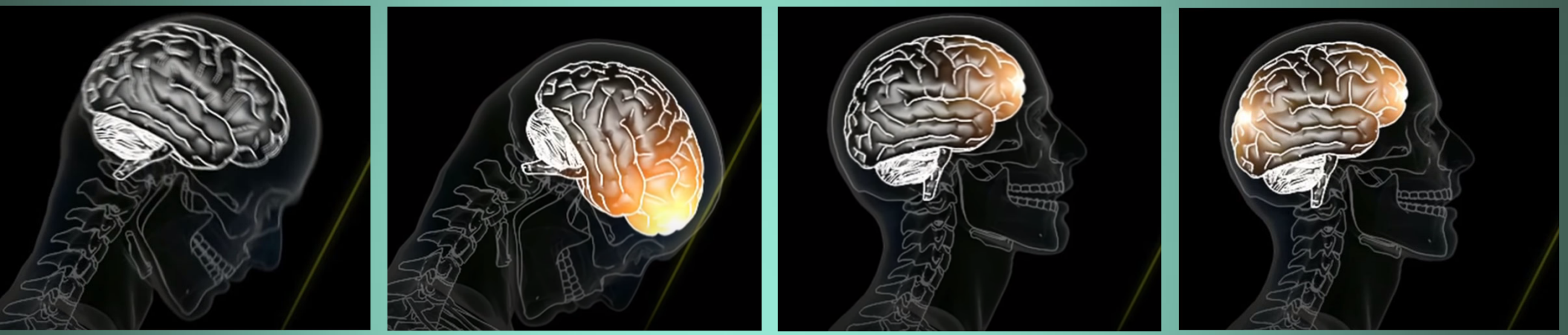
Brain Injury Association of America Congressional Brain Injury Taskforce Briefing 9.26.24 YouTube

Why it is Important to Understand TBI

History of TBI is often hidden among people with

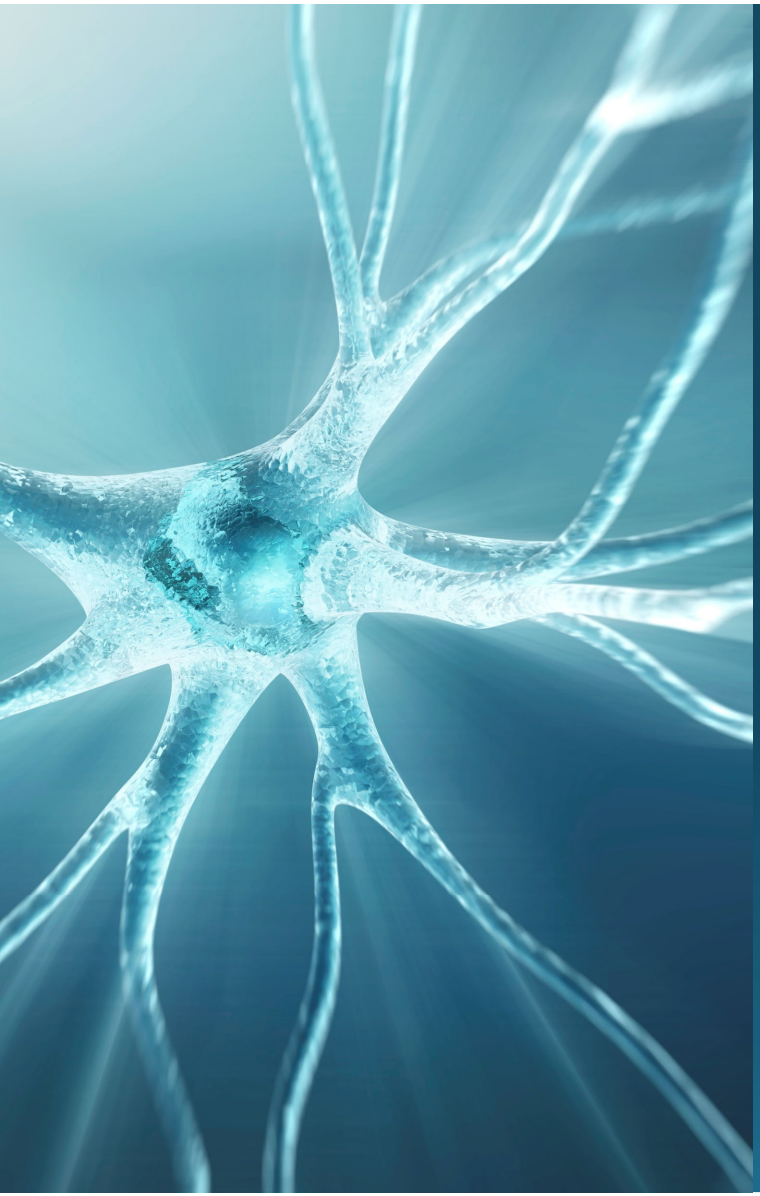
- **Substance Use**
- Spinal cord injury
- **Mental health challenges**
- **Homelessness**
- **History of incarceration**
- Aggression/behavioral issues
- Domestic violence (perpetrators AND victims)
- Cognitive/intellectual disabilities

Concussion is a Functional Injury vs. Structural Injury



- Chemical Cascade
- No CT Findings

CDC "What is a concussion?"
https://www.youtube.com/watch?v=Sno_oJd8GuA



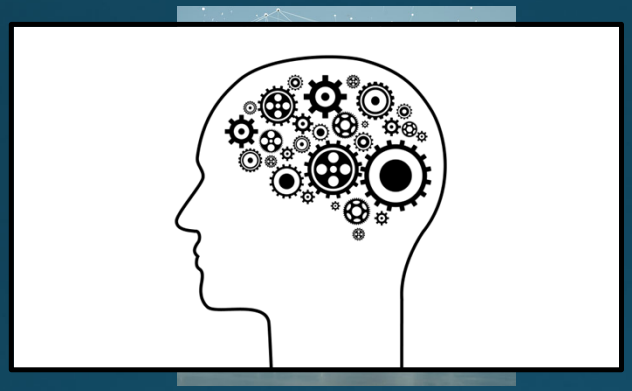
Chemical cascade – series of biochemical changes

Neuroinflammation

Chemicals – "calcium cascade"

Energy crisis

Common Concussion Symptoms



Physical

- **Headaches**
- Changes in vision
- Sleep disturbance
- **Fatigue**
- Balance/Dizziness
- Motor coordination
- Sensitivity to light/sounds

Cognitive/Communication

- Feeling dazed or in fog
- Word finding problems
- Slowed information processing

Emotional/Behavioral

- Irritability
- Quick to anger
- Decreased motivation
- Cries easily

Common Problems after TBI

Physical

Balance, incoordination,

vision, difficulty walking,

movement disorders

Cognitive, Speech and Language

Executive functioning impulsivity, initiation, planning, organization, judgment, self-monitoring, flexibility

Behavior

Impulsive, aggressive, angry, rude,

belligerent, loud, don't know boundaries,

overly emotional

Snapshots – 3 Case Studies

Case studies

- based on real experiences, but details and names are changed
- may be compilations of two or more individuals
- focus on their symptoms and how to best serve them with existing resources available to anyone

Brain Injury can happen to anyone

Snapshots

Ethan

Age: 14

Concussions at 12 & 13

On Autism Spectrum

Injured at school

Jordan

Age: 24

Fell down the stairs at 18 months

Substance Use

Incarcerated multiple times

James

Age: 43

Hit by car at 36, followed by surgery

Second injury at 42

Homeless

- Age: 14
- Concussions at 12 & 13

- On Autism Spectrum
- Injured at school

Ethan

- **Diagnosed with Autism since first grade**
- **Served by a 504 plan**

- Intelligent, good grades, likes to learn
- Struggles socially, "no friends" at school
- Not an athlete
- Reluctant to draw attention to himself

- Mom describes Ethan previously "not acknowledging or vocalizing when he is in pain."
- Mom said, "teachers don't like him and don't want to help."

Ethan

- Served by a 504 plan
- Concussions at 12 & 13 – now 14 years old

1st **concussion at 12, fall during PE**

- Checked at ED, headache and fatigue
- Saw concussion specialist for 2-3 months for symptoms

2nd **concussion at 13, hit in the back of his head by another student**

- ED & followed up with pediatrician
- Symptoms last longer & more of them
- Balance, headache, mood, fatigue

Ethan today

14 years old

Symptom free - YAY!

Beginning high school next year

Reluctant to participate in PE

Picked on by peers

Mom worries what's next

Signs and Symptoms

RECOGNIZING CONCUSSION
In People Who Communicate Without Words

A tool for those who care for people who communicate without words including family members, healthcare professionals, service providers and more.

Concussions are caused by a bump, blow or jolt to the head or body. Even a "ding," "getting your bell rung," or what seems to be a mild bump or blow to the head can be serious.

You can't see a concussion. Signs and symptoms of concussion can show up right after the injury or may not appear or be noticed until days or weeks after the injury.

(Adapted from the CDC https://www.cdc.gov/headsup/index.html)

Common Problems at the Time of Injury

Headaches
- headache that keeps coming back
- pain in head/ neck
- pain below the ear
- pain in the jaw
- pain in or around the eyes

Balance Problems
- dizziness
- trouble with balance

Sensory Changes
- changes in taste or smell
- appetite changes
- too hot/ cold
- ringing in the ears
- bothered by noises
- can't handle background noise
- vision changes
- bothered by light

If you have any of these problems, see a doctor right away!

DANGER SIGNS
- nausea or vomiting
- one pupil larger than the other
- headache that does not go away
- seizures, eyes fluttering, body going stiff, staring into space
- loss of consciousness, even brief
- disoriented/ confused
- hands shake, tremors, muscles get weak, loss of muscle tone

Adapted from the CDC: https://www.cdc.gov/headsup/basics/concussion_danger_signs.html

A Concussion is a Type of Traumatic Brain Injury (TBI).

All Concussions Should Be Taken Seriously.

A Head Injury Can Happen to Anyone at Any Age at Any Time.

Sleep Problems
- can't sleep through the night
- sleep too much
- days and nights get mixed up

Pain Problems
- neck and shoulder pain that happens a lot
- other unexplained body pain

WHAT TO DO:

Seek help & referrals.

Treatment for concussion is available.

Your doctor may refer you to:
- Neurologist
- Neuropsychologist
- Specialized concussion center
- Brain injury rehabilitation center
- Specialist in your particular symptom

Brain Links materials are educational resources. Refer to a doctor for all healthcare needs.

Brain Links — Common Concussion Symptoms

Identifying a concussion can be more difficult in someone who communicates without words.

Cognitive/ Communication
- feeling dazed or in a fog
- slower to understand

Emotional/ Behavioral
- irritability
- quick to anger
- decreased motivation
- cries easily

Physical
- headaches or neck pain
- changes in vision
- sleep changes
- fatigue
- balance/ dizziness
- bothered by light or sounds

Signs of Pain
- excessive crying
- anxious or agitated
- a lot of physical movement
- changes in breathing
- increased muscle tightness
- facial changes (tense or stressed)

Look for:
- disrupted sleep
- stomachaches
- changes in eating habits
- decreased engagement, changes with things they once loved
- poorly controlled behaviors or behaviors that change quickly
- continence issues, bedwetting or uncontrolled bladder & bowels

What Symptoms Might Look Like
- covering, squinting or closing eyes
- changes in appetite, not eating favorite foods
- changes in sleep, night walking, not able to stay in bed for as long
- touching/ holding their head
- bothered by light or noises
- forgetting routines
- changes in any skill they already had
- more clingy/ emotional or withdrawn
- change in appetite or sleep
- more tantrums/ disruptive
- stomach issues

* This information is adapted from a study on very young children (3-5 years old) who often don't have the words to describe their symptoms: Suskauer, S. J., Rane, S., Reesman, J., & Slomine, B. S. (2018). Caregiver-report of symptoms following traumatic brain injury in a small clinical sample of preschool-aged children. Journal of Pediatric Rehabilitation Medicine,11(1), 7-14. doi:10.3233/prm-160424

Brain Links / TN Disability Coalition
615-383-9442 ~ tbi@tndisability.org
https://www.tndisability.org/brain
@BrainLinksTN
YouTube Training Channel

TN Traumatic Brain Injury Program
800-882-0611
https://www.tn.gov/content/tn/health/health-program-areas/fhw/vipp/tbi.html

Brain Links is supported by the Administration for Community Living (ACL) by the U.S. Department of Health and Human Services under Grant NO 90TBSG0024-01-11 and in part by the TN Department of Health, Traumatic Brain Injury Program.

Oct-2019

Signs and Symptoms

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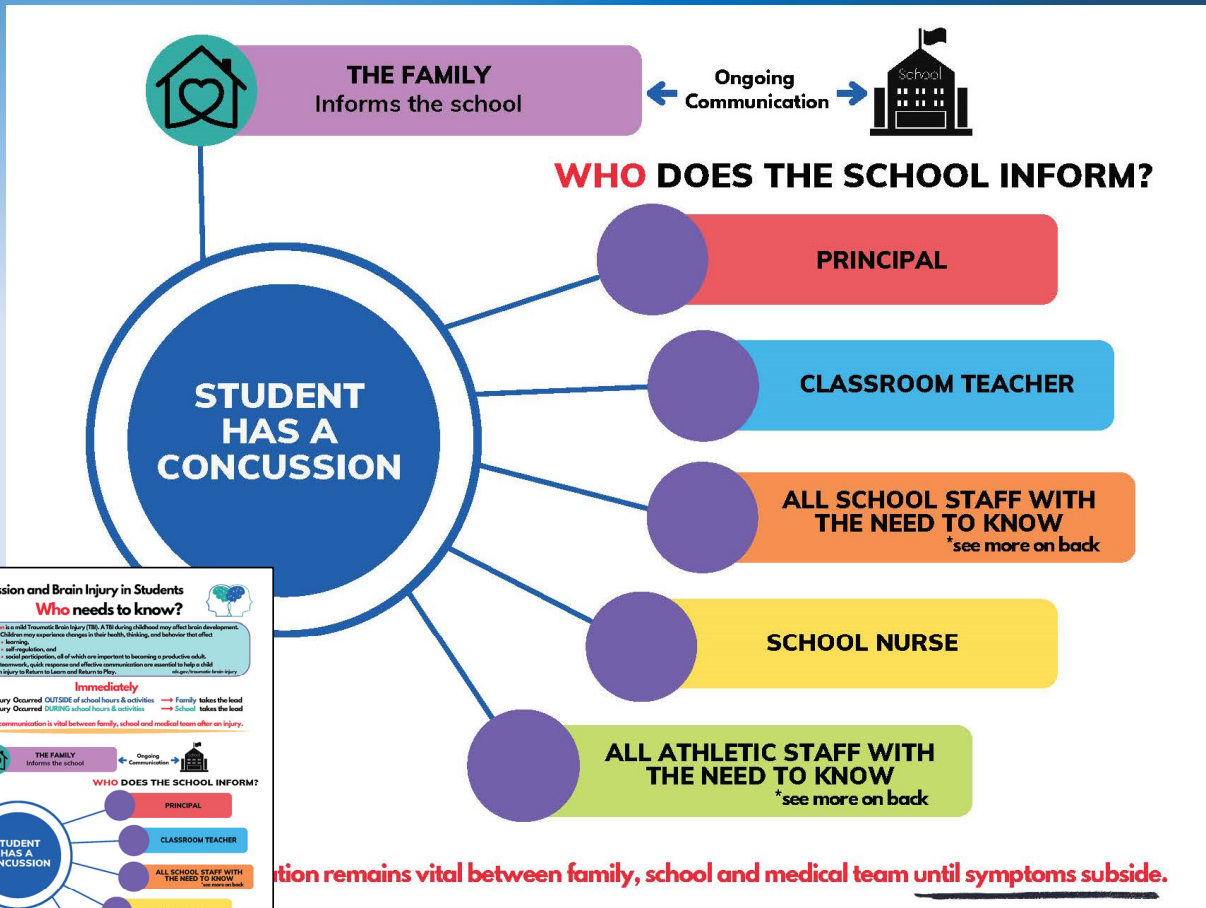
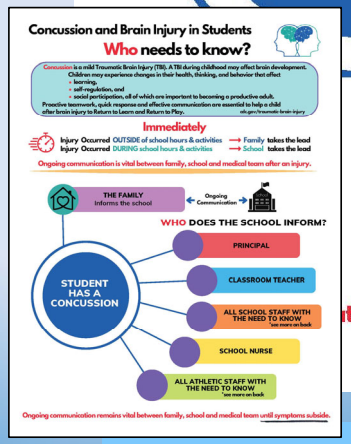
Signs of Pain

- excessive crying
- anxious or agitated
- a lot of physical movement
- changes in breathing
- increased muscle tightness
- facial changes (tense or stressed)

Ethan – how it should have happened

- Immediately - The school contacted family.
- Ethan seen by medical professional experienced in concussion.
- Doctor completed return to school letter.
- School informed principal, classroom teacher, school nurse, school & athletic staff with the need to know.
- Ethan back to school with recommended accommodations.





Ethan – CDC School Letter

SCHOOL LETTER

Returning to School After a Concussion

DEAR SCHOOL STAFF:

Based on the student's current symptoms, I recommend that the student:

☐ Be permitted to return to school and activities while school professionals closely monitor the student. School professionals should observe and check in with the student for the first two weeks, and note if symptoms worsen. If symptoms do not worsen during an activity, then this activity is OK for the student. If symptoms worsen, the student should cut back on time spent engaging in that activity, and may need some short-term support at school. Tell the student to update his or her teachers and school counselor if symptoms worsen.

☐ Is excused from school for _____ days.

✖ Return to school with the following changes until his or her symptoms improve.

(**NOTE:** Making short-term changes to a student's daily school activities can help him or her return to a regular routine more quickly. As the student begins to feel better, you can slowly remove these changes.)

Based on the student's symptoms, please make the short-term changes checked below:

- ☐ No physical activity during recess
- ✖ No physical education (PE) class
- ☐ No after school sports
- ☐ Shorten school day
- ☐ Later school start time
- ✖ Reduce the amount of homework
- ✖ Postpone classroom tests or standardized testing
- ☐ Provide extended time to complete school work, homework, or take tests
- ☐ Provide written notes for school lessons and assignments (when possible)
- ✖ Allow for a quiet place to take rest breaks throughout the day
- ✖ Lessen the amount of screen time for the student, such as on computers, tablets, etc.
- ✖ Give ibuprofen or acetaminophen to help with headaches (as needed)
- ☐ Allow the student to wear sunglasses, earplugs, or headphones if bothered by light or noise
- ☐ **Other:** _____

Children with **MTBI (before the age 16)**

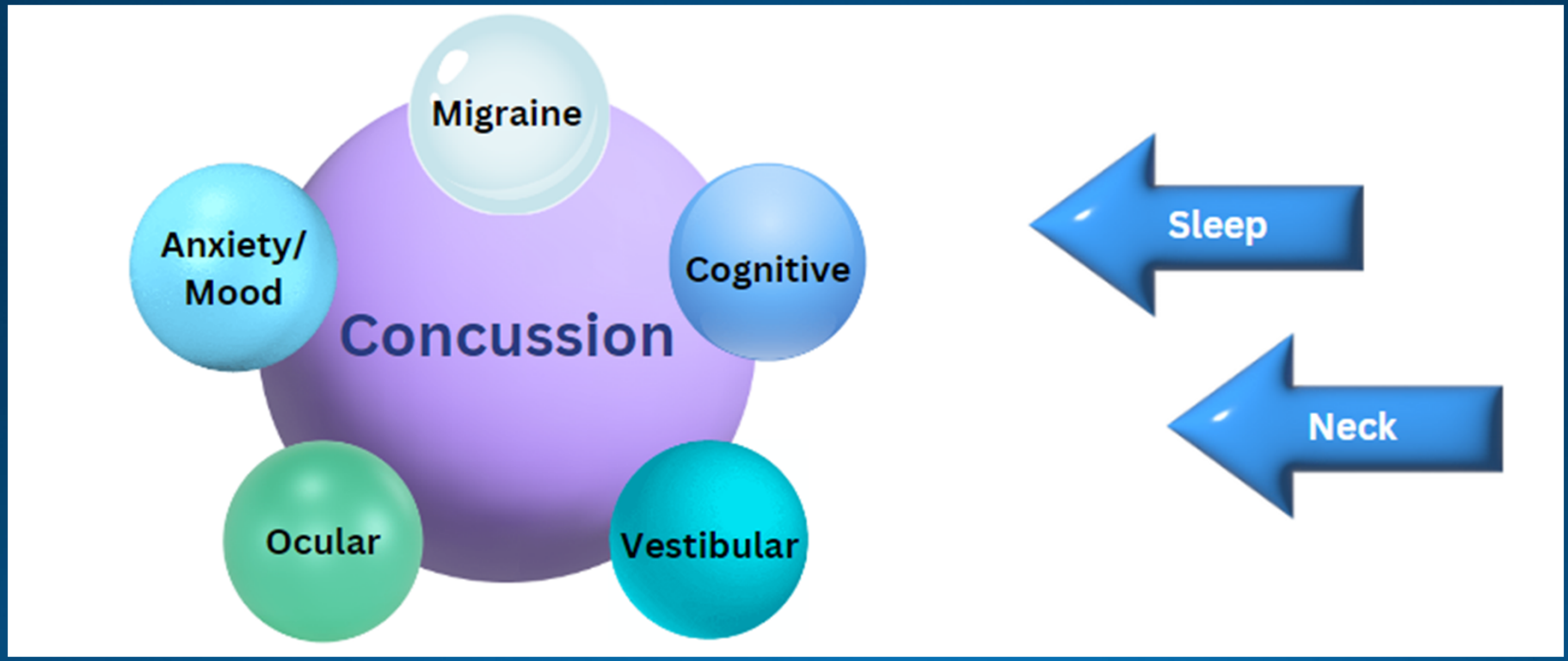
then at age 21-25 …

are more likely

to use substances,
commit violent and property offenses.

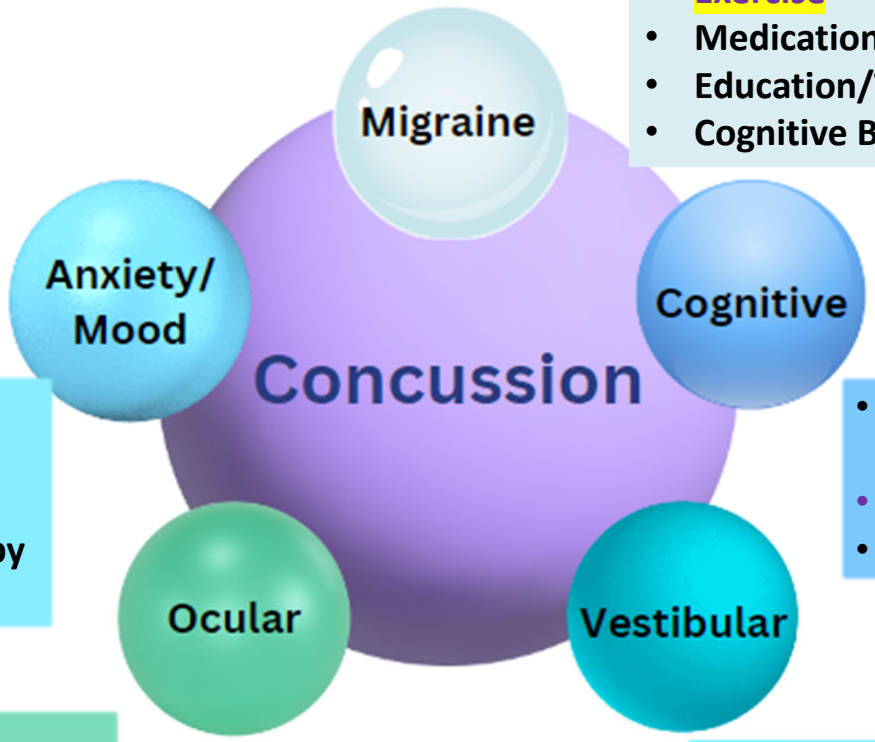
McKinlay et al, 2013

5 Types of Concussion & 2 Modifying Factors



Model from the University of Pittsburgh Medical Center's TREAT Sport-related Concussion Conference on April 20-21, 2024. It was based on research from: Collins, Kontos, Reynolds, Murawski, fu. KSSTA; 2014. Kontos & Collins, APA Books; 2018. Kontos et al. Curr Sports Med Rep; 2019. Design: Brain Links

Targeted Treatments



- Behavior Regulation
- Exercise
- Medication
- Education/Trigger Mod.
- Cognitive Behavior Therapy

- Exercise
- Sleep Hygiene
- Melatonin
- CBT
- Medication
- CPAP

Sleep

- Medication
- Exercise
- Cognitive Behavior Therapy
- Psychotherapy

- Structured Rest
- Exercise
- Medication

Neck

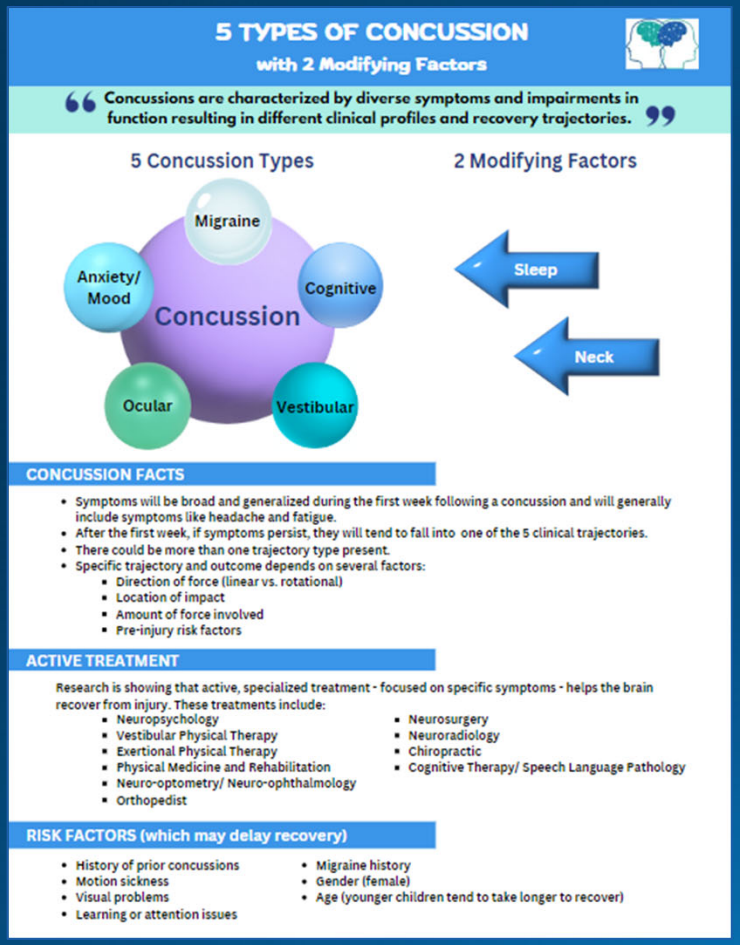
- Vision Therapy/
- Orthoptics

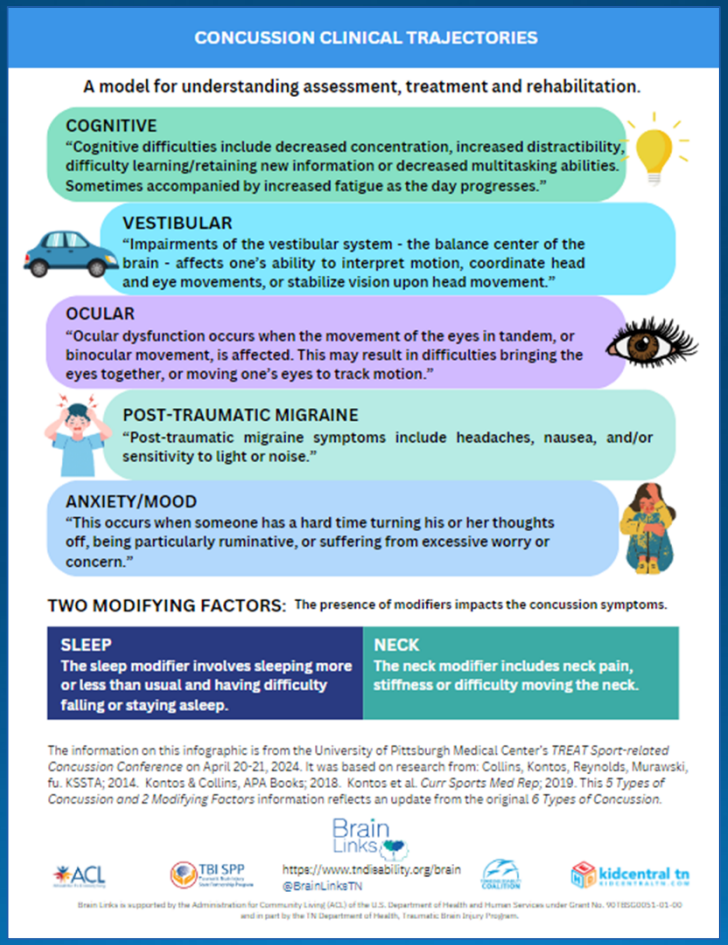
- Vestibular Rehabilitation
- Exercise

- Manual Therapy
- Exercise
- Injection
- Acupuncture
- Biofeedback
- Medication
- Surgery

University of Pittsburgh Medical Center's TREAT Sport-related Concussion Conference on April 20-21, 2024.

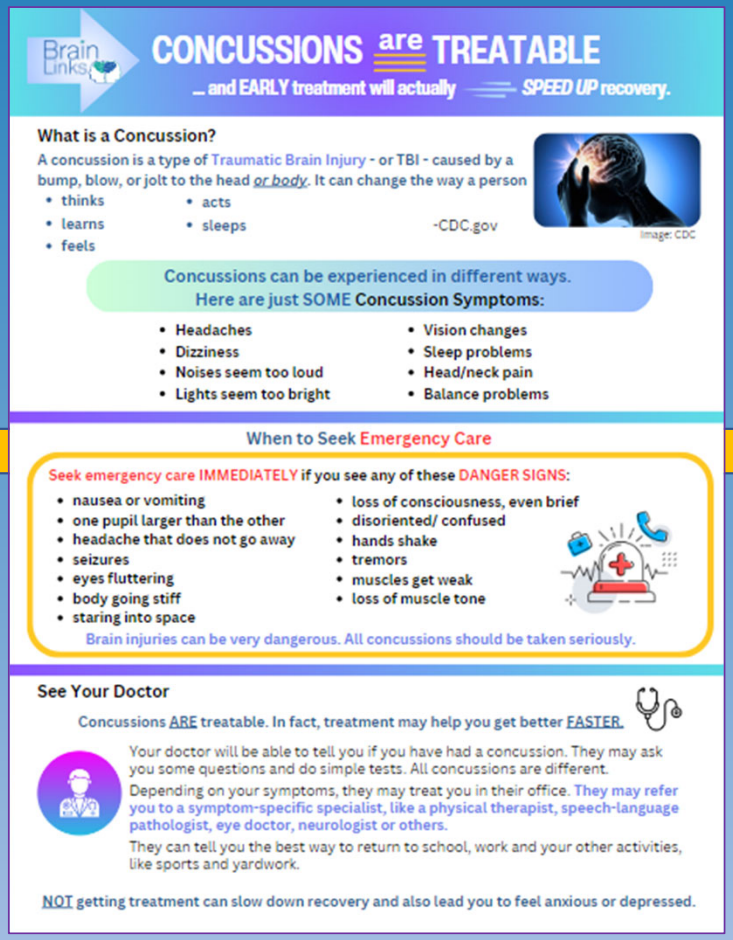
Infographic - 5 Types of Concussion & 2 Modifying Factors





University of Pittsburgh Medical Center's TREAT Sport-related Concussion Conference on April 20-21, 2024.

Concussions ARE Treatable Infographic



Resources & How to Use Them

Times are changing

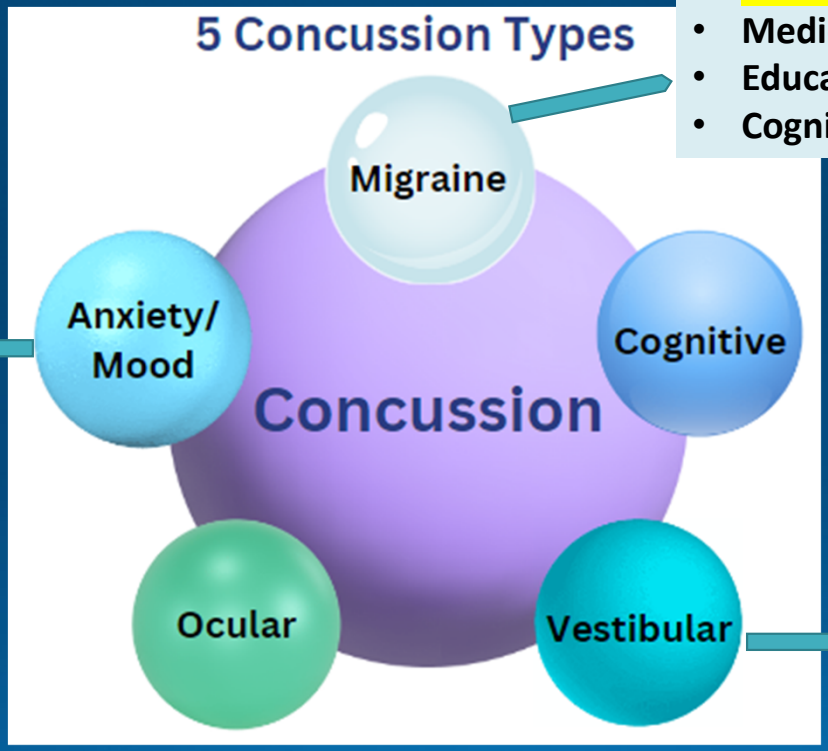
- Back to school
- Vestibular (balance) symptoms

- ***Then*** *– hall pass, extra time (5 min) & empty halls*

- ***Now*** **-** in the hall with a buddy, a chance to "push through" mild symptoms or use less adjustments like shorter time (3 min)

Ethan's symptoms

- Behavior Regulation
- Exercise
- Medication
- Education/Trigger Mod.
- Cognitive Behavioral Therapy



- Medication
- Exercise
- Cognitive Behavior Therapy
- Psychotherapy

- Vestibular Rehabilitation
- Exercise

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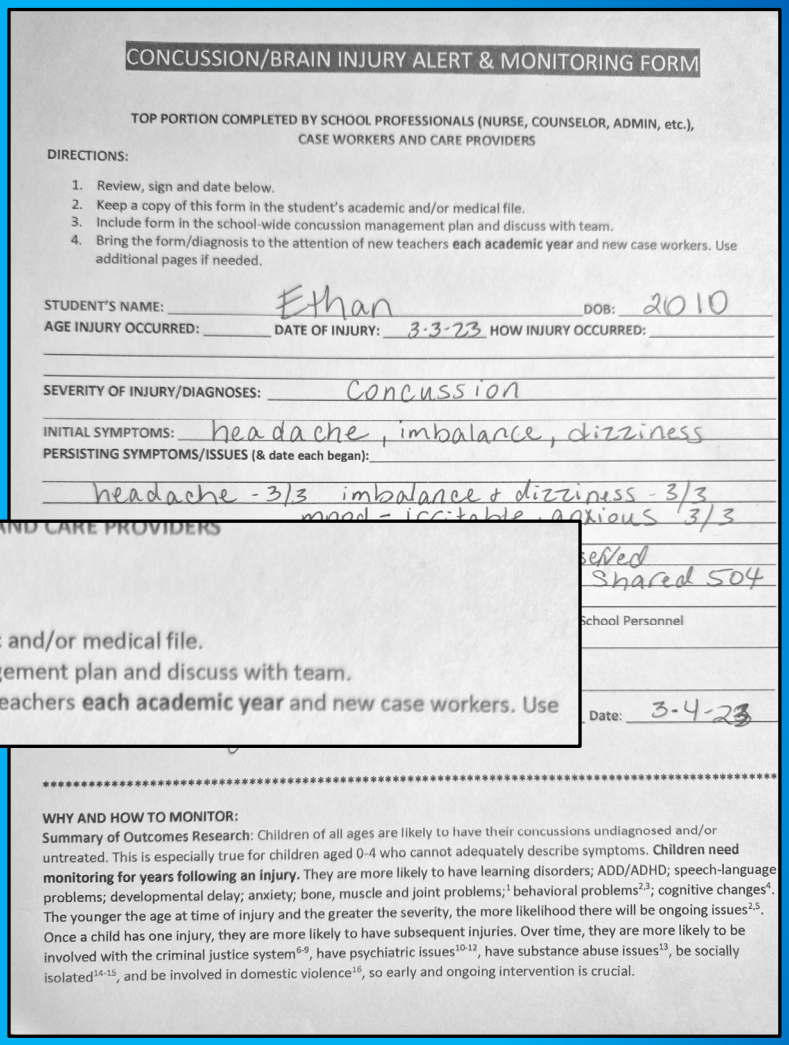
Ethan

Concussion/Brain Injury Alert & Monitoring Form

Goes in the student's file and follows him/her through school, year to year, and school to school



CONCUSSION/BRAIN INJURY ALERT & MONITORING FORM

TOP PORTION COMPLETED BY SCHOOL PROFESSIONALS (NURSE, COUNSELOR, ADMIN, etc.), CASE WORKERS AND CARE PROVIDERS

DIRECTIONS:

1. Review, sign and date below.
2. Keep a copy of this form in the student's academic and/or medical file.
3. Include form in the school-wide concussion management plan and discuss with team.
4. Bring the form/diagnosis to the attention of new teachers **each academic year** and new case workers. Use additional pages if needed.

STUDENT'S NAME: Ethan DOB: 2010

AGE INJURY OCCURRED: _____ DATE OF INJURY: 3-3-23 HOW INJURY OCCURRED: _____

SEVERITY OF INJURY/DIAGNOSES: Concussion

INITIAL SYMPTOMS: headache, imbalance, dizziness

PERSISTING SYMPTOMS/ISSUES (& date each began): headache - 3/3 imbalance & dizziness - 3/3 mood - irritable, anxious 3/3

served Shared 504

School Personnel

Date: 3-4-23

****

WHY AND HOW TO MONITOR:

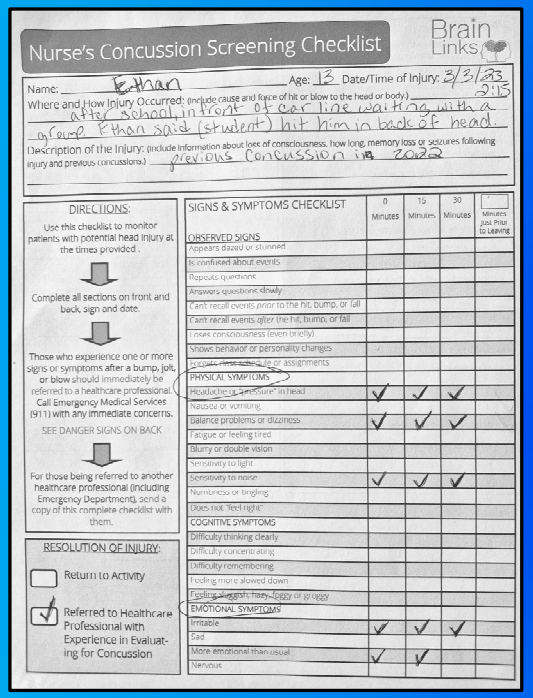
Summary of Outcomes Research: Children of all ages are likely to have their concussions undiagnosed and/or untreated. This is especially true for children aged 0-4 who cannot adequately describe symptoms. **Children need monitoring for years following an injury.** They are more likely to have learning disorders; ADD/ADHD; speech-language problems; developmental delay; anxiety; bone, muscle and joint problems;[1] behavioral problems[2,3]; cognitive changes[4]. The younger the age at time of injury and the greater the severity, the more likelihood there will be ongoing issues[2,5]. Once a child has one injury, they are more likely to have subsequent injuries. Over time, they are more likely to be involved with the criminal justice system[6-9], have psychiatric issues[10-12], have substance abuse issues[13], be socially isolated[14-15], and be involved in domestic violence[16], so early and ongoing intervention is crucial.

CASE WORKERS AND CARE PROVIDERS

DIRECTIONS:

1. Review, sign and date below.
2. Keep a copy of this form in the student's academic and/or medical file.
3. Include form in the school-wide concussion management plan and discuss with team.
4. Bring the form/diagnosis to the attention of new teachers **each academic year** and new case workers. Use additional pages if needed.

Ethan – Nurse's Concussion Screening Checklist



Nurse's Concussion Screening Checklist

Brain Links

Name: Ethan Age: 13 Date/Time of Injury: 3/3/23 2:15

Where and How Injury Occurred: (Include cause and place of hit or blow to the head or body) In front of car line waiting with a group after school, student hit him in back of head.

Description of the Injury: (Include information about loss of consciousness, how long, memory loss or seizures following injury and previous concussions.) previous concussion in 2022

DIRECTIONS:

Use this checklist to monitor patients with potential head injury at the times provided.

Complete all sections on front and back, sign and date.

Those who experience one or more signs or symptoms after a bump, jolt, or blow should immediately be referred to a healthcare professional. Call Emergency Medical Services (911) with any immediate concerns.

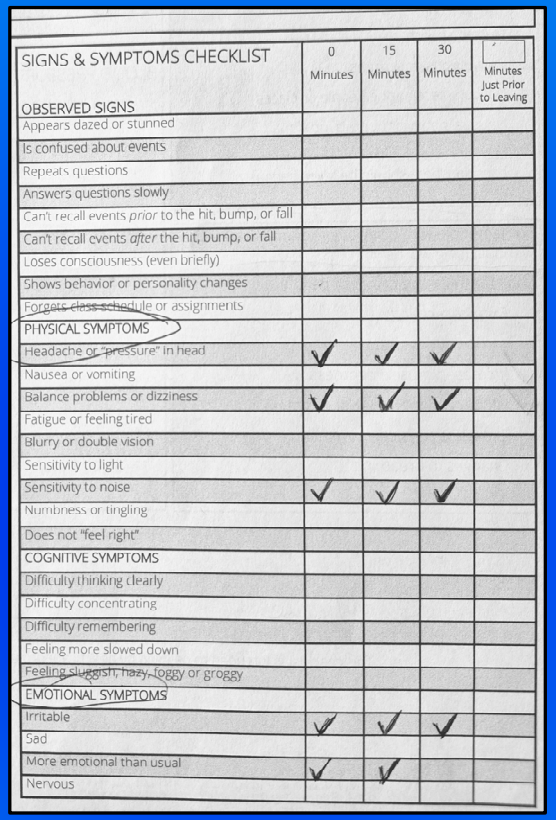
SEE DANGER SIGNS ON BACK

For those being referred to another healthcare professional (including Emergency Department), send a copy of this complete checklist with them.

RESOLUTION OF INJURY:

- ☐ Return to Activity
- ☑ Referred to Healthcare Professional with Experience in Evaluating for Concussion

SIGNS & SYMPTOMS CHECKLIST	0 Minutes	15 Minutes	30 Minutes	Minutes Just Prior to Leaving
OBSERVED SIGNS				
Appears dazed or stunned				
Is confused about events				
Repeats questions				
Answers questions slowly				
Can't recall events *prior* to the hit, bump, or fall				
Can't recall events *after* the hit, bump, or fall				
Loses consciousness (even briefly)				
Shows behavior or personality changes				
Forgets class schedule or assignments				
PHYSICAL SYMPTOMS				
Headache or "pressure" in head	✓	✓	✓	
Nausea or vomiting				
Balance problems or dizziness	✓	✓	✓	
Fatigue or feeling tired				
Blurry or double vision				
Sensitivity to light				
Sensitivity to noise	✓	✓	✓	
Numbness or tingling				
Does not "feel right"				
COGNITIVE SYMPTOMS				
Difficulty thinking clearly				
Difficulty concentrating				
Difficulty remembering				
Feeling more slowed down				
Feeling sluggish, hazy, foggy or groggy				
EMOTIONAL SYMPTOMS				
Irritable	✓	✓	✓	
Sad				
More emotional than usual	✓	✓		
Nervous				



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Balance problems or dizziness	✓	✓	✓	
Fatigue or feeling tired				
Blurry or double vision				
Sensitivity to light				
Sensitivity to noise	✓	✓	✓	
Numbness or tingling				
Does not "feel right"				
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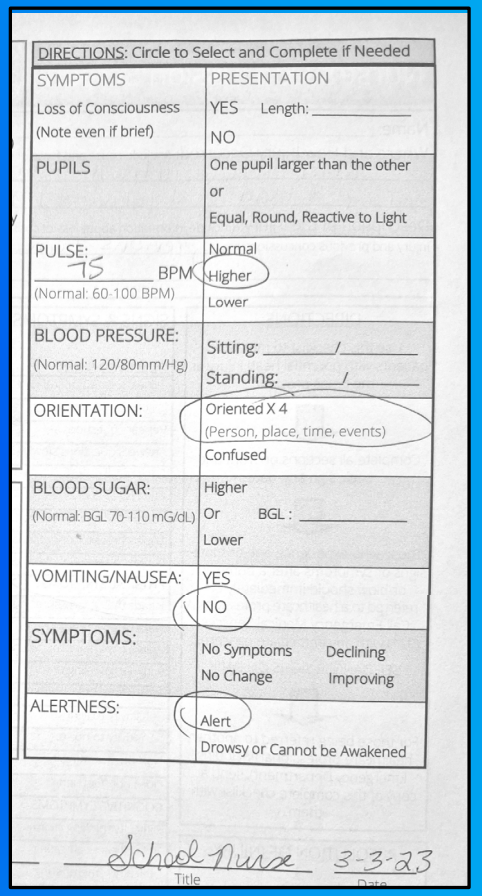
Sad				
More emotional than usual	✓	✓		
Nervous				

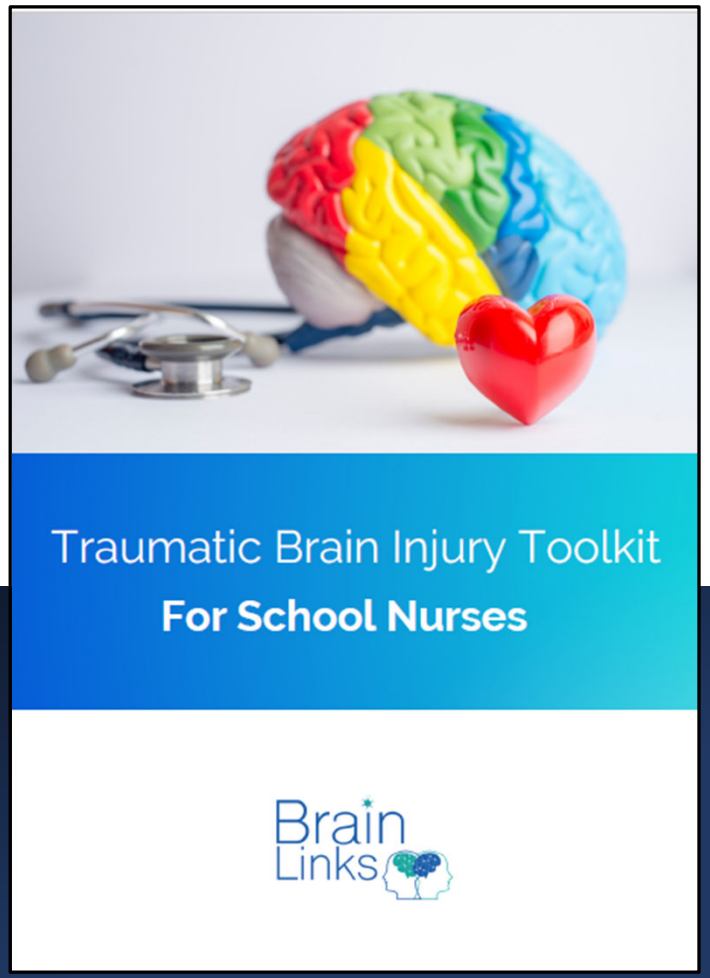


DIRECTIONS: Circle to Select and Complete if Needed

SYMPTOMS	PRESENTATION
Loss of Consciousness (Note even if brief)	YES Length: _____ NO
PUPILS	One pupil larger than the other or Equal, Round, Reactive to Light
PULSE: 75 BPM (Normal: 60-100 BPM)	Normal Higher Lower
BLOOD PRESSURE: (Normal: 120/80mm/Hg)	Sitting: ____/____ Standing: ____/____
ORIENTATION:	Oriented X 4 (Person, place, time, events) Confused
BLOOD SUGAR: (Normal: BGL 70-110 mG/dL)	Higher Or BGL : _____ Lower
VOMITING/NAUSEA:	YES NO
SYMPTOMS:	No Symptoms Declining No Change Improving
ALERTNESS:	Alert Drowsy or Cannot be Awakened

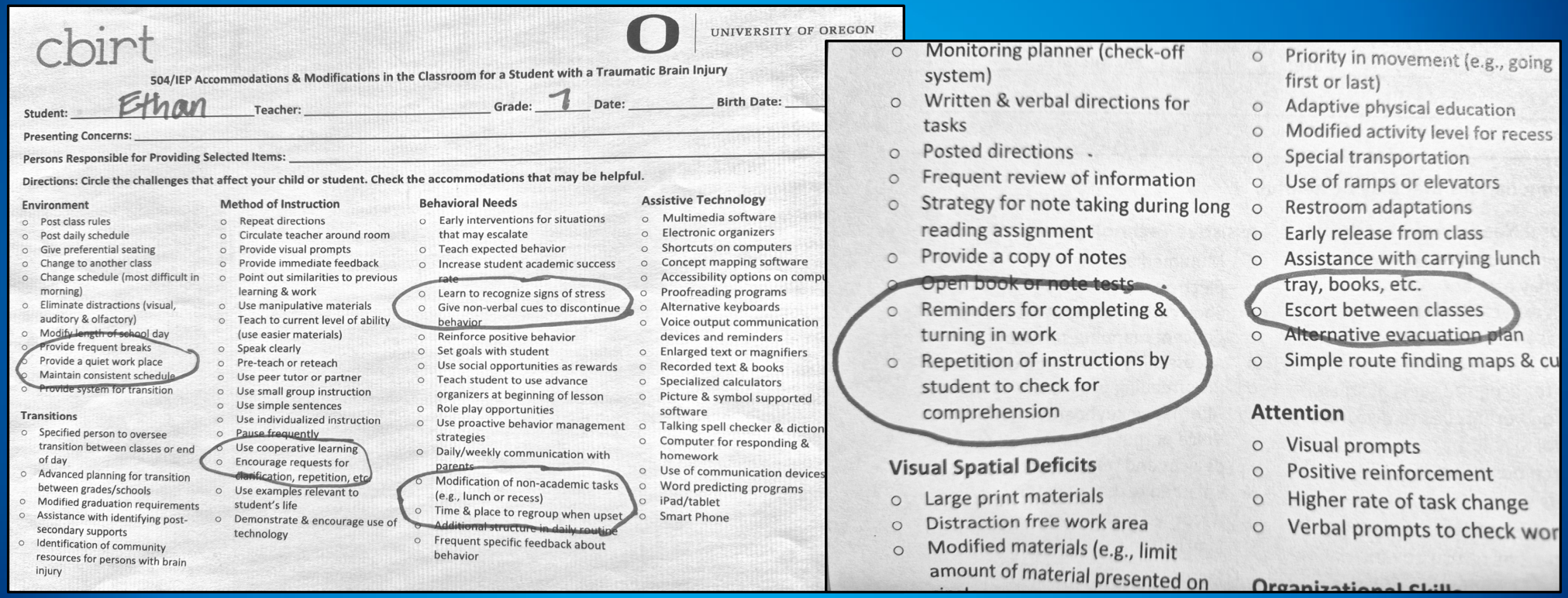
School Nurse (Title) 3-3-23 (Date)

TBI Toolkit for School Nurses



Resources & How to Use Them

504/IEP Accommodations & Modifications In the Classroom for a Student with a TBI



cbirt

UNIVERSITY OF OREGON

504/IEP Accommodations & Modifications in the Classroom for a Student with a Traumatic Brain Injury

Student: Ethan Teacher: _____ Grade: 7 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 compu
- 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 & diction
- Computer for responding & homework
- Use of communication devices
- Word predicting programs
- iPad/tablet
- Smart Phone

- Monitoring planner (check-off system)
- Written & verbal directions for tasks
- Posted directions
- Frequent review of information
- Strategy for note taking during long reading assignment
- Provide a copy of notes
- Open book or note tests
- Reminders for completing & turning in work
- Repetition of instructions by student to check for comprehension

Visual Spatial Deficits

- Large print materials
- Distraction free work area
- Modified materials (e.g., limit amount of material presented on

- Priority in movement (e.g., going first or last)
- Adaptive physical education
- Modified activity level for recess
- Special transportation
- Use of ramps or elevators
- Restroom adaptations
- Early release from class
- Assistance with carrying lunch tray, books, etc.
- Escort between classes
- Alternative evacuation plan
- Simple route finding maps & cu

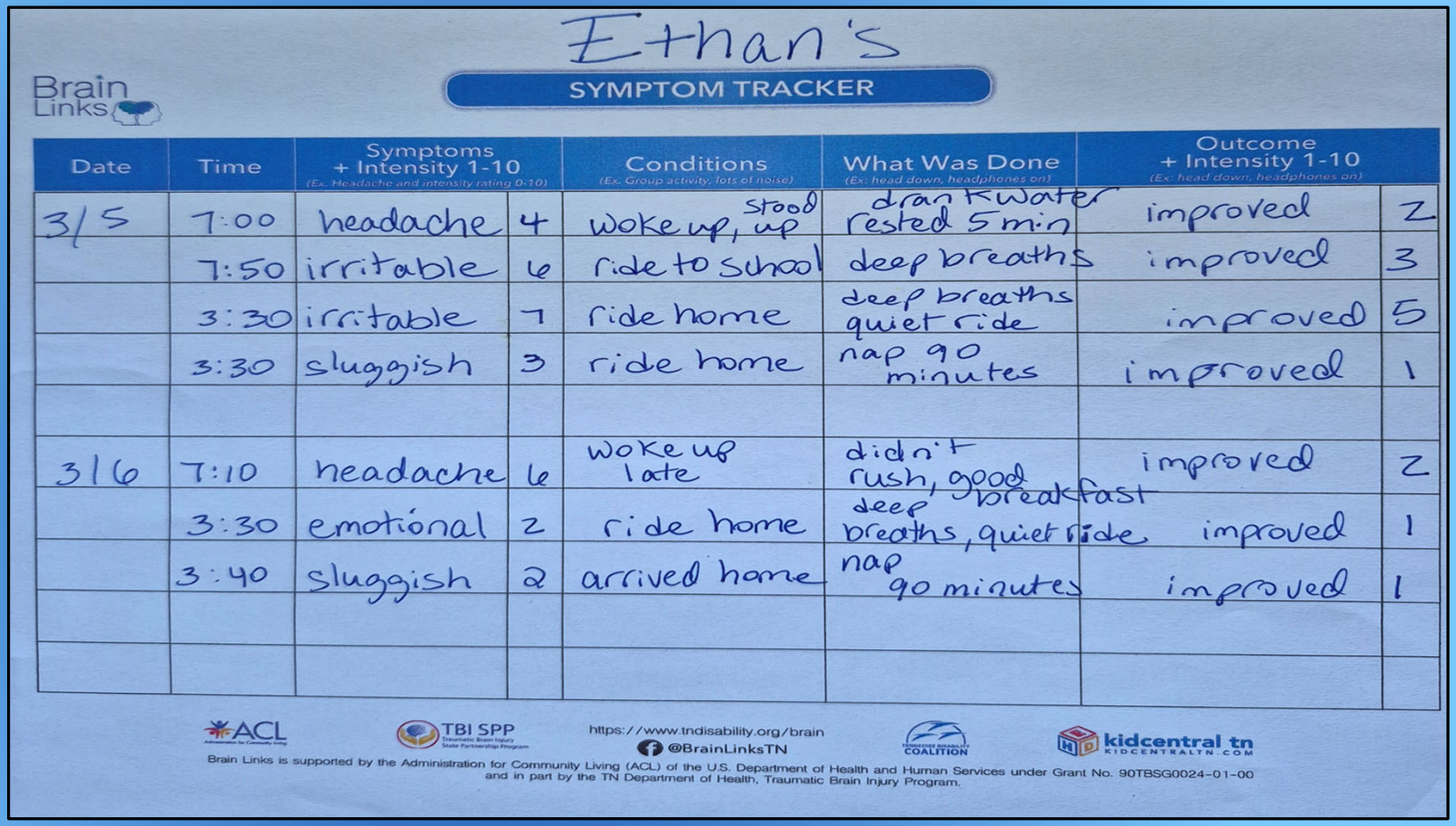
Attention

- Visual prompts
- Positive reinforcement
- Higher rate of task change
- Verbal prompts to check wor

Organizational Skill

Ethan's Symptom Tracker tool

- Simple
- Quick
- List symptom
- Occurs during what
- What was done
- Outcomes



Ethan's

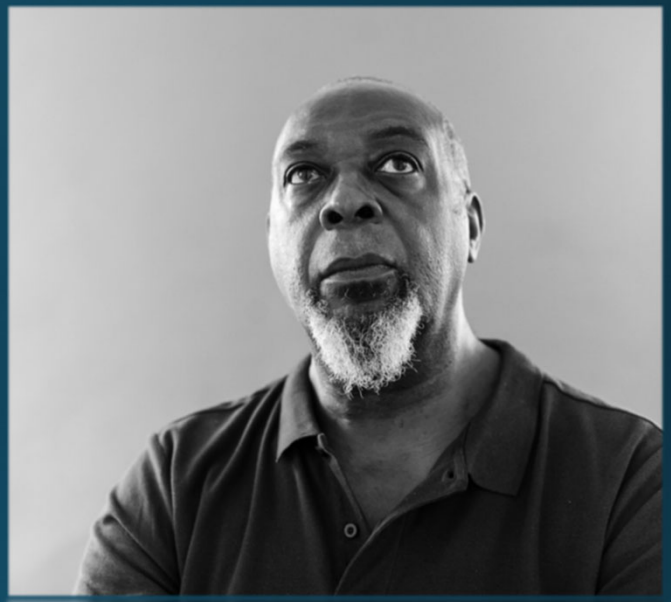
Brain Links

SYMPTOM TRACKER

Date	Time	Symptoms + Intensity 1-10 (Ex. Headache and intensity rating 0-10)		Conditions (Ex. Group activity, lots of noise)	What Was Done (Ex. head down, headphones on)	Outcome + Intensity 1-10 (Ex. head down, headphones on)	
3/5	7:00	headache	4	woke up, stood up	drank water rested 5 min	improved	2
	7:50	irritable	6	ride to school	deep breaths	improved	3
	3:30	irritable	7	ride home	deep breaths quiet ride	improved	5
	3:30	sluggish	3	ride home	nap 90 minutes	improved	1
3/6	7:10	headache	6	woke up late	didn't rush, good breakfast	improved	2
	3:30	emotional	2	ride home	deep breaths, quiet ride	improved	1
	3:40	sluggish	2	arrived home	nap 90 minutes	improved	1

ACL TBI SPP https://www.tndisability.org/brain @BrainLinksTN kidcentral tn KIDCENTRALTN.COM

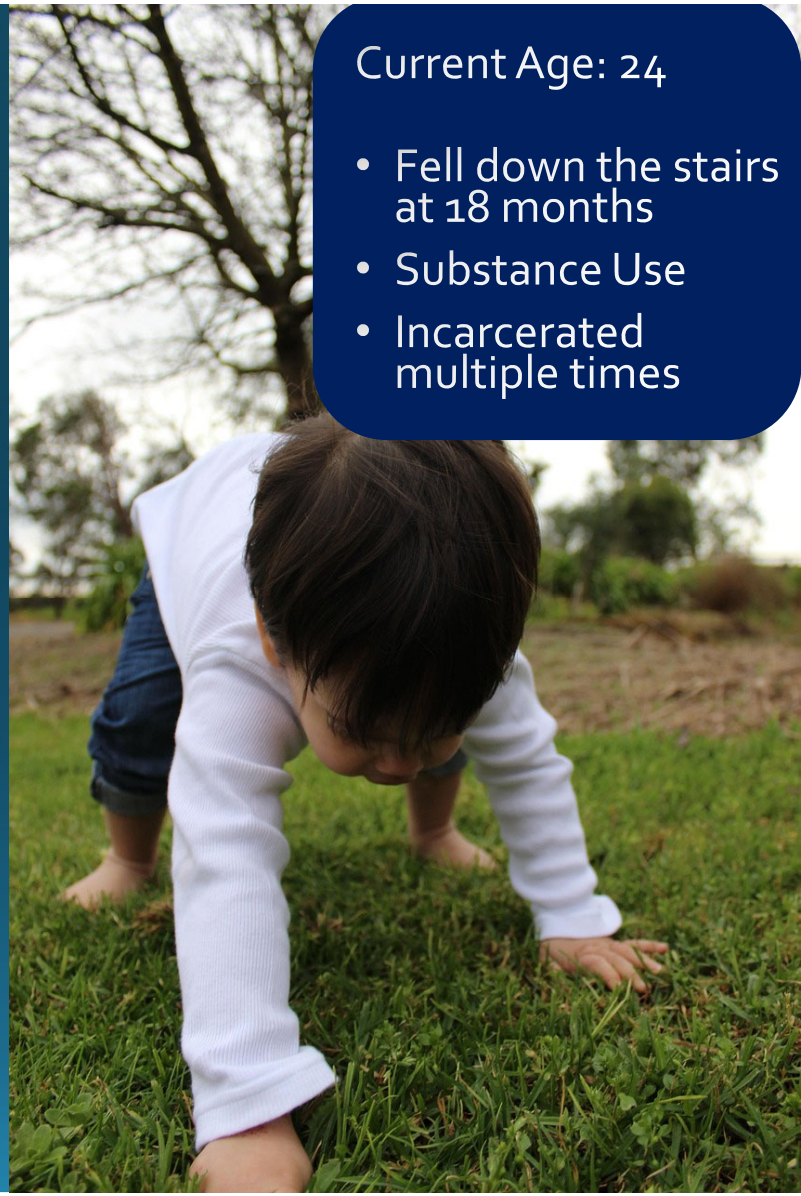
Brain Links is supported by the Administration for Community Living (ACL) of the U.S. Department of Health and Human Services under Grant No. 90TBSG0024-01-00 and in part by the TN Department of Health, Traumatic Brain Injury Program.



People are complicated

Jordan

Age: 18 months	Fell down a flight of steps
	Crying, no loss of consciousness
	Seen at hospital, "no concussion"
	No recommendations
	Bruising around his right eye for weeks



Current Age: 24

- Fell down the stairs at 18 months
- Substance Use
- Incarcerated multiple times

Jordan

Age: 24 years

- Is currently in prison
- Uses drugs and alcohol "tried everything"
- Can't/won't hold a job
- Very smart but struggled in school
- Few friends
- Borderline personality disorder

Children with **MTBI in Preschool**,

then at age 14-16

are significantly more likely to show symptoms of

- ADD/ADHD
- Conduct Disorder and Oppositional Defiant
- Substances use
- Mood disorder

McKinlay et al, 2013

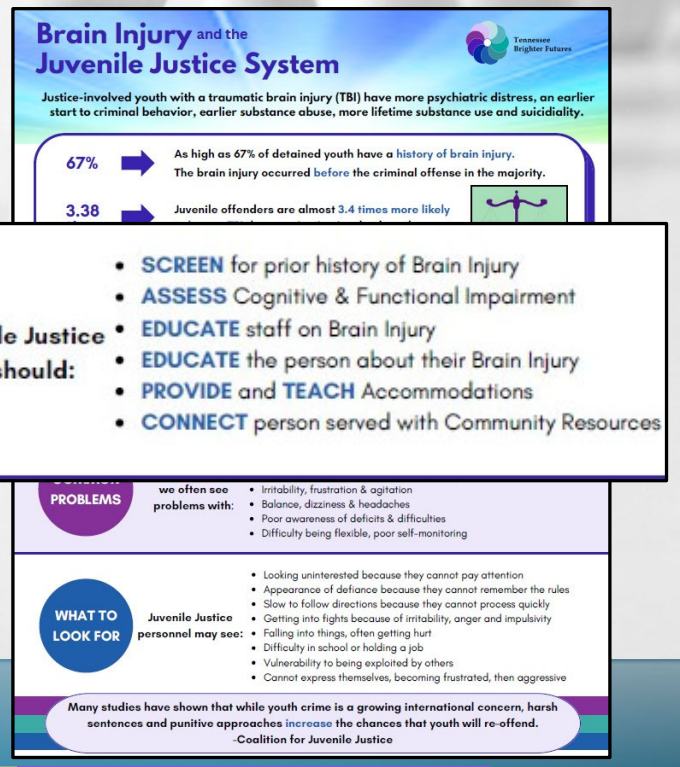
Juvenile Justice & Brain Injury

- As high as 67% of detained youth have had a brain injury prior to criminal offense
- With a brain injury, they are 3 times more like to reoffend

Why there is a need for ongoing monitoring and treatment after brain injury

All ages are more likely to

- ✓Have another injury
- ✓Become obese
- ✓Be incarcerated
- ✓Use substances
- ✓Become depressed
- ✓Be socially isolated



Brain Injury and the **Juvenile Justice System**

Tennessee Brighter Futures

Justice-involved youth with a traumatic brain injury (TBI) have more psychiatric distress, an earlier start to criminal behavior, earlier substance abuse, more lifetime substance use and suicidiality.

67% → As high as 67% of detained youth have a history of brain injury. The brain injury occurred before the criminal offense in the majority.

3.38 → Juvenile offenders are almost 3.4 times more likely

BEST PRACTICE

The Juvenile Justice System should:

- **SCREEN** for prior history of Brain Injury
- **ASSESS** Cognitive & Functional Impairment
- **EDUCATE** staff on Brain Injury
- **EDUCATE** the person about their Brain Injury
- **PROVIDE** and **TEACH** Accommodations
- **CONNECT** person served with Community Resources

PROBLEMS

we often see problems with:

- Irritability, frustration & agitation
- Balance, dizziness & headaches
- Poor awareness of deficits & difficulties
- Difficulty being flexible, poor self-monitoring

WHAT TO LOOK FOR

Juvenile Justice personnel may see:

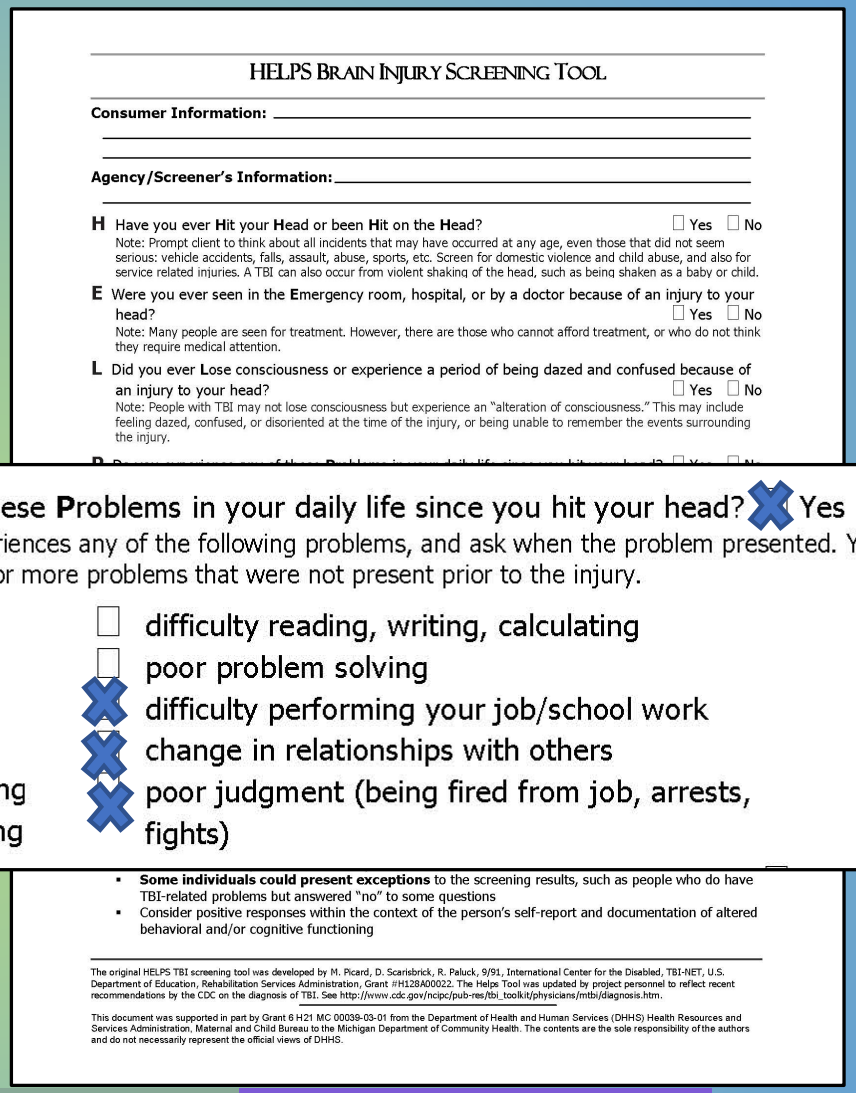
- Looking uninterested because they cannot pay attention
- Appearance of defiance because they cannot remember the rules
- Slow to follow directions because they cannot process quickly
- Getting into fights because of irritability, anger and impulsivity
- Falling into things, often getting hurt
- Difficulty in school or holding a job
- Vulnerability to being exploited by others
- Cannot express themselves, becoming frustrated, then aggressive

Many studies have shown that while youth crime is a growing international concern, harsh sentences and punitive approaches increase the chances that youth will re-offend.
-Coalition for Juvenile Justice

Jordan

HELPS Screening Tool

- [x] **H**ead injury
- [x] **E**mergency room
- [ ] **L**ose Consciousn
- [x] **P**roblems in daily
- [ ] **S**icknesses



HELPS BRAIN INJURY SCREENING TOOL

Consumer Information: _____

Agency/Screener's Information: _____

H Have you ever **H**it your **H**ead or been **H**it on the **H**ead? ☐ Yes ☐ No
Note: Prompt client to think about all incidents that may have occurred at any age, even those that did not seem serious: vehicle accidents, falls, assault, abuse, sports, etc. Screen for domestic violence and child abuse, and also for service related injuries. A TBI can also occur from violent shaking of the head, such as being shaken as a baby or child.

E Were you ever seen in the **E**mergency room, hospital, or by a doctor because of an injury to your head? ☐ Yes ☐ No
Note: Many people are seen for treatment. However, there are those who cannot afford treatment, or who do not think they require medical attention.

L Did you ever **L**ose consciousness or experience a period of being dazed and confused because of an injury to your head? ☐ Yes ☐ No
Note: People with TBI may not lose consciousness but experience an "alteration of consciousness." This may include feeling dazed, confused, or disoriented at the time of the injury, or being unable to remember the events surrounding the injury.

P Do you experience any of these **P**roblems in your daily life since you hit your head? ☒ Yes ☐ No
Note: Ask your client if s/he experiences any of the following problems, and ask when the problem presented. You are looking for a combination of two or more problems that were not present prior to the injury.

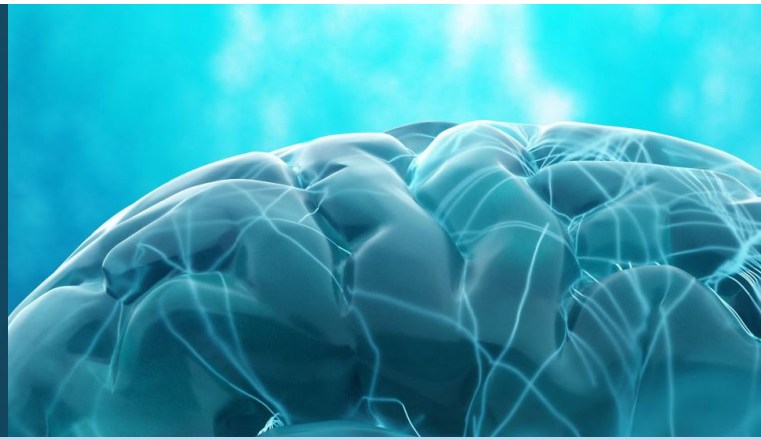
- ☐ headaches
- ☐ dizziness
- ☐ anxiety
- ☒ depression
- ☒ difficulty concentrating
- ☐ difficulty remembering
- ☐ difficulty reading, writing, calculating
- ☐ poor problem solving
- ☒ difficulty performing your job/school work
- ☒ change in relationships with others
- ☒ poor judgment (being fired from job, arrests, fights)

- **Some individuals could present exceptions** to the screening results, such as people who do have TBI-related problems but answered "no" to some questions
- Consider positive responses within the context of the person's self-report and documentation of altered behavioral and/or cognitive functioning

The original HELPS TBI screening tool was developed by M. Picard, D. Scarisbrick, R. Paluck, 9/91, International Center for the Disabled, TBI-NET, U.S. Department of Education, Rehabilitation Services Administration, Grant #H128A00022. The Helps Tool was updated by project personnel to reflect recent recommendations by the CDC on the diagnosis of TBI. See http://www.cdc.gov/ncipc/pub-res/tbi_toolkit/physicians/mtbi/diagnosis.htm.

This document was supported in part by Grant 6 H21 MC 00039-03-01 from the Department of Health and Human Services (DHHS) Health Resources and Services Administration, Maternal and Child Bureau to the Michigan Department of Community Health. The contents are the sole responsibility of the authors and do not necessarily represent the official views of DHHS.

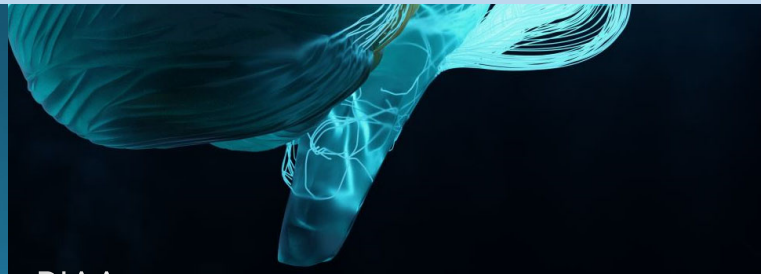
TOXIC
Brain Injury



"The opioid epidemic has led to the creation of a new term: **Toxic Brain Injury**."

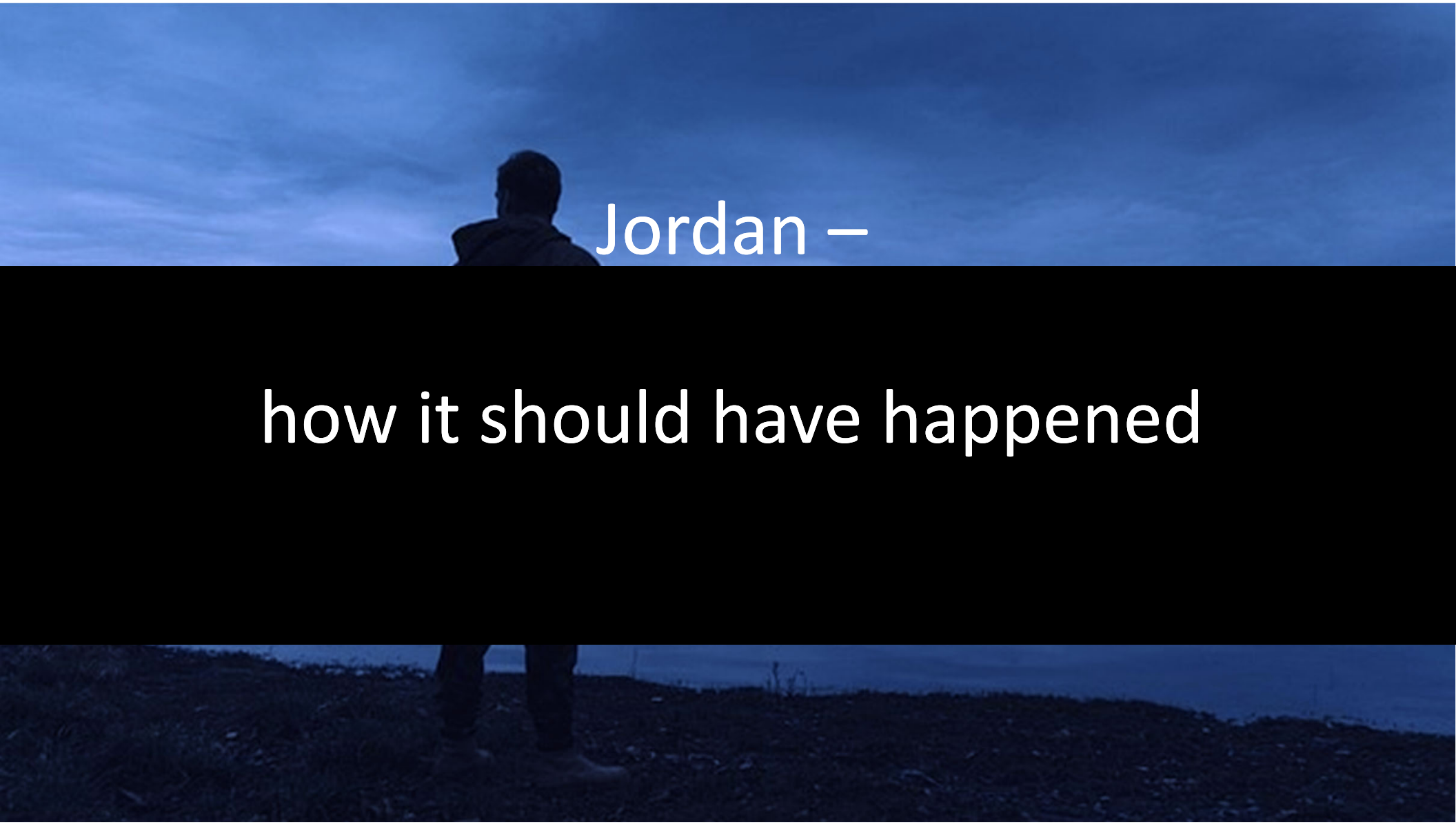
This type of brain injury occurs from prolonged substance misuse and nonfatal overdose.

The amount of time the brain is without adequate oxygen dictates the severity of injury.



BIAA, 2020

Will Dane, Dianna Fahel, and Tiffany Epley


Jordan –
how it should have happened

First things first

- ✓ Hospital checks Jordan
- ✓ CT Scan? Probably not & won't rule out concussion either way

Jordan's parents have instructions from the doctor:

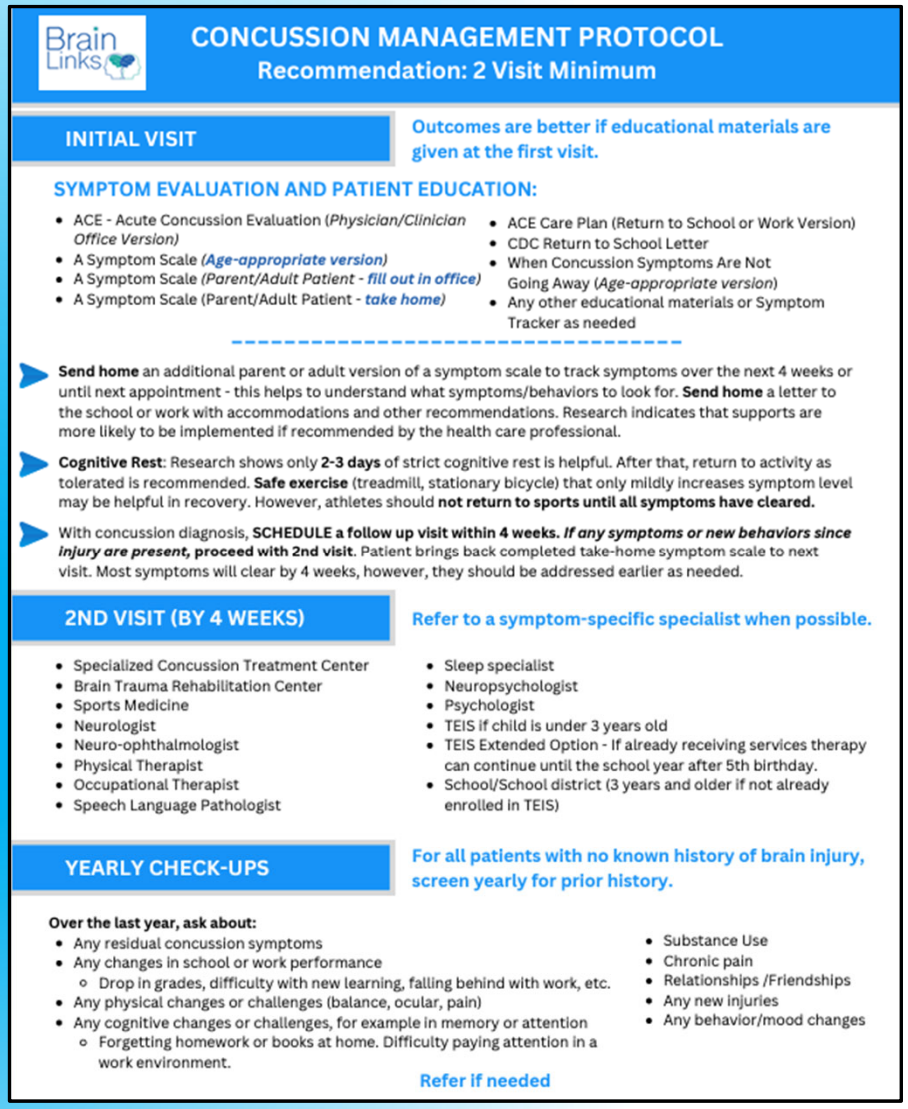
1 **A printed or electronic checklist of what to look for after brain injury**

- Rest for 2-3 days
- Watch for changes & track any symptoms

2 **Follow up in 2-4 weeks with pediatrician**

(sooner if new or worse symptoms)

- To see a specialist if needed
- Possible Early Intervention assessment



Brain Links

CONCUSSION MANAGEMENT PROTOCOL
Recommendation: 2 Visit Minimum

INITIAL VISIT

Outcomes are better if educational materials are given at the first visit.

SYMPTOM EVALUATION AND PATIENT EDUCATION:

- ACE - Acute Concussion Evaluation (*Physician/Clinician Office Version*)
- A Symptom Scale (*Age-appropriate version*)
- A Symptom Scale (*Parent/Adult Patient - fill out in office*)
- A Symptom Scale (Parent/Adult Patient - *take home*)
- ACE Care Plan (Return to School or Work Version)
- CDC Return to School Letter
- When Concussion Symptoms Are Not Going Away (*Age-appropriate version*)
- Any other educational materials or Symptom Tracker as needed

Send home an additional parent or adult version of a symptom scale to track symptoms over the next 4 weeks or until next appointment - this helps to understand what symptoms/behaviors to look for. **Send home** a letter to the school or work with accommodations and other recommendations. Research indicates that supports are more likely to be implemented if recommended by the health care professional.

Cognitive Rest: Research shows only **2-3 days** of strict cognitive rest is helpful. After that, return to activity as tolerated is recommended. **Safe exercise** (treadmill, stationary bicycle) that only mildly increases symptom level may be helpful in recovery. However, athletes should **not return to sports until all symptoms have cleared.**

With concussion diagnosis, **SCHEDULE a follow up visit within 4 weeks.** ***If any symptoms or new behaviors since injury are present,*** **proceed with 2nd visit**. Patient brings back completed take-home symptom scale to next visit. Most symptoms will clear by 4 weeks, however, they should be addressed earlier as needed.

2ND VISIT (BY 4 WEEKS)

Refer to a symptom-specific specialist when possible.

- Specialized Concussion Treatment Center
- Brain Trauma Rehabilitation Center
- Sports Medicine
- Neurologist
- Neuro-ophthalmologist
- Physical Therapist
- Occupational Therapist
- Speech Language Pathologist
- Sleep specialist
- Neuropsychologist
- Psychologist
- TEIS if child is under 3 years old
- TEIS Extended Option - If already receiving services therapy can continue until the school year after 5th birthday.
- School/School district (3 years and older if not already enrolled in TEIS)

YEARLY CHECK-UPS

For all patients with no known history of brain injury, screen yearly for prior history.

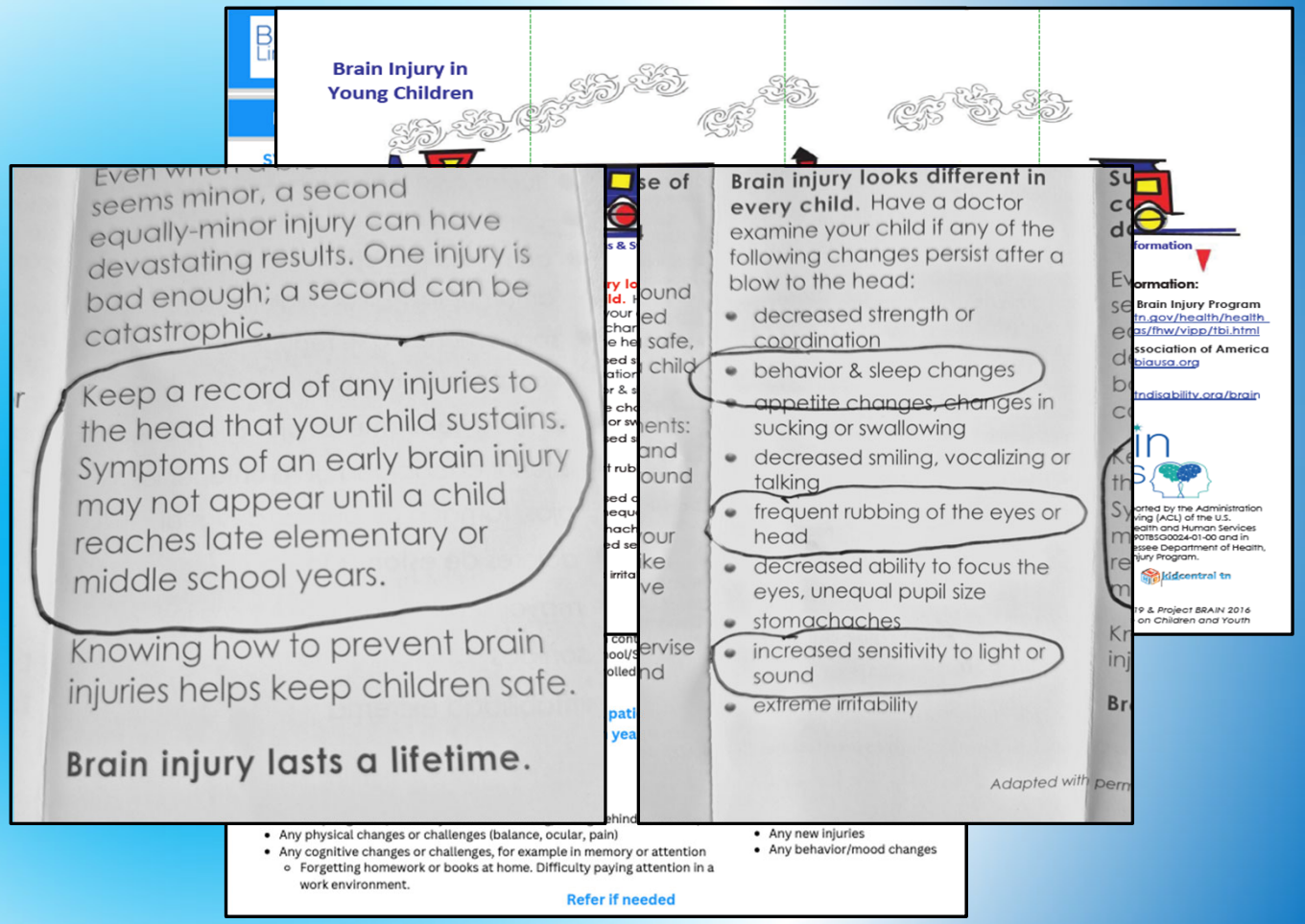
Over the last year, ask about:

- Any residual concussion symptoms
- Any changes in school or work performance
  - Drop in grades, difficulty with new learning, falling behind with work, etc.
- Any physical changes or challenges (balance, ocular, pain)
- Any cognitive changes or challenges, for example in memory or attention
  - Forgetting homework or books at home. Difficulty paying attention in a work environment.
- Substance Use
- Chronic pain
- Relationships /Friendships
- Any new injuries
- Any behavior/mood changes

Refer if needed

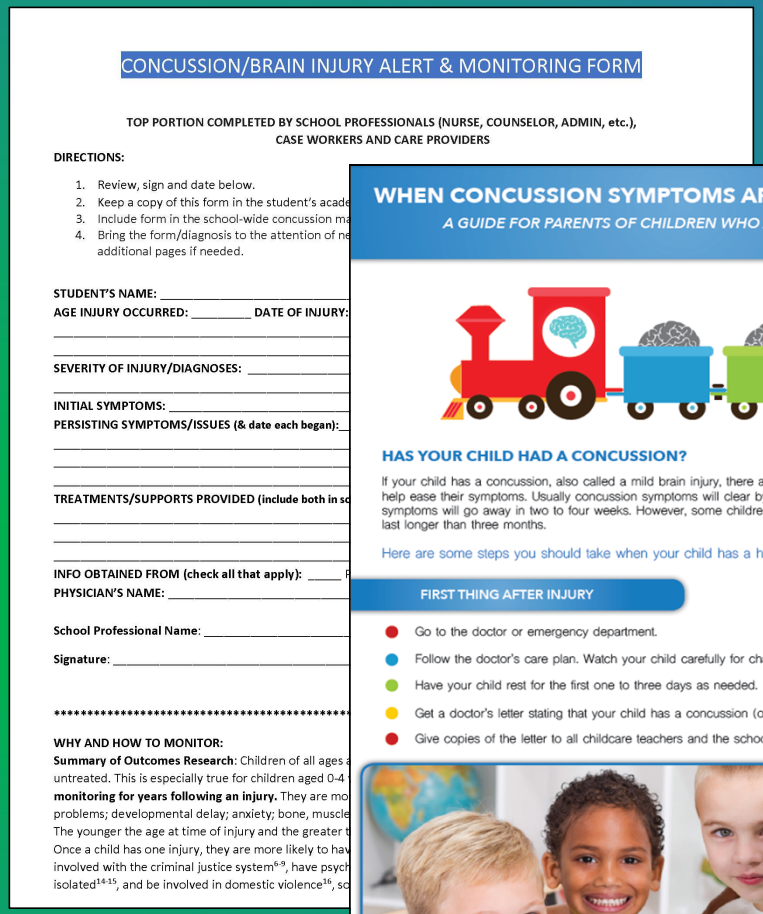
Jordan - how it should have happened

- Hospital follows a Concussion Protocol and gives Jordan's parents **Signs & Symptoms in Young Children**
- Parents watch for symptoms and return to doctor, possibly Early Intervention if needed
- Parents informed school (including school nurse) and updated each new teacher about previous injury



Jordan - how it should have happened

- The Concussion /Brain Injury Alert Form follows Jordan through school
- His parent received **When Concussion Symptoms Are Not Going Away** which list next steps and professionals to help with problems in school, mental health
- Knowing he is at higher risk for substance use, his parents (school, therapist) can teach Jordan skills to de-escalate so he is less likely to self-medicate.



CONCUSSION/BRAIN INJURY ALERT & MONITORING FORM

TOP PORTION COMPLETED BY SCHOOL PROFESSIONALS (NURSE, COUNSELOR, ADMIN, etc.), CASE WORKERS AND CARE PROVIDERS

DIRECTIONS:

1. Review, sign and date below.
2. Keep a copy of this form in the student's acade
3. Include form in the school-wide concussion ma
4. Bring the form/diagnosis to the attention of ne additional pages if needed.

STUDENT'S NAME: _____

AGE INJURY OCCURRED: _____ **DATE OF INJURY:**

SEVERITY OF INJURY/DIAGNOSES:

INITIAL SYMPTOMS:

PERSISTING SYMPTOMS/ISSUES (& date each began):

TREATMENTS/SUPPORTS PROVIDED (include both in sc

INFO OBTAINED FROM (check all that apply): _____ P

PHYSICIAN'S NAME: _____

School Professional Name: _____

Signature: _____

****

WHY AND HOW TO MONITOR:

Summary of Outcomes Research: Children of all ages a untreated. This is especially true for children aged 0-4 **monitoring for years following an injury.** They are mo problems; developmental delay; anxiety; bone, muscle The younger the age at time of injury and the greater t Once a child has one injury, they are more likely to hav involved with the criminal justice system[6-9], have psych isolated[14-15], and be involved in domestic violence[16], sc

WHEN CONCUSSION SYMPTOMS ARE NOT GOING AWAY

A GUIDE FOR PARENTS OF CHILDREN WHO ARE FIVE AND UNDER

HAS YOUR CHILD HAD A CONCUSSION?

If your child has a concussion, also called a mild brain injury, there are certain steps you should take to help ease their symptoms. Usually concussion symptoms will clear by three months. For most children, symptoms will go away in two to four weeks. However, some children have symptoms that last longer than three months.

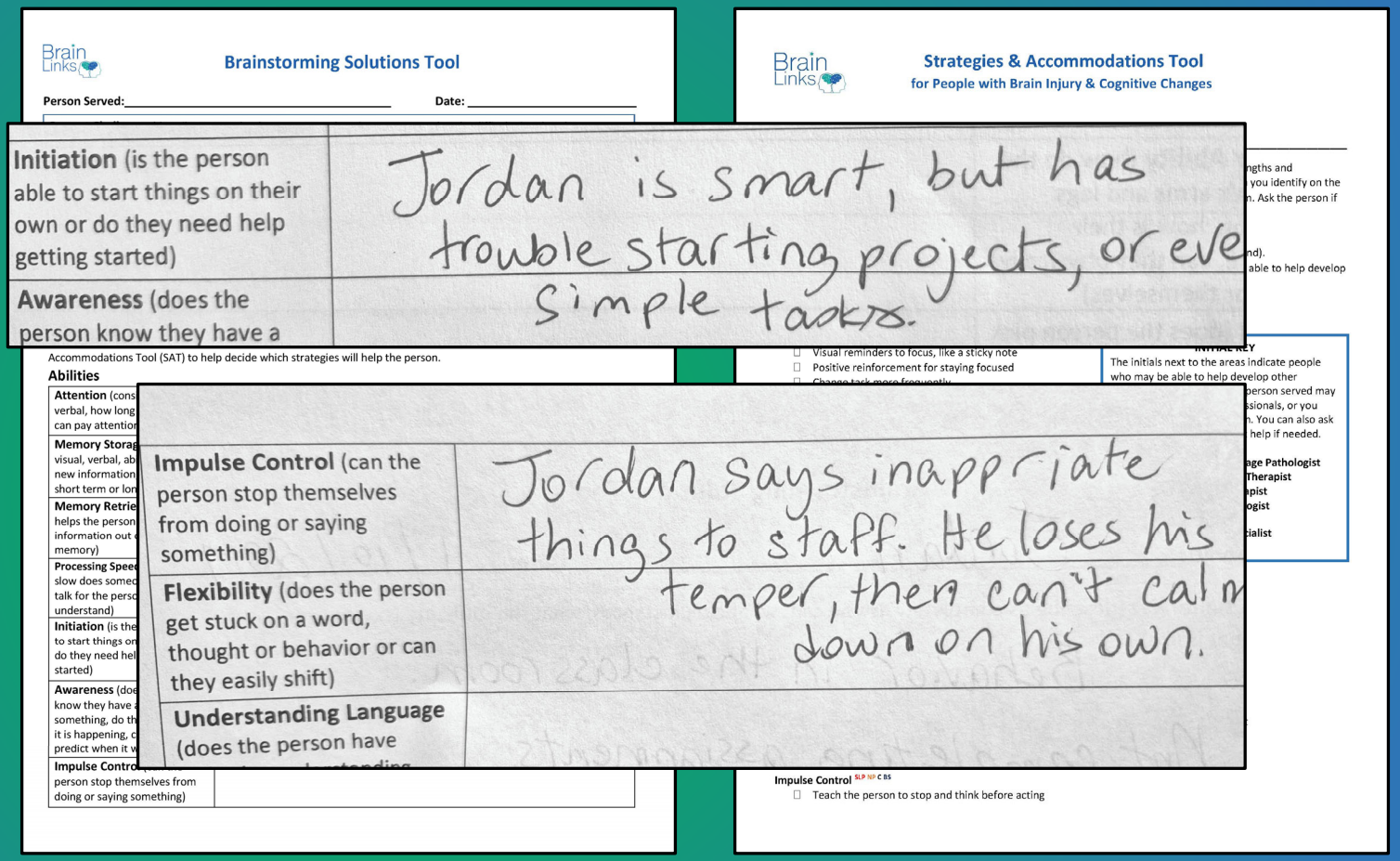
Here are some steps you should take when your child has a head injury.

FIRST THING AFTER INJURY

- Go to the doctor or emergency department.
- Follow the doctor's care plan. Watch your child carefully for changes.
- Have your child rest for the first one to three days as needed.
- Get a doctor's letter stating that your child has a concussion (or mild brain injury).
- Give copies of the letter to all childcare teachers and the school nurse. Keep a copy for yourself.

Jordan - how it should have happened

- Psychologist uses **the Brainstorming Solutions Tool** to direct Jordan, parents and school to what may work best.
- **Strategies and Accommodations Tool** used specifically for behavior, emotional state and fatigue.



Resources & How to Use Them

People are complicated

Age: 43

Hit by car at 36

Second injury at 42

Homeless

James

On his own

Medical emergency

Treated for initial injury

Long history of drug use

Mental Illness diagnosis - Bipolar

Second injury

Drug use continued

Lack of self care

Altered cognitive abilities

Homeless

A dangerous situation

James

Age: 43

Hit by car at 36

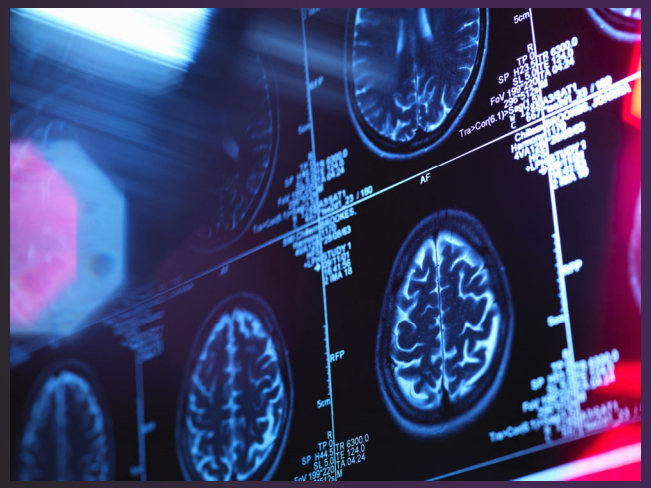
Invasive injury, fractured skull

Surgery to put a plate in his forehead to protect his brain

Frontal lobe injury

James

Second injury at 42



Head injury cause unknown

Went to hospital, additional surgery

Left hospital before recovered

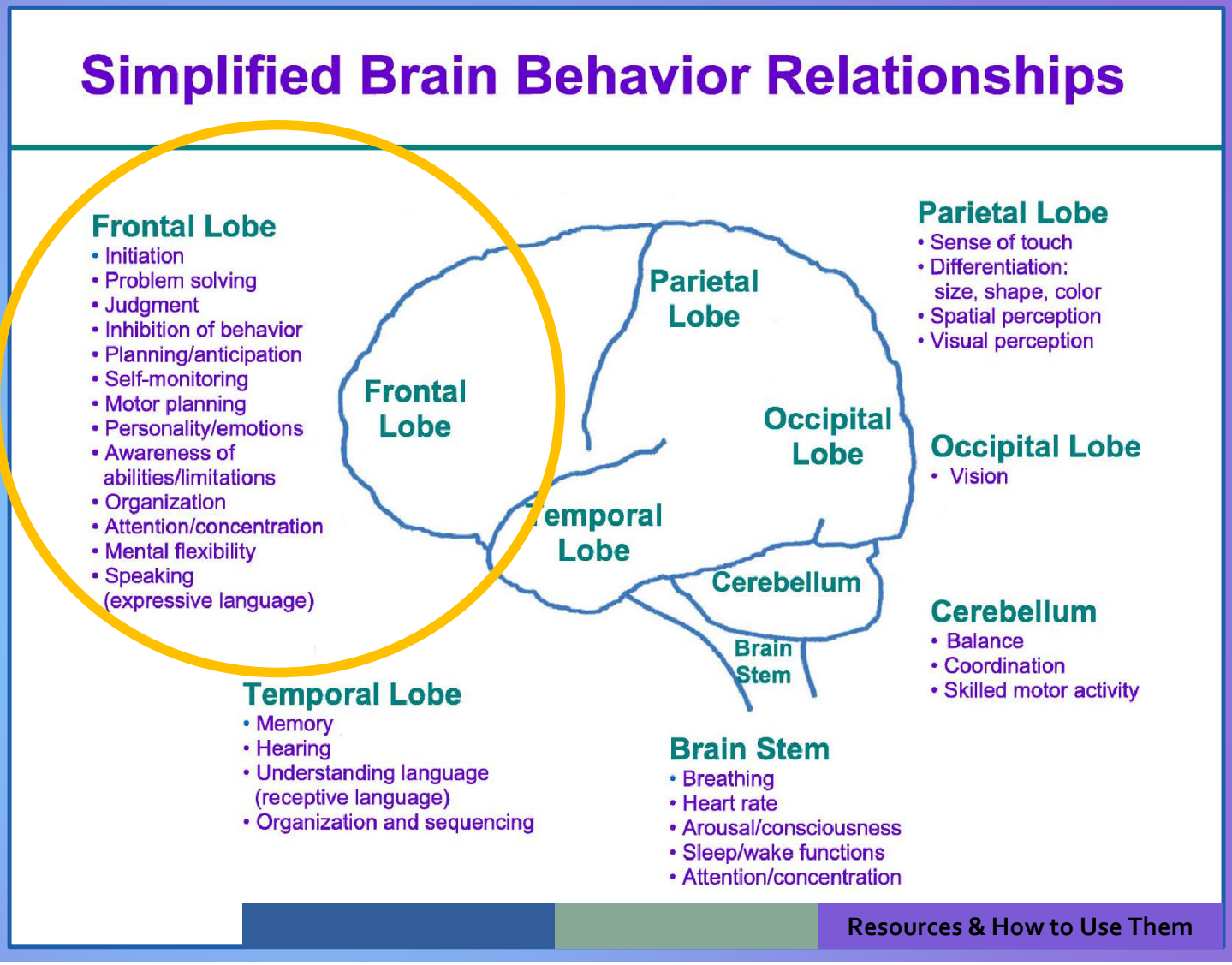
Homeless

“Walking Wounded”

Frontal lobe

- Self-control
- Judgement
- Problem solving
- Personality/emotions
- Attention/concentration
- Self-monitoring
- Inhibition of Behavior

The brain's
"Breaking mechanism"



People are complicated
James has multiple needs

Brain Injury

- **URGENTLY Needs** medical care
- Overall health check
- Chronic injury

Confusion
Judgment
Frustration

Substance Use

- **URGENTLY Needs** treatment
- Staff trained in Brain Injury
- Break the cycle
- Supportive people

Disability benefits ?
Employment possibilities ?

Mental Health & Homelessness

- **URGENTLY Needs** to be safe indoors
- Treatment professional and doctor to help him return to meds that **help** him
- Balance and stability

James

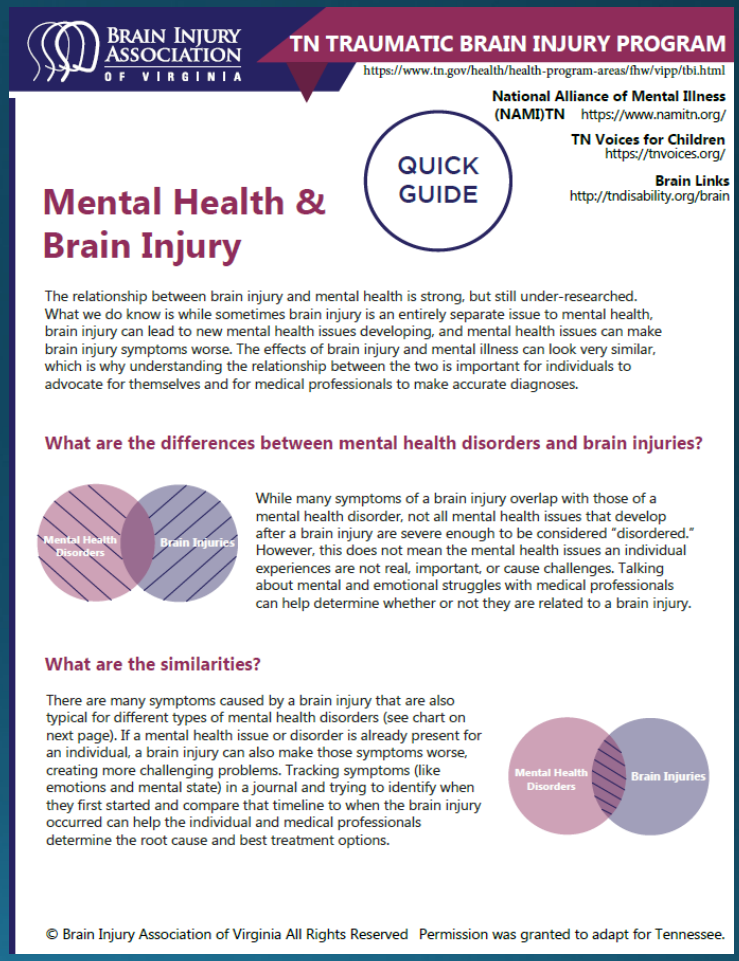
- Safe
- Living in a group home
- Advocate working with him
  - to make plans for next steps
  - and access services for ongoing support

Overall, the symptoms* of some mental health disorders and brain injuries overlap in many ways:

	Concussion	Anxiety	Depression	Substance Abuse
Headaches	x	x	x	x
Drowsiness	x	x	x	x
Irritability	x	x	x	x
Poor memory	x	x	x	x
Fatigue	x	x	x	x
Poor sleep	x	x	x	x
Nausea	x	x	x	x
Dizziness	x			x
Blurred vision	x			x

The symptoms of some mental health disorders and brain injuries overlap in many ways.

Mental Health & Brain Injury



BRAIN INJURY ASSOCIATION OF VIRGINIA

TN TRAUMATIC BRAIN INJURY PROGRAM

https://www.tn.gov/health/health-program-areas/fhw/vipp/tbi.html

National Alliance of Mental Illness (NAMI)TN https://www.namitn.org/

TN Voices for Children https://tnvoices.org/

Brain Links http://tndisability.org/brain

QUICK GUIDE

Mental Health & Brain Injury

The relationship between brain injury and mental health is strong, but still under-researched. What we do know is while sometimes brain injury is an entirely separate issue to mental health, brain injury can lead to new mental health issues developing, and mental health issues can make brain injury symptoms worse. The effects of brain injury and mental illness can look very similar, which is why understanding the relationship between the two is important for individuals to advocate for themselves and for medical professionals to make accurate diagnoses.

What are the differences between mental health disorders and brain injuries?

While many symptoms of a brain injury overlap with those of a mental health disorder, not all mental health issues that develop after a brain injury are severe enough to be considered "disordered." However, this does not mean the mental health issues an individual experiences are not real, important, or cause challenges. Talking about mental and emotional struggles with medical professionals can help determine whether or not they are related to a brain injury.

What are the similarities?

There are many symptoms caused by a brain injury that are also typical for different types of mental health disorders (see chart on next page). If a mental health issue or disorder is already present for an individual, a brain injury can also make those symptoms worse, creating more challenging problems. Tracking symptoms (like emotions and mental state) in a journal and trying to identify when they first started and compare that timeline to when the brain injury occurred can help the individual and medical professionals determine the root cause and best treatment options.

James – what should have happened

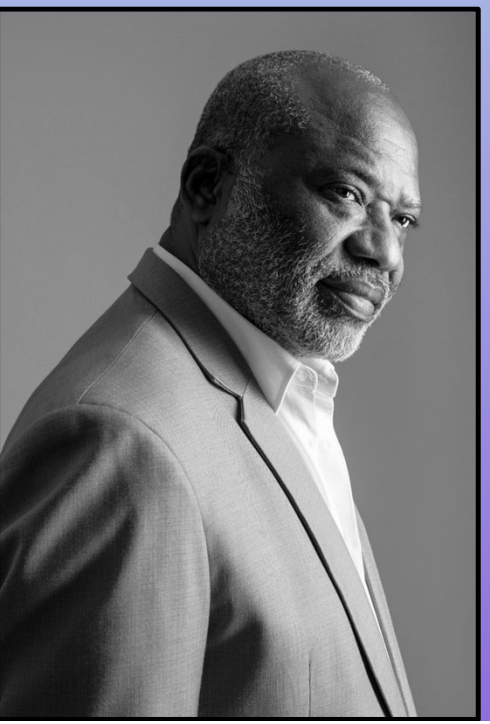
His housing counselor talked with the Brain Injury Service Coordinator.

James and his Service Coordinator arranged a time to meet in person.

They talked about his next steps and made a plan together to address urgent needs first.

They will meet again. James knows what to expect.

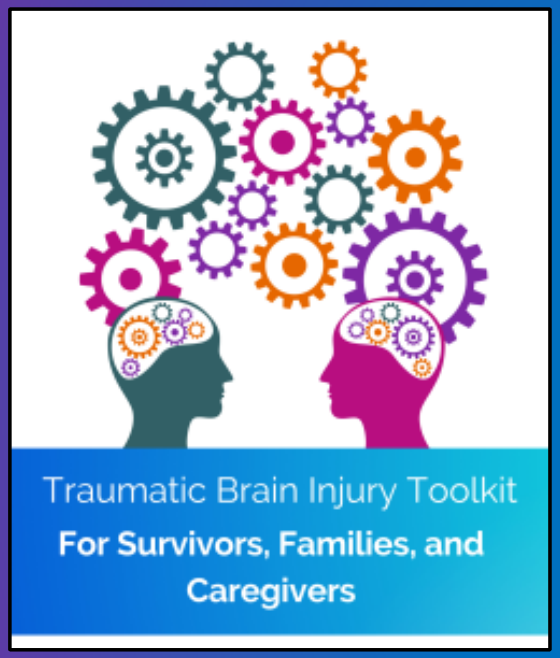
James – a system for him to help himself

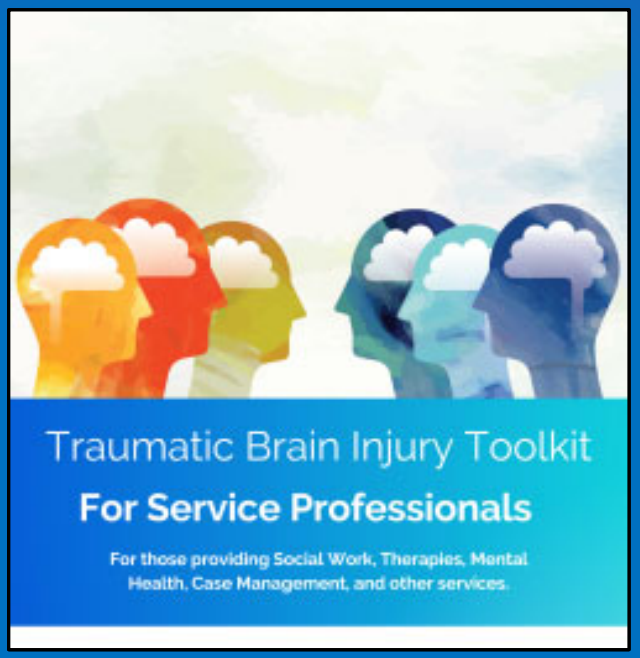


Short term ideas

- **Virtual Brain Injury Support Group** meeting,
  - One hour, meet others, art therapy
- **Symptom Tracker** – could James work on one thing at a time?
- **Brain Health** - Any small change he could be supported to enjoy:
  - better nutrition, finding purpose, exercise, socialization, peace

James has people who can help





https://www.tndisability.org/brain-toolkits

People who can be there

TBI Service Coordination

TN's TBI Program
7 Service Coordinators
Will provide help
No cost

Virtual Support Groups
http://www.braininjurytn.org/service-coordination.html

TN Family Support Program
https://www.tn.gov/didd/for-consumers/family-support.html

Statewide Brain Injury Listserv
https://www.tn.gov/health/health-program-areas/fhw/tbi/brain-injury-listserv.html

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Who know where to find the key information

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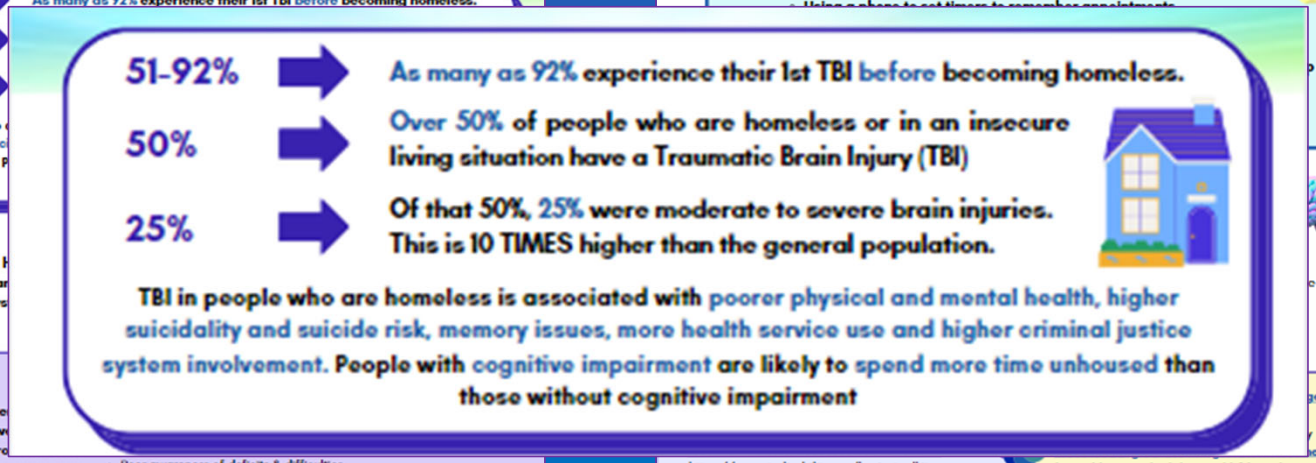
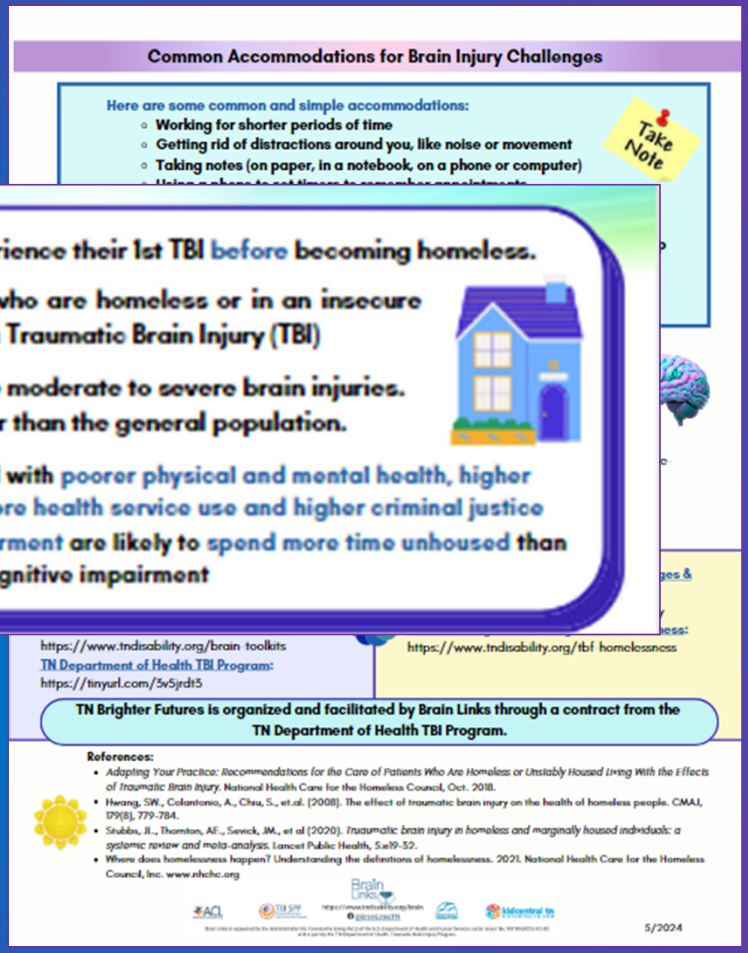
Resources & How to Use Them

Brain Injury and Homelessness Infographic





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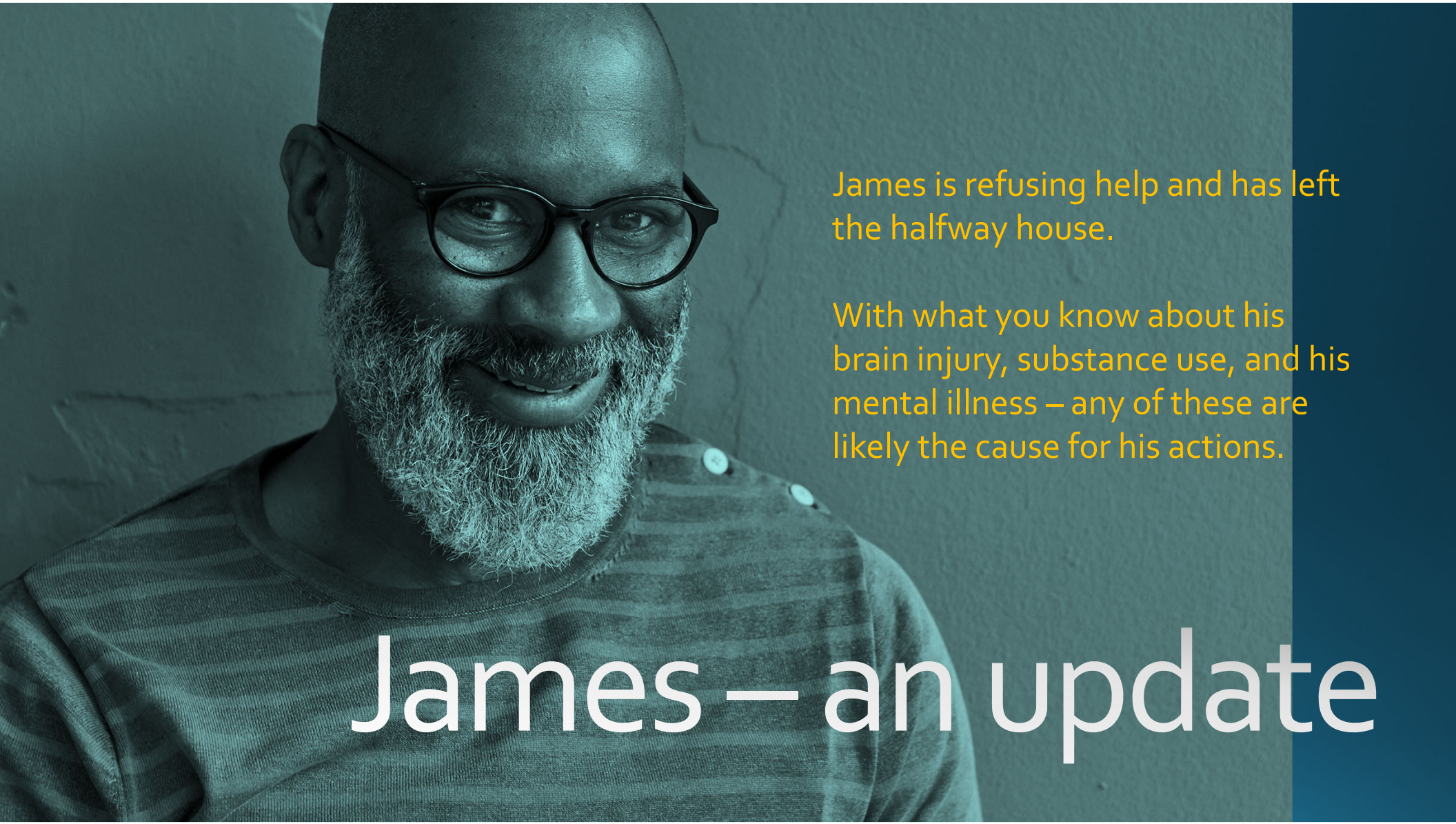
Resources & How to Use Them



James is refusing help and has left the halfway house.

With what you know about his brain injury, substance use, and his mental illness – any of these are likely the cause for his actions.

James – an update

Takeaways

After a brain injury, patience is not just a virtue, it's a necessity;

the journey to recovery is not a race, but a steady climb,

so embrace each step, no matter how small.

Resource pages by system of support

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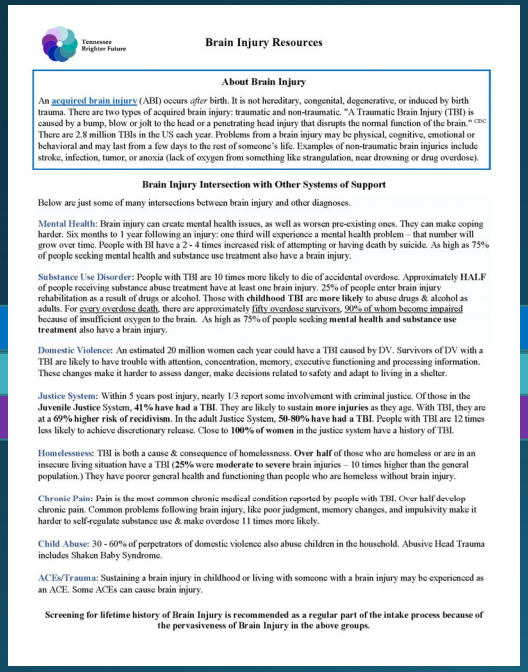
Brain Injury



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Brain Injury Resources

About Brain Injury

An acquired brain injury (ABI) occurs *after* birth. It is not hereditary, congenital, degenerative, or induced by birth trauma. There are two types of acquired brain injury: traumatic and non-traumatic. "A Traumatic Brain Injury (TBI) is caused by a bump, blow or jolt to the head or a penetrating head injury that disrupts the normal function of the brain." CDC There are 2.8 million TBIs in the US each year. Problems from a brain injury may be physical, cognitive, emotional or behavioral and may last from a few days to the rest of someone's life. Examples of non-traumatic brain injuries include stroke, infection, tumor, or anoxia (lack of oxygen from something like strangulation, near drowning or drug overdose).

Brain Injury Intersection with Other Systems of Support

Below are just some of many intersections between brain injury and other diagnoses.

Mental Health: Brain injury can create mental health issues, as well as worsen pre-existing ones. They can make coping harder. Six months to 1 year following an injury: one third will experience a mental health problem – that number will grow over time. People with BI have a 2 - 4 times increased risk of attempting or having death by suicide. As high as 75% of people seeking mental health and substance use treatment also have a brain injury.

Substance Use Disorder: People with TBI are 10 times more likely to die of accidental overdose. Approximately **HALF** of people receiving substance abuse treatment have at least one brain injury. 25% of people enter brain injury rehabilitation as a result of drugs or alcohol. Those with **childhood TBI are more likely** to abuse drugs & alcohol as adults. For every overdose death, there are approximately fifty overdose survivors, 90% of whom become impaired because of insufficient oxygen to the brain. As high as 75% of people seeking **mental health and substance use treatment** also have a brain injury.

Domestic Violence: An estimated 20 million women each year could have a TBI caused by DV. Survivors of DV with a TBI are likely to have trouble with attention, concentration, memory, executive functioning and processing information. These changes make it harder to assess danger, make decisions related to safety and adapt to living in a shelter.

Justice System: Within 5 years post injury, nearly 1/3 report some involvement with criminal justice. Of those in the **Juvenile Justice** System, **41% have had a TBI**. They are likely to sustain **more injuries** as they age. With TBI, they are at a **69% higher risk of recidivism**. In the adult Justice System, **50-80% have had a TBI**. People with TBI are 12 times less likely to achieve discretionary release. Close to **100% of women** in the justice system have a history of TBI.

Homelessness: TBI is both a cause & consequence of homelessness. **Over half** of those who are homeless or are in an insecure living situation have a TBI (**25%** were **moderate to severe** brain injuries – 10 times higher than the general population.) They have poorer general health and functioning than people who are homeless without brain injury.

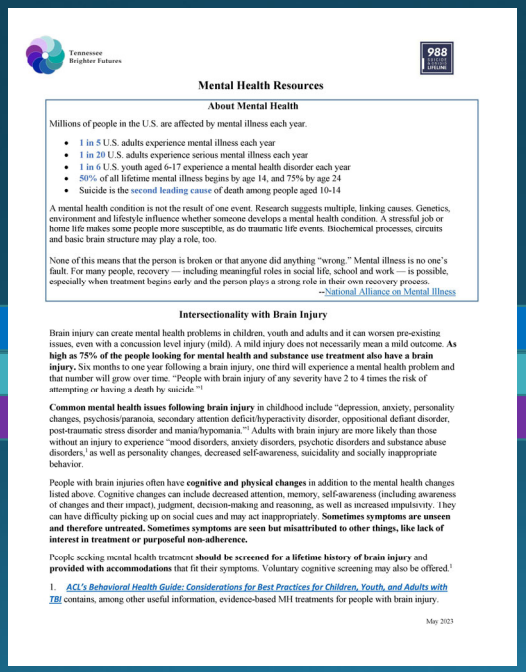
Chronic Pain: Pain is the most common chronic medical condition reported by people with TBI. Over half develop chronic pain. Common problems following brain injury, like poor judgment, memory changes, and impulsivity make it harder to self-regulate substance use & make overdose 11 times more likely.

Child Abuse: 30 - 60% of perpetrators of domestic violence also abuse children in the household. Abusive Head Trauma includes Shaken Baby Syndrome.

ACEs/Trauma: Sustaining a brain injury in childhood or living with someone with a brain injury may be experienced as an ACE. Some ACEs can cause brain injury.

Screening for lifetime history of Brain Injury is recommended as a regular part of the intake process because of the pervasiveness of Brain Injury in the above groups.

Mental Health



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988 SUICIDE & CRISIS LIFELINE

Mental Health Resources

About Mental Health

Millions of people in the U.S. are affected by mental illness each year.

- 1 in 5 U.S. adults experience mental illness each year
- 1 in 20 U.S. adults experience serious mental illness each year
- 1 in 6 U.S. youth aged 6-17 experience a mental health disorder each year
- 50% of all lifetime mental illness begins by age 14, and 75% by age 24
- Suicide is the second leading cause of death among people aged 10-14

A mental health condition is not the result of one event. Research suggests multiple, linking causes. Genetics, environment and lifestyle influence whether someone develops a mental health condition. A stressful job or home life makes some people more susceptible, as do traumatic life events. Biochemical processes, circuits and basic brain structure may play a role, too.

None of this means that the person is broken or that anyone did anything "wrong." Mental illness is no one's fault. For many people, recovery — including meaningful roles in social life, school and work — is possible, especially when treatment begins early and the person plays a strong role in their own recovery process.
--National Alliance on Mental Illness

Intersectionality with Brain Injury

Brain injury can create mental health problems in children, youth and adults and it can worsen pre-existing issues, even with a concussion level injury (mild). A mild injury does not necessarily mean a mild outcome. **As high as 75% of the people looking for mental health and substance use treatment also have a brain injury.** Six months to one year following a brain injury, one third will experience a mental health problem and that number will grow over time. "People with brain injury of any severity have 2 to 4 times the risk of attempting or having a death by suicide "[1]

Common mental health issues following brain injury in childhood include "depression, anxiety, personality changes, psychosis/paranoia, secondary attention deficit/hyperactivity disorder, oppositional defiant disorder, post-traumatic stress disorder and mania/hypomania."[1] Adults with brain injury are more likely than those without an injury to experience "mood disorders, anxiety disorders, psychotic disorders and substance abuse disorders,[1] as well as personality changes, decreased self-awareness, suicidality and socially inappropriate behavior.

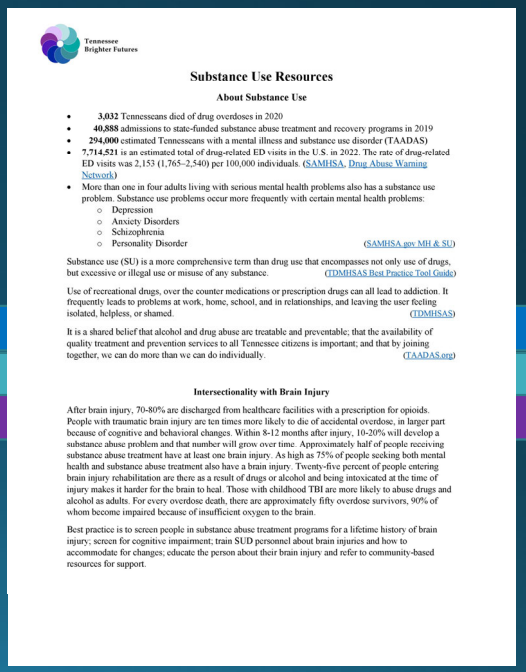
People with brain injuries often have **cognitive and physical changes** in addition to the mental health changes listed above. Cognitive changes can include decreased attention, memory, self-awareness (including awareness of changes and their impact), judgment, decision-making and reasonmg, as well as increased impulsivity. They can have difficulty picking up on social cues and may act inappropriately. **Sometimes symptoms are unseen and therefore untreated. Sometimes symptoms are seen but misattributed to other things, like lack of interest in treatment or purposeful non-adherence.**

People seeking mental health treatment **should be screened for a lifetime history of brain injury** and **provided with accommodations** that fit their symptoms. Voluntary cognitive screening may also be offered.[1]

1. ***ACL's Behavioral Health Guide: Considerations for Best Practices for Children, Youth, and Adults with TBI*** contains, among other useful information, evidence-based MH treatments for people with brain injury.

May 2023

Substance Use



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Substance Use Resources

About Substance Use

- **3,032** Tennesseans died of drug overdoses in 2020
- **40,888** admissions to state-funded substance abuse treatment and recovery programs in 2019
- **294,000** estimated Tennesseans with a mental illness and substance use disorder (TAADAS)
- **7,714,521** is an estimated total of drug-related ED visits in the U.S. in 2022. The rate of drug-related ED visits was 2,153 (1,765–2,540) per 100,000 individuals. (SAMHSA, Drug Abuse Warning Network)
- More than one in four adults living with serious mental health problems also has a substance use problem. Substance use problems occur more frequently with certain mental health problems:
  - Depression
  - Anxiety Disorders
  - Schizophrenia
  - Personality Disorder (SAMHSA.gov MH & SU)

Substance use (SU) is a more comprehensive term than drug use that encompasses not only use of drugs, but excessive or illegal use or misuse of any substance. (TDMHSAS Best Practice Tool Guide)

Use of recreational drugs, over the counter medications or prescription drugs can all lead to addiction. It frequently leads to problems at work, home, school, and in relationships, and leaving the user feeling isolated, helpless, or shamed. (TDMHSAS)

It is a shared belief that alcohol and drug abuse are treatable and preventable; that the availability of quality treatment and prevention services to all Tennessee citizens is important; and that by joining together, we can do more than we can do individually. (TAADAS.org)

Intersectionality with Brain Injury

After brain injury, 70-80% are discharged from healthcare facilities with a prescription for opioids. People with traumatic brain injury are ten times more likely to die of accidental overdose, in larger part because of cognitive and behavioral changes. Within 8-12 months after injury, 10-20% will develop a substance abuse problem and that number will grow over time. Approximately half of people receiving substance abuse treatment have at least one brain injury. As high as 75% of people seeking both mental health and substance abuse treatment also have a brain injury. Twenty-five percent of people entering brain injury rehabilitation are there as a result of drugs or alcohol and being intoxicated at the time of injury makes it harder for the brain to heal. Those with childhood TBI are more likely to abuse drugs and alcohol as adults. For every overdose death, there are approximately fifty overdose survivors, 90% of whom become impaired because of insufficient oxygen to the brain.

Best practice is to screen people in substance abuse treatment programs for a lifetime history of brain injury; screen for cognitive impairment; train SUD personnel about brain injuries and how to accommodate for changes; educate the person about their brain injury and refer to community-based resources for support.

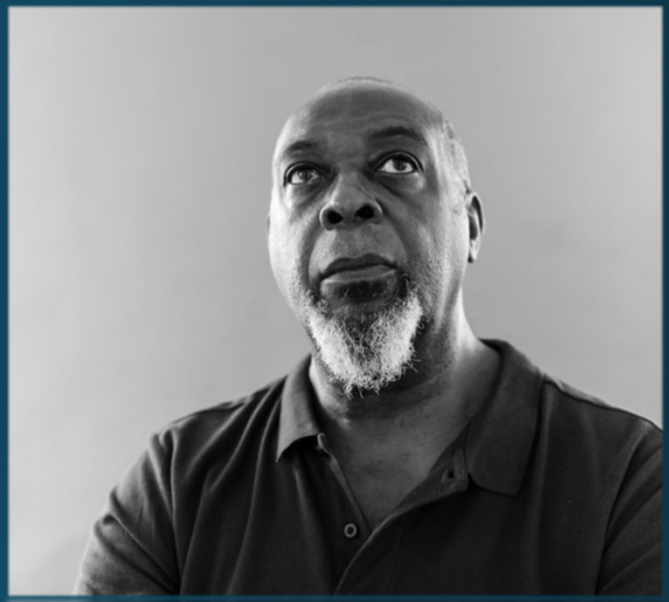
https://www.tndisability.org/tbf-systems-support

Questions?

What did they need most?

Ethan 14	Jordan 24	James 43
Longer healing time	Breaking the cycle	Safety/medically stable
Supports in school	Stability and positive experiences	Short term housing and treatment plan
What is the concussion vs autism vs puberty?	Employment that fits now and long term	Support system and next steps for long term

What else?



What will you use from today?

Join us again!

Using Case Studies to Highlight Best Practice and Improve Outcomes in Brain Injury

March 13 10-11:30 CST/11-12:30 EST

Case Studies of Brain Injury with Co-Occurring Challenges: A Framework for Addressing Cognitive Changes

April 3 10-11:30 CST/11-12:30 EST

Case Studies of Psychosocial and Behavioral Changes after Brain Injury: Practical Recommendations

Brain Links

materials and recording will be posted on website www.tndisability.org/brain

Thank you!

1 minute survey = certificate