

# Brain Injury Training

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Pre-test  
[t.ly/TjQn](https://t.ly/TjQn)

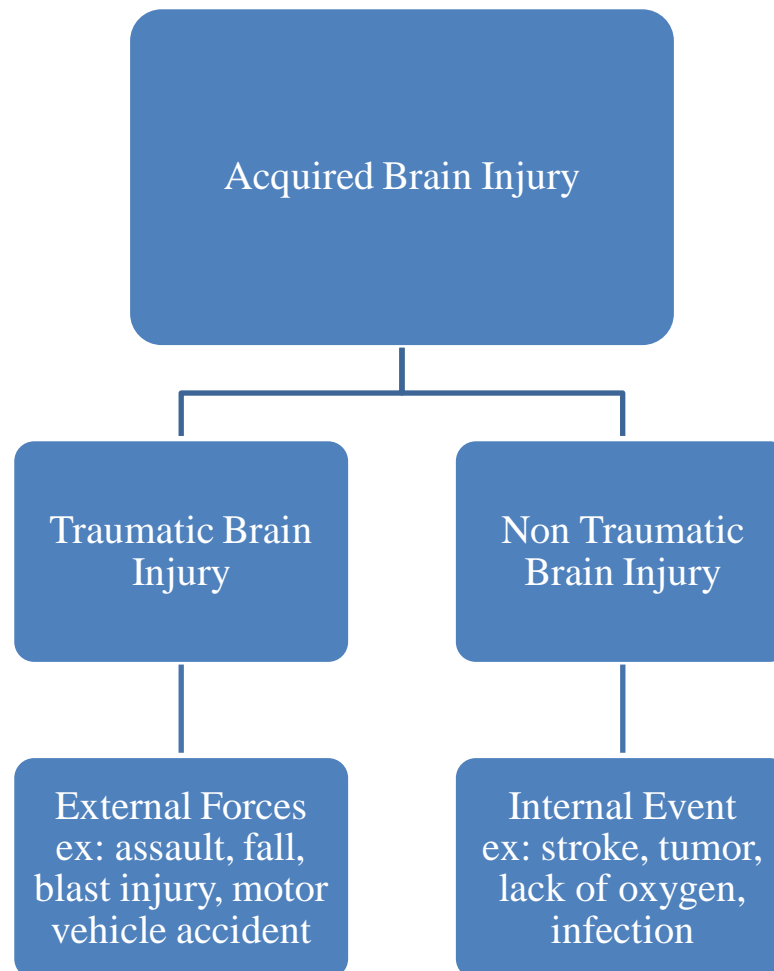




# Objectives

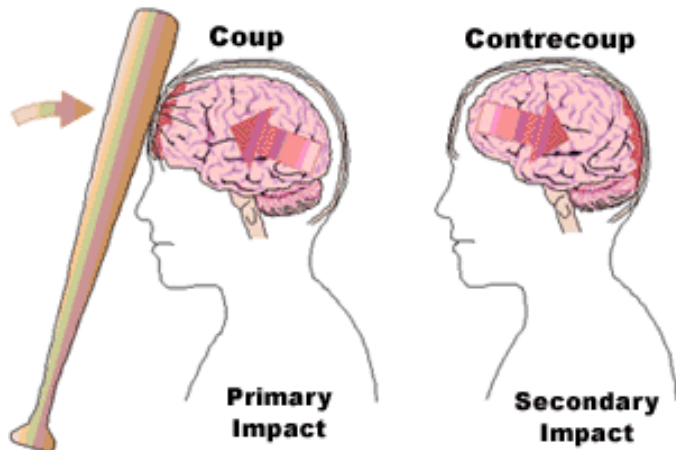
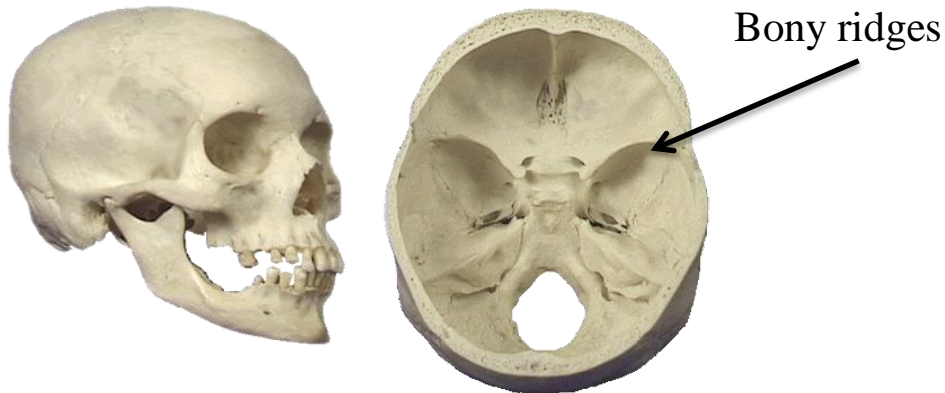
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1. Brain injury overview: incidence, signs and symptoms
2. Learn about short term interventions
3. Resources



# Mechanism of Injury

## Traumatic Brain Injury

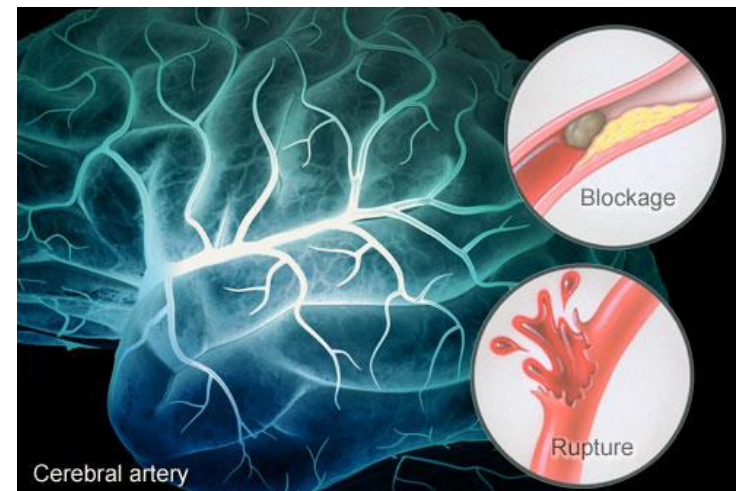


## Non Traumatic Brain Injury

### Anoxia:

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

### Stroke:



### **Frontal lobe**

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

### **Motor cortex**

Movement

### **Sensory cortex**

Sensations

### **Parietal lobe**

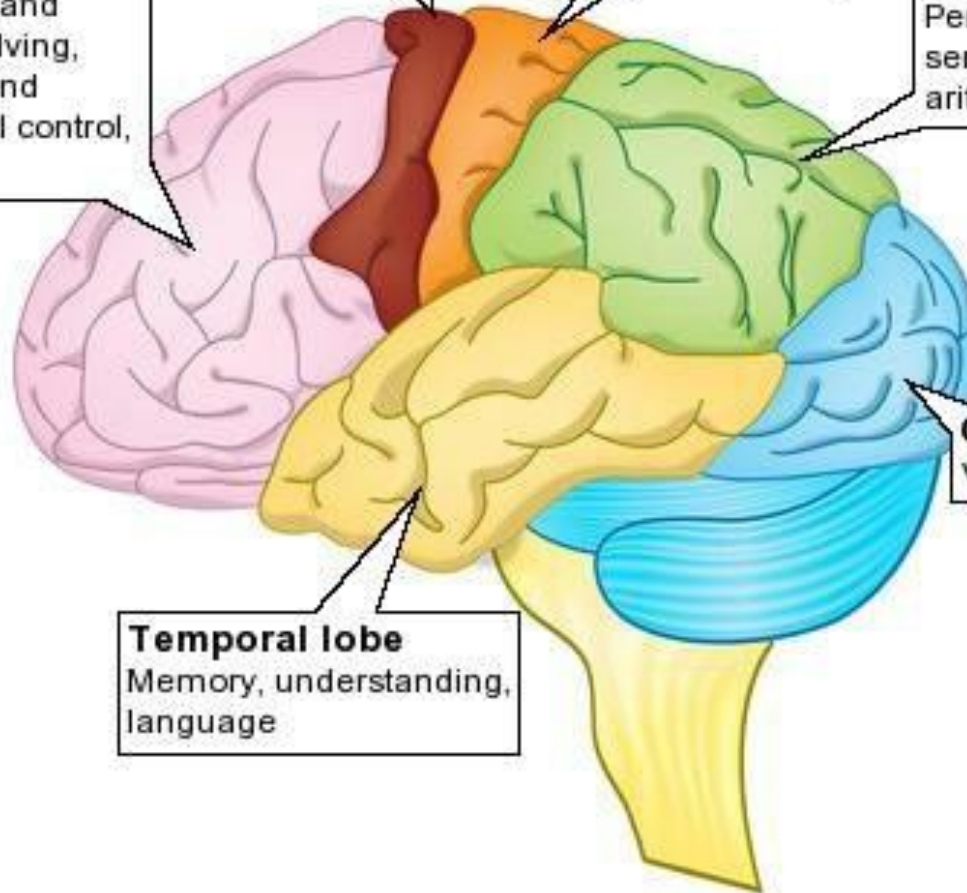
Perception, making sense of the world, arithmetic, spelling

### **Occipital lobe**

Vision

### **Temporal lobe**

Memory, understanding, language





# We don't all start at the same place!

Brains need: Nutrition, physical security, emotional nurture (Mate, 2010)



# Classification of Severity

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

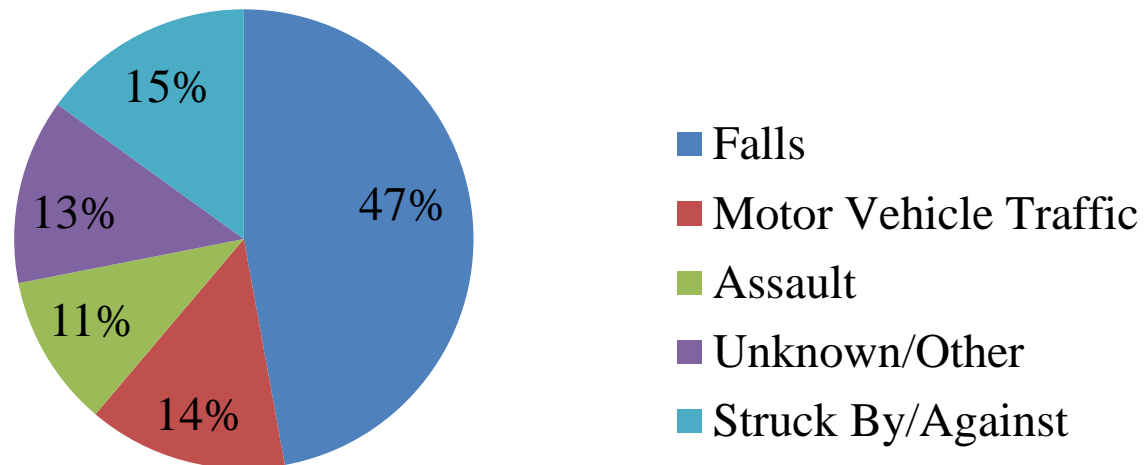
**Moderate –** **Loss of consciousness 30 minutes to 24hrs**

**Severe –**        **Loss of consciousness for over 24 hours**



# 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 2013, 2.8 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*



# “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

# A Multitude of Losses

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- Functional abilities (physical, cognitive)
- 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

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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 Abuse

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*Why would TBI be association with substance abuse disorders?*

1. Intoxication causes TBI
2. Early life TBI predispose to substance abuse
3. Structural damage from TBI changes behavioral control





# Health Disparities and Brain Injury

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- Certain groups have a higher chance of sustaining a TBI and poorer outcomes
  - Racial and ethnic minorities
  - American Indians/Alaska Natives have high rates of TBI hospitalization compared with other races
  - LGBTQ+
- Predictors for outcomes:
  - Accessing healthcare - people with lower incomes and those without health insurance have less access to care
  - Pre-injury Education
  - Income (*Brain Injury Association of America, 2019*)
- Research has shown that white brain injury survivors are significantly more likely to be discharged to post-acute rehabilitation settings compared to their non-white peers (*Asemota et al, 2013*)
- Black TBI survivors are less likely to return to pre-injury productivity compared to white survivors (*Asemota et al, 2013*)



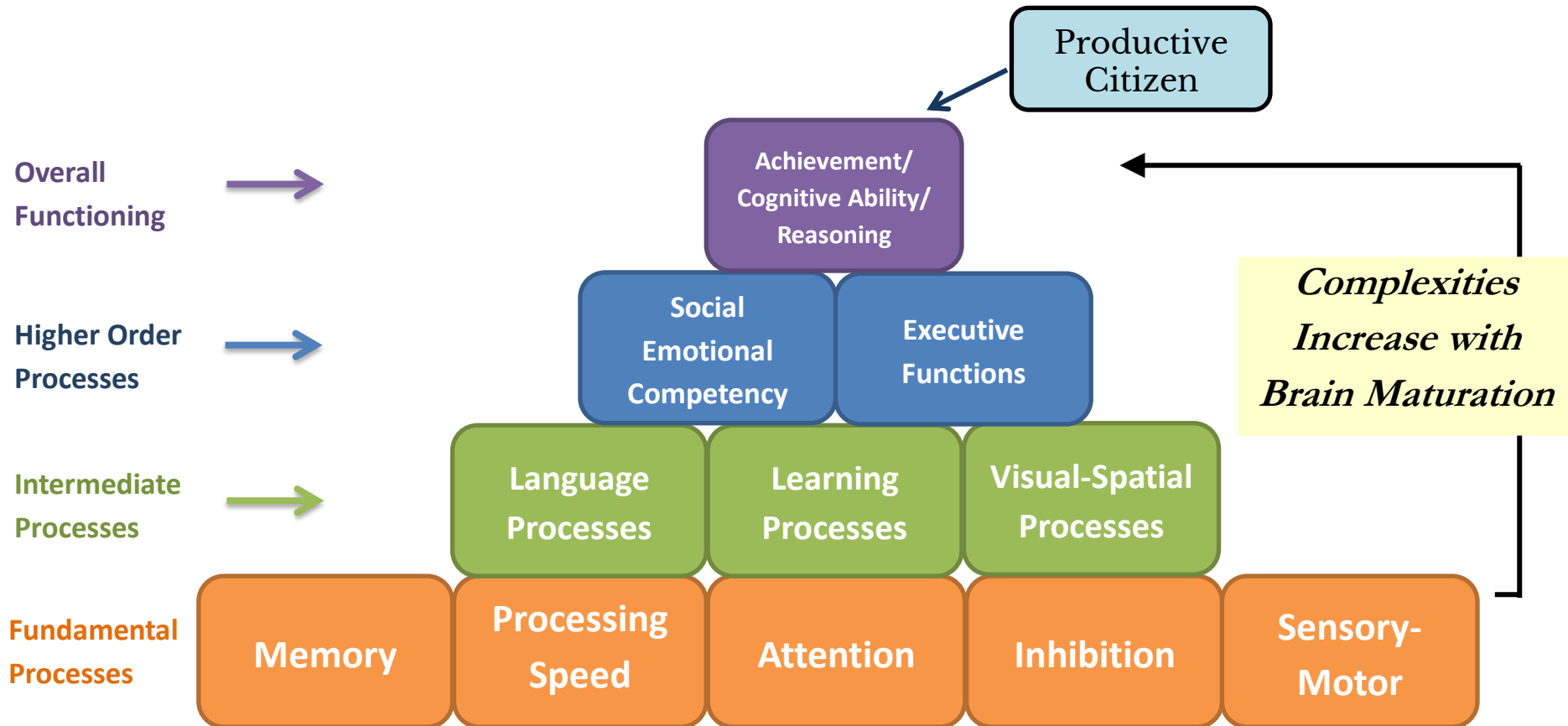
# Brain Injury & Victimization

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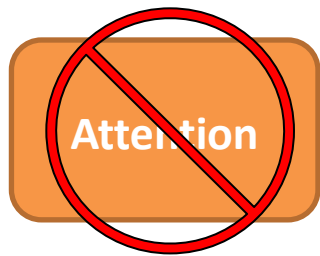
- A TBI can cause cognitive problems **that reduce one's ability to perceive, remember, or understand risky situations** that could lead to an incident of physical or sexual violence
- Persons with disabilities are *4 to 10 times more likely to become a victim* of violence, abuse, or neglect than persons without disabilities
- Difficulty with **anger management**, which may prompt others to use undue physical force or inappropriate medication
- TBI outcomes affect others' perceptions of a **person's ability to honestly and accurately** report an incident of victimization
- Individuals experiencing IPV are significantly more likely to have a brain injury(38-68%) compared to the general population (8.5%) *(Gagnon & DePrince, 2016)*
- Women experiencing IPV showed that of those who had experienced a TBI within the past 6 months, just 17% sought medical attention *(Gagnon & DePrince, 2016)*



# Hierarchy of Neurocognitive Development



CO Brain Injury Steering Committee: Adapted from Miller, 2007;  
Reitan and Wolfson, 2004; Hale and Fiorello, 2004



# Impaired Attention

## What it looks like:

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



When the teacher asks you to read out loud  
but you don't even know what page they're on



# **Accommodations for Impaired Attention**

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- Check to make sure there is good eye contact
- Work on only one task at a time
- 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)

# Delayed Processing Speed

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## What it looks like:

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





# Accommodations for **Delayed Processing Speed**

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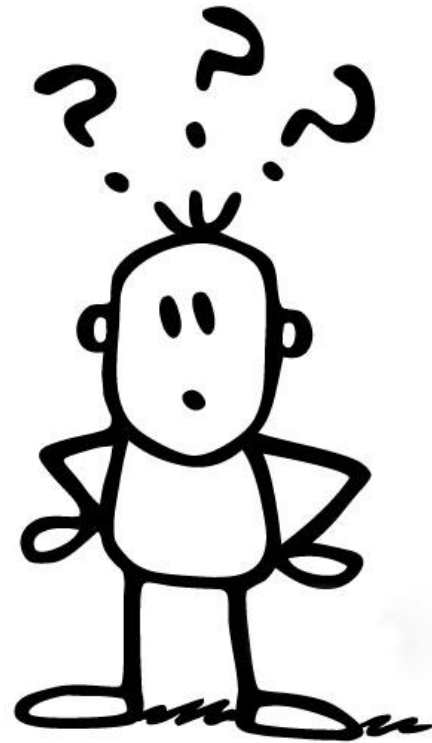
- Provide additional time to review information
- Speak slowly, making sure client understands – ask them to rephrase back to you what they heard
- Offer assistance with completing forms
- Utilize checklists and a written schedule of routines
- Provide written cues for organizing (“first do this, then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

# Short Term Memory Loss

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## What it looks like:

- Can't remember more than one thing at a time
- Can't remember details
- Appears disorganized
- 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

# Impaired Sensory Motor Skills

## What it looks like:

- Appear overwhelmed
- Emotionally melt 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



# Resources

Funds from surcharges on convictions of speeding tickets,  
DUI, DWAI, & the children's helmet law

CO Department of Human Services



Education  
Grants

Services

Research  
Grants



- Case management for youth & adults with brain injury
- Specialized support & consultation about school-related issues for children/youth with brain injury
- Brain injury specific classes and workshops
- Trainings to community providers about brain injury and resources



# Brain Injury Alliance of Colorado

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*The go-to resource for help and services for survivors of an injury to the brain, their families, and providers.*

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

# Resource Navigation

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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



# Self-management/Skill-building



- Designed for survivors of a TBI 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

### 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

# Education Consultation

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BIAC has a Youth Education Liaison specialist on staff who provides free, statewide consultation and support services to children and youth, aged 0-21, with a documented brain injury.

## Examples of support:

- Providing parent/guardian education of services and programming options available in schools
- Assisting in the partnership between parents and schools
- Educating parents and school teams on how a student has been impacted by their brain injury
- Collaborating with schools on intervention planning
- Attending transition, IEP, MTSS, and other planning meetings
- Partnering with hospitals to help with transition to school
- Any other student specific educational needs/concerns/questions

## How to apply:

If you are a parent or professional working with a child or youth with brain injury, please contact BIAC to request an application for education consultation: [info@biacolorado.org](mailto:info@biacolorado.org) or 303.355.9969, toll-free 1.800.955.2443

# Classes & Workshops

These activities are **free**, however **space is limited and registration is required**.  
Clients in services with BIAC have priority access.

## Workshops

Financial Health  
Brain Injury Basics  
Mindfulness



## Classes

Art  
Music Therapy  
Adaptive Yoga  
Cooking/Nutrition  
Balance (fall prevention)



# Peer Mentorship Program

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## **The Power of Peer!**

Have you ever been inspired to give back to other brain injury survivors as someone who “has been there?” Have you ever thought your life could improve by talking to someone that “really understands because they know what it is like to have a brain injury?”

The Peer Mentorship Program is looking for volunteers! The program will span up to a year in duration, with weekly phone or video conference contacts, and if possible a monthly community activity (dependent upon proximity, transportation and personal budgets). The program is designed to support survivors explore resiliency, define what it means to thrive, and then to take steps in this direction.





# Recreation & Social Programs

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Participants will experience the best of Colorado with caring, professional & highly experienced staff. The activities include hiking, climbing, a ropes course, cycling, and rafting. Winter activities include skiing, snowboarding, tubing, and ice fishing. Survivors of all levels of recovery are welcome to attend.

Partial scholarship funding awarded based on needs and availability of funds.

## Multi Day Opportunities:

Winter Sports – March/April  
Summer Camps – June through August  
Canoe Trip – September  
Creative Activities – September

## Day Programs:

Obstacle Course – April  
Rock Climbing – May  
Paddle Sports – July  
Zip Line – October

## Social Activities:

Movies  
Sporting events  
Cultural activities

**Contact: Michael Zavala**  
**[Michael@BIAColorado.org](mailto:Michael@BIAColorado.org)**  
**303-562-0401**





## **Clinical Services**

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*BIAC is excited to announce the brand-new addition of the Clinical Services Program!*

- Therapists are Certified Brain Injury Specialists
- Person-centered approach
- Includes a variety of treatment modalities to meet specific needs and treatment goals unique to brain injury survivors
- Also available to caregivers & family members of survivors

### **Options for Counseling Services:**

- ✓ In-person
- ✓ Telehealth
- ✓ Video options

### **Insurance Accepted:**

- ✓ Medicaid

For more information, please call **303-900-5232** or email **[Counseling@BIAColorado.org](mailto:Counseling@BIAColorado.org)**



# HeadSTRONG

The Brain Injury Alliance of Colorado is the go-to resource for help and services for survivors of an injury to the brain, their families, and providers.

Volume 1 • Issue 4 • December

## 15 Tips For Surviving—and Enjoying—the Holidays with a Brain Injury

**F**lashing lights. Crowded stores. Loud family gatherings. The holiday season should be joyful, but it can often be overwhelming to someone who is living with traumatic brain injury.

If you are living with a brain injury, share these tips with your friends and family. If someone you love is living with a brain injury, the tips below can help you plan in advance to make the holiday season happier and more relaxed for all of your friends and family.



brain injury if they don't already have them.

1 Identify—in advance, if possible—a quiet place to go at gatherings if you are feeling overwhelmed. This gives you a chance to take a break, and lets your loved ones stay involved in the festivities.

2 Avoid crowded stores and order gifts online instead.

3 If you are shopping in stores, remember to make a list in advance and plan your trips on week days—or either early in the morning or late at night when there are fewer crowds.

4 Wear a cap with a brim or lightly tinted sunglasses to minimize the glare of bright lights in stores or flashing lights on a tree.

5 Ask a friend to go with you to stores or holiday parties. They can help you navigate crowds and anxiety-producing situations.

6 Plan in advance as much as possible. And ask your friends what their plans are so you're not surprised by anything.

7 Volunteer to help with activities that you enjoy and are least stressed about.

8 Remember to ask for help if it is offered to you.

9 Ask someone you trust to help you with a budget to avoid overspending on gifts.

10 Take a nap if you need a break.



# HeadSTRONG

The Brain Injury Alliance of Colorado is the go-to resource for help and services for survivors of an injury to the brain, their families, and providers.

Volume 1 • Issue 3 • September 2017

## Feed Your Body, Feed Your Brain: Nutritional Tips to Speed Recovery

Mary Ann Keatley, PHD, CCC and Laura L. Whittemore, Brain Injury Hope Foundation

**A** healthy diet during the recovery from a brain injury is highly beneficial. Scientists know that deficiencies in certain nutrients and chemicals can cause disruptions in brain functioning and the ability to think clearly. The brain uses calories to function. When someone sustains a brain injury, it is necessary to eat enough nutritional calories to help the brain function efficiently.

### Nutritional Tips for Head Injuries

- Eat small meals every three to four hours.
- Keep small baggies of healthy snacks with you during the day to boost your energy, such as nuts, trail mix, apples, cheese, hard-boiled eggs, and energy bars. Ask a member of your family or support group to make these for you and put them in a small cooler to take with you when away from home.
- Balance small meals with a combination of protein, healthy fats and oils, and carbohydrates. Proteins include fish, lean meats, nuts, and eggs. Healthy fats and oils can be found in avocados, seeds, and nuts. Carbohydrates are found in vegetables, fresh fruits, and grains. Avoid eating carbohydrates by themselves if you have blood sugar concerns. Many individuals report that sugar and chocolate increase headaches, so eat sweets sparingly.
- Eat moderately. Do not overeat as it can cause you to feel sleepy.



- Eat by the clock. If your brain/body signals are not working well, set a timer, watch alarm or a mobile phone to alert you that it's time to eat.
- Since weight gain is common following brain injury, this is another reason to stick to a healthy diet.
- Try to eat around the same time every day. The body does best when it is on a routine schedule.

It is very important to eat healthy foods to help the brain function efficiently. Feed your brain with protein snacks throughout the day.

### Grocery Shopping and Menu Ideas

Shopping and preparing meals take a lot of energy. The grocery store is a very difficult environment when you have a head injury because of the lights, visual stimulation, and sounds.

- A magnetized notepad posted on the refrigerator is a time saver for writing down the food items to get during your next shopping trip. Photocopy a shopping list that you use regularly and circle the items you need to purchase during your next shopping trip. If you go to the same store each week, plan your list to follow the order of the aisles. For example, fresh foods usually line the walls or periphery of the

It is very important to eat healthy foods to help the brain function efficiently.

Source: Brainline.org/Article/15-Tips-Surviving-And-Enjoying-Holidays-For-Brain-Injury



**BREAKING DOWN  
BARRIERS** **BRAIN INJURY  
CONFERENCE**

*Save the Date*

**NOVEMBER 3 - 4, 2022**  
UNIVERSITY OF DENVER

# Education for Professionals

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- **In-person Trainings**

BIAC provides free education to community professionals anywhere in the state. This 60-90 minute training provides professionals with a better understanding of identifying brain injury and using strategies to support clients

- **Website**

Animated videos, webinars, links, research articles, and networking opportunities

- **Annual Conference**

Two-day event with opportunity to gain continuing education hours

## Education for Professionals

What is a brain injury?  
[Brain Injury Facts & Figures](#)



Would you like to request a training?  
Fill out this form and BIAC staff member  
will touch with you shortly



- REFER A SURVIVOR
- BRAIN INJURY PROFESSIONAL NETWORKING (BPN)
- RESOURCE DIRECTORY
- CRIMINAL JUSTICE AND BRAIN INJURY
- EDUCATIONAL MATERIALS
- ANNUAL PROFESSIONAL CONFERENCE
- CALENDAR

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## Animated Videos

Brain Injury 101



Brain Injury 102: Strategies & Accommodations



Brain Injury 103: Youth Considerations



**Thank you for your time!**  
**Questions? Comments? Feedback?**

**Post-Test!**  
**[t.ly/iuyB](https://t.ly/iuyB)**



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**BIAColorado.org**