

**BISC-MI Annual Conference**

October, 2025

Russha Knauer  
Director, MINDSOURCE



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Case Study



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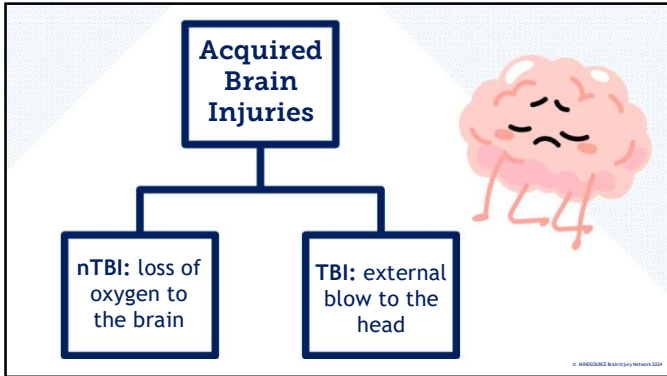
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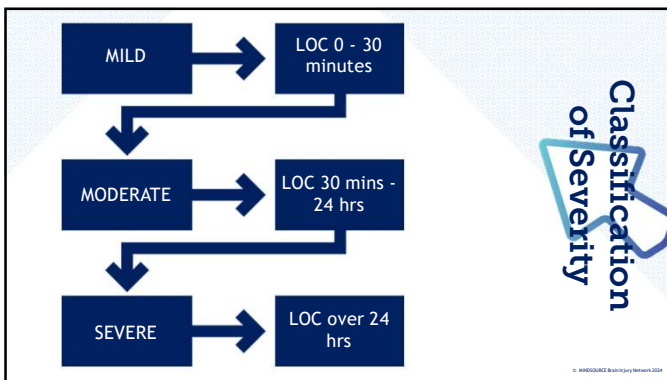
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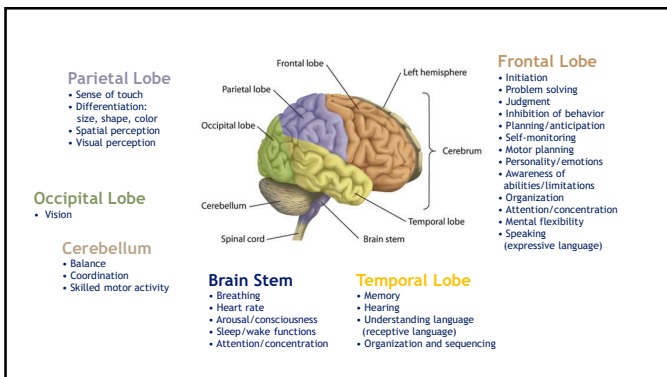
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### Mechanism of Injury

Needs and interventions are similar

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### Scope of Problem

Prevalence rate for TBIs is 18.2% of the general population in the United States

- 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
- Leading Cause: Falls

Military/Veterans -25%  
 Juvenile Justice -30%  
 Homeless -50%  
 Criminal Justice -60%

Racial & ethnic minorities  
 Rural/Frontier residents  
 Victims of intimate partner violence

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<p><b>OVER 500K PEOPLE</b> in Colorado have a brain injury and are living with a disability.</p>	<p><b>OVER HALF OF UNHOUSED PEOPLE</b> report a history of brain injury.</p>	<p><b>400K YOUTH</b> are treated for a brain injury in hospital emergency departments each year.</p>
<p><b>60% OF PEOPLE IN THE LEGAL SYSTEM</b> have experienced a brain injury.</p>	<p><b>50% OF BRAIN INJURY SURVIVORS</b> will receive a mental health diagnosis.</p>	<p><b>EVERY 40 SECONDS</b> someone in the U.S. has a stroke.</p>

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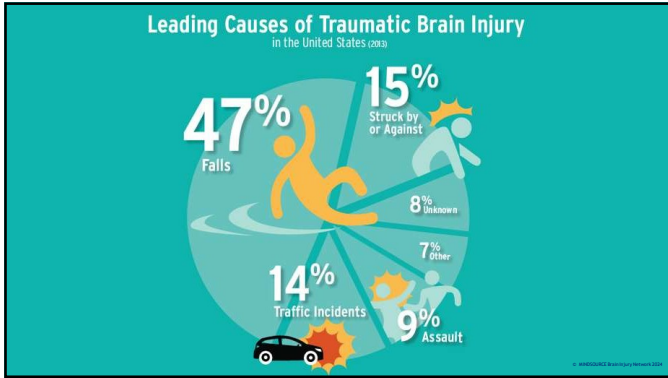
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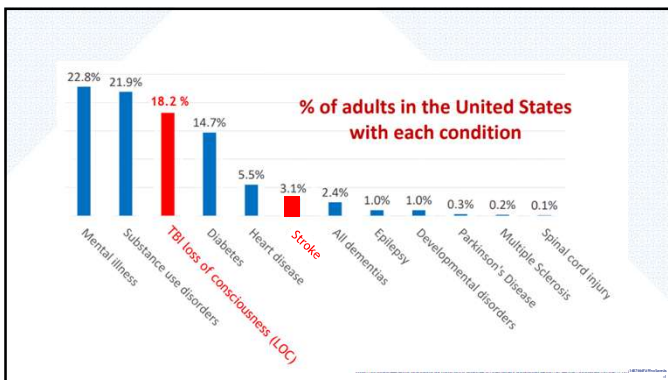
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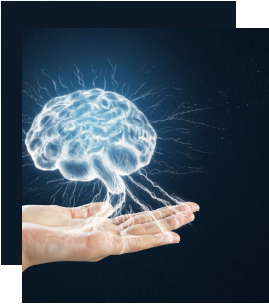
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## Outcomes

Short- or long-term outcomes that may affect all aspects of a person's life, including:

- Work/school
- Maintaining meaningful relationships
- Changes in life roles, isolation
- Mental health (ex: depression, anxiety, substance misuse)
- Physical health (ex: headaches, fatigue, aphasia)
- Cognitive health (ex: issues with problem-solving, planning, organizing)

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**Risk, Need, Responsivity Principles**

<p>Overall risk to reoffend More time, attention, resources for those higher risk to reoffend Hands off with those lower risk to reoffend</p>	<p>Static and dynamic factors Contribute to one's overall risk to reoffend Focus on dynamic factors</p>	<p>General Individual Systemic</p>
<p><b>Risk</b></p>	<p><b>Need</b></p>	<p><b>Responsivity</b></p>

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**Childhood BI and risks for CJ system involvement**

Higher prevalence rates in general

- Avg 3.8 events, most occurring in childhood
- Brain injuries in childhood associated with
  - Violent offending
  - Criminality
  - Conduct disorder



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**Brain Injury and Recidivism**

TBI is associated with greater risks for recidivism

- Higher risk classifications
- More likely to have committed a previous felony
- Less likely to be successful with supervision

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**TBI and correctional services:**

- Increased utilization of services while incarcerated (health and psychological)
- Lower rates of treatment completion
- Higher rates of disciplinary incidents
- Lower ability to maintain rule-abiding behavior during incarceration
- More prior incarcerations
- Higher rates of recidivism (50% higher than those with no reported TBI)
- Higher levels of AOD use preceding their current incarceration

Prattick & Isberg, 2011  
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- Agitation after traumatic brain injury (TBI) is the most frequently observed behavioral problem
- Injury to the frontal lobes can affect the area of the brain that normally controls impulses
  - The inability to control urges can lead to impulsive and often inappropriate social behavior

**Criminogenic Need and Brain Injury**

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### Criminogenic Need and Brain Injury

Individuals with brain injury report loss of relationships, including friendships, is one of the most devastating effects of brain injury

Studies have shown up to a 66% unstable employment or unemployment rate following brain injury

In a study of persons 3 to 5 years after complicated mild to severe TBI, 60% had at least some difficulty performing leisure activities

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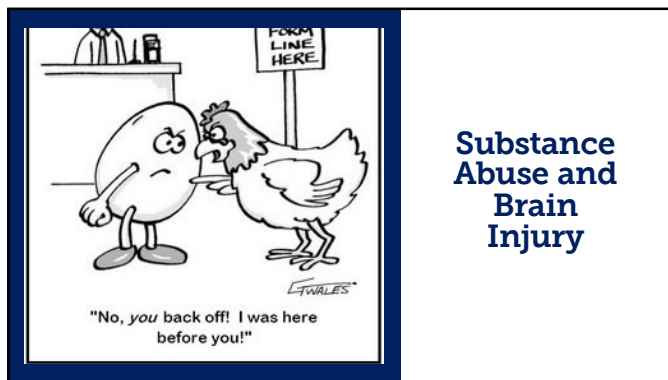
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## Central 8 Criminogenic Needs

BIG FOUR	NEXT FOUR
<p><b>Low Self Control:</b> arrested at young age, large number of prior offenses, rule violations on conditional release  <b>Generally,</b> BI decreases self-regulation, increases disinhibition, poor judgment, executive functioning</p>	<p><b>Lack of Employment / Education:</b> Low levels of performance and involvement, low levels of reward and satisfaction  <b>Generally,</b> those with BI are more likely to be underemployed, less likely to be employed, maintain employment, and find employment satisfying</p>
<p><b>Pro-Criminal Relationships:</b> association with pro-criminal others, isolation from pro-social others  <b>Generally,</b> loss of friendships after brain injury</p>	<p><b>Dysfunctional Family / Marital:</b> poor communication, significant conflict (parent-child, spouse-spouse), criminal involvement, lack of appropriate behavioral expectations and rules  <b>Generally,</b> loss of romantic relationships and divorce are more common after brain injury; parenting can become more difficult after brain injury</p>
<p><b>Anti-Social Personality Patterns:</b> impulsive, adventurous, pleasure-seeking, generalized trouble in multiple settings, callous disregard for others, lack of empathy, anger problems  <b>Generally,</b> those with BI struggle with emotional and impulse control and have difficulties understanding others' emotions</p>	<p><b>Lack of Prosocial Leisure / Recreation:</b> low levels of involvement and satisfaction in recreational activities  <b>Generally,</b> people struggle to engage in activities they used to enjoy post-injury</p>
<p><b>Pro-Criminal Cognitions:</b> identification with criminals, negative attitudes towards law and justice system, belief that crime will yield rewards, rationalizes crime</p>	<p><b>Substance Misuse / Abuse:</b> Continued use despite significant life disruptions, increased tolerance to drugs / alcohol; increased use over time; inability to stop use  <b>Generally,</b> brain injury is strongly associated with substance abuse</p>

Fisher, G.A. & Barkis, J. (2011). *Understanding Behavioral Needs for BI*

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### Individual Responsivity

- **General**
  - Racial / ethnic minorities with brain injuries have poorer outcomes
- **BI in Criminal Legal Systems**
  - 4 x experienced trauma
  - 3.5 x have a behavioral health disorder

Miles, M.A., 2010; Chouinard, M. et al., 2002; Neiderhiser, 2010; Pappas, M. et al., 2013; Lee & Edlund, 2010; Runtz, M. et al., 2010; Miller & Curtis, 2012  
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### Special Risks to Women

- Significantly more **post-concussive symptoms**
- Higher rate of **long-term disability**
- **Poorer physical health**, e.g., more inflammation
- More **cognitive difficulties**, e.g., executive dysfunction and memory deficits
- More **affective problems**, particularly suicidality
- Higher risk of early onset **dementing disease**
- **50% reported not receiving needed care**, particularly for mental health symptoms
- More **structural and financial barriers**

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### Justice Involved Women

- **Twice as** likely as men to incur a TBI of any kind
- **6x as likely** as men to have multiple violence related TBIs
  - Violence-related TBIs related to more reports of **physical illness**
  - Violently injured women had **longer total incarceration times**, not because of offense but because of re-arrest
  - More likely to have violent related injuries happen close in time, increasing risk of developing **neuropathological conditions** as they age

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# Brain Injuries in Childhood

- Impaired executive functioning
- Declined / stunted cognitive abilities
- Increased peer victimization
- Struggles adapting to new or changing environments
- Struggles forming healthy attachments



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## Hierarchy of Neurocognitive Development



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

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

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**More likely to experience homelessness**

50% of those unoused have a brain injury

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**More likely to use healthcare resources**

- More likely to get a new health diagnosis
- More likely to use healthcare resources



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**ACL Grant**  
 MINDSOURCE  
 University of Denver  
 Colorado Judicial  
 Brain Injury Alliance of Colorado




**Lifetime History**  
 Screened for Lifetime History of brain injury using the CBI-15a-D



**Cognitive Impairment**  
 Those positive were screened for neuropsychological impairments.



**Strategies & Support**  
 Clients and the professionals were provided with suggested strategies and supports.



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Criminal Justice Entity	Total OSU Screened	Positive Screens	Percent Positive
Arapahoe County Probation	51	28	54.9%
Boulder County Jail (JBBS & JET Units)	369	215	58.2%
Denver County Jail (RISE unit)	1352	360	26.6%
Denver County Jail (Transition Unit)	732	449	61.3%
Larimer County Jail	480	287	59.7%
Adams County Probation (Females)	31	30	96.7%
Adams County Probation (Veterans)	111	47	42.3%
Adams County Probation (Sex offenses)	69	28	40.5%
Denver Drug Court	686	299	43.5%
Denver Juvenile Probation	445	82	18.4%
Jefferson County Recovery Court	81	49	60.4%
Total	4,407	1,854	42%

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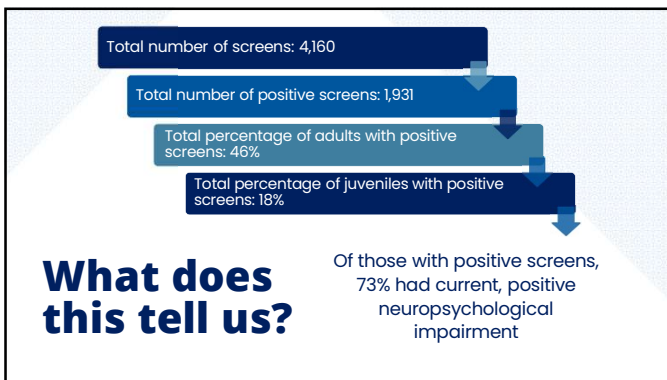
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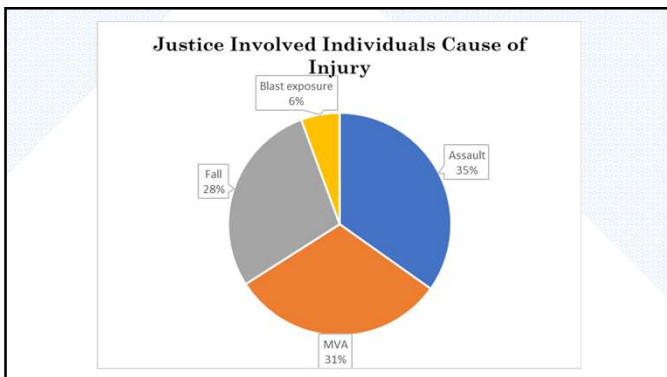
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### Colorado Brain Injury Model

1. Training to understand brain injury & effects
2. Screen for lifetime history
3. Adjust supervision and treatment
4. Refer for going supports

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### Achieving Healing Through Education, Accountability, and Determination (A.H.E.A.D.)

- Week One:** Understanding TBI and Symptom Recognition
- Week Two:** Memory Skills and Goal Setting
- Week Three:** Emotional Regulation
- Week Four:** Communication Mastery
- Week Five:** TBI and Anger - Identification, Options, and Understanding
- Week 6:** Why Stopping and Thinking is Important
- Optional Module:** Grieving and TBI

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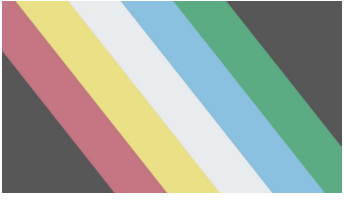
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**RNR vs  
Desistance**

Skill Correction → Skill Development



- Aligns with disability field
- Create conditions and make environmental adjustments to ensure people can access your services effectively
- Invites successful engagement

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**You're Not Treating the Brain Injury**



Injury likely happened years or decades earlier

Teach and Reinforce the Use of Simple Strategies

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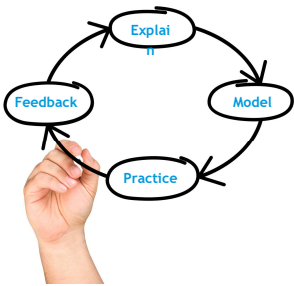
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**Skill Development**



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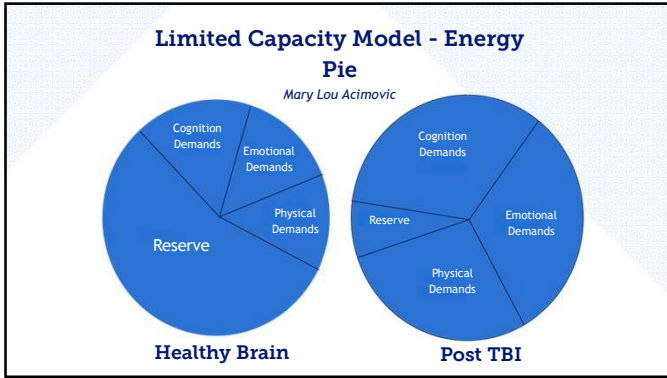
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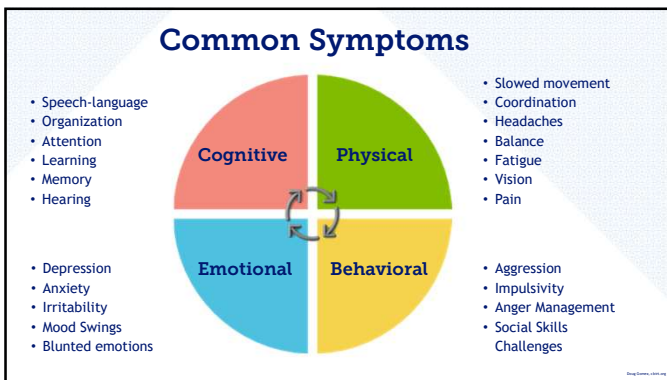
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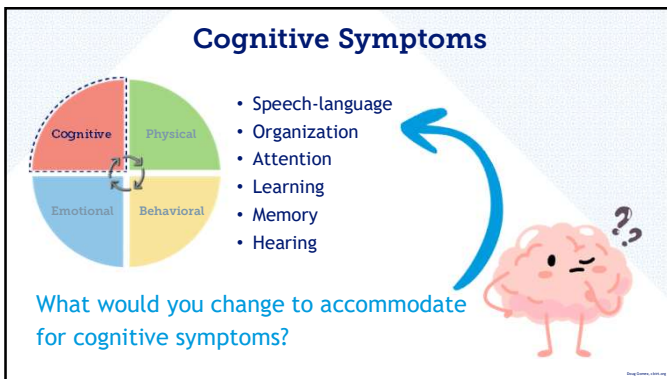
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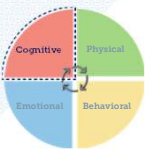
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### Cognitive Strategies



- Speech-language
- Organization
- Attention
- Learning
- Memory
- Hearing



- Reduce visual and noise distractions.
- Give brief and simple instructions. Use plain language.
- Utilize checklists and a written schedule of routines.
- Provide written cues for organizing (“first do this, then do this”), breaking complex directions into simple steps.
- Practice and reinforce strategies until they become automatic.

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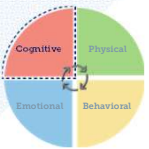
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### Cognitive Strategies, cont.



- Speech-language
- Organization
- Attention
- Learning
- Memory
- Hearing



- Plan for changes in routines and reinforce flexibility.
- Teach clients to use reminder systems, e.g., planner, electronic reminders.
- Allow for extra time for the person to process and respond to information. Check for understanding.
- Repeat and summarize information.
- Be direct and concrete. Avoid abstract humor, sarcasm, metaphors, and colloquialisms.

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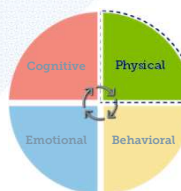
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### Physical Symptoms



- Slowed movement
- Coordination
- Headaches
- Balance
- Fatigue
- Vision
- Pain



What would you change to accommodate for physical symptoms?

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### Physical Strategies



- Slowed movement
- Coordination
- Headaches
- Balance
- Fatigue
- Vision
- Pain

- 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

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### Behavioral Symptoms



- Aggression
- Impulsivity
- Anger Management
- Social Skills Challenges

What would you change to accommodate for behavioral symptoms?

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### Behavioral Strategies



- Aggression
- Impulsivity
- Anger Management
- Social Skills Challenges

- Suggest breaks
- Mindfulness exercises
- Practice positive social interactions
- Don't rush, speak over, or become observably frustrated
- Use de-escalation techniques

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### Emotional Symptoms

- Depression
- Anxiety
- Irritability
- Mood Swings
- Blunted emotions

What would you change to accommodate for emotional symptoms?

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### Emotional Strategies

- Depression
- Anxiety
- Irritability
- Mood Swings
- Blunted Emotions
- Minimize anxiety
- Avoid focusing on deficits
- Promote self-awareness
- Don't interpret lack of emotion as a sign of lack of interest

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## Brain Injury Informed Organizational Practices

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## Environmental Considerations



**Create a welcoming environment**

- Dim or remove overhead **lighting**
- Play **soothing sounds** or use white noise machines
- Using **calming** paint colors and display inspirational artwork
- Ensure **seating** is welcoming and not crowded
- Allow use of **headphones** when appropriate
- Create **quiet spaces** for clients who need them
- Ensure clear and easy to read **signage** throughout
- Create an **environment that is welcoming** for friends and families

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## How to set all clients up for success



- Provide **appointment reminders**
- Assist in setting up or scheduling **transportation**
- Identify ways to engage **support systems**
- Use every interaction as an opportunity to develop trust
- Ensure use of **simple, concrete language**
- **Set up each meeting** with goals for meeting, time allowed, and identify what the client wants to discuss
- Use **grounding activities** to find focus

- Take **breaks** as needed
- Teach and reinforce use of **organizational habits**
- Schedule meetings at **regular intervals**
- Use **visual aids**
- Break material into **chunks and repeat** to aid in memory and retention
- Encourage development and maintenance of **healthy physical activity routine**
- Encourage and reinforce **healthy sleep hygiene**

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## De-Escalation: General Tips

-  Reasoning with an angry person is not possible
-  De-escalation requires practice
-  Empathy is key

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### De-Escalation: Triggers

#### General Triggers

- Pain & discomfort
- Fatigue
- Fear
- Reduced autonomy
- Lack of sleep
- Anxiety & depression

#### Environmental Triggers

- Overstimulation
- Interpersonal relationships
- If you can't figure out the trigger - it might be you

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### De-Escalation: Techniques

#### Non-Verbal

- Exude calm & self-assured
- Select an appropriate location
- Keep your hands to yourself
- Speak soothingly
- Position yourself for safety

#### Verbal

- Be honest
- Content is secondary to calming
- Validate - empathize with feelings not behavior
- Don't interrupt, get defensive, or argue

Calm is ALMOST as contagious as fear or panic

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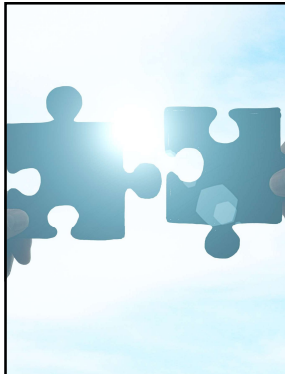
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### You're Not Treating the Brain Injury

There are people who do that

#### Build Partnerships

- State Brain Injury Program
- Brain Injury Association

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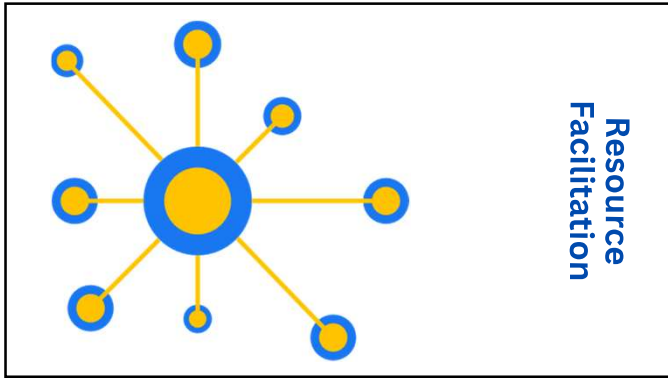
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<p>Those with TBI are less likely to engage in treatment, services, and supervision</p>	
<p>If they engage in Resource Facilitation, they have:</p> <ul style="list-style-type: none"> <li>Fewer reincarcerations</li> <li>Fewer arrests</li> </ul>	

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## Post-Injury Care

- Advocacy
- Alternative Healthcare Assistance
- Behavioral Health
- Brain Injury Waiver: Home & Community Based Services
- Community Support
- Financial Assistance and Support
- Neurological Care
- Rehabilitation Care
- Vocational Rehabilitation

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### Service Connections



- **Advocacy**
  - Benefit Navigation
  - Disability Advocate
  - Disability Legal Services
  - Personal Injury Lawyer
- **Assistance**
  - Benefit Counselor / Life Care Planner
  - Homemaker / Caregiver
  - Housing
  - In-Home Support Services
  - Independent Life Skills Trainer
  - Long-Term Case Management
  - Social Worker
  - Supportive Living Programs
- **Community Support**
  - Brain Injury Education
  - Recreation Support
  - Support Groups
- **Financial Assistance and Support**
  - Energy Outreach, EBT, LEAP
  - SSI, SSDI, Conservatorship, ABLE Act Savings Plan

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### Health and Rehabilitation Care



- **Alternative Healthcare**
  - Acupuncture
  - Chiropractor
  - HBOT
  - Massage
  - Yoga
- **Behavioral Health**
  - Mental Health Counselor
  - Psychiatrist
- **Brain Injury Waiver: Home & Community Based Services**
- **Neurological Care**
  - Neurologist
  - Neuropsychologist
  - Neurosurgeon
- **Rehabilitation Care**
  - Post-Acute Inpatient and Ongoing Outpatient Rehabilitation
  - Cognitive Rehabilitation
  - Occupational Therapy
  - Physical Therapy
  - Speech Language Pathology
  - Vestibular Therapy
- **Vocational Rehabilitation**

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### Reshaping Cognitions



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*Attuning to Cognitive Impairments*

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**Your hub for Brain Injury Resources**  
[www.mindsourcecolorado.org](http://www.mindsourcecolorado.org)

- Resources
- Screening
- Training
- Meetings & Events
- Awareness Materials



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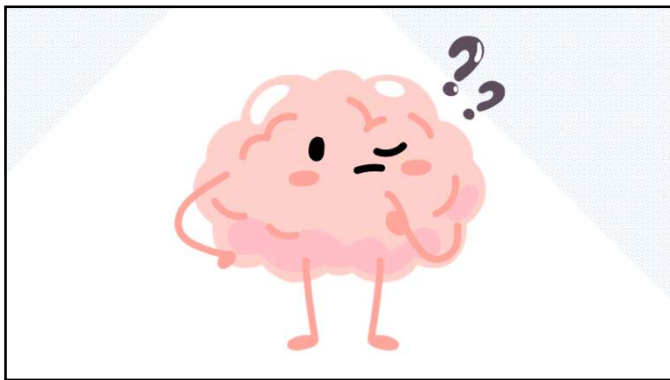
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**WE WANT YOUR FEEDBACK**



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