



# Brain Injury – Strategies for Improved Engagement and Successful Outcomes

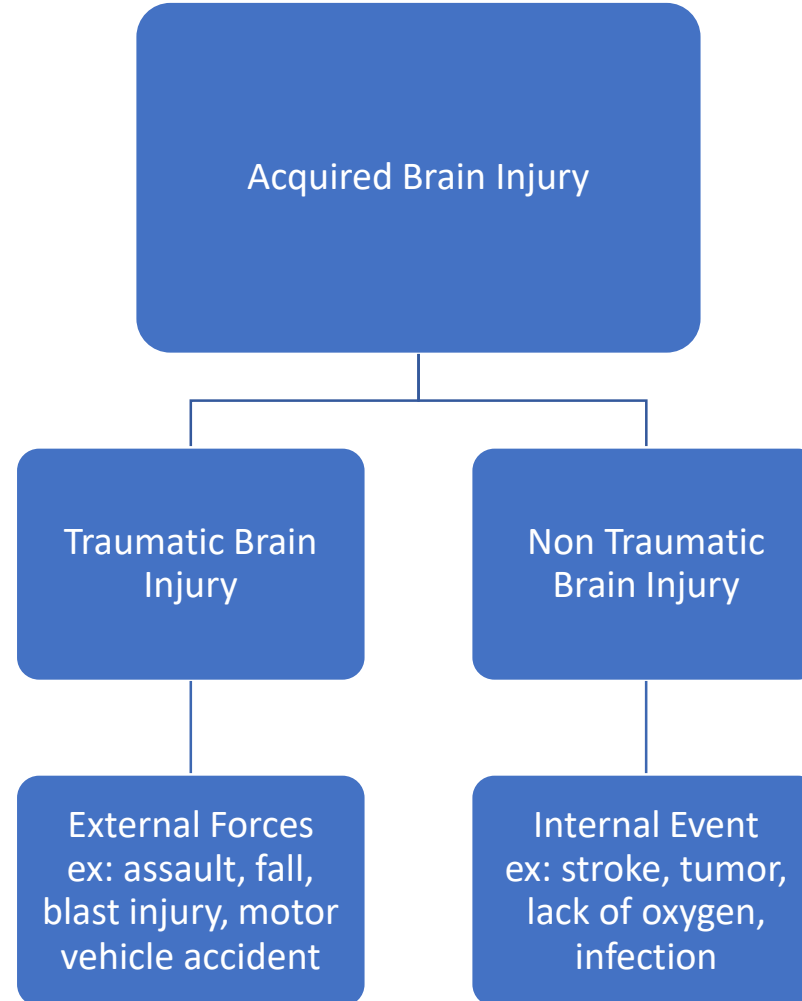
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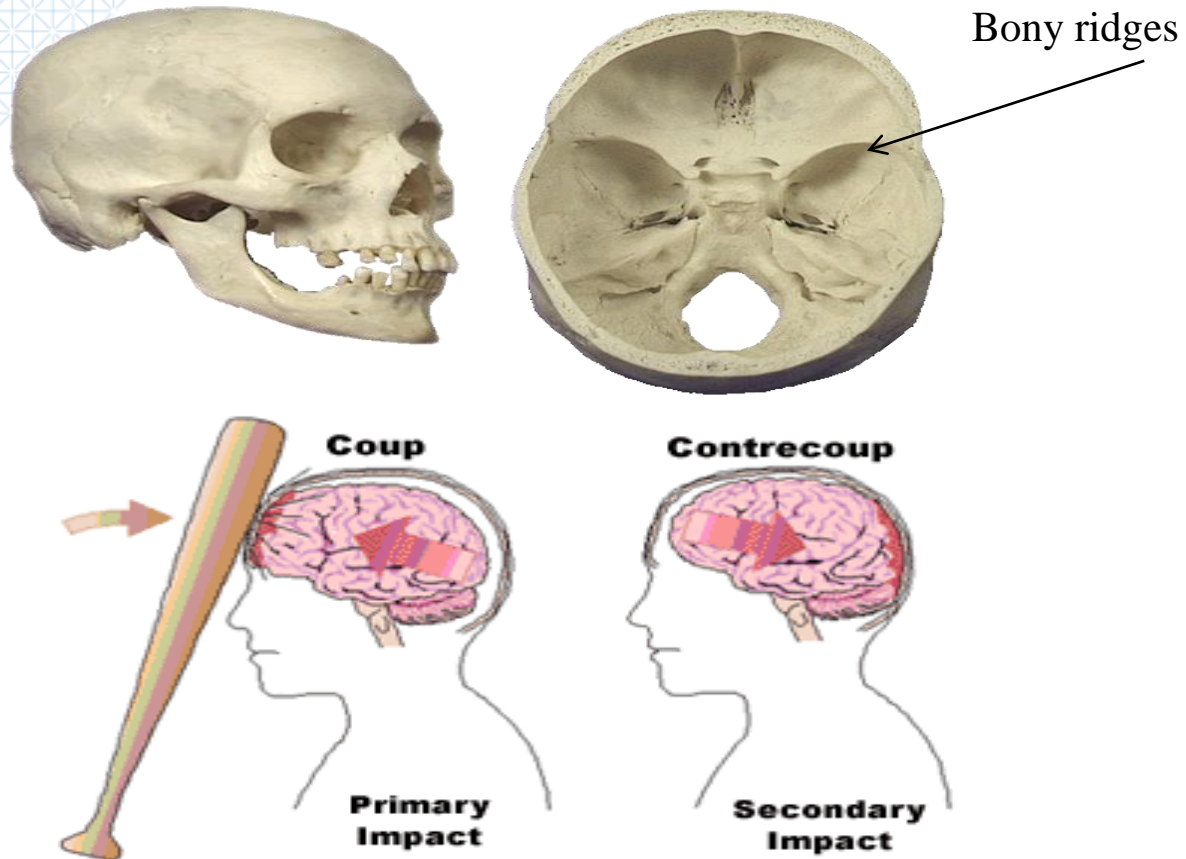
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# “Acquired Brain Injury”



# Mechanism of Injury

## Traumatic Brain Injury

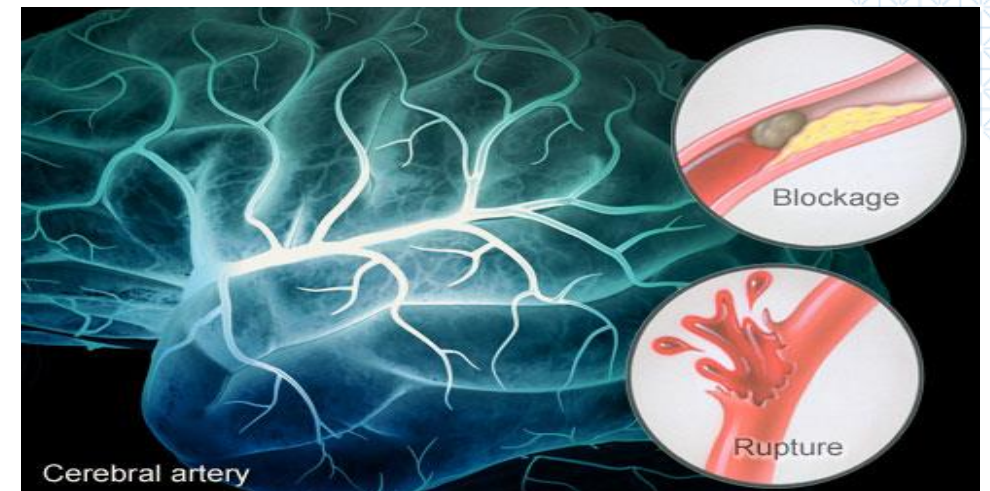


## Non Traumatic Brain Injury

### Anoxia:

A loss of oxygen to the brain caused by an airway obstruction due to choking, strangulation, near drowning or drug reactions.

### Stroke:





# Classification of Severity

**Mild >**

**Loss of consciousness 0-30 minutes  
(Concussion)**

75% of  
TBIs



**Moderate >**

**Loss of consciousness 30 minutes to 24hrs**

**Severe >**

**Loss of consciousness for over 24 hours**

# “Mild” TBI: Complications

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>75% of TBIs are mild. MTBI symptoms may appear mild, but can lead to significant, life-long impairment affecting an individual's ability to function physically, cognitively, and psychologically

- Symptoms may be subtle
  - 90% of concussions are not associated with a loss of consciousness
  - Concussive symptoms may develop over days or even months later
- Treated in non-hospital setting, not in ED, or not treated at all
  - 90% of mTBI may go **unreported**
  - Often not visible on CT scan or MRI
- Brain Injury can **mirror** other disabilities
- Individuals with a history of concussion are at an **increased risk** of sustaining a subsequent concussion

**Frontal lobe**

Executive functions, thinking, planning, organising and problem solving, emotions and behavioural control, personality

**Motor cortex**

Movement

**Sensory cortex**

Sensations

**Parietal lobe**

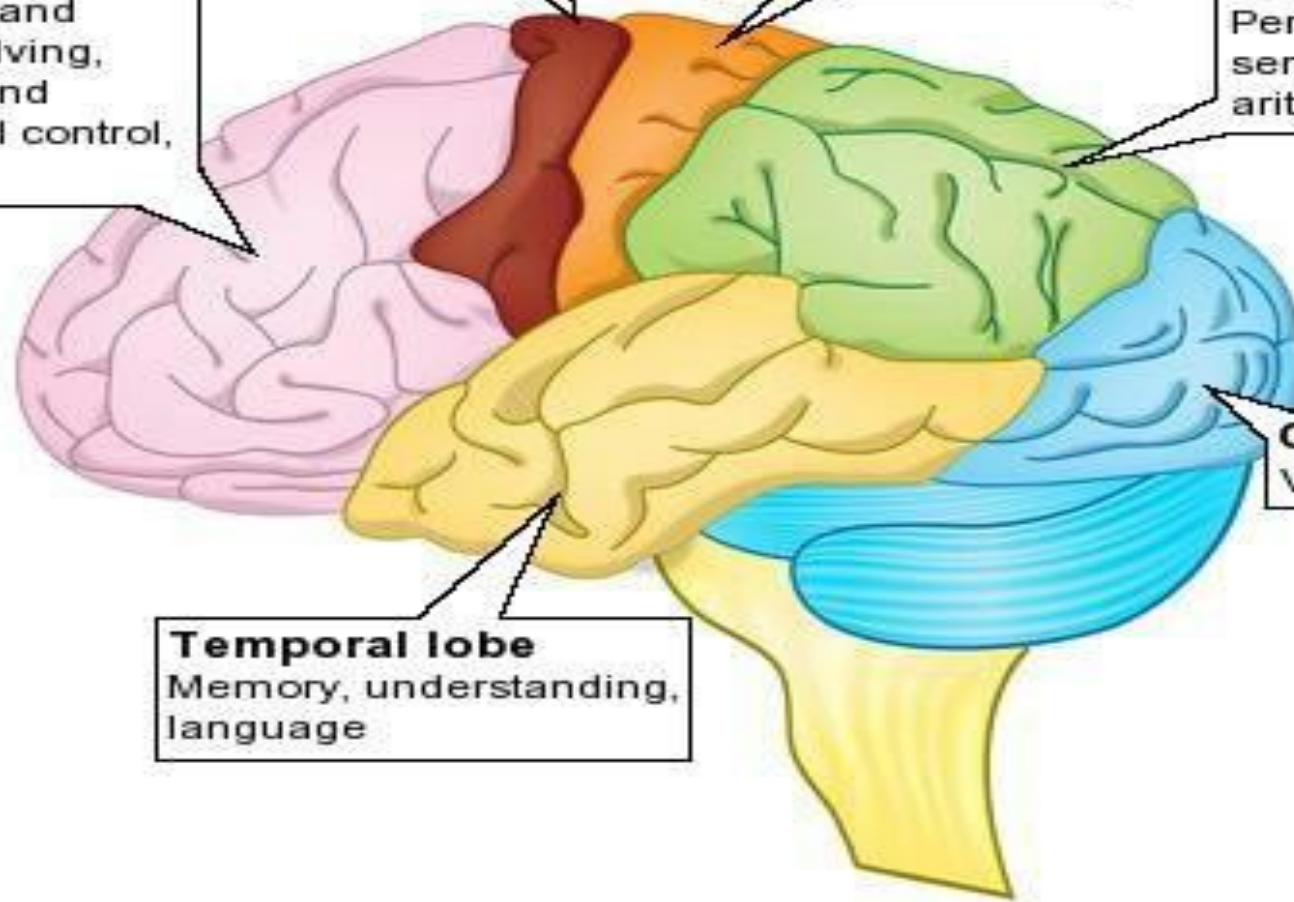
Perception, making sense of the world, arithmetic, spelling

**Temporal lobe**

Memory, understanding, language

**Occipital lobe**

Vision

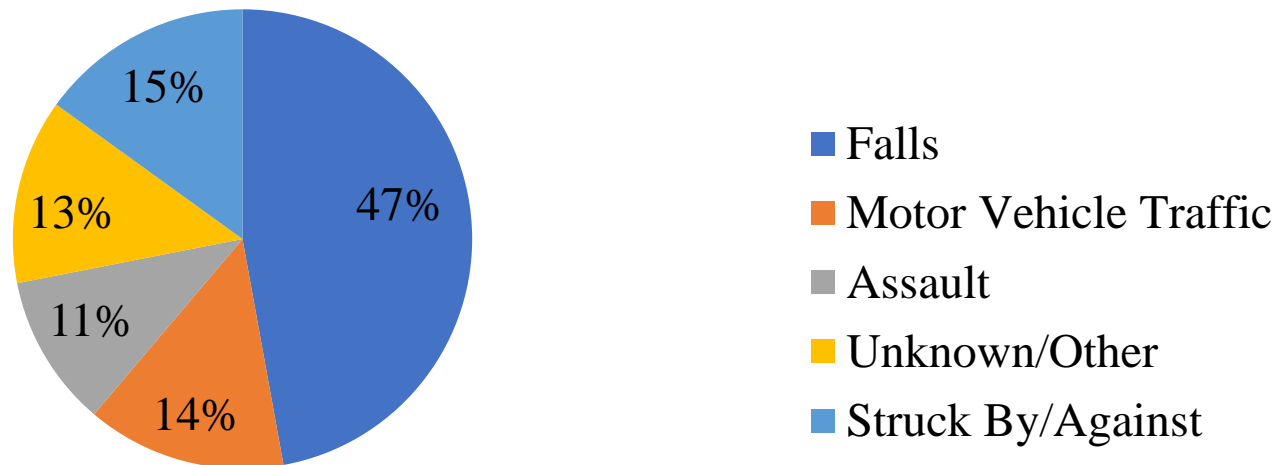




# TBI Statistics

- Children **0 to 4 years**, older adolescents aged **15 to 19** years, and adults **65 years+** are most at risk
- Males are almost **twice** as likely to sustain a TBI as females
- **Falls** are the leading cause of TBIs in the United States (globally, motor vehicle accidents are #1)

In 2014, 2.9 million TBIs occurred in the U.S.



# Colorado Data

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**Over 500,000 adults in Colorado have sustained a brain injury**

- Colorado ranks **9th** in the nation of fatalities and **13th** in the nation of hospitalizations due to a TBI
- Almost **5,000** individuals are hospitalized and nearly **1,000** die due to a TBI in Colorado each year
- **23,500** emergency room visits each year are due to a TBI
- Males are **twice as likely** to sustain a TBI in Colorado as females
- The age groups with the highest risk of sustaining a TBI in Colorado are **15-24** and **65+**
- Each year, **2,200** individuals continue to experience disability one year after hospitalization for a TBI

The number of people with TBI who are not seen in an emergency department or who receive no care is unknown.

*Traumatic Brain Injury National Data Center*



# Signs & Symptoms

<b>Thinking/ Remembering</b>	Difficulty thinking clearly	Feeling slowed down	Difficulty concentrating	Difficulty remember new information
<b>Physical</b>	Headache Fuzzy or blurry vision	Nausea or vomiting (early on) Dizziness	Sensitivity to noise or light Balance problems	Feeling tired, having no energy
<b>Emotional/ Mood</b>	Irritability	Sadness	More emotional	Nervousness or anxiety
<b>Sleep</b>	Sleeping more than usual	Sleeping less than usual	Trouble falling asleep	Difficulty maintaining deep sleep

# A Multitude of Loss

- Functional abilities (physical, cognitive)
- Neurological changes: self awareness, cognition, communication, emotional regulation, cognitive fatigue, hypersensitivity, executive functioning
- Life roles as worker, spouse, lover, friend, parent, sibling, authority figure, student...
- Responsibilities as bread winner, role model, support to others (emotional, work, home, parenting, etc.), driving
- Social network of friends/family
- Self-esteem
- Intimacy

- ↑ risk for **homelessness**
- ↑ risk for **substance abuse**
- ↑ risk for **criminal activity**
- ↑ risk for **mental health** issues



# Mental Health Fallout

Almost half of adults with TBI who have no pre-injury history of mental health problems develop mental health problems after the TBI

(Gould, Ponsford, Johnston, & Schonberger, 2011. *Psychological Medicine*, 41, 2099-2109.)

1/3 of TBI survivors experience emotional problems between 6 months and a year post injury

Patients who reported:

- Hopelessness 35%
- Suicidal ideation 23%
- Suicide attempts 18%

85% of survivor families report that emotional or behavioral problems have an impact on their function

Suicidal ideation can be 7x higher in people with TBI than in those without

- *Attempts* of suicide post-TBI can be at rates close to 17%
- Increased suicide risk persists up to 15 years post-injury

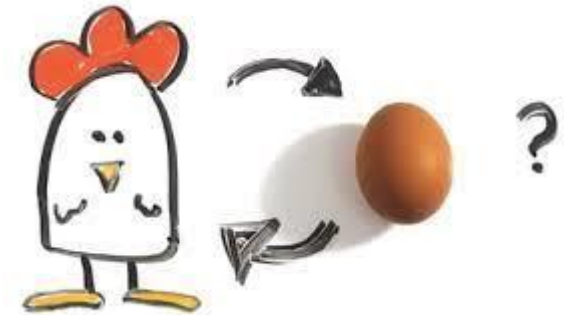
Fazel, et al. 2014. *JAMA Psychiatry*, 71(3), 326-33.; Mackelprang et al., 2014. *Am J Public Health*, 104(7), e100; Simpson & Tate, 2007. *Brain Inj.*, 21(13-14), 1335-51.



# Brain Injury & Substance Use

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- ✓ Intoxication causes TBI
- ✓ Early life TBI predispose to substance abuse
- ✓ Structural damage from brain injury changes behavioral control



# What does brain injury “look” like?

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## Short Term Memory Loss

*The mental ability to store and retrieve words, facts, procedures, skills, concepts and experiences.*

- Can't remember more than one thing at a time
- Can't remember details – forgets what someone has told them or what they've read
- Appears disorganized – loses/misplaces items
- Forgets meetings/appointments
- Loses track of time
- Appears to have an “attitude” problem
- Appears manipulative



# Accommodations for Short Term Memory Loss

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- Repeat information and summarize
- Provide written summary – cue them to record important information (dates, action items)
- Review new information frequently
- Teach client to use reminder system like planner
- Teach “chunking” as a way to aid in retention
- Stick to routine as much as possible
- Keep information tangible and relevant
- Practice & reinforce strategies until they become automatic



# What does brain injury “look” like?

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## Delayed Processing Speed

*How quickly information is received, processed, and/or outputted.*

- Slow to respond to questions
- Appears to not be paying attention
- Difficulty following conversations
- Looks confused
- Doesn't follow instructions



# Accommodations for **Delayed Processing Speed**

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- Provide additional time to review information
- Speak slowly, making sure client understands – ask them to rephrase back to you what they heard
- Offer assistance with completing forms
- Utilize checklists and a written schedule of routines
- Provide written cues for organizing (“first do this, then do this”)

# What does brain injury “look” like?

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## **Impaired Attention**

*The ability to sustain focus on the information necessary for learning or completing a task.*

- Difficulty concentrating in noisy environments
- Fidgets, squirms in seat, can't sit still
- Interrupts conversations
- Low frustration tolerance
- Talks Excessively
- Off topic
- Impulsivity (inability to inhibit)





# Accommodations for **Impaired Attention**

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- Check to make sure there is good eye contact
- Be okay with redirecting
- Work on only one task at a time – check in regularly
- Keep instructions brief, simple, & to the point
- Have client participate in discussion & development of plan
- Reduce distractions, meet in quiet environment
- Use cue words to alert the client to pay attention (“look”, “listen”)
- Establish nonverbal cueing system (eye contact, touch)

# What does brain injury “look” like?

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## Impaired Sensory Motor Skills

*Perceiving and responding to what is seen, heard, smelled, tasted, felt and touched.*

- Fatigued – not getting enough quality sleep
- Experiences pain, headaches
- Sensitive to lights/noise
- Appear overwhelmed
- Emotionally melts down
- Irritable, short fused
- May appear oppositional
- Shuts down



# Accommodations for Impaired Sensory Motor

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- Keep environment quiet
- Keep noise and lights to a minimum
- Keep sessions short to minimize onset of headaches and fatigue
- Schedule rest periods and breaks from planned activities
- Consider time of day (mornings are often better)
- Ask client where in the room they'd prefer to sit or what other accommodations they might need



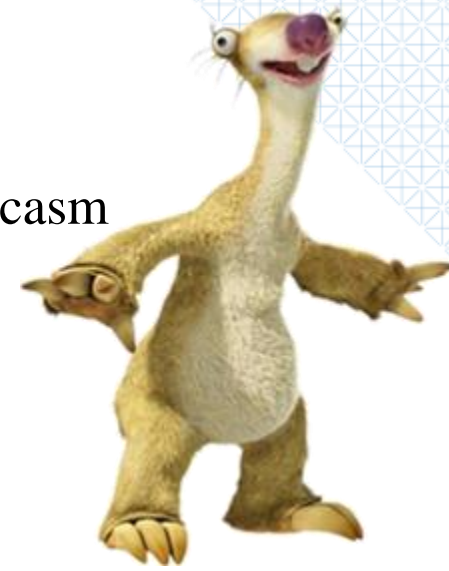
# What does brain injury “look” like?

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## Language Problems

*Verbal and nonverbal rules of social language and interactions.  
Ability to understand what is being said and to be understood.*

- Difficulties with using & recognizing body language
- Use inappropriate eye contact
- May get in your space
- May either say too little or too much
- Have little insight or awareness of how their behavior may be inappropriate
- Poor grammar or immature speech
- Difficult to follow in conversation
- Difficulty staying on topic
- Difficulties navigating social rules
- Appears confused
- May say “huh” frequently
- Struggles with abstract language/sarcasm
- May withdraw



# Accommodations for Language

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- Provide direct, structured and concrete feedback
- Do not rely on body language to convey a message
- Role play – model prosocial behaviors
- Avoid abstract humor, sarcasm, metaphors, colloquialisms, etc.
- Allow wait time for person to process what has been said
- Provide instructions/directions slowly and one at a time
- Ask if it would be helpful to repeat or rephrase your message
- Let the individual know that you value their input, thoughts, and feelings
- Redirect if the individual is off topic
- Provide opportunities to practice expression
- Teach individual to rehearse silently before replying

# What does brain injury “look” like?

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## Emotional/Behavioral

*The awareness of social, emotional and behavioral self-regulation, control and monitoring.*

- Over/under reaction
- Anxious, irritable
- Cries easily – feels depressed
- Difficulties with anger management
- Melt down
- Can appear emotionally “flat”
- Difficulties & maintaining meaningful relationships





# **Accommodations for Emotional/Behavioral Challenges**

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- Minimize anxiety with reassurance, education, and structure.
- Avoid focusing only on individual's deficits
- Promote self awareness by stopping and addressing undesired behavior immediately
- Don't interpret lack of emotion as a sign of lack of interest.
- Suggest breaks if the individual becomes irritable or agitated.
- Mindfulness exercises to aid clients in accurately identify internal emotional states: progressive relaxation, body scans, deep breathing exercises
- Practice positive social interactions. Provide alternative comments or choices that could have been made

# Skill vs. Will



# Key Concepts

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- Brain injury may present medically, but often, and more importantly, **behaviorally**
- Accommodate and create **simple** strategies for the behaviors (do not feel like you need to “treat” the injury)
- Consider first if the individual is **capable** of doing something, as opposed questioning their willfulness



# Organizational Structure

**Governor/Legislature  
(Gov Polis)**

**Colorado Dept. of Human Services  
(Michelle Barnes)**

**Office of Adult, Aging & Disability Services  
(Yolanda Webb)**

CDHS Boards and  
Commissions



# Brain Injury Alliance of Colorado (BIAC)

*BIAC is a statewide nonprofit dedicated to helping all persons with a brain injury thrive in their community*

- Core service is [resource navigation](#) for all ages –
  - free
  - no income or insurance eligibility criteria
- Brain injury specific [conferences & workshops](#)
- Online [educational materials](#) for survivors, family, & professionals
- Statewide brain injury [professional networking](#) groups
- Adaptive [recreation programs, music & art therapy classes](#)
- Emergency [utility assistance](#) through Energy Outreach Colorado
- Online [resource directory](#) specific to brain injury providers
- Statewide [support groups](#)
- Member of [United States Brain Injury Alliance](#)

# BIACs Resource Navigation Services



Resource Navigation is our foundational support program for survivors, family members, and caregivers. It is intended to be quick and easy to access.

All ages can access this free support.

## Examples of support:

- Finding medical providers
- Understanding brain injury
- Filling out paperwork
- Connecting to community-based resources
- Problem-solving

## How to connect:

- Online Referral Form: <https://biacolorado.org/referral/>
- Email: [info@biacolorado.org](mailto:info@biacolorado.org)
- Phone: 303.355.9969, toll-free 1.800.955.2443



# BIAC's Self-Management/Skill Building Services



## **How to apply:**

***If you are a survivor interested in participating in the Self-management Program, please contact BIAC to request an application:***

***[info@biacolorado.org](mailto:info@biacolorado.org)***

***or 303.355.9969, toll-free 1.800.955.2443***

- Designed for survivors of a TBI (16 and older) who want to invest time in improving their skills in specific areas that can be challenging after a brain injury.
- BIAC Advisors work one-on-one with each participant to assess their strengths & weaknesses, identify natural supports in their life, & develop strategies for building specific skills with the goal of greater self-sufficiency.
- Six-month program, average of 4 hours per month
- Participants will have regular homework outside of meetings with their Advisor which will be reviewed each time they meet.

## **Areas of focus for Self-management:**

- Communication
- Scheduling/Planning
- Prioritization/Organization

<https://biacolorado.org/referral/>

ABOUT

PUBLIC POLICY

ADULTS WITH BRAIN INJURY

KIDS WITH BRAIN INJURY

FOR PROFESSIONALS

FUNDRAIS

## Survivor Referral Form

### Individual Making Referral

If you are a survivor filling out this form, skip to the next section.

Name

First

Last

Relationship to Survivor

Phone

Email

REFER A SURVIVOR

BRAIN INJURY PROFESSIONAL  
NETWORKING (BIPN)

RESOURCE DIRECTORY

EDUCATIONAL MATERIALS

ANNUAL PROFESSIONAL CONFERENCE

CALENDAR

Join Our M

Email

First

Last

# Thank you for your time!

