

Concussion, TBI and the Intersectionality with Substance Misuse

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





Who we are

Statewide team of brain injury specialists

What we do

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

- Family-friendly educational materials
- Resources for return to school and work settings
- Toolkits for healthcare providers and school nurses
- Youtube Training Channel Playlist

Agenda

- Why it's important to have an understanding of TBI
- Overview of Traumatic Brain Injury (TBI) & Concussion, including a new model
- TBI and Substance Use
- ACEs (Adverse Childhood Experiences)
- Tools and ways to help



BRAIN INJURY

Facts & Statistics

EVERY 9 SECONDS

someone in the United States
sustains a brain injury

MORE THAN 3.6 MILLION

People sustain an
ABI each year

AT LEAST 2.8 MILLION

people sustain a TBI
each year

The total number of people who
sustain TBIs and do not seek
treatment is

UNKNOWN

www.biausa.org



68 Tennesseans experience a
traumatic brain injury EACH DAY

At least 5.3 million Americans live with a TBI-related disability.
That's one in every 60 people.

Important to Understand TBI

History of TBI is often hidden among people with

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

Ages 15-19 with TBI

Youth ages 15-19 with TBI have higher levels of

- Anxiety
- Depression
- Attention deficit and hyperactivity disorder
- Attempted suicide
- Abuse of alcohol and/or drugs



(T Renn & C Veeh, 2019)

Substance Abuse

People with TBI:

- 70-80% discharged from health care facilities with a Rx for opioids
- Greater risk of opioid misuse and death due to overdose
- 10-20% develop a substance abuse problems 8 -12 months after injury



**Of those with Substance Abuse Problems:
As high as 50% may have incurred a TBI**



People with TBI:

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People with Substance Abuse Problems:

- As high as 50% may have incurred a TBI

Opioid Overdose and Brain Injury

- “The opioid crisis has led to a second ‘silent epidemic’ of brain injuries nationwide and here in NH.
- For every overdose death, there are approximately fifty overdose survivors, 90% of whom become impaired because of insufficient oxygen to the brain.
- Brain injury is a little-known offshoot of NH’s drug crisis – but the connection between drug overdose and brain injury is real.”

From: [The SUD/Brain Injury and Mental Health Interagency Task Force Progress Report November 2020](#)

Complex Relationship

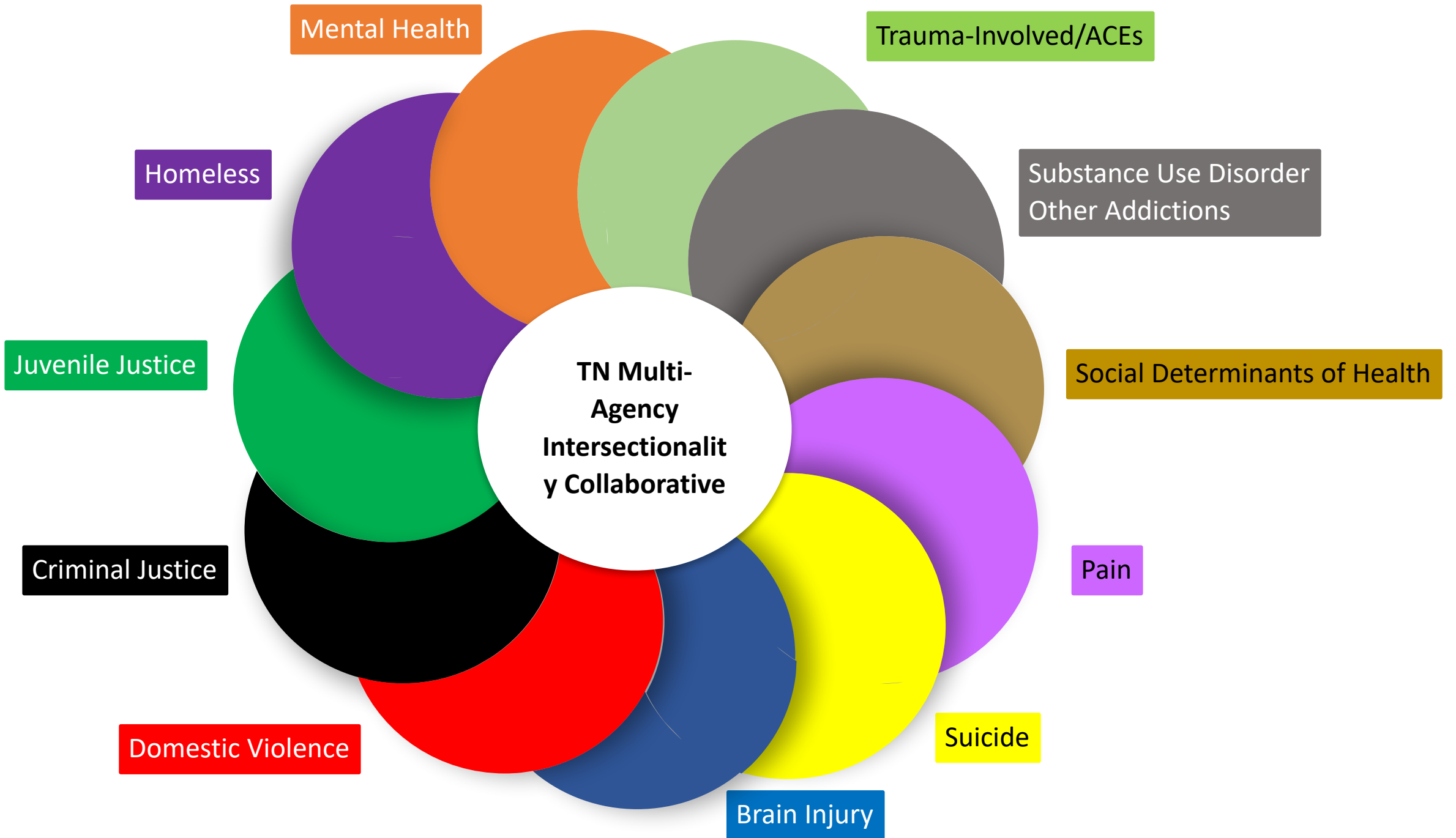
25% of people entering brain injury rehabilitation are there as a result of drugs or alcohol.

Approximately half of people receiving substance abuse treatment have at least one brain injury.

TBI



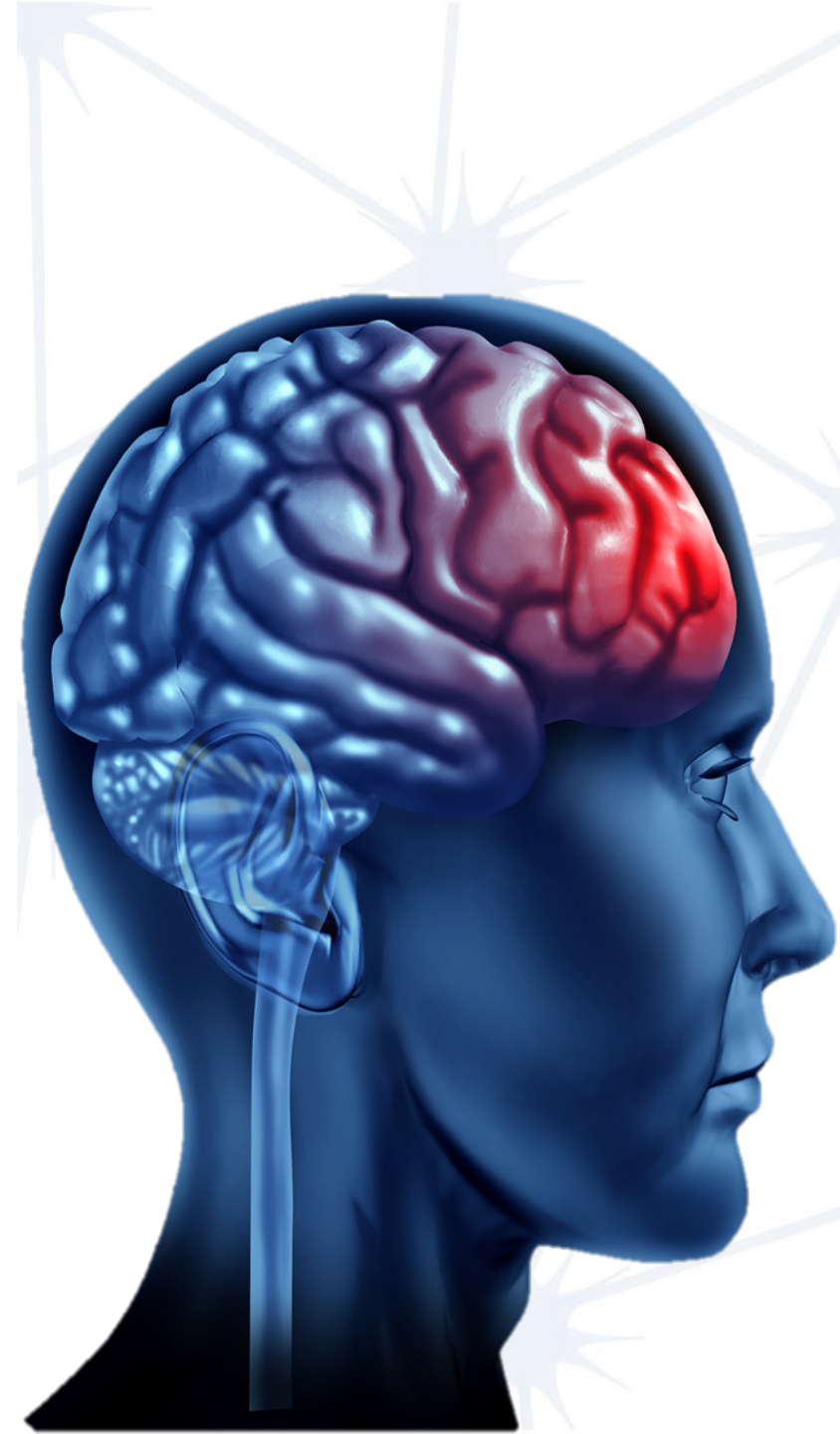
Substance
Abuse



What is TBI?

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

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



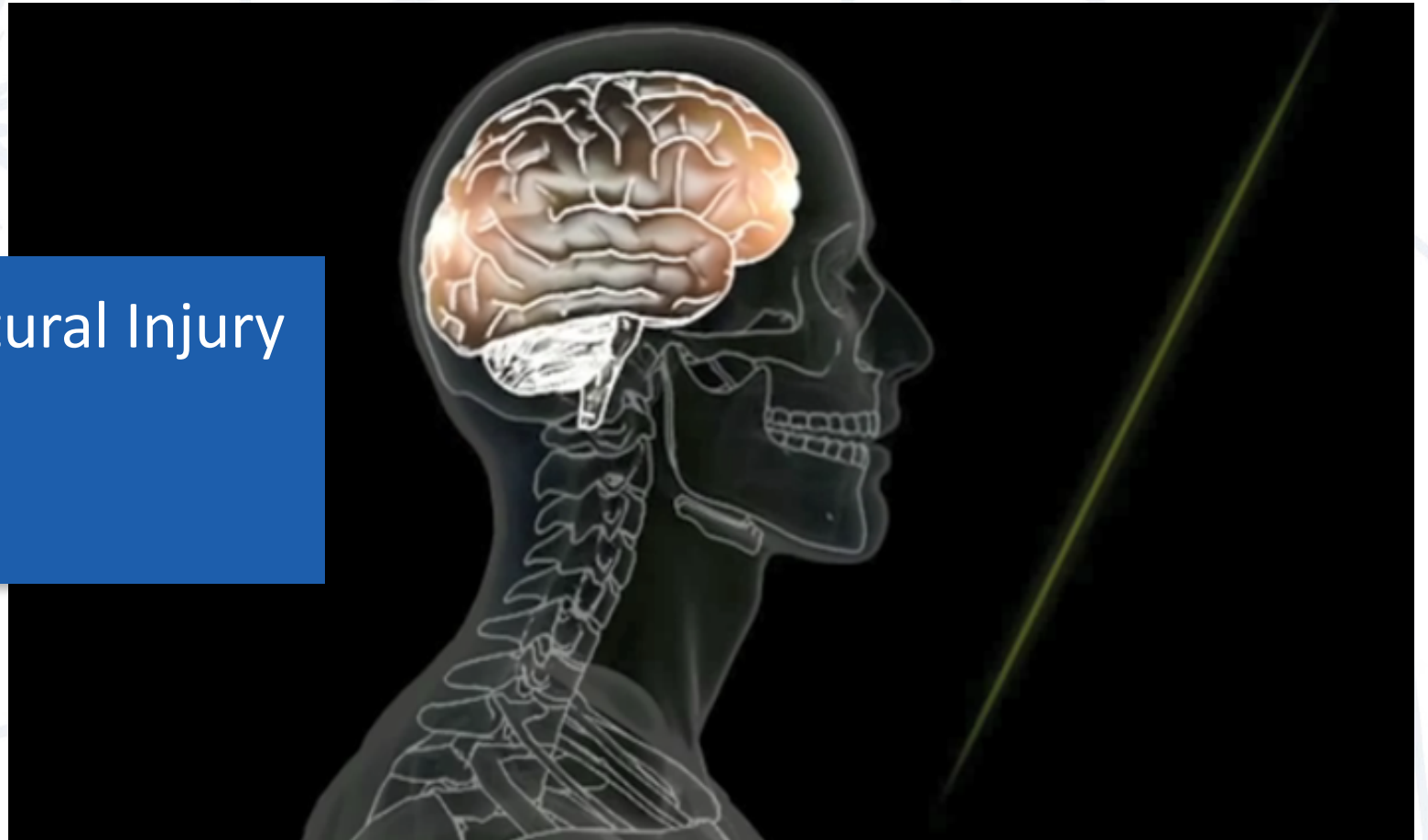
TBI Can Happen in Many Ways

- Fall
- Struck by an object
- Motor Vehicle/4-wheeler
- Assaulted
- Jumping on a trampoline
- Falling off a bike



Concussion is a Type of TBI

- Functional Injury vs. Structural Injury
- Chemical Cascade
- CT Findings



Common Symptoms following Concussion

Cognitive/Communication

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

Emotional/Behavioral

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



Physical

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

Common Symptoms Following Concussion for the Younger Child



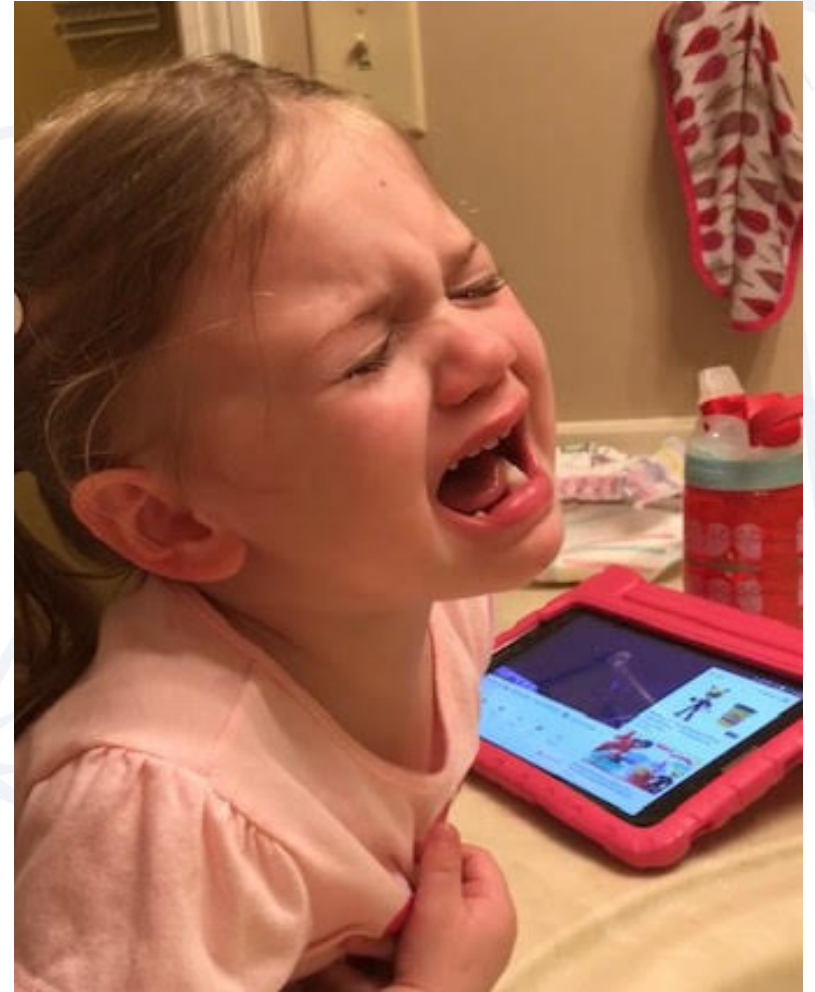
Same as Older Child or Adult, but also

- Appetite Changes
- Behavioral Dysregulation
- Decreased Engagement
- Disrupted Sleep
- Continence Issues
- Increased Dependence
- Stomachaches

Missing the Very Young: Pain Indicators

Signs of Pain:

- Excessive crying
- Anxious or agitated
- Increased muscle tightness
- Facial changes (tense or stressed)
- A lot of physical movement
- Changes in breathing



* These behaviors would also be relevant for someone who communicates without words

Danger Signs



Emergency

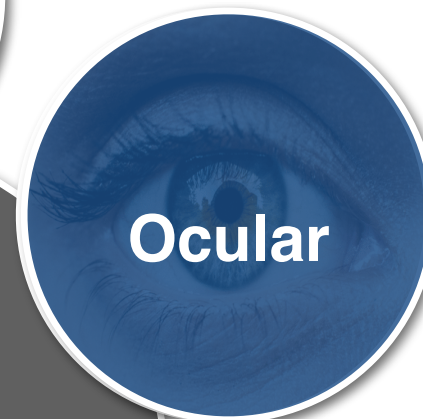
- One pupil larger than the other.
- Drowsiness or inability to wake up.
- A headache that gets worse and does not go away.
- Slurred speech, weakness, numbness, or decreased coordination.
- Repeated vomiting or nausea; seizures.
- Unusual behavior, increased confusion, restlessness, or agitation.
- Loss of consciousness.

6 Types of Concussion



Targeted & **Active** Treatments

- Medication
- **Exercise**
- CBT
- Psychotherapy



- Vestibular Rehabilitation
- **Exercise**

- Vision Therapy/
• Orthoptics

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



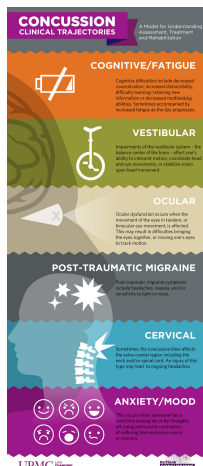
Concussion



- Structured Rest
- **Exercise**
- Medication



- Behavior Regulation
- **Exercise**
- Medication
- CBT Cognitive Behavioral Therapy
- Education/Trigger Modification



Courtesy of UPMC Sports Medicine Concussion Program

Concussion Protocol

Asking Healthcare Providers to

- Think of Concussion as a 2-visit diagnosis
 - 1st visit: Symptoms Evaluation and Patient Education. Give parent/patient a symptom list to take home and observe.
 - Return in 4 weeks if symptoms exist/persist
 - ❑ Referral for treatment
- Check in at yearly check-ups specifically about the concussion

CONCUSSION MANAGEMENT PROTOCOL

RECOMMENDATION: 2 VISIT MINIMUM

INITIAL VISIT

SYMPTOM EVALUATION AND PATIENT EDUCATION:

- * ACE – Acute Concussion Evaluation (Physician/Clinician Office version)
- * A Symptom Scale (Age-appropriate version)
- * A Symptom Scale (Parent/Adult Patient – fill out in office)
- * A Symptom Scale (Parent/Adult Patient – take home)
- * ACE Care Plan (Return to school or work version)
- * CDC Return to School Letter
- * When Concussion Symptoms Aren't Going Away (Age-appropriate version)
- * Any other educational materials or symptom tracker as needed

Send home an additional parent or adult version of a symptom scale to track symptoms over the next 4 weeks. This helps to understand what symptoms/behaviors to look for. Send home a letter to the school or work with recommendations. Research indicates that supports are more likely to be implemented if recommended by the healthcare professional.

With concussion diagnosis, recommend follow up visit in 4 weeks if any symptoms or any new behaviors since injury are present. Bring completed form to next visit.

4 WEEK POST INJURY VISIT

IF SYMPTOMS PERSIST OR NEW BEHAVIORS ARE PRESENT, CONSIDER THE FOLLOWING REFERRALS:

- * A specialized concussion treatment center
- * A neurologist
- * A symptom-specific specialist (e.g. neuro-ophthalmologist)
- * A brain trauma rehabilitation center
- * A neuropsychological evaluation
- * TEIS (if child is under 3 years old)
- * School district (3–5 years old)
- * School (5 years and over)

Note: Schools may not provide all the treatments needed. Research indicates that supports are more likely to be implemented if recommended by the healthcare professional.

YEARLY CHECK-UPS

ASK ABOUT:

- * Any residual concussion symptoms
- * Any changes in school or work performance



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Need for Ongoing Monitoring/Treatment

All ages: More likely to

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



Nathan

Age: 10 months

- Falls down a flight of steps
- Crying, no loss of consciousness
- Seen at hospital, “no concussion”
- No recommendations
- Bruising around his right eye for weeks

Age: 24 years

- Is currently in prison
- Is an addict (“tried everything”)
- Can’t/won’t hold a job
- Very smart but struggled in school
- Few friends
- Borderline personality disorder



Often, the parent or guardian may say, “He won’t get help.”

Adverse Childhood Experiences (ACEs)

Big study showed:

Potentially traumatic events can have negative, lasting effects on health and well-being

ACEs are things like:

- Economic hardship

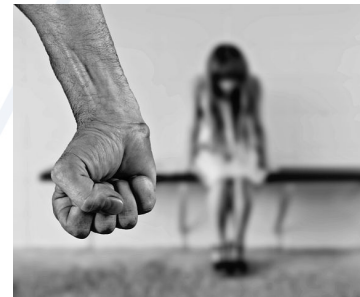
- Divorce or separation

- Victim or witness of violence

- Physical, emotional or sexual abuse

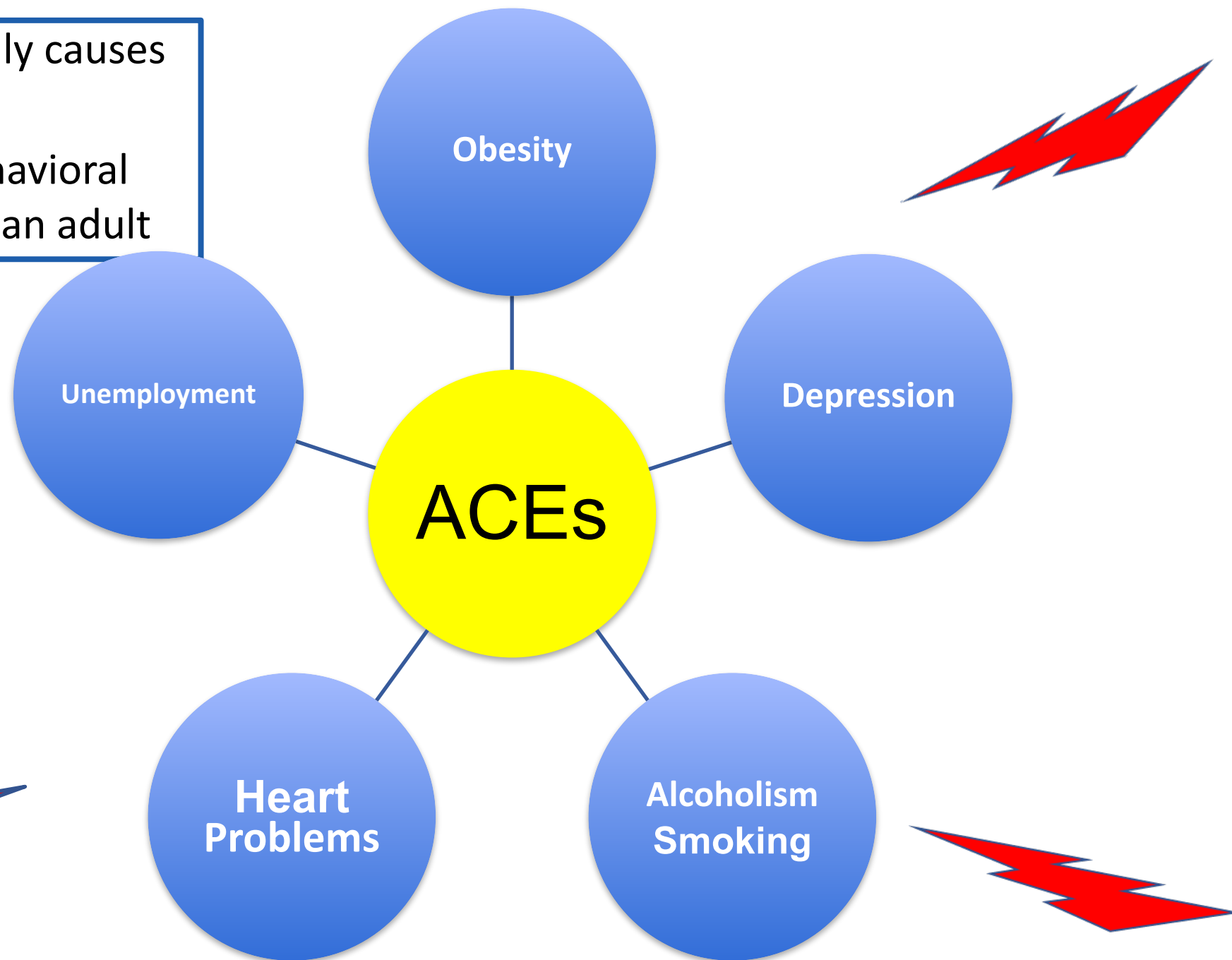
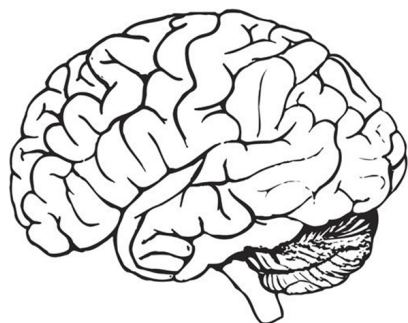
- Growing up in a family with mental health or substance use problems

- A family member who is incarcerated



This chronic stress literally causes changes in the brain.

Can lead to negative behavioral and health outcomes as an adult



ACEs

Children with ACEs much more likely to develop

✦ **Mood disorders**

✦ **Poor executive functioning**

Decreased decision-making skills

Poor judgement

Poor impulse control



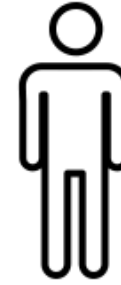
Implications for Substance Use Programs

People with TBI will have a harder time using services and maintaining sobriety without accommodations:

- Write things down/encourage them to take notes
- Set up alarms for appointments
- Repeat information, summarize, use visual aids
- Ask them to paraphrase
- Speak more slowly with pauses for comprehension
- Support efforts to be organized – notebooks, calendars, lists
- Education about brain injury, brain injury resources
- Judgement and impulsivity may be issues – help to plan ahead, anticipate triggers, think about consequences
- Recovery may take longer



At the Individual Level



Brain Health

- Eat well
- Get 7-8 hours sleep
- Exercise regularly
- Maintain a healthy weight
- Don't drink or do illicit drugs
- Keep learning
- Be social
- And much more...

Get early treatment for Brain Injuries Screening for Brain Injuries*

Ongoing monitoring throughout life

Re-engage in treatment as needed

Seek out natural pain remedies

- Relaxation, meditation
- Stretching
- Arnica
- Physical therapy, chiropractic care
- Over the counter aids – Voltaren, Biofreeze
- Etc.

HELPS Screening

Head injury

Emergency room

Lose Consciousness

Problems in daily living

Sicknesses

HELPS BRAIN INJURY SCREENING TOOL

Consumer Information: _____

Agency/Screener's Information: _____

H Have you ever **Hit** your **Head** or been **Hit** on the **Head**? ☐ Yes ☐ No

Note: Prompt client to think about all incidents that may have occurred at any age, even those that did not seem serious: vehicle accidents, falls, assault, abuse, sports, etc. Screen for domestic violence and child abuse, and also for service related injuries. A TBI can also occur from violent shaking of the head, such as being shaken as a baby or child.

E Were you ever seen in the **Emergency** room, **hospital**, or by a **doctor** because of an **injury** to your **head**? ☐ Yes ☐ No

Note: Many people are seen for treatment. However, there are those who cannot afford treatment, or who do not think they require medical attention.

L Did you ever **Lose** consciousness or experience a period of being **dazed** and **confused** because of an **injury** to your **head**? ☐ Yes ☐ No

Note: People with TBI may not lose consciousness but experience an "alteration of consciousness." This may include feeling dazed, confused, or disoriented at the time of the injury, or being unable to remember the events surrounding the injury.

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

- | | |
|---|--|
| <input type="checkbox"/> headaches | <input type="checkbox"/> difficulty reading, writing, calculating |
| <input type="checkbox"/> dizziness | <input type="checkbox"/> poor problem solving |
| <input type="checkbox"/> anxiety | <input type="checkbox"/> difficulty performing your job/school work |
| <input type="checkbox"/> depression | <input type="checkbox"/> change in relationships with others |
| <input type="checkbox"/> difficulty concentrating | <input type="checkbox"/> poor judgment (being fired from job, arrests, fights) |
| <input type="checkbox"/> difficulty remembering | |

S Any significant **Sicknesses**? ☐ Yes ☐ No

Note: Traumatic brain injury implies a physical blow to the head, but acquired brain injury may also be caused by medical conditions, such as: brain tumor, meningitis, West Nile virus, stroke, seizures. Also screen for instances of oxygen deprivation such as following a heart attack, carbon monoxide poisoning, near drowning, or near suffocation.

Scoring the HELPS Screening Tool

A HELPS screening is considered positive for a *possible* TBI when the following 3 items are identified:

- 1.) An event that could have caused a brain injury (yes to H, E or S), **and**
- 2.) A period of loss of consciousness or altered consciousness after the injury or another indication that the injury was severe (yes to L or E), **and**
- 3.) The presence of two or more chronic problems listed under P that were not present before the injury.

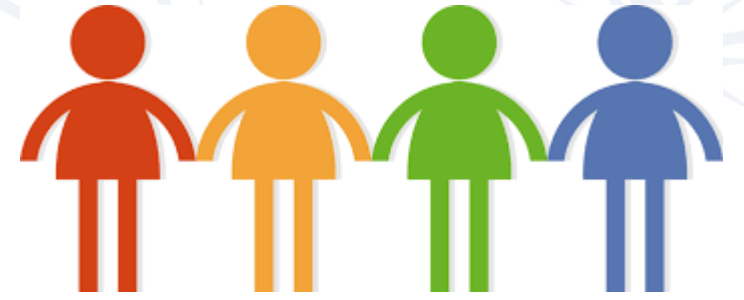
Note:

- A positive screening is **not sufficient to diagnose TBI** as the reason for current symptoms and difficulties - other possible causes may need to be ruled out
- **Some individuals could present exceptions** to the screening results, such as people who do have TBI-related problems but answered "no" to some questions
- Consider positive responses within the context of the person's self-report and documentation of altered behavioral and/or cognitive functioning

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

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At the Community Level



- ✦ Support for young and/or single parents
- ✦ Brain health education
- ✦ Educate schools about Concussion, TBI and the connections to Substance Use, and the need for screening
- ✦ Educate Healthcare Providers about Concussion/TBI
- ✦ Educate Substance Use Programs about TBI
- ✦ Educate Police and about changes after TBI
- ✦ Educate Correctional & Probation Officers about screening for TBI & substance use

At the Community Level



- ✦ Access to healthcare
- ✦ Access to affordable childcare and Pre-K
- ✦ TN's Safe Stars Program for community and school sports
- ✦ Caregiver Support
- ✦ Bring churches and other organization together to help
- ✦ Engage Brain Links with your community to teach about TBI and Brain Health

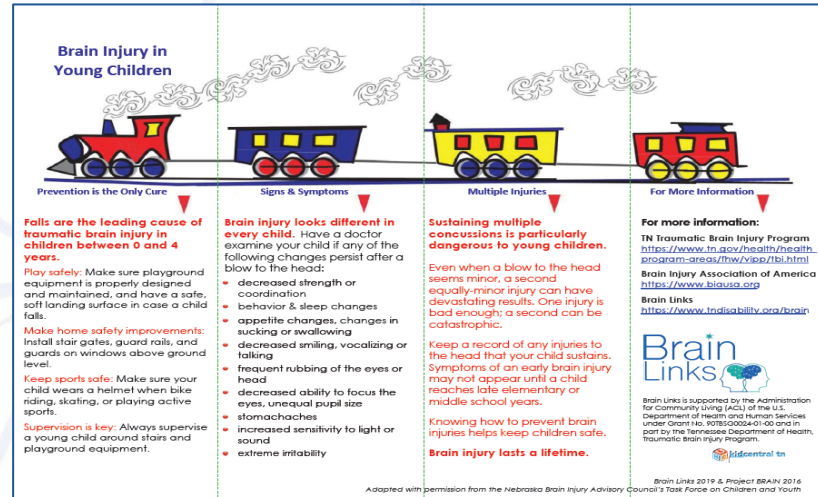
Tools



Signs & Symptoms Tools

Spanish available

tndisability.org/brain



Brain Injury in Young Children

Prevention is the Only Cure

Falls are the leading cause of traumatic brain injury in children between 0 and 4 years.

Play safely: Make sure playground equipment is properly designed and maintained, and have a safe, soft landing surface in case a child falls.

Make home safety improvements: Install stair gates, guard rails, and guards on windows above ground level.

Keep sports safe: Make sure your child wears a helmet when bike riding, skating, or playing active sports.

Supervision is key: Always supervise a young child around stairs and playground equipment.

Signs & Symptoms

Brain injury looks different in every child. Have a doctor examine your child if any of the following changes persist after a blow to the head:

- decreased strength or coordination
- behavior & sleep changes
- appetite changes, changes in sucking or swallowing
- decreased smiling, vocalizing or talking
- frequent rubbing of the eyes or head
- decreased ability to focus the eyes, unequal pupil size
- stomachaches
- increased sensitivity to light or sound
- extreme irritability

Multiple Injuries

Sustaining multiple concussions is particularly dangerous to young children.

Even when a blow to the head seems minor, a second equally-minor injury can have devastating results. One injury is bad enough; a second can be catastrophic.

Keep a record of any injuries to the head that your child sustains. Symptoms of an early brain injury may not appear until a child reaches late elementary or middle school years.

Knowing how to prevent brain injuries helps keep children safe.

Brain injury lasts a lifetime.

For More Information:

TN Traumatic Brain Injury Program
<https://www.tn.gov/health/health-education/areas/tbi/tbi.html>

Brain Injury Association of America
<https://www.biausa.org>

Brain Links
<https://www.tndisability.org/brain>

Brain Links

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Brain Links 2019 & Project BRAIN 2016

Adapted with permission from the Nebraska Brain Injury Advisory Council's Task Force on Children and Youth



When Your Child's Head Has Been Hurt: HEADS UP TO PARENTS

A head injury can happen to anyone in every day life, at home, at school or in sports. Many children who hurt their heads get well and have no long-term problems.

- You can't see a concussion. Signs and symptoms of concussion can show up right after the injury or may not appear or be noticed until days or weeks after the injury.
- "Concussions are caused by a bump or blow to the head. Even a 'ding,' 'getting your bell rung,' or what seems to be a mild bump or blow to the head can be serious.
- If your child reports any symptoms of concussion, or if you notice the symptoms yourself, seek medical attention right away."

(Adapted from the Centers for Disease Control and Prevention www.cdc.gov/concussion/)

HEALTH PROBLEMS

Headaches

- headache that keeps coming back
- pain in forehead
- pain below the ear
- pain in the jaw
- pain in or around the eyes

Balance Problems

- dizziness
- trouble with balance

Sensory Changes

- bothered by smells
- changes in taste or smell
- appetite changes
- feels too hot
- feels too cold
- doesn't feel temperature at all

Sleep Problems

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

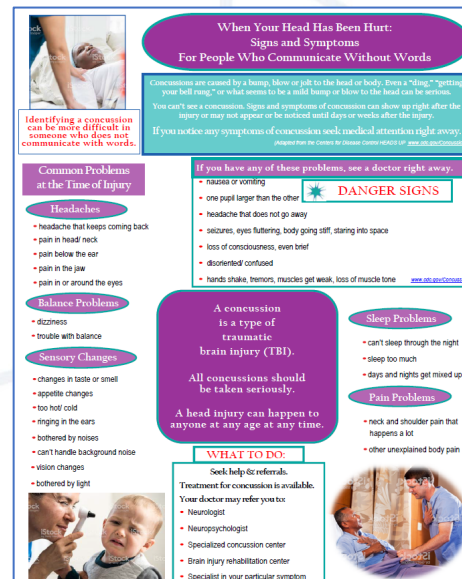
Pain Problems

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

WHAT TO DO:

Seek help for referrals. Treatment for concussion is available. Your doctor may refer you to:

- Neurologist
- Neuropsychologist
- Specialized concussion center
- Brain injury rehabilitation center
- Specialist in your particular symptom



When Your Head Has Been Hurt: Signs and Symptoms For People Who Communicate Without Words

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

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Common Problems at the Time of Injury

Headaches

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

Balance Problems

- dizziness
- trouble with balance

Sensory Changes

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

Sleep Problems

- can't sleep through the night
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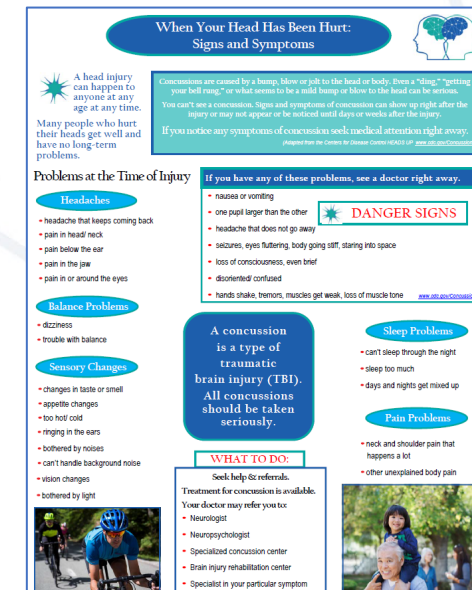
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When Your Head Has Been Hurt: Signs and Symptoms

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When Concussion Symptoms Aren't Going Away

WHEN CONCUSSION SYMPTOMS ARE NOT GOING AWAY
A GUIDE FOR PARENTS OF CHILDREN WHO ARE FIVE AND UNDER




HAS YOUR CHILD HAD A CONCUSSION?

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

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

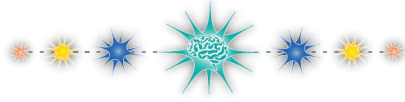
FIRST THING AFTER INJURY

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



5 and Under

WHEN CONCUSSION SYMPTOMS ARE NOT GOING AWAY
A GUIDE FOR PARENTS OF CHILDREN WHO ARE SCHOOL-AGED



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If you have a child in school, three months is too long to wait and see if symptoms go away. You need to take action earlier, along with the school, to help your child do well in school and stay up-to-date.

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


FIRST THING AFTER INJURY

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



School-Aged

WHEN CONCUSSION SYMPTOMS ARE NOT GOING AWAY
A GUIDE FOR ADULTS WITH CONCUSSION



HAVE YOU HAD A CONCUSSION?

If you have had a concussion, also called a mild brain injury, there are things you can do to feel better. Usually concussion symptoms will go away by three months. Most people feel better in two to four weeks. However, some people have symptoms that last longer than three months.

Remember: You don't have to hit your head to get a concussion. A hard bump to the body can also cause a concussion. If you have an active lifestyle, three months may be too long to wait to see if symptoms go away. You need to act sooner to safely and successfully return to school, work and physical activity.

FIRST THING AFTER INJURY

- Go to the doctor or hospital.
- Rest for the first one to three days as needed.
- Follow the doctor's care plan.
- Watch carefully for changes.
- Have someone else watch, too.

Get a doctor's letter saying that you have a concussion (or mild brain injury) and when you may return part-time or full-time to school or work.

FIRST FEW DAYS TO WEEKS AFTER INJURY

After three days, start to ease back into daily routine, but try not to do too much. Too much activity can make symptoms last longer. Did you know that research also shows that too much rest can do the same? It is safest to find a balance. If you can, put off big work, legal or financial decisions during this time.

TRY NOT TO PUSH THROUGH YOUR SYMPTOMS

RETURNING TO COLLEGE (OR OTHER TRAINING AFTER HIGH SCHOOL)


Ease back into school. You may need to start with a shorter schedule. Leave class as symptoms get worse and before they become too bad. Take a break when you need one. Start by talking to each teacher. Show them the doctor's note. Tell them what happened. Let them know how you are feeling and what you think may help you or what you may need to do.

Examples of helpful changes:

- "I may need to wear sunglasses because I'm sensitive to light."
- "I may need to put my head down to rest. I'd like to do this rather than leave as I can still leave."
- "I can't handle a whole class yet, so I may need to leave early."
- "I may need extra time for this test/project because it takes longer for me to think and plan."

Let teachers know that you do not expect these changes to last long, but you do need them now in order to do your best. If you need help in making these changes, talk to the school's Disability Services office.

Tennessee's TBI Service Coordinators are people who can help you at no cost. They know about concussion (brain injury) and can help with what you need. 800-882-0611



Adults

Spanish Available

tndisability.org/brain

Problems can still arise after TBI treatment

**A GUIDE TO POSSIBLE CHANGES
AFTER BRAIN INJURY**
FOR SCHOOL-AGED CHILDREN AND ADULTS

**This guide was designed to help
people watch for changes that *may* follow a brain injury.**

Changes after brain injury may happen even years after the person's treatment ends, whether they completed rehabilitation, hospitalization, etc. This guide gives ideas about how to address these changes. It will also give tips for keeping your brain healthy throughout your life.

Keep this guide handy in case there are questions or concerns.

OUTCOMES AFTER BRAIN INJURY REHAB ARE DIFFERENT FOR EVERYONE



THEY WILL DEPEND ON MANY THINGS INCLUDING:

- Injury severity/Types of changes
- Support from family and friends
- Motivation to improve and ability to adapt to changes
- Mental health (ie depression, anxiety)
- Age at the time of injury
- Complications (things like infections, seizures, other injuries, etc.)
- Supports for transitioning to home or work (employer, transportation, etc.)
- Funding for rehab/Length of rehab/Willingness or ability to participate in rehab

There is no cut-off date for brain injury recovery. Positive change can continue for years. Improvement happens quickly for some people and more slowly for others. Some people may have negative changes over time or as they age. Some negative changes can be prevented by the choices you make today.

THINGS TO WATCH FOR IN CHILDREN

Your child's immediate physical injuries may heal quickly, but they may continue to struggle in other areas. The changes in these other areas can be hard to see if you don't know what you are looking for. Consider whether the following types of problems may be related to the injury.



Academic (School) Changes: Falling behind in class, difficulty learning new information, putting off school work, forgetting assignments, leaving items behind at school, trouble saying or writing what they mean

Social Changes: Losing friends, difficulty making new friends, not knowing how to act or speak in different situations, not understanding facial cues or social skills (like knowing it is time to end a conversation or that they are making someone uncomfortable), acting younger than their friends, laughing or crying too easily

Behavior Changes: Not acting like themselves, getting into fights, acting without thinking first, making poor decisions, making inappropriate sexual comments, using abusive words or tone, letting friends talk them into doing the wrong things, letting others mistreat or abuse them, alcohol use disorder, drug use disorder, trouble with the law

Physical Changes: Pain, a physical change from the injury that gets worse, reaching developmental milestones more slowly, sleep changes

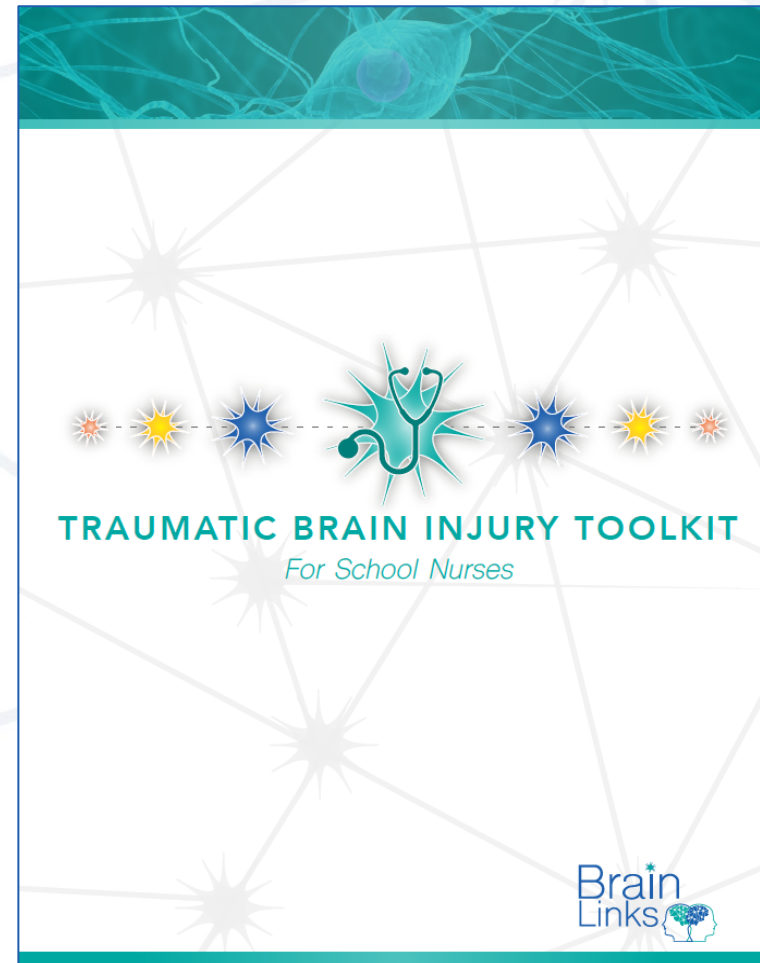
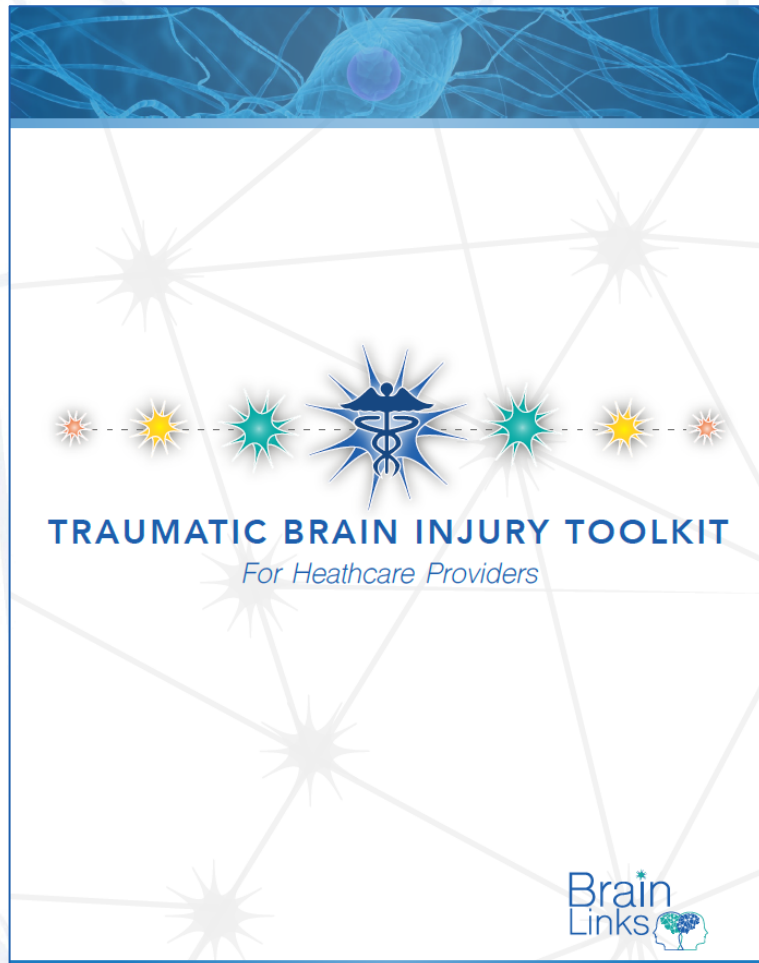
Mental Health Changes: Becoming depressed or anxious, difficulty coping with change or handling stress, worrying at night and not sleeping, pushing friends and family away, spending too much time alone, doing things to hurt yourself, feeling stuck or unmotivated, developing addictive behaviors

See Suicide Warning Signs: <https://www.in.gov/health/health-program-areas/tnrc/vtpp/suicide-prevention/warning-signs.html>

Spanish Available

tndisability.org/brain

Helpful Toolkits for the Community



Brain Health

How to Have a Healthy Brain Throughout Life

Evidence-based information on

- Eating Well
- Exercise
- Being Social
- Learning
- Mental Health
- Gratitude
- Resilience
- Purpose and Joy
- Brain Injury Prevention
- Avoiding Toxicity
- Sleep

- ❖ How to Make Change
- ❖ Free Resources

BRAIN HEALTH


HOW TO HAVE A HEALTHY BRAIN THROUGHOUT LIFE

Our brain controls everything about us: our moods and emotions, our movements, thoughts and words. Some habits, like eating junk food, not exercising, smoking and drinking alcohol can harm our brain. Unhealthy habits can lead to early loss of memory and thinking skills and sometimes dementia - a disorder that effects memory, personality and reasoning.

We can make changes right now - no matter what age we are - that will improve our brains and the quality of our lives.

HERE'S WHERE TO START:

Suggestions are based on current research.



EAT WELL

- The best diet for a healthy brain includes lots of vegetables, fruits, whole grains, healthy fats (avocados, nuts and seeds), and legumes (beans, peas and lentils) and NO eggs, meat or dairy. This is a **vegan diet**.
- If you feel that you can't be a vegan, the next best choice for brain health is **vegetarian**, which is no meat or fish. If you can't be a vegetarian, eat as many healthy, meatless meals as you can.
- Beware of trendy diets. They can often help you lose weight in the short term, but may not be good for your body in the long term.

Avoid junk food, fast food restaurants and most processed (man-made, factory-made) foods. These foods often contain a lot of sugar, salt and fat.

Guidelines for the Prevention of Alzheimer's Disease: "Vegetables, legumes (beans, peas, lentils), fruits, and whole grains should replace meats and dairy products as primary staples of the diet."
Journal of Neurobiology of Aging, 2014.

GREEN TEA: Did you know that green tea is both **neuro-protective (protects the brain)** and **neuro-restorative (heals the brain)**?
That means if you drink green tea and have an accident that hurts your brain, it will help protect your brain from injury. Even if you begin to drink the tea after the injury, it will help.

PLANT FOODS VS ANIMAL FOODS: Did you know that **plant foods have 64 times more antioxidants** than animal foods? Antioxidants help protect cells in your body from damage, including brain cells.

DR. GREGER'S DAILY DOZEN APP: This free app helps you **keep track of the healthy foods** that you eat and helps you figure out what you are missing.

EXERCISE


Cardiovascular exercise - any exercise that raises your heart rate - is good for your whole body, including your brain. Other exercise, like yoga, is very good for your body and for relaxation. To really benefit your brain, add cardiovascular exercise which will **increase blood flow to your brain**. Examples of this type of exercise are walking quickly, jogging, dancing and riding a bike.

Too little exercise actually hurts the brain.

Cardiovascular exercise has been proven to:

- Fight Depression
- Manage Stress
- Control Blood Sugar Levels
- Help Fight Colds and Diseases
- Increase Focus
- Lower Blood Pressure
- Maintain a Healthy Weight
- Improve Memory

Exercise and better food choices can help you to keep a healthy weight. Studies have shown that having a heavier body makes us have a smaller brain. **So keep your weight down and your brain healthy!**



Other Resources

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

<http://www.braininjurytn.org/service-coordination.html>

- Virtual Support Groups

- TN TBI Family Support Program <https://www.tn.gov/health/health-program-areas/fhw/vipp/tbi/tbi-family-support-program.html>

Tennessee Traumatic
Brain Injury

Service Coordination Program

*Assisting people with brain injuries,
their families and professionals*



Tennessee Department of Health
Traumatic Brain Injury Program
1-800-882-0611

Brain Links' training satisfaction survey

Check the chat → →

Thank you in advance for supporting our grant efforts!!!



Need to know:
Wendy
Substance Use & TBI
Nov 3



Website: www.tndisability.org/brain



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