

# Introduction to Brain Injury

**Brain Injury Alliance of NJ**

**Kim Myers**

**1-800-669-4323**

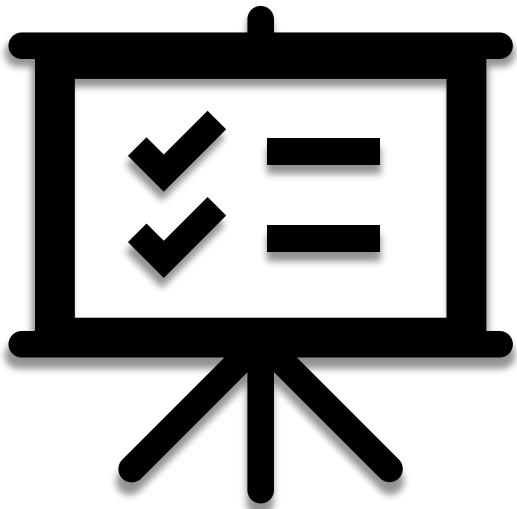
**bianj.org**



**Brain Injury  
Alliance**

NEW JERSEY

# Objectives



- ▶ Discuss functions of the brain
- ▶ Define brain injury and the different levels of severity
- ▶ Discuss prevalence and causes of brain injury
- ▶ Identify changes that can occur after brain injury
- ▶ Identify strategies to help individuals with brain injury
- ▶ Provide brief overview of programs and services



What is your  
connection to  
brain injury?

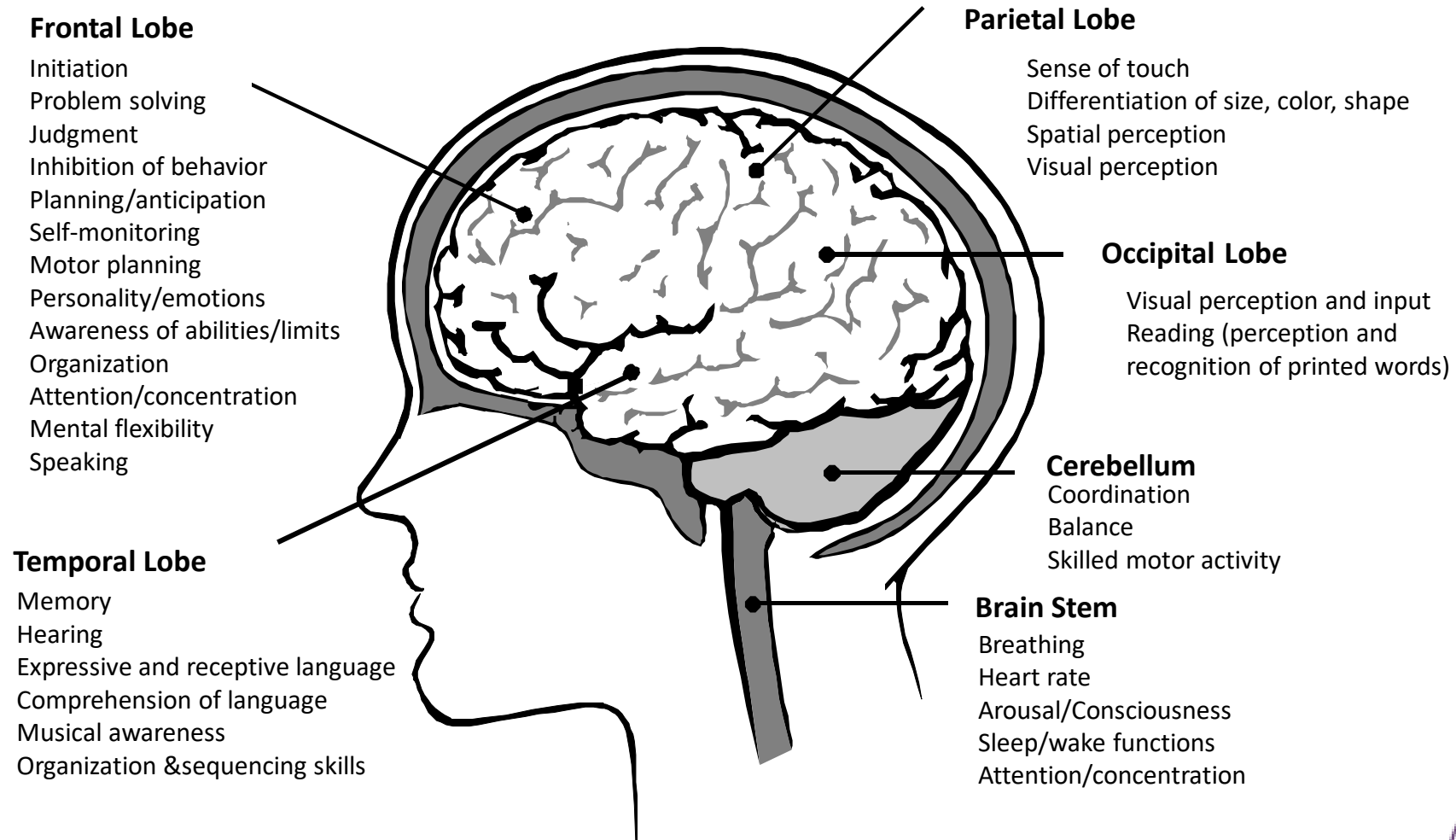
# The Brain



Controls everything we do

- ▶ ...breathing
- ▶ ...walking
- ▶ ...talking
- ▶ ...thinking
- ▶ ...behaving
- ▶ ...feeling

# Functions of the Brain



A brain injury is not  
congenital, degenerative,  
hereditary, or induced by birth  
trauma

(Brain Injury Association of America, n.d.).



# Definitions of Brain Injury

## **Acquired (non-traumatic) brain injury**

(ABI): is an injury to the brain that has occurred after birth (stroke, brain tumor, aneurysm, etc.)

**Traumatic brain injury** (TBI): is an insult to the brain caused by an external physical force (falling downstairs, car crash)

# Examples of Acquired Brain Injury

Lack of oxygen

Stroke/aneurysms

Infections to the brain

Toxic exposure (substances, poison)

Seizure

Electric Shock

Tumors



# Examples of **Traumatic Brain Injuries**

Motor Vehicle Crashes

Falls

Assaults/Violence

Domestic Violence

Sports/ Recreation Injuries

Military / Blast Injuries

Workplace Injuries

Acceleration/Deceleration Forces

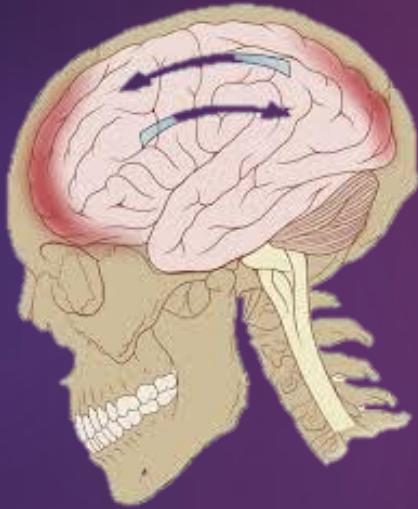
# Severity of Brain Injury

**Mild**

**Moderate**

**Severe**

# Mild

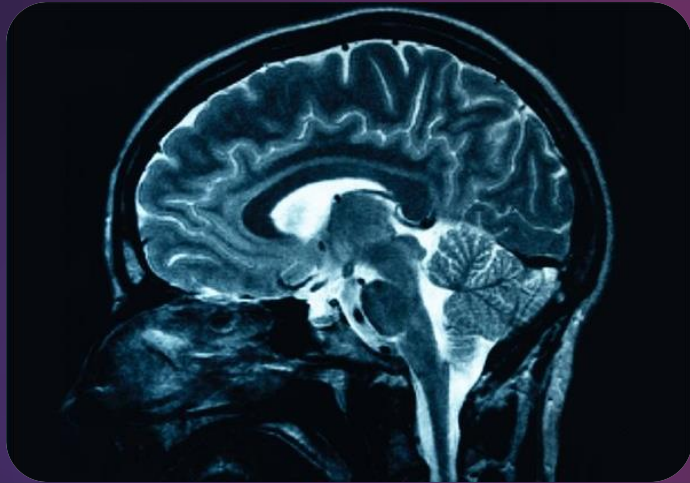


An individual who sustains a **mild brain injury** may experience:

- ▶ Loss of consciousness up to 30 min
- ▶ Vomiting
- ▶ Dizziness
- ▶ Memory loss
- ▶ Fatigue
- ▶ Not present on imaging

A concussion is considered a mild traumatic brain injury or mTBI

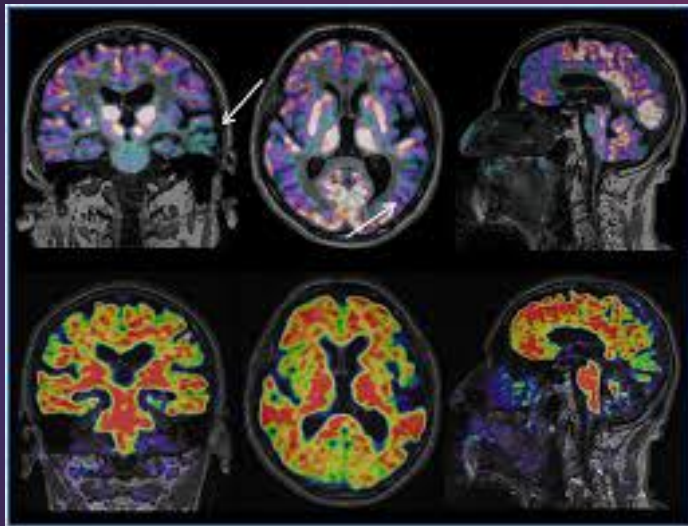
# Moderate



An individual who sustains a **moderate brain injury** will experience:

- ▶ Contusions or bleeding on/within the brain
- ▶ Be unconscious for up to 24 hours
- ▶ Signs of brain trauma

# Severe



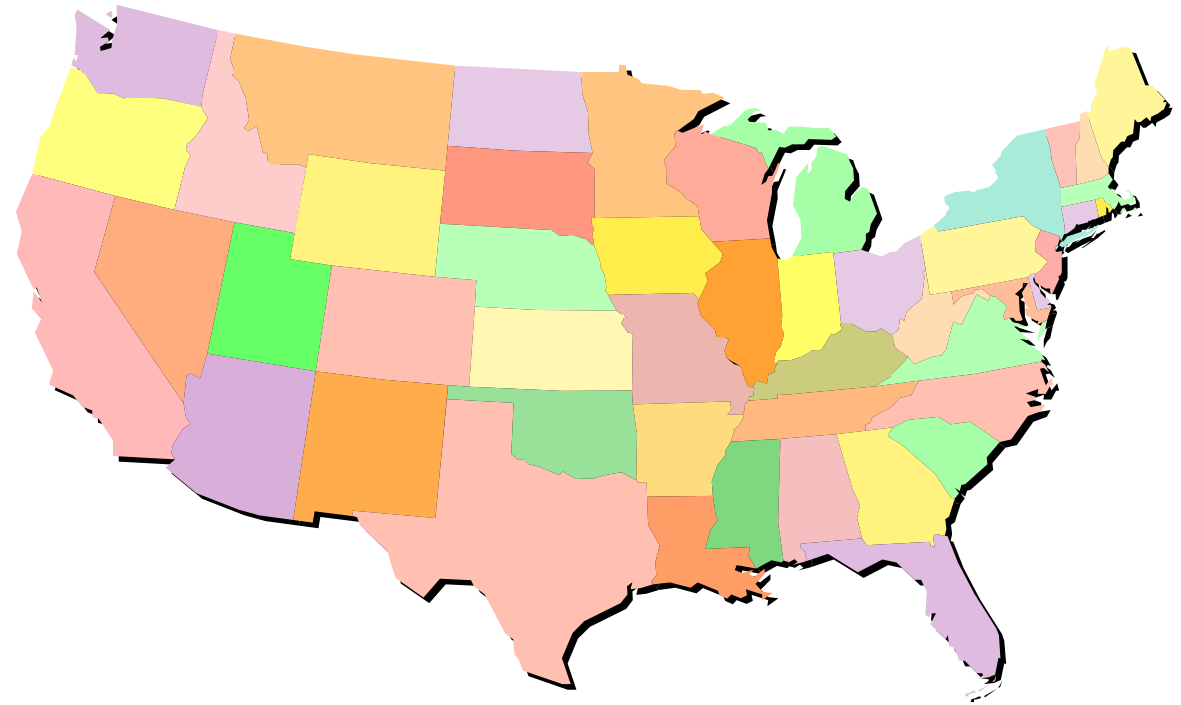
An individual who sustains a **severe brain injury** will experience:

- ▶ Unconscious for more than 24 hours
- ▶ Show signs of injury on neuroimaging tests
- ▶ May experience post-traumatic confusion or amnesia

# “The Silent Epidemic”

Estimated **5.3 million**  
Americans live with a disability  
as a result of traumatic brain  
injury

(CDC, 2016)



# TBI Statistics

586

Hospitalized  
per day

190

Deaths per  
day

75+

Most  
hospitalized  
and deaths

15%

high-school  
students  
sustain a  
concussion  
each year

(CDC, 2022)

# Leading Causes of Brain Injury

1. Falls
2. Motor vehicle crashes
3. Assaults
4. Unintentionally struck by or against an object



# Brain injury is unpredictable in its consequences

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Every individual is different prior to an injury

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Every brain injury is different

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Every person with brain injury adjusts differently to the changes that result from their injury

# Effects of Brain Injury



Physical



Cognitive



Emotional and behavioral

# Physical Changes

- ▶ Fatigue
- ▶ Loss of smell & taste
- ▶ Hearing Loss
- ▶ Visual Problems
- ▶ Sleep disturbances
- ▶ Balance & coordination
- ▶ Slurred speech
- ▶ Motor control
- ▶ Seizures
- ▶ Decreased tolerance for drugs and alcohol
- ▶ Headaches

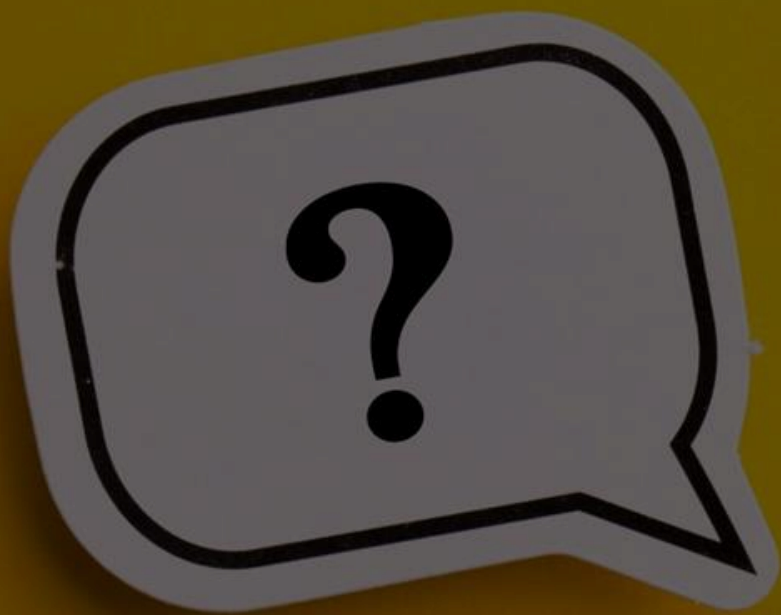
# Cognitive Changes

- ▶ Memory loss
- ▶ Lack of initiative
- ▶ Impaired reasoning
- ▶ Visual/Perceptual Skills
- ▶ Processing and understanding
- ▶ Communication
- ▶ Attention span
- ▶ Planning/Organizing
- ▶ Completing tasks
- ▶ Diminished insight and empathy

# Emotional & Behavioral Changes

- ▶ Impulsivity
- ▶ Emotional lability
- ▶ Irritability
- ▶ Decrease frustration tolerance
- ▶ Impaired judgment
- ▶ Anxiety
- ▶ Depression
- ▶ Aggressive behaviors
- ▶ Changed sexual drive
- ▶ Changed personality

four years later



What symptoms of brain injury did you notice in this clip?

# Treatment

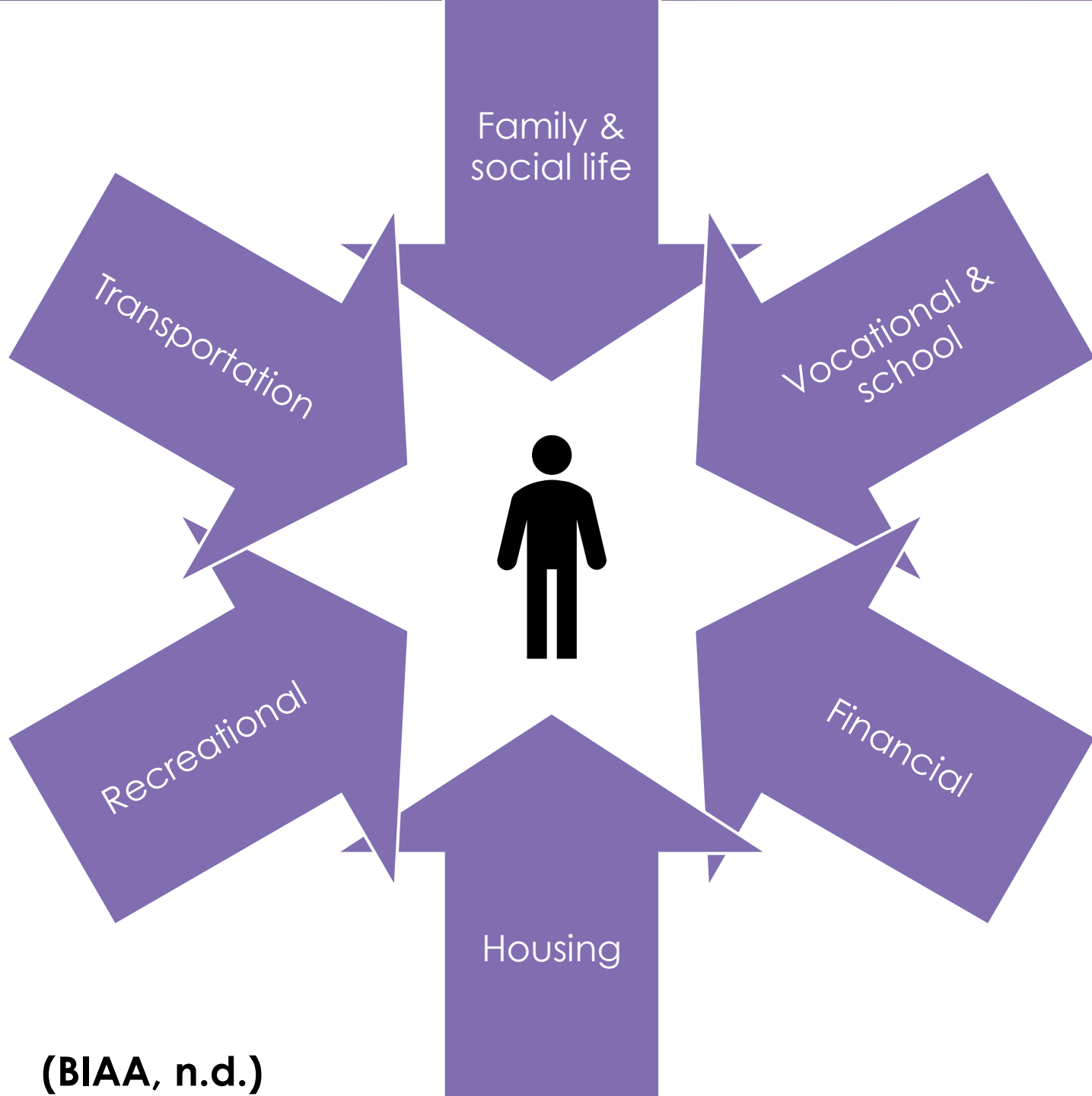
Injury severity doesn't necessarily determine symptoms or outcome

Things might not return to the way they were before the injury

Rehabilitation can be a slow process







Long Term Impact

(BIAA, n.d.)

# Psychosocial Consequences

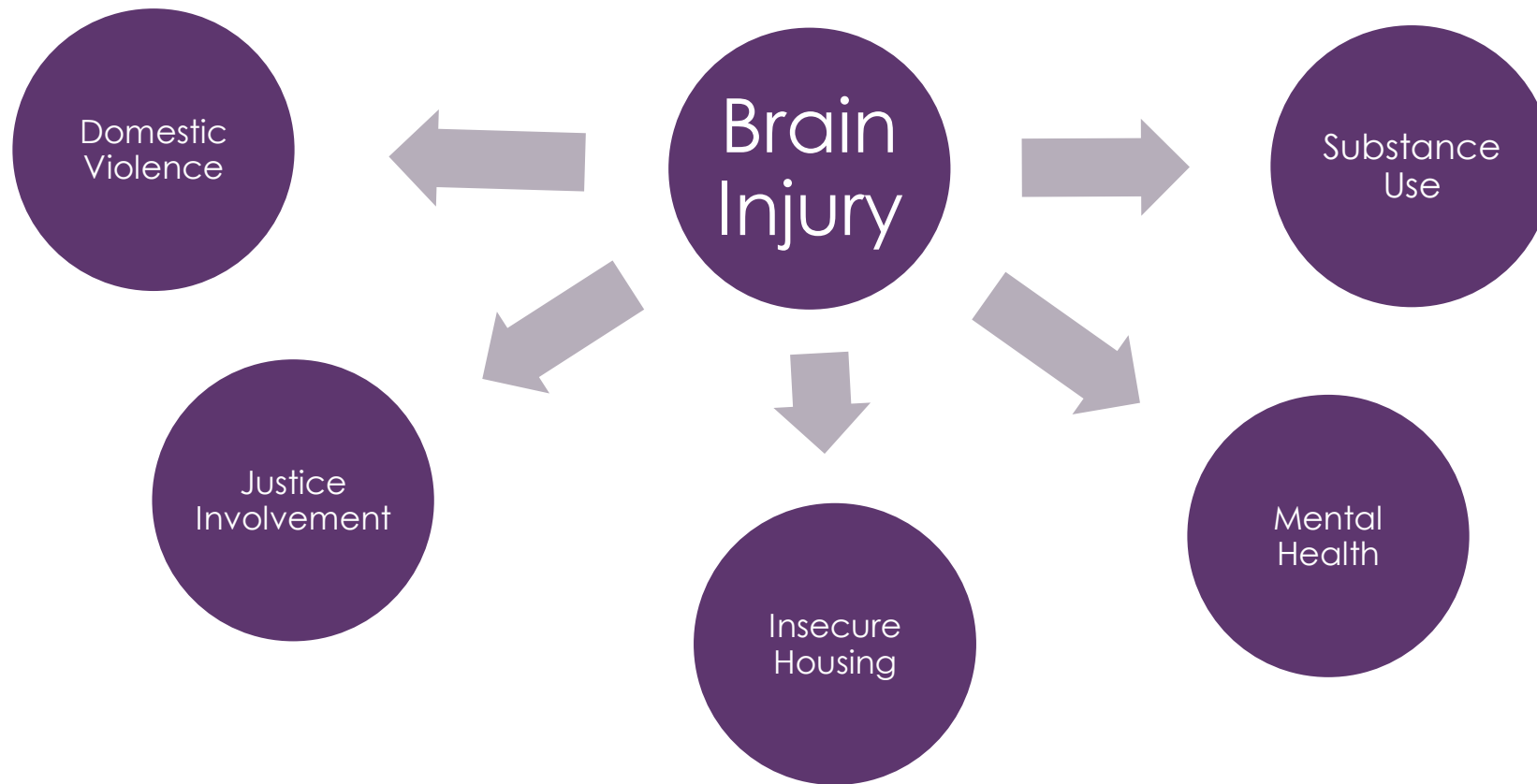
## Interpersonal Difficulties

- Establishing and Maintaining Relationships
- Intimacy/Sexuality
- Substance Use

## Intra-Personal Difficulties

- Loss of Self Esteem
- Shaken Sense of Self
- Depression/Frustration
- Profound Sense of Loss

# Other Interconnected Issues



A close-up photograph of several hands holding white puzzle pieces against a bright, warm, out-of-focus background. The hands are positioned around the puzzle pieces, suggesting a collaborative effort. A large black rectangular box is overlaid on the right side of the image, containing the word 'Strategies' in white text.

# Strategies

# How Can You Help?

1

Become more knowledgeable about brain injury and appropriate resources

2

Offer understanding and support

3

Provide appropriate assistance and accommodations

# Strategies



Speak slowly



Be concrete and break information into smaller pieces



Encourage visual reminders & checklists



Repeat information

# Prevention Strategies



**Walk and drive  
safely in the  
community**



**Use safety  
equipment**

Helmet  
Car seat/seatbelts  
Reflectors



**Play sports  
according to the  
rules**



**Exercise caution  
and be aware of  
your surroundings**

# Awareness & Education





# Awareness & Education

## Educate children

## Raise awareness among those who are at risk:

- ▶ Senior citizens
- ▶ Those who use substances such as drugs/alcohol
- ▶ Victims of violence
- ▶ Those engaged in sports or risky physical labor
- ▶ Servicemembers

## Use safety precautions

# BIANJ Programs and Services

- ▶ Direct Services
- ▶ Education
- ▶ Prevention
- ▶ Advocacy



# Direct/Support Services

- ▶ Case Management
- ▶ Helpline 1-800-669-4323
- ▶ Support Groups
- ▶ Camp TREK (Together in Recreation, Education, and Knowledge)





## TBI Fund

Provides NJ residents who have survived a traumatic brain injury the opportunity to access the brain injury-related services and supports they need to live independently in the community.

To be determined eligible for services, an individual must:

- ▶ Provide medical documentation of TBI
- ▶ Be a resident of NJ
- ▶ Have liquid assets of less than \$100,000

# Education

- ▶ Webinars
- ▶ Workshops
- ▶ Regional Trainings
- ▶ Family FEST



# Prevention & Advocacy

## Prevention

- ▶ U Got Brains Champion Schools Program
- ▶ JerseyDrives webpage
- ▶ Share the Road Campaign

## Advocacy

- ▶ Legislative Network



# CONNECT WITH US



- ▶ [facebook.com/biaofnj](https://facebook.com/biaofnj)
- ▶ [twitter.com/braininjurynj](https://twitter.com/braininjurynj)
- ▶ [youtube.com/brainhealthnetwork](https://youtube.com/brainhealthnetwork)
- ▶ [instagram.com/braininjuryallianceofnj](https://instagram.com/braininjuryallianceofnj)
- ▶ [bianj.org](https://bianj.org)



# Thank You!

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**N E W J E R S E Y**