



## Brain Links' Tennessee Brighter Future's Infographic Series on the Overlap of Brain Injury with Other Systems of Support

The Infographic Series reflects a main goal of TBF: to share with other Systems of Support how brain injury intersects with them. Each one shows, in a visual format,

- The evidence supporting the overlaps of brain injury with that System of Support
- Steps for best practice:
  - **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
- Common problems to look for after brain injury
- Signs and symptoms of brain injury common to individuals within that System of Support
- Common accommodations that can be used to support challenges
- Some tools to support best practice
- Tennessee resources and
- References

The Tennessee-based resources can easily be switched out for national resources or for another state's resources.

The infographics are meant to be distributed widely to personnel within all of the Systems of Support, to keep people focused on the question of whether the person they are serving may also have a co-morbid brain injury. The infographic format makes the information easy to grasp and encourages posting in work areas and/or System of Support waiting rooms.

The main target audience is personnel working in the Systems of Support and those supporting frontline personnel, like state agencies, however, the infographics may also be shared with people being served.

**Follow this website link to learn more about Brain Links**

<http://www.tndisability.org/brain>



## Tennessee Brighter Futures: Topic-Specific Infographic Series

Choose the title below to jump directly to that Infographic.

- **Tennessee Brighter Futures (TBF):**  
*An overview of the Tennessee Brighter Futures Collaborative.*
- **Brain Injury & Co-Occurring Conditions**  
*Shows brain injury's overlaps with 9 major systems of support and 5 social determinants of health.*
- **Brain Injury & Adverse Childhood Experiences**
- **Brain Injury & Aging Health**
- **Brain Injury & Child Abuse**
- **Brain Injury & Chronic Pain**
- **Brain Injury & Criminal Legal Systems**
- **Brain Injury & Disability Health**
- **Brain Injury & Domestic Violence**
- **Brain Injury & Homelessness**
- **Brain Injury & Juvenile Justice**
- **Brain Injury & Mental Health**
- **Brain Injury & Minority Health**
- **Brain Injury & Rural Health**
- **Brain Injury & Substance Use Disorder**
- **Brain Injury & Veterans**



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 and in part by the TN Department of Health, Traumatic Brain Injury Program.

September 2025



# Tennessee Brighter Futures

Building brighter futures for Tennesseans by improving how systems of support collaborate to identify, educate and serve people with co-occurring needs.

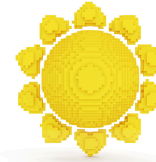
## What is Tennessee Brighter Futures (TBF)?

A statewide group of agencies and organizations that help people who may have multiple diagnoses or needs.

TBF is organized and facilitated by Brain Links through a contract from the Tennessee Department of Health TBI Program.

## The Purpose of Tennessee Brighter Futures

To share expert information and build upon learning from each system of support's experience so we strengthen how we can best



- Screen
- Support
- Educate
- Refer



### Consider Nathan's experience: Nathan is 24 years old.

**When Nathan was 2, he fell down the stairs and seemed to recover from a pretty scary concussion. Everyone soon forgot about the brain injury.**

By the time Nathan was in 2nd grade, he was getting into fights, having difficulty paying attention in school and falling behind his peers. In his teens, Nathan was involved with drugs and alcohol, continued falling behind in school and getting into trouble.

By 24, Nathan had been arrested twice, had issues with substance abuse and keeping a job, experienced depression and attempted suicide. He would be homeless if his mom didn't let him live at home. He was involved in multiple systems of care, but none knew about the concussion.

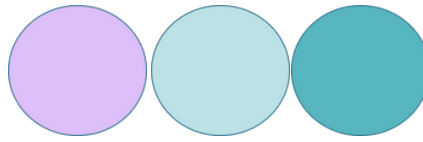
**Understanding the possible downstream effects from his brain injury may have prevented some difficulties and could have helped him, his family and the professionals along the way.**




**Tennessee Brighter Futures helps Systems of Support like these below to be prepared for people like Nathan. TBF is made up of agencies and organizations with expert knowledge in one or more of these key areas:**



- Mental health
- Trauma/Adverse Childhood Experiences (ACEs)
- Child Abuse
- Brain Injury
- Homelessness/Housing Instability
- Criminal and Juvenile Justice
- Domestic Violence
- Pain
- Substance Use
- Social determinants of health, including racial/ethnic minorities & rural healthcare.

## How does it work?



-  **Tennessee Brighter Futures meets every other month** for 1.5 hours and one **System of Support** shares their expertise at each meeting, with time for questions and ideas. Attendees can receive a Certificate of Attendance.
-  **After each meeting, each agency receives** curated **Resource Pages** designed to support your frontline providers. They contain carefully selected screening tools, websites, infographics, trainings and support groups and more.
-  **Brain Links sends a follow up email** with the **Resource Pages** attached ready for you to forward easily to your network.

**Client outcomes are better when **Systems of Support** work together and provide services most relevant to their core missions.**

**What's in it for you,  
your agency and  
those you serve?**



- 1** Get your system's mission out to fellow service providers to increase referrals and improve outcomes for the people you serve across the state.
- 2** Save time and resources by knowing exactly where to refer people.
- 3** Improve your services by providing better, more well-rounded, relevant support and education. **For the whole person. For each individual.**



**To download Resource Pages  
and recordings from prior meetings, go to**

**<https://www.tndisability.org/tennessee-brighter-futures>**

**To Join TN Brighter Futures, send an email to [tbi@tndisability.org](mailto:tbi@tndisability.org)**





## Discover the Overlooked Connections: Brain Injury & Co-Occurring Conditions

**Did you know that over 64 million people in the U.S. live with brain injury?** Many may also face challenges like mental health, substance use, homelessness, chronic pain, domestic violence, adverse childhood experiences, child abuse, or justice system involvement.



**This infographic reveals how brain injury overlaps with 9 critical service systems and 5 social determinants of health** (aging, disability, rural health, veteran health, and minority health). It's a must-see tool for professionals in healthcare, education, criminal justice, homelessness services, and more.

Together, we can close the gap in care—and improve outcomes across ALL systems of support. Whether you're a provider, policymaker, or advocate, this powerful visual helps you:



- Understand how brain injuries often go unrecognized
- See the link between brain injury and ALL systems of support
- Learn what frontline staff can do: screen, accommodate, educate and refer

Explore Brain Links' powerful **infographic series** revealing the hidden connections between brain injury and dozens of co-occurring conditions.

**Understand the connections. Improve support. Change lives.**



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.

**No two brain injuries are alike. Brain injury often does not occur alone.**

It can lead to other problems and it can come from another problem. These common co-morbidities must be recognized and understood so that we can more effectively treat people from all systems of support and potentially prevent downstream consequences.

**In the Quick View below, a fact is given about 9 systems of support (purple boxes) and 5 social determinants of health (green boxes), showing their connection to brain injury.**

**Quick  
View**

**Adverse Childhood Experiences:**

Toxic stress from ACEs exposure can alter brain development and lead to risky behaviors increasing risk of TBI.

**Mental Health (MH):** 50% in treatment have a brain injury.

80% in MH & SUD treatment have a history of brain injury.

**Substance Use Disorder (SUD):**

About 50% in treatment have a brain injury. 80% in MH & SUD treatment have a history of brain injury.

**Criminal Legal System:**

50-87% have had a traumatic brain injury (TBI).

**Racial Minorities:**

More likely to sustain a TBI and have worse outcomes.

**Domestic Violence (DV):**

As high as 20 million women each year could have a TBI caused by DV.

**Disability:**

Over 5 million in U.S. have brain injury-related disability.

**Homelessness:**

Over 50% who are homeless or in an insecure living situation have a TBI.

**Aging:**

Over 1 in 50 Americans 75+ experience a TBI-related ED visits, hospitalizations or death.

**Child Abuse:**

Abusive Head Trauma is a leading cause of physical abuse deaths in children under 5 in the U.S.

**Juvenile Justice:**

As high as 67% of detained youth have a history of brain injury.

**Rural Health:**

Those in rural areas are at higher risk of sustaining a brain injury.

**Pain:**

About 60% of people with TBI develop chronic pain.

**Veterans:**

Veterans with TBI have higher rates of PTSD, depression, SUD and anxiety disorder.

**BRAIN  
INJURY**

## NEW BRAIN INJURIES IN THE U.S. EACH YEAR



Traumatic Brain Injury – Pediatric (TBI)

➡ **5.2 million\***  
Emergency department (ED), inpatient and outpatient



Traumatic Brain Injury – Adult

➡ **12.6 million\***  
Emergency department, inpatient and outpatient



Traumatic Brain Injury – Military

➡ **19,167**



Stroke

➡ **795,000**



Brain Tumors

➡ **90,000**



Dementias

➡ **514,000\*\***

### Prevalence

The total number of people **living with traumatic brain injury** in the United States:

★ **64,000,000**  
or **18.7% of U.S. population**

The number of **all causes of** brain injuries is even higher.

**Total:**

➡ **19,218,167 new brain injuries/year**  
★ or **5.6% of the U.S. population**

**Drug Overdose with Anoxia:** In 2023, 105,007 people died from overdose. Many more survived and many survived multiple overdoses. Studies suggest there are between **15-50 survivors for every death**. A New Hampshire task force found that 90% of survivors had an anoxic injury. Until there is improved data, there is a wide range (between 1.6 and 4.84 million) of new anoxic brain injuries each year.

### Brain injury can also include these nontraumatic causes:

- Brain infection
- Metabolic disorders
- Epilepsy/Seizure disorder
- Neurotoxic poisoning
- Congenital injuries
- Near drownings and others



We do not have accurate numbers for these types of injuries. There are also brain injuries that occur before birth that are not considered “acquired brain injuries,” but they are still brain injuries and may benefit from accommodations.

\***An unknown number will not seek care but may still have an injury that produces lasting or prolonged changes.** The CDC says: “Current data sources may capture only 1 out of every 9 concussions across the nation.”

\*\***Dementia is different from other brain injuries in that it is a progressive disease.** It will still impact community providers’ treatment. They need to screen for neurocognitive impairment.

### Adverse Childhood Experiences (ACEs) Produce Brain Changes



ACEs are not brain “injuries”, but they can produce developmental brain changes. Similar to brain injury, changes may include: emotional, behavioral, cognitive and mental health challenges. Also, like brain injury, accommodations, or strategies, may be helpful in supporting people with ACEs.

# EACH SYSTEM AND ITS CONNECTION TO BRAIN INJURY

Where we see many of the people living with **brain injuries** throughout our communities

## Adverse Childhood Experiences (ACEs)

- **61% of adults** have experienced at least 1 ACE. 16% of adults have experienced **4 or more ACEs**. ACEs occur across all demographic groups.
- Toxic stress from ACEs exposure **can alter brain development** and look like impulsivity, poor judgment, and quick to anger.
- **Brain changes** from ACEs can lead to risk-taking behaviors, **increasing the risk of TBI** as an adult. ACEs can also lead to **neurologic decline** later in life.



## Mental Health

- **6 months to 1 year** following an injury: **one third** will experience a mental health problem - **that number will grow over time**.
- People with **brain injury** have a **2-4 times** increased risk of attempting or having death by suicide.
- As high as **80%** of people seeking mental health **and** substance use treatment also have a **brain injury**.



## Substance Use Disorder

- **About 50% of the people in Substance Use (SU) treatment have a brain injury.**
- About 80% of people who need **both Mental Health and SU treatment** also have a brain injury.
- 72% of people in inpatient treatment for brain injury are **given an Rx for opioids**.
- Within one year after injury, **10-20% will develop a SU problem** & that number will grow over time.
- **For every overdose death**, there are approximately **fifty overdose survivors**, **90% of whom become impaired** because of insufficient oxygen to the brain.



## Domestic Violence

- **It is estimated that millions of women each year may sustain a brain injury caused by domestic violence.**
- In 1 study of women who experienced DV, **85% experienced blows to the head**; for **50% of them**, it was **too many times to count**.
- In the same study, **83% were strangled** (which can lead to a **brain injury** from lack of oxygen), **88% were strangled multiple times**.
- **Men are victims of domestic violence, too.** 26% of men report domestic abuse in their lifetime.



## Juvenile Justice

- **As high as 67% of detained youth have a history of brain injury.** For most, the brain injury occurred **before the criminal offense**.
- Youth with a TBI have a **69% higher chance of re-offending**.
- Juvenile offenders are almost **3.4 times more likely to have a TBI** than non-justice-involved youth.



## Criminal Legal System

- **50-87% of people in the Criminal Legal System (CLS) have had a traumatic brain injury.** (Compared with **8.5% in the general population**)
- People with TBI are **12 times less likely** to achieve a discretionary release.
- Nearly **100% of women** in the Criminal Legal System have a history of TBI. (Many from DV)



## Chronic Pain

- **About 60% of people with TBI develop chronic pain.**
- People with TBI are **at 11 times greater risk** of accidental overdose.
- Common problems following **brain injury**, like **poor judgment, memory and increased impulsivity** make it harder to self-regulate substance use and **make overdose more likely.**



## Homelessness

- **Over 50% of people who are homeless or in an insecure living situation have a TBI. (25% were moderate to severe) This is 10 times higher than the general population.**
- Most will experience their 1st TBI **before** becoming homeless.
- TBI in people who are homeless is associated with **poorer physical and mental health, higher suicidality and suicide risk, memory issues, more health service use and higher criminal legal system involvement.** People with **cognitive impairment** are likely to **spend more time unhoused** than those without cognitive impairment.



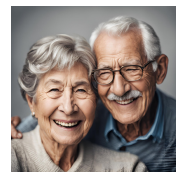
## Child Abuse

- **30-60% of perpetrators of Domestic Violence also abuse children in the household.**
- "Abusive Head Trauma (AHT) is a leading cause of physical **child abuse deaths in children under 5** in the United States." (**One-third of all child maltreatment deaths.**)
- Consider that the **parent/caregiver** of a child involved with the Child Welfare System **may have had a brain injury.** The best practice ideas to follow should be applied to both children and parents/caregivers.



## Aging Health

- Nationally, people age 75 years and older have the **highest numbers and rates of traumatic brain injury-related hospitalizations.**
- **Over 1 in 50 Americans aged 75 or older experience a TBI-related ED visit, hospitalization or death.**
- Each year, there are about **3 million emergency department visits** because of falls in older adults. **More than half** will not tell their doctor.



## Veterans

- **19,547 military members** diagnosed with TBI in 2023.
- **Service members with TBIs have higher rates of PTSD, depression, substance use disorder, and anxiety disorder than those without TBI.**
- **Veterans with mTBI** (mild) had greater combat exposure; less social support; and more comorbidities, including asthma, PTSD, sleeping problems, worse pain scores and slower processing speed.



## Disability Health

- **1 in 4 Adults** in the US reported having a disability in 2022. (cdc.org)
- **Over 5 million people in the United States have a disability related to brain injury. This is 1 in 60 people.** (biausa.org)
- Just over 47% of people 40 or older with a history of brain injury live with a **disability in at least one area of functioning.** (Schneider, Wang, et al., 2021).
- Disabilities following brain injury often cannot be seen. For this reason, brain injury has been **called the "silent epidemic" for decades.**



## Rural Health

- **60 million (1 out of 5) people live in rural America, making the problems with TBI management and resources a major public health concern.**
- **Contributing factors to higher rates of brain injury:** Environmental issues (poorer road conditions, unpredictable weather and livestock and wildlife), drinking and driving, and substance use.
- **Poorer outcomes result from:** Longer travel times to emergency care, lack of access to level 1 trauma centers, lack of specialized brain injury care and high cost of healthcare in rural areas.



## Minority Health

- **People in racial and ethnic minorities are more likely to sustain a traumatic brain injury, & more likely to have worse outcomes.** Reasons for higher rates of TBI include: Motor vehicle accidents, substance use, suicide and domestic violence.
- In Tennessee, Hispanics have the highest proportion of **work-related TBIs**.
- People who are Hispanic or Black are more likely to drop out of long-term studies and are **less likely to receive follow-up care and rehabilitation** for a variety of reasons.
- **Native American & Alaskan Natives** have the highest rate of TBI & fatality from TBI.



## RECOMMENDATIONS FOR BEST PRACTICE ACROSS ALL SYSTEMS

### BEST PRACTICE

**Frontline Providers should:**

- **SCREEN** for prior history of brain injury
- **ASSESS** neurocognitive and functional impairment
- **EDUCATE** staff on brain injury
- **EDUCATE** the person about their brain injury
- **PROVIDE** and **TEACH** accommodations
- **CONNECT** person served with community resources

### COMMON PROBLEMS

**After Brain Injury, we often see problems with:**

- Attention, memory and new learning
- Slowed speed of processing
- Organization, problem solving and impulsivity
- Irritability, frustration and agitation
- Balance, dizziness and headaches
- Poor awareness of deficits & difficulties
- Difficulty being flexible, poor self-monitoring

### WHAT TO LOOK FOR

**Frontline Providers 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 re-entering community because of cognitive changes
- Getting stuck on an idea or a way of doing something, not recognizing mistakes

# COMMON ACCOMMODATIONS FOR BRAIN INJURY CHALLENGES

Here are some common and simple accommodations:

## For the person:

- Working for shorter periods of time
- Getting rid of distractions around you, like noise or movement
- Taking notes (on paper, in a notebook, on a phone or computer)
- Using a phone to set timers to remember appointments



## For the care provider:

- Repeating information to the person
- Slowing down when talking; giving them more time to respond
- Giving the person a list of house rules, written directions, or pictures to help them understand and remember
- Coaching the person with the injury to "Stop, think and plan" then act
- Coaching the person to take deep breaths when feeling angry or anxious

## TOOLS FOR BEST PRACTICE

### Brain Injury Screening Resources:

- ★ **NASHIA's Online Brain Injury Screening and Support System (OBISSS):** <https://www.nashia.org/obisssprogram>  
The OBISSS is highly recommended. It is made up of the OSU screening tool, a Symptoms Questionnaire and Strategies. It can be used electronically, on a computer, phone or iPad. It can be self-administered.
- **OSU TBI Identification Method - Modified:** Modified to include brain injury from all causes.  
<https://www.tndisability.org/primary-emergency-care-providers>

**Brain Links' Strategies & Accommodations Tool:** <https://www.tndisability.org/rehabilitation>

### Symptom Questionnaire and Cognitive Strategies:

- Adults: [bit.ly/3FLkz0V](https://bit.ly/3FLkz0V)
- Juvenile: [bit.ly/4iS2bSC](https://bit.ly/4iS2bSC)



## TENNESSEE RESOURCES

**Brain Links' Website** with many resources  
<https://www.tndisability.org/brain>

**Brain Links' Toolkits** (for Service Professionals and Survivors) <https://www.tndisability.org/brain-toolkits>

**TN Department of Health TBI Program**  
<https://tinyurl.com/3v5jrdt3>



**Tennessee Brighter Futures' Resource Pages & Training for Brain Injury**  
<https://www.tndisability.org/tbf-brain-injury>

**Tennessee Brighter Futures**  
More information on the collaborative & resources for all systems of support  
<https://www.tndisability.org/tennessee-brighter-futures>

**TN Brighter Futures is organized and facilitated by Brain Links through a contract from the TN Department of Health TBI Program.**



For a list of selected references, visit Brain Links:  
<https://www.tndisability.org/tbf-brain-injury>



<https://www.tndisability.org/brain>  
@BrainLinksTN



Brain Links is supported by the Administration for Community Living (ACL) of the U.S. Department of Health and Human Services under Grant No. 907BSG0051-01-00 and in part by the TN Department of Health, Traumatic Brain Injury Program.

# Brain Injury and Adverse Childhood Experiences (ACEs)



Adverse childhood experiences (ACEs) are stressful or traumatic events, including abuse, neglect, witnessing domestic violence or having a family member who is incarcerated.

Unaddressed ACEs are strongly linked to a wide range of health problems throughout a person's lifespan, including those associated with substance misuse.

61%



61% of adults have experienced at least 1 ACE. 16% of adults have experienced 4 or more ACEs. ACEs occur across all demographic groups.

ACEs & BI



Toxic stress from ACEs exposure can alter brain development and look like impulsivity, poor judgment, and quick to anger.

Later Life



Brain changes from toxic stress/ACEs can lead to risk-taking behaviors, increasing the risk of TBI as an adult. ACEs can also lead to neurological decline later in life.



## BEST PRACTICE

Providers across systems 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

## COMMON PROBLEMS

After Brain Injury, we often see problems with:

- Attention, memory and new learning
- Slowed speed of processing
- Organization, problem solving & impulsivity
- Irritability, frustration & agitation
- Balance, dizziness & headaches
- Poor awareness of deficits & difficulties
- Difficulty being flexible, poor self-monitoring

Some changes in the brain caused by toxic stress from ACE exposure can look like brain injury changes, like impulsivity, poor judgment and quick to anger

## WHAT TO LOOK FOR

What providers might 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 re-entering community because of cognitive changes
- Gets stuck on an idea or a way of doing something, does not recognize mistakes

**ACEs are preventable.**

To prevent ACEs, we must understand and address the factors that put people at risk for ACEs. Creating and sustaining safe, stable, nurturing relationships and environments for all children and families can prevent ACEs and help all children reach their full potential.

# Common Accommodations for Brain Injury Challenges

Here are some common and simple accommodations:

## For the person:

- Working for shorter periods of time
- Getting rid of distractions around you, like noise or movement
- Taking notes (on paper, in a notebook, on a phone or computer)
- Using a phone to set timers to remember appointments

## For the care provider:

- Repeating information to the person
- Slowing down when talking; giving them more time to respond
- Giving the person a list of house rules, written directions, or pictures to help them understand and remember
- Coaching the person with the injury to "Stop, think and plan" then act
- Coaching the person to take deep breaths when feeling angry or anxious



## Tools for Best Practice



### Brain Injury Screening Resources:

- **NASHIA's OBISSS:** <https://www.nashia.org/obisssprogram> - The OBISSS is highly recommended. It is made up of the OSU screening tool, a Symptoms Questionnaire and Strategies. It can be used electronically, on a computer, phone or ipad. It can be self-administered.
- **OSU TBI Identification Method:** <https://wexnermedical.osu.edu/neurological-institute/neuroscience-research-institute/research-centers/ohio-valley-center-for-brain-injury-prevention-and-rehabilitation/osu-tbi-id>

**Brain Links' Strategies & Accommodations Tool:** <https://www.tndisability.org/rehabilitation>

### Symptom Questionnaire and Cognitive Strategies:

- Adult: [bit.ly/3FLkz0V](https://bit.ly/3FLkz0V)
- Juvenile: [bit.ly/4iS2bSC](https://bit.ly/4iS2bSC)

## Tennessee Resources

**Brain Links' Website** with many resources:  
[tndisability.org/brain](https://www.tndisability.org/brain)

**Brain Links' Toolkits** (for Service Professionals and Survivors): <https://www.tndisability.org/brain-toolkits>

**TN Department of Health TBI Program**  
<https://tinyurl.com/3v5jrdt3>



**Tennessee Brighter Futures' Resource Pages & Training for Brain Injury**

<https://www.tndisability.org/tbf-brain-injury>



**Resource Pages, Training & Infographic for Adverse Childhood Experiences**

<https://www.tndisability.org/tbf-adverse-childhood-experiences>

**TN Brighter Futures is organized and facilitated by Brain Links through a contract from the TN Department of Health TBI Program.**



Brain Injury  
and ACEs  
Resources

### References:

- Adverse Childhood Experiences (ACEs): Preventing early trauma to improve adult health. Vital Signs, Nov. 2019. Centers for Disease Control and Prevention. <https://www.cdc.gov/vitalsigns/aces/index.html>
- Guinn AS, Ports KA, Ford DC, Breiding M, Merrick MT. Associations between adverse childhood experiences and acquired brain injury, including traumatic brain injuries, among adults: 2014 BRFSS North Carolina. Inj Prev. 2019 Dec;25(6):514-520. doi: 10.1136/injuryprev-2018-042927. Epub 2018 Oct 13. PMID: 30317219; PMCID: PMC6462254.



<https://www.tndisability.org/brain>  
@BrainLinksTN



Brain Links is supported by the Administration for Community Living (ACL) of the U.S. Department of Health and Human Services under Grant No. 90TBSC0051-01-00 and in part by the TN Department of Health, Traumatic Brain Injury Program.

# Brain Injury and Aging Health



**Traumatic Brain Injuries may be missed or misdiagnosed in older adults because symptoms of TBI overlap with other medical conditions that are common among older adults, such as dementia.**

**75+**



**Nationally, people aged 75 years and older have the highest numbers and rates of TBI-related hospitalizations.**

**1 in 50**



**Over 1 in 50 Americans aged 75 or older experience a TBI-related ED visit, hospitalization or death.**

**3 Million**



**Each year, there are about 3 million emergency department visits due to falls in older adults. More than half will not tell their doctor.**



**cdc.gov**

## BEST PRACTICE

**People who work with older persons 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

## COMMON PROBLEMS

**After Brain Injury, we often see problems with:**

- Attention, memory and new learning
- Slowed speed of processing
- Organization, problem solving & impulsivity
- Irritability, frustration & agitation
- Balance, dizziness & headaches
- Poor awareness of deficits & difficulties
- Difficulty being flexible, poor self-monitoring

*For an older adult who already has changes in abilities, look for a worsening in any of those areas after a fall or other injury.*

## WHAT TO LOOK FOR

**People who work with older persons 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
- Being argumentative because of irritability, anger and impulsivity
- Falling into things, often getting hurt
- Difficulty re-entering community because of cognitive changes
- Getting stuck on an idea or a way of doing something, does not recognize mistakes

**STEADI is a fall prevention program of the CDC with user-friendly brochures to help identify and remove reasons for falling. [cdc.gov/steadi/](https://cdc.gov/steadi/)**

# Common Accommodations for Brain Injury Challenges

Here are some common and simple accommodations:

## For the person:

- Working for shorter periods of time
- Getting rid of distractions around you, like noise or movement
- Taking notes (on paper, in a notebook, on a phone or computer)
- Using a phone to set timers to remember appointments

## For the care provider:

- Repeating information to the person
- Slowing down when talking; giving them more time to respond
- Giving the person a list of house rules, written directions, or pictures to help them understand and remember
- Coaching the person with the injury to "Stop, think and plan" then act
- Coaching the person to take deep breaths when feeling angry or anxious



## Tools for Best Practice

### Brain Injury Screening Resources:

- **OSU TBI Identification Method:** <https://wexnermedical.osu.edu/neurological-institute/neuroscience-research-institute/research-centers/ohio-valley-center-for-brain-injury-prevention-and-rehabilitation/osu-tbi-id>
- **NASHIA's OBISST:** <https://www.nashia.org/obisssprogram>

**Brain Links' Strategies & Accommodations Tool:** <https://www.tndisability.org/rehabilitation>

**Symptom Questionnaire:** <https://mindsourcencolorado.org/adult-symptom-questionnaire/>

**Cognitive Strategies Guidebook:** [https://mindsourcencolorado.org/wp-](https://mindsourcencolorado.org/wp-content/uploads/2019/05/Strategies-and-Accommodations-Guidebook-CJ-Professionals-5.6.19.pdf)

[content/uploads/2019/05/Strategies-and-Accommodations-Guidebook-CJ-Professionals-5.6.19.pdf](https://mindsourcencolorado.org/wp-content/uploads/2019/05/Strategies-and-Accommodations-Guidebook-CJ-Professionals-5.6.19.pdf)



## Tennessee Resources

**Brain Links' Website** with many resources:  
[tndisability.org/brain](https://tndisability.org/brain)

**Brain Links' Toolkits** (for Service Professionals and Survivors): <https://www.tndisability.org/brain-toolkits>

**TN Department of Health TBI Program:**  
<https://tinyurl.com/3v5jrdt3>



**Tennessee Brighter Futures' Resource Pages & Training for Brain Injury:**

<https://www.tndisability.org/tbf-brain-injury>



**Resource Pages & Training on Aging and BI**

<https://www.tndisability.org/tbf-social-determinants-health>

**TN Brighter Futures is organized and facilitated by Brain Links through a contract from the TN Department of Health TBI Program.**



**Aging and  
Brain Injury  
Resources**

### References:

- Gardner, RC; Dams-O'Connor, K; et al. (2018). Geriatric TBI: Epidemiology, Outcomes, Knowledge Gaps and Future Directions. *J of Neurotrauma*, Vol 35, No.7. <https://doi.org/10.1089/neu.2017.5371>
- Peterson, AB; Thomas, KE. (2021). Incidence of Nonfatal Traumatic Brain Injury-Related Hospitalizations - United States, 2018. *Morbidity and Mortality Weekly Report (MMWR)*. Dec 3, 2021. 70(48);1664-1668.
- Traumatic Brain Injury and Concussion, [cdc.gov/traumaticbraininjury](https://cdc.gov/traumaticbraininjury)



<https://www.tndisability.org/brain>  
@BrainLinksTN



Brain Links is supported by the Administration for Community Living (ACL) of the U.S. Department of Health and Human Services under Grant No. 90TBSC0051-01-00 and in part by the TN Department of Health, Traumatic Brain Injury Program.

# Brain Injury and Child Abuse



**“At least 1 in 7 children have experienced child abuse or neglect in the past year in the United States. This is likely an underestimate because many cases are unreported.”**  
CDC.gov

**30-60%** → 30-60% of **perpetrators of Domestic Violence** also abuse children in the household.

**One Third** → “Abusive Head Trauma (AHT) is a leading cause of physical **child abuse deaths in children under 5** in the United States. AHT accounts for about **one-third of all child maltreatment deaths.**” CDC

Consider that the **parent/caregiver** of a child involved with the Child Welfare System **may have had a brain injury.** The ideas below should be applied to both children and parents/caregivers.



## BEST PRACTICE

**The Child Welfare System should:**

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

**TN Child Abuse Hotline:**  
**(877) 237-0004**

## COMMON PROBLEMS

**After Brain Injury, we often see problems with:**

- Attention, memory and new learning
- Slowed speed of processing
- Organization, problem solving & impulsivity
- Irritability, frustration & agitation
- Balance, dizziness & headaches
- Poor awareness of deficits & difficulties
- Difficulty being flexible, poor self-monitoring



## WHAT TO LOOK FOR

**Child Welfare 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
- Missing appointments because of memory changes
- Gets stuck on an idea or a way of doing something, does not recognize mistakes

**There are 4 types of child abuse: physical, sexual, psychological and neglect. Shaken Baby Syndrome is a type of Abusive Head Trauma (a form of physical abuse) that involves shaking.**

# Common Accommodations for Brain Injury Challenges

Here are some common and simple accommodations:

- Working for shorter periods of time
- Getting rid of distractions around you, like noise or movement
- Taking notes (on paper, in a notebook, on a phone or computer)
- Using a phone to set timers to remember appointments
- Repeating information to the person
- Slowing down when talking; giving them more time to respond
- Giving students extra time on tests
- Sitting in the front of the classroom to reduce distractions
- Coaching the person with the injury to "Stop, think and plan" then act
- Coaching the person to take deep breaths when feeling angry or anxious



## Tools for Best Practice

### Brain Injury Screening Resources:

- **NASHIA's OBISSS:** <https://www.nashia.org/obissprogram> – The OBISSS is highly recommended. It is made up of the OSU screening tool, a Symptoms Questionnaire and Strategies. It can be used electronically, on a computer, phone or ipad. It can be self-administered.
- **OSU TBI Identification Method:** <https://wexnermedical.osu.edu/neurological-institute/neuroscience-research-institute/research-centers/ohio-valley-center-for-brain-injury-prevention-and-rehabilitation/osu-tbi-id>

**Brain Links' Strategies & Accommodations Tool:** <https://www.tndisability.org/rehabilitation-symptom-questionnaire-and-cognitive-strategies>

- Adult: [bit.ly/3FLkz0V](https://bit.ly/3FLkz0V)
- Juvenile: [bit.ly/4iS2bSC](https://bit.ly/4iS2bSC)



## Tennessee Resources

**Brain Links' Website** with many resources:  
[tndisability.org/brain](https://tndisability.org/brain)

**Brain Links' Toolkits** (for Service Professionals and Survivors): <https://www.tndisability.org/brain-toolkits>

**TN Department of Health TBI Program:**  
<https://tinyurl.com/3v5jrdt3>



**Tennessee Brighter Futures' Resource Pages & Training for Brain Injury:**  
<https://www.tndisability.org/tbf-brain-injury>



**Resource Pages & Training for Child Abuse:**  
<https://www.tndisability.org/tbf-child-abuse>

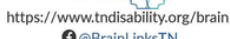
**TN Brighter Futures is organized and facilitated by Brain Links through a contract from the TN Department of Health TBI Program.**



Child Abuse  
Resources

### References:

- Fast Facts: Preventing Child Abuse & Neglect, Centers for Disease Control and Prevention. <https://www.cdc.gov/violenceprevention/childabuseandneglect/fastfact.html>
- The Period of PURPLE Crying, National Center on Shaken Baby Syndrome, <https://dontshake.org/purple-crying>.
- Brain Injury and Child Welfare Best Practice Guide: Information and Tools for State Agencies. Administration for Community Living Traumatic Brain Injury State Partnership Grant, Ad Hoc Workgroup on Child Welfare, Feb 2023. <https://www.nashia.org/acl-child-welfare>



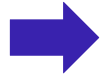
Brain Links is supported by the Administration for Community Living (ACL) of the U.S. Department of Health and Human Services under Grant No. 90TBSC0051-01-00 and in part by the TN Department of Health, Traumatic Brain Injury Program.

# Brain Injury and Chronic Pain



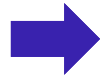
**Pain is the most common chronic medical condition reported by people with Traumatic Brain Injury (TBI).**

**Over 50%**



**Over 50% of people with TBI develop chronic pain**

**11 Times**



**People with TBI are at eleven times greater risk of accidental overdose**



**Common problems following brain injury, like poor judgment, memory and increased impulsivity make it harder to self-regulate substance use and make overdose more likely.**

## BEST PRACTICE

**Providers specializing in treating Chronic Pain 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

## COMMON PROBLEMS

**After Brain Injury, we often see problems with:**

- Attention, memory and new learning
- Slowed speed of processing
- Organization, problem solving & impulsivity
- Irritability, frustration & agitation
- Balance, dizziness & headaches
- Poor awareness of deficits & difficulties
- Difficulty being flexible, poor self-monitoring

## WHAT TO LOOK FOR

**Providers specializing in treating Chronic Pain may see:**

- Looking uninterested because they cannot pay attention
- Missing appointments
- Appearance of non-compliance because they cannot remember dosages and medication schedules
- Slow to follow directions because they cannot process quickly
- Falling into things, often getting hurt
- Difficulty re-entering community because of cognitive changes
- Gets stuck on an idea or a way of doing something, does not recognize mistakes

**An estimated 50 million adults in the United States experienced chronic pain (i.e., pain lasting ≥3 months) in 2016, resulting in substantial health care costs and lost productivity. - CDC.gov**

# Common Accommodations for Brain Injury Challenges

Here are some common and simple accommodations:

- Working for shorter periods of time
- Getting rid of distractions around you, like noise or movement
- Taking notes (on paper, in a notebook, on a phone or computer)
- Using a phone to set timers to remember appointments & medication schedules; providing a check-off medication schedule to avoid forgetting they have already taken a medication
- Repeating information to the person
- Slowing down when talking; giving them more time to respond
- Giving a written list of non-medication strategies to avoid or reduce pain
- Coaching the person to take deep breaths when feeling angry or anxious

Take Note

## Tools for Best Practice



### Brain Injury Screening Resources:

- **NASHIA's OBISSS:** <https://www.nashia.org/obissprogram> - The OBISSS is highly recommended. It is made up of the OSU screening tool, a Symptoms Questionnaire and Strategies. It can be used electronically, on a computer, phone or ipad. It can be self-administered.
- **OSU TBI Identification Method:** <https://wexnermedical.osu.edu/neurological-institute/neuroscience-research-institute/research-centers/ohio-valley-center-for-brain-injury-prevention-and-rehabilitation/osu-tbi-id>

**Brain Links' Strategies & Accommodations Tool:** <https://www.tndisability.org/rehabilitation>

### Symptom Questionnaire and Cognitive Strategies:

- Adult: [bit.ly/3FLkz0V](https://bit.ly/3FLkz0V)
- Juvenile: [bit.ly/4iS2bSC](https://bit.ly/4iS2bSC)

## Tennessee Resources

**Brain Links' Website** with many resources:  
[tndisability.org/brain](https://tndisability.org/brain)

**Brain Links' Toolkits** (for Service Professionals and Survivors): <https://www.tndisability.org/brain-toolkits>

**TN Department of Health TBI Program:**  
<https://tinyurl.com/3v5jrdt3>



**Tennessee Brighter Futures' Resource Pages & Training for Brain Injury:**

<https://www.tndisability.org/tbf-brain-injury>



**Resource Pages & Training for Chronic Pain:**

<https://www.tndisability.org/tbf-pain>

**TN Brighter Futures is organized and facilitated by Brain Links through a contract from the TN Department of Health TBI Program.**



Pain Resources

### References:

- Hammond, F. M., Barrett, R. S., Shea, T., et. al. (2015). Psychotropic medication use during inpatient rehabilitation for traumatic brain injury. Archives of Physical Medicine and Rehabilitation, 96 (8Suppl 3): S256-73. 16.
- Hammond, F. M., Dams-O'Connor, K, Ketchum J et al (2018). Mortality secondary to accidental poisoning after inpatient rehabilitation for traumatic brain injury study: A NIDILRR Traumatic Brain Injury Model Systems Study.
- John D. Corrigan and Rachel Sayko Adams (2019). The Intersection of Lifetime History of Traumatic Brain Injury and the Opioid Crisis. Addictive Behaviors; 90: 143-145. <https://doi.org/10.1016/j.addbeh.2018.10.030>



<https://www.tndisability.org/brain>  
@BrainLinksTN



Brain Links is supported by the Administration for Community Living (ACL) of the U.S. Department of Health and Human Services under Grant No. 90TBG0051-01-00 and in part by the TN Department of Health, Traumatic Brain Injury Program.

# Brain Injury and the Criminal Legal System



The Centers for Disease Control and Prevention (CDC) recognizes TBI in prisons and jails as an important public health problem.

50-87%



The percentage of people in the Criminal Legal System who have had a TBI. (Compared with 8.5% in the general population)

12 times



People with TBI are twelve times less likely to achieve a discretionary release.

100%



Nearly 100% of women in the Criminal Legal System have a history of TBI. (Many from Domestic Violence)



## BEST PRACTICE

The Criminal Legal 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

## COMMON PROBLEMS

After Brain Injury, we often see problems with:

- Attention, memory and new learning
- Slowed speed of processing
- Organization, problem solving & impulsivity
- Irritability, frustration & agitation
- Balance, dizziness & headaches
- Poor awareness of deficits & difficulties
- Difficulty being flexible, poor self-monitoring

## WHAT TO LOOK FOR

Criminal Legal 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 re-entering community because of cognitive changes
- Gets stuck on an idea or a way of doing something, does not recognize mistakes

95% of people in prisons will return to the community.

They need social support, a way to be productive, housing, and independence with structure. Watch for mental health warning signs and physical health problems.

# Common Accommodations for Brain Injury Challenges

Here are some common and simple accommodations:

- Working for shorter periods of time
- Getting rid of distractions around you, like noise or movement
- Taking notes (on paper, in a notebook, on a phone or computer)
- Using a phone to set timers to remember appointments
- Repeating information to the person
- Slowing down when talking; giving them more time to respond
- Giving the person a list of house rules, written directions, or pictures to help them understand and remember
- Coaching the person with the injury to "Stop, think and plan" then act
- Coaching the person to take deep breaths when feeling angry or anxious



## Tools for Best Practice

### Brain Injury Screening Resources:

- **NASHIA's OBISSS:** <https://www.nashia.org/obissprogram> – The OBISSS is highly recommended. It is made up of the OSU screening tool, a Symptoms Questionnaire and Strategies. It can be used electronically, on a computer, phone or ipad. It can be self-administered.
- **OSU TBI Identification Method:** <https://wexnermedical.osu.edu/neurological-institute/neuroscience-research-institute/research-centers/ohio-valley-center-for-brain-injury-prevention-and-rehabilitation/osu-tbi-id>

**Brain Links' Strategies & Accommodations Tool:** <https://www.tndisability.org/rehabilitation-symptom-questionnaire-and-cognitive-strategies>

- Adult: [bit.ly/3FLkz0V](https://bit.ly/3FLkz0V)
- Juvenile: [bit.ly/4iS2bSC](https://bit.ly/4iS2bSC)



## Tennessee Resources

**Brain Links' Website** with many resources:  
[tndisability.org/brain](https://www.tndisability.org/brain)

**Brain Links' Toolkits** (for Service Professionals and Survivors): <https://www.tndisability.org/brain-toolkits>

**TN Department of Health TBI Program:**  
<https://tinyurl.com/3v5jrdt3>



**Tennessee Brighter Futures' Resource Pages & Training for Brain Injury:**  
<https://www.tndisability.org/tbf-brain-injury>



**Resource Pages & Training for Criminal Legal Systems:**  
<https://www.tndisability.org/tbf-criminal-justice>

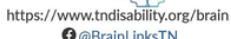
**TN Brighter Futures is organized and facilitated by Brain Links through a contract from the TN Department of Health TBI Program.**



Criminal Legal System

### References:

- Dettmer, J. Criminal and Juvenile Justice Best Practice Guide: Information and Resources for State Brain Injury Programs. (2020). <https://www.nashia.org/cj-best-practice-guide-attachments-resources-copy>
- Traumatic Brain Injury in Prisons and Jails: An Unrecognized Problem. Centers for Disease Control and Prevention. [https://www.cdc.gov/traumaticbraininjury/pdf/prisoner\\_tbi\\_prof-a.pdf](https://www.cdc.gov/traumaticbraininjury/pdf/prisoner_tbi_prof-a.pdf)
- Jackson, S. (2020) 5 Tips to Help a Family Member Reintegrate After Prison Release. <https://www.trendwyoming.org/articles/helping-family-member-reintegrate-after-prison-release/>



Brain Links is supported by the Administration for Community Living (ACL) of the U.S. Department of Health and Human Services under Grant No. 90TBSC0051-01-00 and in part by the TN Department of Health, Traumatic Brain Injury Program.

# Brain Injury and Disability Health



Traumatic Brain Injury (TBI) is a leading cause of death and disability in the United States. (biausa.org) Brain Injury can both precede another disability and be an outcome of a disability.

1 in 4



Adults in the US reported having a disability in 2022. (cdc.org)

Over 5 Million



The number of people in the United States who have a disability related to Brain Injury. This is **1 in 60 people**. (biausa.org)

47%



Just over 47% of people 40 or older with a history of Brain Injury live with a **disability in at least one area of functioning**. (Schneider, Wang, et al., 2021).



Disabilities following Brain Injury often cannot be seen. For this reason, Brain Injury has been called the **"silent epidemic" for decades**.

## BEST PRACTICE

Care providers working with people with disabilities should:

- **SCREEN** and/or **REVIEW FILE** 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

## COMMON PROBLEMS

After Brain Injury, we often see problems with:

- Attention, memory and new learning
- Slowed speed of processing
- Organization, problem solving & impulsivity
- Irritability, frustration & agitation
- Balance, dizziness & headaches
- Poor awareness of deficits & difficulties
- Difficulty being flexible, poor self-monitoring

For people with a disability, look for a worsening of a difficulty area to determine if there has been a change due to an injury

## WHAT TO LOOK FOR

Care providers working with people with disabilities 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 re-entering community because of cognitive changes
- Gets stuck on an idea or a way of doing something, does not recognize mistakes
- **A worsening of a particular problem area after hitting their head**

"The Centers for Medicare and Medicaid Services (CMS) has recognized traumatic brain injury (TBI) as a **chronic health condition**, starting in January 2025. The National Centers for Disease Control and Prevention estimates 29.5%, or almost **one in three Tennesseans**, are living with some form of disability. According to the CDC, that's higher than the national average of 25.6%, or about one in four Americans."

# Common Accommodations for Brain Injury Challenges

Here are some common and simple accommodations:

## For the person:

- Working for shorter periods of time
- Getting rid of distractions around you, like noise or movement
- Taking notes (on paper, in a notebook, on a phone or computer)
- Using a phone to set timers to remember appointments

## For the care provider:

- Repeating information to the person
- Slowing down when talking; giving them more time to respond
- Giving the person a list of house rules, written directions, or pictures to help them understand and remember
- Coaching the person with the injury to "Stop, think and plan" then act
- Coaching the person to take deep breaths when feeling angry or anxious



## Tools for Best Practice

### Brain Injury Screening Resources:

- **NASHIA's OBISSS:** <https://www.nashia.org/obissprogram> – The OBISSS is highly recommended. It is made up of the OSU screening tool, a Symptoms Questionnaire and Strategies. It can be used electronically, on a computer, phone or ipad. It can be self-administered.
- **OSU TBI Identification Method:** <https://wexnermedical.osu.edu/neurological-institute/neuroscience-research-institute/research-centers/ohio-valley-center-for-brain-injury-prevention-and-rehabilitation/osu-tbi-id>

**Brain Links' Strategies & Accommodations Tool:** <https://www.tndisability.org/rehabilitation>

### Symptom Questionnaire and Cognitive Strategies:

- Adult: [bit.ly/3FLkz0V](https://bit.ly/3FLkz0V)
- Juvenile: [bit.ly/4iS2bSC](https://bit.ly/4iS2bSC)



## Tennessee Resources

**Brain Links' Website** with many resources:  
[tndisability.org/brain](https://tndisability.org/brain)

**Brain Links' Toolkits** (for Service Professionals and Survivors): <https://www.tndisability.org/brain-toolkits>

**TN Department of Health TBI Program:**  
<https://tinyurl.com/3v5jrdt3>



**Tennessee Brighter Futures' Resource Pages & Training for Brain Injury:**

<https://www.tndisability.org/tbf-brain-injury>



**Resource Pages & Training for Disability Health:**

<https://www.tndisability.org/tbf-social-determinants-health>

**TN Brighter Futures is organized and facilitated by Brain Links through a contract from the TN Department of Health TBI Program.**



Disability  
Health  
Resources

### References:

- Schneider ALC, Wang D, Gottesman RF, Selvin E. Prevalence of Disability Associated With Head Injury With Loss of Consciousness in Adults in the United States: A Population-Based Study. *Neurology*. 2021 Jul 13;97(2):e124–e135. doi: 10.1212/WNL.00000000000012148. Epub 2021 May 26. PMID: 34039721; PMCID: PMC8279570.
- Disability & Health U.S. State Profile Data for Tennessee (Adults 18+ years of age). Centers for Disease Control and Prevention. <https://www.cdc.gov/ncbddd/disabilityandhealth/impacts/tennessee.html>



<https://www.tndisability.org/brain>  
@BrainLinksTN



Brain Links is supported by the Administration for Community Living (ACL) of the U.S. Department of Health and Human Services under Grant No. 90TBSC0051-01-00 and in part by the TN Department of Health, Traumatic Brain Injury Program.

# Brain Injury and Domestic Violence



Domestic Violence is recognized as a leading cause of Traumatic Brain Injury (TBI). Abusers target the head, neck and face more than any other area of the body, which creates the potential for brain injuries. Brain Injury must be considered when working with survivors.

20 Million



As many as **20 million women each year** could sustain a brain injury caused by domestic violence.

85%



In 1 study of women who experienced DV, **85% experienced blows to the head**; for **50% of them**, it was **too many times to count**.

83%



In the same study, **83% were strangled** (which can lead to a brain injury from lack of oxygen), **88% were strangled multiple times**.

26%



**Men are victims of domestic violence, too.**  
**26% of men report domestic abuse in their lifetime.**



## BEST PRACTICE

**Domestic Violence personnel 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

## COMMON PROBLEMS

**After Brain Injury, we often see problems with:**

- Attention, memory and new learning
- Slowed speed of processing
- Organization, problem solving & impulsivity
- Irritability, frustration & agitation
- Balance, dizziness & headaches
- Poor awareness of deficits & difficulties
- Difficulty being flexible, poor self-monitoring

## WHAT TO LOOK FOR

**Domestic Violence personnel may see:**

- Missing information because they cannot pay attention
- Difficulty assessing danger, making decisions related to safety
- Slow to follow directions because they cannot process quickly
- Difficulty adapting to living in a shelter
- Falling into things, often getting hurt
- Vulnerability to being exploited by others
- Gets stuck on an idea or a way of doing something, does not recognize mistakes

**15.5 MILLION children witness domestic violence per year.**  
**Women often seek shelter before treatment for injury.**

# Common Accommodations for Brain Injury Challenges

Here are some common and simple accommodations:

- Working for shorter periods of time
- Getting rid of distractions around you, like noise or movement
- Taking notes (on paper, in a notebook, on a phone or computer)
- Using a phone to set timers to remember appointments
- Repeating information to the person
- Slowing down when talking; giving them more time to respond
- Giving the person a list of house rules, written directions, or pictures to help them understand and remember
- Coaching the person with the injury to "Stop, think and plan" then act
- Coaching the person to take deep breaths when feeling angry or anxious

Take Note

## Tools for Best Practice

### Brain Injury Screening Resources:

- **NASHIA's OBISSS:** <https://www.nashia.org/obissprogram> - The OBISSS is highly recommended. It is made up of the OSU screening tool, a Symptoms Questionnaire and Strategies. It can be used electronically, on a computer, phone or ipad. It can be self-administered.
- **OSU TBI Identification Method:** <https://wexnermedical.osu.edu/neurological-institute/neuroscience-research-institute/research-centers/ohio-valley-center-for-brain-injury-prevention-and-rehabilitation/osu-tbi-id>

**Brain Links' Strategies & Accommodations Tool:** <https://www.tndisability.org/rehabilitation>

### Symptom Questionnaire and Cognitive Strategies:

- Adult: [bit.ly/3FLkz0V](https://bit.ly/3FLkz0V)
- Juvenile: [bit.ly/4iS2bSC](https://bit.ly/4iS2bSC)



## Tennessee Resources

**Brain Links' Website** with many resources:  
[tndisability.org/brain](https://tndisability.org/brain)

**Brain Links' Toolkits** (for Service Professionals and Survivors): <https://www.tndisability.org/brain-toolkits>

**TN Department of Health TBI Program:**  
<https://tinyurl.com/3v5jrdt3>



**Tennessee Brighter Futures' Resource Pages & Training for Brain Injury:**  
<https://www.tndisability.org/tbf-brain-injury>

**Resource Pages & Training for Domestic Violence:**  
<https://www.tndisability.org/tbf-domestic-violence>



**TN Brighter Futures is organized and facilitated by Brain Links through a contract from the TN Department of Health TBI Program.**



Domestic  
Violence  
Resources

### References:

- Ohio Valley Domestic Violence Network. <https://www.odvn.org/>
- Martinez, A. & Hamilton, J. Domestic Violence is now recognized as a leading cause of Traumatic Brain Injury. March 13, 2024. WWNO Radio, 89.9. <https://www.wwno.org/npr-news/2024-03-13/domestic-violence-is-now-recognized-as-a-leading-cause-of-traumatic-brain-injury>.
- St. Ivany, A., Bullock, L., Schminkey, D., Wells, K., Sharps, P., Kools, S. (2018). Living in fear and prioritizing safety: Exploring women's lives after traumatic brain injury from intimate partner violence. Qualitative Health Research, 28 (11) 1708-1718.
- SAMHSA <https://tinyurl.com/2evwwvcb>

# Brain Injury and Homelessness



**Brain Injury and Homelessness are highly interrelated.  
Brain Injury is both a cause and a consequence of homelessness.**

**51-92%**



**As many as 92% experience their 1st TBI before becoming homeless.**

**50%**

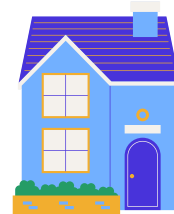


**Over 50% of people who are homeless or in an insecure living situation have a Traumatic Brain Injury (TBI).**

**25%**



**Of that 50%, 25% were moderate to severe brain injuries. This is 10 TIMES higher than the general population.**



**TBI in people who are homeless is associated with poorer physical and mental health, higher suicidality and suicide risk, memory issues, more health service use and higher criminal justice system involvement. People with cognitive impairment are likely to spend more time unhoused than those without cognitive impairment.**

## BEST PRACTICE

**The Homelessness and Housing 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

## COMMON PROBLEMS

**After Brain Injury, we often see problems with:**

- Attention, memory and new learning
- Slowed speed of processing
- Organization, problem solving & impulsivity
- Irritability, frustration & agitation
- Balance, dizziness & headaches
- Poor awareness of deficits & difficulties
- Difficulty being flexible, poor self-monitoring

## WHAT TO LOOK FOR

**Homelessness and Housing personnel may see:**

- Looking uninterested because they cannot pay attention
- Forgetting appointments, rent paying & new information
- Slow to understand and respond
- Getting into fights because of irritability, anger and impulsivity
- Falling into things, often getting hurt
- Refusing help because they do not realize they need it
- Gets stuck on an idea or a way of doing something, does not recognize mistakes

**"Many who meet the definition of homelessness do not consider themselves homeless or do not disclose their housing status due to stigma and discrimination." -nhchc.org**

# Common Accommodations for Brain Injury Challenges

Here are some common and simple accommodations:

- Working for shorter periods of time
- Getting rid of distractions around you, like noise or movement
- Taking notes (on paper, in a notebook, on a phone or computer)
- Using a phone to set timers to remember appointments
- Repeating information to the person
- Slowing down when talking; giving them more time to respond
- Giving the person a list of house rules, written directions, or pictures to help them understand and remember
- Coaching the person with the injury to "Stop, think and plan" then act
- Coaching the person to take deep breaths when feeling angry or anxious



## Tools for Best Practice



### Brain Injury Screening Resources:

- **NASHIA's OBISSS:** <https://www.nashia.org/obissprogram> - The OBISSS is highly recommended. It is made up of the OSU screening tool, a Symptoms Questionnaire and Strategies. It can be used electronically, on a computer, phone or ipad. It can be self-administered.
- **OSU TBI Identification Method:** <https://wexnermedical.osu.edu/neurological-institute/neuroscience-research-institute/research-centers/ohio-valley-center-for-brain-injury-prevention-and-rehabilitation/osu-tbi-id>

**Brain Links' Strategies & Accommodations Tool:** <https://www.tndisability.org/rehabilitation>

### Symptom Questionnaire and Cognitive Strategies:

- Adult: [bit.ly/3FLkz0V](https://bit.ly/3FLkz0V)
- Juvenile: [bit.ly/4iS2bSC](https://bit.ly/4iS2bSC)

## Tennessee Resources

**Brain Links' Website** with many resources:  
[tndisability.org/brain](https://tndisability.org/brain)

**Brain Links' Toolkits** (for Service Professionals and Survivors): <https://www.tndisability.org/brain-toolkits>

**TN Department of Health TBI Program:**  
<https://tinyurl.com/3v5jrdt3>



**Tennessee Brighter Futures' Resource Pages & Training for Brain Injury:**

<https://www.tndisability.org/tbf-brain-injury>



**Resource Pages & Training for Homelessness:**

<https://www.tndisability.org/tbf-homelessness>

**TN Brighter Futures is organized and facilitated by Brain Links through a contract from the TN Department of Health TBI Program.**

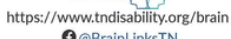


### References:

- *Adapting Your Practice: Recommendations for the Care of Patients Who Are Homeless or Unstably Housed Living With the Effects of Traumatic Brain Injury.* National Health Care for the Homeless Council, Oct. 2018.
- Hwang, SW., Colantonio, A., Chiu, S., et al. (2008). The effect of traumatic brain injury on the health of homeless people. *CMAJ*, 179(8), 779-784.
- Stubbs, JL., Thornton, AE., Sevic, JM., et al (2020). *Traumatic brain injury in homeless and marginally housed individuals: a systemic review and meta-analysis.* *Lancet Public Health*, 5:e19-32.
- Where does homelessness happen? Understanding the definitions of homelessness. 2021. National Health Care for the Homeless Council, Inc. [www.nhchc.org](http://www.nhchc.org)



Homelessness  
Resources



Brain Links is supported by the Administration for Community Living (ACL) of the U.S. Department of Health and Human Services under Grant No. 90TBSC0051-01-00 and in part by the TN Department of Health, Traumatic Brain Injury Program.

# Brain Injury and the Juvenile Justice System



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 suicidality.

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  
times



Juvenile offenders are almost **3.4 times more likely**  
**to have a TBI** than non-justice involved youth.



69%



With a TBI, they have a **69% higher chance of re-offending**.

## 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

## COMMON PROBLEMS

**After Brain Injury,  
we often see  
problems with:**

- Attention, memory and new learning
- Slowed speed of processing
- Organization, problem solving & impulsivity
- 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

# Common Accommodations for Brain Injury Challenges

Here are some common and simple accommodations:

- Working for shorter periods of time
- Getting rid of distractions around you, like noise or movement
- Taking notes (on paper, in a notebook, on a phone or computer)
- Using a phone to set timers to remember appointments
- Repeating information to the person
- Slowing down when talking; giving them more time to respond
- Giving the person a list of house rules, written directions, or pictures to help them understand and remember
- Coaching the person with the injury to “Stop, think and plan” then act
- Coaching the person to take deep breaths when feeling angry or anxious

Take Note

## Tools for Best Practice

### Brain Injury Screening Resources:

- **NASHIA's OBISSS:** <https://www.nashia.org/obissprogram> – The OBISSS is highly recommended. It is made up of the OSU screening tool, a Symptoms Questionnaire and Strategies. It can be used electronically, on a computer, phone or ipad. It can be self-administered.
- **OSU TBI Identification Method:** <https://wexnermedical.osu.edu/neurological-institute/neuroscience-research-institute/research-centers/ohio-valley-center-for-brain-injury-prevention-and-rehabilitation/osu-tbi-id>

**Brain Links' Strategies & Accommodations Tool:** <https://www.tndisability.org/rehabilitation-symptom-questionnaire-and-cognitive-strategies>

- Adult: [bit.ly/3FLkz0V](https://bit.ly/3FLkz0V)
- Juvenile: [bit.ly/4iS2bSC](https://bit.ly/4iS2bSC)



## Tennessee Resources

**Brain Links' Website** with many resources:  
[tndisability.org/brain](https://www.tndisability.org/brain)

**Brain Links' Toolkits** (for Service Professionals and Survivors): <https://www.tndisability.org/brain-toolkits>

**TN Department of Health TBI Program:**  
<https://tinyurl.com/3v5jrdt3>



**Tennessee Brighter Futures' Resource Pages & Training for Brain Injury:**  
<https://www.tndisability.org/tbf-brain-injury>



**Resource Pages & Training for Juvenile Justice:**  
<https://www.tndisability.org/tbf-juvenile-justice>

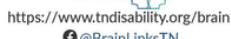
**TN Brighter Futures is organized and facilitated by Brain Links through a contract from the TN Department of Health TBI Program.**

### References:

- Nagel, D., Vaccaro, M., et al. (2021). *Brain Injury in Justice-Involved Youth: Findings and Implications for Juvenile Service Professionals*. National Partnership for Juvenile Services. <http://npjs.org/jajjs/>
- Gordon, W.A., Spielman, L., et al. (2017). The Relationship between TBI and Criminality in Juvenile Offenders. *JHTR*. 32(6).
- TBI and Youth Justice, McMaster University website: <https://tbi-youth-justice.org/>
- Over-Representation of Brain Injury in Adult and Juvenile Criminal Justice Populations. [www.biausa.org/](http://www.biausa.org/)
- Dettmer, J. Criminal and Juvenile Justice Best Practice Guide: Information and Resources for State Brain Injury Programs. (2020). <https://www.nashia.org/cj-best-practice-guide-attachments-resources-copy>



Juvenile Justice Resources



Brain Links is supported by the Administration for Community Living (ACL) of the U.S. Department of Health and Human Services under Grant No. 90TBG0051-01-00 and in part by the TN Department of Health, Traumatic Brain Injury Program.

# Brain Injury and Mental Health



Children and adults can experience Mental Health challenges following brain injuries. These challenges range from anxiety and depression to personality changes and psychotic disorders.

One Third



6 months to 1 year following an injury: **one third** will experience a mental health problem – that number will grow over time.

2 - 4 Times



People with Brain Injury have a **2-4 times** increased risk of attempting or having death by suicide.

75%



As high as **75%** of people seeking mental health **and** substance use treatment also have a brain injury.



## BEST PRACTICE

The Mental Health 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

## COMMON PROBLEMS

After Brain Injury, we often see problems with:

- Attention, memory and new learning
- Slowed speed of processing
- Organization, problem solving & impulsivity
- Irritability, frustration & agitation
- Balance, dizziness & headaches
- Poor awareness of deficits & difficulties
- Difficulty being flexible, poor self-monitoring

988  
National Suicide  
and Crisis  
Lifeline

## WHAT TO LOOK FOR

Mental Health 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 engaging in the community because of cognitive changes
- Gets stuck on an idea or a way of doing something, does not recognize mistakes

**"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 role in their own recovery process." - NAMI**

# Common Accommodations for Brain Injury Challenges

Here are some common and simple accommodations:

- Working for shorter periods of time
- Getting rid of distractions around you, like noise or movement
- Taking notes (on paper, in a notebook, on a phone or computer)
- Using a phone to set timers to remember appointments
- Repeating information to the person
- Slowing down when talking; giving them more time to respond
- Giving the person a list of house rules, written directions, or pictures to help them understand and remember
- Coaching the person with the injury to "Stop, think and plan" then act
- Coaching the person to take deep breaths when feeling angry or anxious



## Tools for Best Practice



### Brain Injury Screening Resources:

- **NASHIA's OBISSS:** <https://www.nashia.org/obissprogram> - The OBISSS is highly recommended. It is made up of the OSU screening tool, a Symptoms Questionnaire and Strategies. It can be used electronically, on a computer, phone or ipad. It can be self-administered.
- **OSU TBI Identification Method:** <https://wexnermedical.osu.edu/neurological-institute/neuroscience-research-institute/research-centers/ohio-valley-center-for-brain-injury-prevention-and-rehabilitation/osu-tbi-id>

**Brain Links' Strategies & Accommodations Tool:** <https://www.tndisability.org/rehabilitation>

### Symptom Questionnaire and Cognitive Strategies:

- Adult: [bit.ly/3FLkz0V](https://bit.ly/3FLkz0V)
- Juvenile: [bit.ly/4iS2bSC](https://bit.ly/4iS2bSC)

## Tennessee Resources

**Brain Links' Website** with many resources:  
[tndisability.org/brain](https://www.tndisability.org/brain)

**Brain Links' Toolkits** (for Service Professionals and Survivors): <https://www.tndisability.org/brain-toolkits>

**TN Department of Health TBI Program:**  
<https://tinyurl.com/3v5jrdt3>



**Tennessee Brighter Futures' Resource Pages & Training for Brain Injury:**

<https://www.tndisability.org/tbf-brain-injury>



**Resource Pages & Training for Mental Health**

<https://www.tndisability.org/tbf-mental-health>

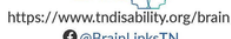
**TN Brighter Futures is organized and facilitated by Brain Links through a contract from the TN Department of Health TBI Program.**



Mental Health Resources

### References:

- National Alliance on Mental Health (NAMI), [nami.org](https://www.nami.org).
- Administration for Community Living Behavioral Health Guide: Considerations for Best Practices for Children, Youth and Adults with Traumatic Brain Injury. May 2022.
- Corrigan, JD and Dettmer, JL. Substance Abuse and Mental Health Services Administration. (2021). Treating Clients with Traumatic Brain Injury (Updated). Advisory.

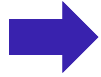


Brain Links is supported by the Administration for Community Living (ACL) of the U.S. Department of Health and Human Services under Grant No. 90TBSC0051-01-00 and in part by the TN Department of Health, Traumatic Brain Injury Program.

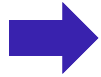
# Brain Injury and Minority Health



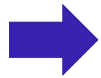
**“The residents of Tennessee experience poorer life expectancy than the residents of most other states. Additionally, there are many significant differences in this outcome across racial, ethnic, gender, and geographic lines within Tennessee.”<sup>1</sup>**



**People in racial and ethnic minorities are more likely to sustain a TBI and more likely to have worse outcomes. Reasons for higher rates of TBI include: Motor vehicle accidents, Substance Use, Suicide and Domestic Violence.**



**In Tennessee, Hispanics have the highest proportion of work-related Traumatic Brain Injuries.**



**Minorities are more likely to drop out of long-term studies for a variety of reasons. They are also less likely to receive follow-up care and rehabilitation related to a lack of insurance.<sup>2</sup>**

**Native American & Alaskan Natives: highest rate of TBI & fatality from TBI**

## BEST PRACTICE

**Care providers working with people in racial & ethnic minorities 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



## COMMON PROBLEMS

**After Brain Injury, we often see problems with:**

- Attention, memory and new learning
- Slowed speed of processing
- Organization, problem solving & impulsivity
- Irritability, frustration & agitation
- Balance, dizziness & headaches
- Poor awareness of deficits & difficulties
- Difficulty being flexible, poor self-monitoring

## WHAT TO LOOK FOR

**Care providers working with people in racial & ethnic minorities 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, bumping into things, often getting hurt
- Difficulty re-entering community because of cognitive changes
- Gets stuck on an idea or a way of doing something, does not recognize mistakes

**Black & Hispanic children are more likely to be impacted by Adverse Childhood Experiences (ACEs) than White & Asian children. Cognitive & behavioral changes that ACEs can produce can look similar to brain injury. A brain healthy lifestyle will help.**

# Common Accommodations for Brain Injury Challenges

Here are some common and simple accommodations:

- Working for shorter periods of time
- Getting rid of distractions around you, like noise or movement
- Taking notes (on paper, in a notebook, on a phone or computer)
- Using a phone to set timers to remember appointments
- Repeating information to the person
- Slowing down when talking; giving them more time to respond
- Giving the person a list of house rules, written directions, or pictures to help them understand and remember
- Coaching the person with the injury to "Stop, think and plan" then act
- Coaching the person to take deep breaths when feeling angry or anxious

Take Note

## Tools for Best Practice

### Brain Injury Screening Resources:

- **NASHIA's OBISSS:** <https://www.nashia.org/obissprogram> - The OBISSS is highly recommended. It is made up of the OSU screening tool, a Symptoms Questionnaire and Strategies. It can be used electronically, on a computer, phone or ipad. It can be self-administered.
- **OSU TBI Identification Method:** <https://wexnermedical.osu.edu/neurological-institute/neuroscience-research-institute/research-centers/ohio-valley-center-for-brain-injury-prevention-and-rehabilitation/osu-tbi-id>

**Brain Links' Strategies & Accommodations Tool:** <https://www.tndisability.org/rehabilitation>

### Symptom Questionnaire and Cognitive Strategies:

- Adult: [bit.ly/3FLkz0V](https://bit.ly/3FLkz0V)
- Juvenile: [bit.ly/4iS2bSC](https://bit.ly/4iS2bSC)



## Tennessee Resources

**Brain Links' Website** with many resources:  
[tndisability.org/brain](https://tndisability.org/brain)

**Brain Links' Toolkits** (for Service Professionals and Survivors): <https://www.tndisability.org/brain-toolkits>

**TN Department of Health TBI Program:**  
<https://tinyurl.com/3v5jrdt3>



**Tennessee Brighter Futures' Resource Pages & Training for Brain Injury:**  
<https://www.tndisability.org/tbf-brain-injury>



**Resource Pages & Training for Minority Health:**  
<https://www.tndisability.org/tbf-social-determinants-health>

**TN Brighter Futures is organized and facilitated by Brain Links through a contract from the TN Department of Health TBI Program.**



Minority Health Resources

### References:

1. Chavez-Lindell, T., Udeh, Ijeoma, et al. (2024). Health Disparities in Tennessee. The Tennessee Department of Health Disparities Elimination. [https://www.tn.gov/content/dam/tn/health/program-areas/division-of-health-disparities-elimination/documents/HD\\_Report\\_FINAL\\_06122024.pdf](https://www.tn.gov/content/dam/tn/health/program-areas/division-of-health-disparities-elimination/documents/HD_Report_FINAL_06122024.pdf)
2. Sander, A.M., Lequeria, A.H. et al. (2018). Race/Ethnicity and Retention in TBI Outcomes Research: A TBI Model Systems National Database Study. JHTR. Jul-Aug;33(4):219-227. doi:10.1097/HTR.0000000000000395



<https://www.tndisability.org/brain>  
@BrainLinksTN



Brain Links is supported by the Administration for Community Living (ACL) of the U.S. Department of Health and Human Services under Grant No. 90TBSC0051-01-00 and in part by the TN Department of Health, Traumatic Brain Injury Program.

# Brain Injury and Rural Health



**People living in rural areas are at a higher risk of sustaining a brain injury, and have more fatalities, in part because of the greater distance to specialized care.**

**60 million** ➡ **60 million (1 out of 5) people live in rural America, making the problems with TBI management and resources a major public health concern**

## **Contributing factors to higher rates of brain injury:**

**Environmental issues (poorer road conditions, unpredictable weather and livestock and wildlife), drinking and driving, and substance abuse.**



## **Poorer outcomes result from:**

**Longer travel times to emergency care, lack of access to level 1 trauma centers, lack of specialized brain injury care and high cost of healthcare in rural areas.**

## **BEST PRACTICE**

**Providers in Rural Areas 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

## **COMMON PROBLEMS**

**After Brain Injury, we often see problems with:**

- Attention, memory and new learning
- Slowed speed of processing
- Organization, problem solving & impulsivity
- Irritability, frustration & agitation
- Balance, dizziness & headaches
- Poor awareness of deficits & difficulties
- Difficulty being flexible, poor self-monitoring

## **WHAT TO LOOK FOR**

**Providers in Rural Areas may see:**

- Children doing poorly in school; adults struggling at work
- Missing appointments
- Appearance of non-compliance because they cannot remember dosages and medication schedules
- Slow to follow directions because they cannot process quickly
- Falling into things, often getting hurt
- Parenting and relationship issues because of cognitive changes
- Gets stuck on an idea or a way of doing something, does not recognize mistakes

**Rural communities face issues with higher rates of chronic diseases like obesity and high blood pressure, more substance use, less access to transportation and quality healthcare, higher poverty and poorer overall infrastructure.**

# Common Accommodations for Brain Injury Challenges

Here are some common and simple accommodations:

- Working for shorter periods of time
- Getting rid of distractions, like noise or movement
- Taking notes (on paper, in a notebook, on a phone or computer)
- Using a phone to set timers to remember appointments & medication schedules; providing a check-off medication schedule to avoid forgetting they have already taken a medication
- Repeating information to the person
- Slowing down when talking; giving them more time to respond
- Giving a written list of non-medication strategies to avoid or reduce pain
- Coaching the person to take deep breaths when feeling angry or anxious



## Tools for Best Practice

### Brain Injury Screening Resources:

- **NASHIA's OBISSS:** <https://www.nashia.org/obissprogram> – The OBISSS is highly recommended. It is made up of the OSU screening tool, a Symptoms Questionnaire and Strategies. It can be used electronically, on a computer, phone or ipad. It can be self-administered.
- **OSU TBI Identification Method:** <https://wexnermedical.osu.edu/neurological-institute/neuroscience-research-institute/research-centers/ohio-valley-center-for-brain-injury-prevention-and-rehabilitation/osu-tbi-id>

**Brain Links' Strategies & Accommodations Tool:** <https://www.tndisability.org/rehabilitation-symptom-questionnaire-and-cognitive-strategies>

- Adult: [bit.ly/3FLkz0V](https://bit.ly/3FLkz0V)
- Juvenile: [bit.ly/4iS2bSC](https://bit.ly/4iS2bSC)



## Tennessee Resources

**Brain Links' Website** with many resources:  
[tndisability.org/brain](https://www.tndisability.org/brain)

**Brain Links' Toolkits** (for Service Professionals and Survivors): <https://www.tndisability.org/brain-toolkits>

**TN Department of Health TBI Program:**  
<https://tinyurl.com/3v5jrdt3>



**Tennessee Brighter Futures' Resource Pages & Training for Brain Injury:**  
<https://www.tndisability.org/tbf-brain-injury>



**Resource Pages & Training for Rural Health:**  
<https://www.tndisability.org/tbf-social-determinants-health>

**TN Brighter Futures is organized and facilitated by Brain Links through a contract from the TN Department of Health TBI Program.**



### References:

- Brown J.B., Kheng M., Carney N.A., Rubiano A.M & Puyana J.C. (2019). Geographical Disparity and Traumatic Brain Injury in America: Rural Areas Suffer Poorer Outcomes. *J Neurosciences Rural Practice*. Jan-Mar;10(1): 10-15.
- Womack L, Daugherty J, Sarmiento K, et al. 2022. 142 Urban-rural traumatic brain injury mortality disparities by age and mechanism of injury. *Injury Prevention* 26:A20-A21.
- Daugherty J, Waltzman D, Popat S, Horn Groenendaal A, Cherney M, Knudson A. (2022) Challenges and opportunities in diagnosing and managing mild traumatic brain injury in rural settings. *Rural and Remote Health*. 22: 7241.



Social  
Determinants  
of Health Resources



<https://www.tndisability.org/brain>  
@BrainLinksTN



Brain Links is supported by the Administration for Community Living (ACL) of the U.S. Department of Health and Human Services under Grant No. 90TBSC0051-01-00 and in part by the TN Department of Health, Traumatic Brain Injury Program.

# Brain Injury and Substance Use Disorder



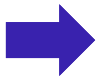
Brain Injury can be both a cause of Substance Use Disorder and a consequence. Some people with Brain Injuries turn to substances to help with chronic pain, mental health issues (like anxiety and depression) and in an effort to “just feel normal.”

50%



About half of the people in Substance Use Disorder (SUD) treatment have a brain injury

75%



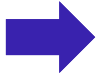
About 75% of people who need both Mental Health and SUD treatment also have a brain injury

70-80%



The percentage of people discharged from healthcare facilities for Brain Injury that are given a prescription for opioids

10-20%



Within one year after injury, 10-20% will develop a SUD problem & that number will grow over time.



For every overdose death, there are approximately fifty overdose survivors, 90% of whom become impaired because of insufficient oxygen to the brain.

## BEST PRACTICE

Substance Use treatment centers 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

## COMMON PROBLEMS

After Brain Injury, we often see problems with:

- Attention, memory and new learning
- Slowed speed of processing
- Organization, problem solving & impulsivity
- Irritability, frustration & agitation
- Balance, dizziness & headaches
- Poor awareness of deficits & difficulties
- Difficulty being flexible, poor self-monitoring

## WHAT TO LOOK FOR

Substance Use personnel may see:

- Appearance of “checking out” during a session or group
- 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 staying sober because of cognitive changes
- Gets stuck on an idea or a way of doing something, does not recognize mistakes

People with Brain Injury are 10 times more likely to die of accidental overdose, in large part because of cognitive and behavioral changes. 25% of people entering Brain Injury treatment were intoxicated when injured. Being intoxicated at injury makes it harder for the brain to heal.

# Common Accommodations for Brain Injury Challenges

Here are some common and simple accommodations:

- Working for shorter periods of time
- Getting rid of distractions around you, like noise or movement
- Taking notes (on paper, in a notebook, on a phone or computer)
- Using a phone to set timers to remember appointments
- Repeating information to the person
- Slowing down when talking; giving them more time to respond
- Giving the person a list of house rules, written directions, or pictures to help them understand and remember
- Coaching the person with the injury to "Stop, think and plan" then act
- Coaching the person to take deep breaths when feeling angry or anxious



## Tools for Best Practice

### Brain Injury Screening Resources:

- **NASHIA's OBISSS:** <https://www.nashia.org/obissprogram> - The OBISSS is highly recommended. It is made up of the OSU screening tool, a Symptoms Questionnaire and Strategies. It can be used electronically, on a computer, phone or ipad. It can be self-administered.
- **OSU TBI Identification Method:** <https://wexnermedical.osu.edu/neurological-institute/neuroscience-research-institute/research-centers/ohio-valley-center-for-brain-injury-prevention-and-rehabilitation/osu-tbi-id>

**Brain Links' Strategies & Accommodations Tool:** <https://www.tndisability.org/rehabilitation-symptom-questionnaire-and-cognitive-strategies>

- Adult: [bit.ly/3FLkz0V](https://bit.ly/3FLkz0V)
- Juvenile: [bit.ly/4iS2bSC](https://bit.ly/4iS2bSC)



## Tennessee Resources

**Brain Links' Website** with many resources:  
[tndisability.org/brain](https://tndisability.org/brain)

**Brain Links' Toolkits** (for Service Professionals and Survivors): <https://www.tndisability.org/brain-toolkits>

**TN Department of Health TBI Program:**  
<https://tinyurl.com/3v5jrdt3>



**Tennessee Brighter Futures' Resource Pages & Training for Brain Injury:**  
<https://www.tndisability.org/tbf-brain-injury>



**Resource Pages & Training for Substance Use Disorder:**  
<https://www.tndisability.org/tbf-substance-use>

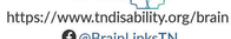
**TN Brighter Futures is organized and facilitated by Brain Links through a contract from the TN Department of Health TBI Program.**



Substance Use Resources

### References:

- Lemskey, C. (2021). *Traumatic Brain Injury and Substance Use Disorders: Making the Connections*. Substance Abuse and Mental Health Services Administration (SAMHSA).
- Substance Abuse and Mental Health Services Administration (2021) "Treating Patients with Traumatic Brain Injury", update from the SMA10-4591, In Brief, Volume 9, Issue 2.
- Administration for Community Living Behavioral Health Guide: Considerations for Best Practices for Children, Youth and Adults with Traumatic Brain Injury. May 2022.



# Brain Injury and Veterans



**Most Traumatic Brain Injuries (TBIs) among veterans are from explosions and combat. PTSD often occurs along with the TBI because of the traumatic event that caused it.**

**414,000**



The number of military members diagnosed with TBI from 2000 to late 2019 - most were mild. (Defense & Veterans Brain Injury Center) (Mild injury **does not** necessarily mean mild outcome.)

**Higher Rates**



Service members with TBIs have higher rates of PTSD, depressive disorder, substance use disorder, and anxiety disorder than those without TBI.



**84%**



Veterans with mTBI (mild) had greater combat exposure; less social support; and more comorbidities, including asthma, PTSD, sleeping problems, worse pain scores and slower processing speed.

## BEST PRACTICE

**People working with veterans should:**

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

## COMMON PROBLEMS

**After Brain Injury, we often see problems with:**

- Attention, memory and new learning
- Slowed speed of processing
- Organization, problem solving & impulsivity
- Irritability, frustration & agitation
- Balance, dizziness & headaches
- Poor awareness of deficits & difficulties
- Difficulty being flexible, poor self-monitoring

*"Veterans who use VA health care must undergo mandatory TBI screening if they served in combat operations."  
U.S. Dept. of Veterans Affairs*

## WHAT TO LOOK FOR

**People working with veterans 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 re-entering community because of cognitive changes
- Gets stuck on an idea or a way of doing something, does not recognize mistakes

**"Veterans are more likely to be civically engaged than non-veterans and, on average, veterans contribute more time in their communities than non-veterans." Nat'l Conference on Citizenship**

# Common Accommodations for Brain Injury Challenges

Here are some common and simple accommodations:

- Working for shorter periods of time
- Getting rid of distractions, like noise or movement
- Taking notes (on paper, in a notebook, on a phone or computer)
- Using a phone to set timers to remember appointments
- Repeating information to the person
- Slowing down when talking; giving them more time to respond
- Giving the person a list of house rules, written directions, or pictures to help them understand and remember
- Coaching the person with the injury to "Stop, think and plan" then act
- Coaching the person to take deep breaths when feeling angry or anxious

Take Note

## Tools for Best Practice

### Brain Injury Screening Resources:

- **NASHIA's OBISSS:** <https://www.nashia.org/obissprogram> – The OBISSS is highly recommended. It is made up of the OSU screening tool, a Symptoms Questionnaire and Strategies. It can be used electronically, on a computer, phone or ipad. It can be self-administered.
- **OSU TBI Identification Method:** <https://wexnermedical.osu.edu/neurological-institute/neuroscience-research-institute/research-centers/ohio-valley-center-for-brain-injury-prevention-and-rehabilitation/osu-tbi-id>

**Brain Links' Strategies & Accommodations Tool:** <https://www.tndisability.org/rehabilitation-symptom-questionnaire-and-cognitive-strategies>

- Adult: [bit.ly/3FLkz0V](https://bit.ly/3FLkz0V)
- Juvenile: [bit.ly/4iS2bSC](https://bit.ly/4iS2bSC)



## Tennessee Resources

**Brain Links' Website** with many resources:  
[tndisability.org/brain](https://www.tndisability.org/brain)

**Brain Links' Toolkits** (for Service Professionals and Survivors): <https://www.tndisability.org/brain-toolkits>

**TN Department of Health TBI Program:**  
<https://tinyurl.com/3v5jrdt3>



**Tennessee Brighter Futures' Resource Pages & Training for Brain Injury:**  
<https://www.tndisability.org/tbf-brain-injury>



**Resource Pages & Training for Veterans Health**  
<https://www.tndisability.org/tbf-social-determinants-health>

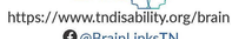
**TN Brighter Futures is organized and facilitated by Brain Links through a contract from the TN Department of Health TBI Program.**



Veterans  
Health  
Resource  
Pages

### References:

- Understanding military traumatic brain injury. (2025) DAV.org <https://www.dav.org/get-help-now/veteran-topics-resources/traumatic-brain-injury-tbi/>
- Greer N, Sayer NA, Spont M, Taylor BC, Ackland PE, MacDonald R, McKenzie L, Rosebush C, Wilt TJ. Prevalence and Severity of Psychiatric Disorders and Suicidal Behavior in Service Members and Veterans With and Without Traumatic Brain Injury: Systematic Review. J Head Trauma Rehabil. 2020 Jan/Feb;35(1):1-13. doi: 10.1097/HTR.0000000000000478. PMID: 31033741.



Brain Links is supported by the Administration for Community Living (ACL) of the U.S. Department of Health and Human Services under Grant No. 90TBSC0051-01-00 and in part by the TN Department of Health, Traumatic Brain Injury Program.