Brain Injury Symptoms and Accommodations for Healthcare Professionals

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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)

Moderate – Loss of consciousness 30 minutes to 24hrs

Severe – Loss of consciousness for over 24 hours

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Acquired Brain Injury

- Traumatic Brain Injury
  - External Forces: assault, fall, blast injury, motor vehicle accident
- Non-Traumatic Brain Injury
  - Internal Event: stroke, tumor, lack of oxygen, infection
**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
Children 0 to 4 years, older adolescents aged 15 to 19 years, and adults 65 years+ are most at risk.

Falls are the leading cause of TBIs in the United States (globally, motor vehicle accidents are #1).

Males are almost twice as likely to sustain a TBI as females.

An estimated 2.8 million people in the United States sustain a TBI annually (CDC).
Over 500,000 adults in Colorado have sustained a brain injury

- 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
- More than 115,000 Coloradans have experienced a stroke
- Stroke is the 5th leading cause of death in Colorado

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
A Multitude of Loss

- Functional abilities
- Neurological changes: self awareness, communication, emotional regulation
- Life roles & responsibilities as bread winner, role model, social network
- Self-esteem
- Suicidality

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

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Brain Injury & Mental Health

• 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.)

• Depression, anxiety disorders, irritability, and anger problems are most common diagnoses.

• Compared to the general population, those with a history of TBI were
  • 37% more likely to receive psychiatric services and 69% more likely to be hospitalized than persons without TBI.

• **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%
Brain Injury & Victimization

- 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.
- 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.
- May engage in at-risk drinking or drug use that place them in situations or relationships that lead to episodes of victimization.

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How is brain injury “treated”?  

- Rehabilitation  
  - Physical Therapy  
  - Occupational Therapy  
  - Speech/Language Pathologist: Cognitive Therapy  
- Independent Living Skills  
- Medication  
  - Pain management  
  - Physical symptoms (e.g., headaches, seizures, attention, fatigue)  
  - Mental health  
- Complimentary and Alternative Modalities
Keep in Mind

- Complex combination of factors lead to mental health problems post brain injury
  - Neurological
  - Psychological
  - Social
  - Pre-injury personality/functioning

- Medications can play a key role
  - Neuro-psychiatrist or physiatrist

- Each individual is unique
  - To know one individual with a brain injury is not to know brain injury
Colorado BHO Practice Standards

“People with TBI should be given the same access to mental health services as the general Medicaid population”

1. Under no circumstance does the presence of TBI preclude an assessment for and treatment of co-occurring mental illness covered under the Colorado Medicaid Community Mental Health Services Program. BHOs will not deny services for a covered diagnosis on the basis that the covered diagnosis is not primary, and regardless of etiology.
General Tx Principles

- Start with a thorough holistic assessment
- Provide education for client & family
- Enhance self-awareness
- Provide supports, repetition, and consistent feedback
- Develop clear, short-term, realistic goals together
- Provide compensatory strategies
- Foster a sense of realistic hope and meaning

(Prigatano, 1986; Klonoff, 2010; Ruff & Chester, 2014)
Signs & Symptoms

➢ Physical
  • Headaches & Migraines
  • Dizziness
  • Sensitivity to light or noise
  • Fatigue
  • Visual difficulties

➢ Cognition
  • Difficulties with thinking clearly, concentration, memory, processing speed

➢ Emotion/Mood
  • Irritability
  • Sadness
  • Anxiety
  • Depression

➢ Sleep
  • Sleeping more or less than usual
  • Difficulty falling asleep or staying asleep
Skill vs. Will

T-Rex trying to hang curtains...
Brain Injury 102
Strategies & Accommodations

Presented by
Brain Injury Alliance
COLORADO
Recommendations for Behavioral Health Treatment Providers

1. Behavioral health professionals should screen for lifetime exposure to TBI
2. Treatment must accommodate neurobehavioral deficits due to TBI
3. Treatment must be holistic in order to address co-morbid conditions
4. Improvement gained by insight must be supplanted by other therapeutic supports
Screening & Identification
Importance of Screening for Brain Injury

One study found that 42% of persons who indicated they had incurred a TBI as defined by the CDC did not seek medical attention (Corrigan & Bogner, 2007)

- The full extent of the problem may not be completely understood immediately after the injury but may be revealed with a comprehensive medical evaluation and diagnostic testing

- Clients may be eligible for additional support services

- Psychotherapies can be adapted for neurocognitive deficits. Examples:
  - Minimize environmental distractions
  - Written material/handouts where possible
  - Repetition of key points
Components of Screening

- **Education / awareness**
  - Training regarding the sequelae of brain injury
  - Important to have a foundational knowledge of brain injury
  - Training should be provided to anyone conducting intake/screening

- **Medical documentation**
  - Best practice
  - Important to note that medical documentation only indicates an injury not impact
  - Documentation should be from a clinician trained in diagnosing TBI

- **Establishing credible history**

- **Assessing impact**

- **Modifying/generating novel interventions**
Questions should include:

- Where?
- When?
- How?
- Medical intervention(s) sought at the time, later, throughout the recovery?
- There needs to be a reported incident(s) as well as on-going symptoms/behaviors that persist beyond the incident
  - Are answers medically plausible?
  - Be aware of assumptions
  - During the health interview, details of the incident should be clear and consistent. The description of the injury should not vary widely from report to report, from reporter to reporter
  - If there are multiple injuries, specifics about each injury should be well-detailed and consistent
Screening Tools

• Screening tools must be:
  – Valid and reliable
  – Sensitive to the population
  – Appropriate to the setting

• Resources:
  – MINDSOURCE Brain Injury Screening Questionnaire
    (https://mindsourcecolorado.org/non-grant-questionnaire/)
  – OSU TBI-ID Method
    (www.ohiovalley.org/informationeducation/screening/)
  – Brain Check Survey
    (http://www.lobi.chhs.colostate.edu/survey.aspx)
Step 1
Ask questions 1-5 below. Record the cause of each reported injury and any details provided spontaneously in the chart at the bottom of this page. You do not need to ask further about loss of consciousness or other injury details during this step.

1. In your lifetime, have you ever been hospitalized or treated in an emergency room following an injury to your head or neck? Think about any childhood injuries you remember or were told about.
   - No  □ Yes — Record cause in chart

2. In your lifetime, have you ever injured your head or neck in a car accident or from crashing some other moving vehicle like a bicycle, motorcycle or ATV?
   - No  □ Yes — Record cause in chart

3. In your lifetime, have you ever injured your head or neck in a fall or from being hit by something (for example, falling from a bike or horse, rollerblading, falling on ice, being hit by a rock)? Have you ever injured your head or neck playing sports or on the playground?
   - No  □ Yes — Record cause in chart

4. In your lifetime, have you ever injured your head or neck in a fight, from being hit by someone, or from being shaken violently? Have you ever been shot in the head?
   - No  □ Yes — Record cause in chart

5. In your lifetime, have you ever been nearby when an explosion or a blast occurred? If you served in the military, think about any combat- or training-related incidents.
   - No  □ Yes — Record cause in chart

Interviewer instruction:
If the answers to any of the above questions are “yes,” go to Step 2. If the answers to all of the above questions are “no,” then proceed to Step 3.

Step 2
Interviewer instruction: If the answer is “yes” to any of the questions in Step 1 ask the following additional questions about each reported injury and add details to the chart below.

Were you knocked out or did you lose consciousness (LOC)?
   - Yes, how long?
   - If no, were you dazed or did you have a gap in your memory from the injury?
   - How old were you?

Have you ever had a period of time in which you experienced multiple, repeated impacts to your head (e.g. history of abuse, contact sports, military duty)?
   - If yes, what was the typical or usual effect—were you knocked out (Loss of Consciousness - LOC)?
   - If no, were you dazed or did you have a gap in your memory from the injury?
   - What was the most severe effect from one of the times you had an impact to the head?
   - How old were you when these repeated injuries began? Ended?

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Step 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cause</td>
<td>Loss of consciousness (LOC)/knocked out</td>
</tr>
<tr>
<td>No LOC</td>
<td>&lt; 30 min</td>
</tr>
</tbody>
</table>

If more injuries with LOC: How many? Longest knocked out? How many ≥ 30 mins? Youngest age?

Step 3

<table>
<thead>
<tr>
<th>Step 3</th>
<th>Typical Effect</th>
<th>Most Severe Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cause of repeated injury</td>
<td>Dazed/memory gap, no LOC</td>
<td>LOC</td>
</tr>
</tbody>
</table>

### Step 1

<table>
<thead>
<tr>
<th>Cause</th>
<th>Loss of consciousness (LOC)/knocked out</th>
<th>Dazed/Mem Gap</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>No LOC</td>
<td>&lt; 30 min</td>
<td>30 min-24 hrs</td>
<td>&gt; 24 hrs</td>
</tr>
</tbody>
</table>

If more injuries with LOC: How many? _____ Longest knocked out? _____ How many ≥ 30 mins.? _____ Youngest age? _____

### Step 2

### Interpreting Findings

After completing the OSU TBI-ID screening interview please refer the individuals to the DU Clinician if any one or more of the following conditions are met:

1. **Worst** = Individual reports one moderate to severe TBI. Moderate and Severe TBI indicated by report of loss of consciousness (LOC) of greater than 30 minutes.
2. **First** = Individual reports TBI with LOC before age of 15.
3. **Multiple** = Individual reports a period where 3 or more blows to the head caused altered consciousness OR 2 or more TBIs with LOC within a 3 month period.

### Step 3

<table>
<thead>
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<th>Cause of repeated injury</th>
<th>Typical Effect</th>
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<td>LOC &lt; 30 min</td>
<td>LOC 30 min - 24 hrs</td>
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</tbody>
</table>

For more information about TBI or the OSU TBI Identification Method visit:

- Ohio Valley Center at OSU
  www.ohiovalley.org/informationeducation

- BrainLine.org
  www.brainline.org

(Updated July 2013)
BIAC is a statewide **nonprofit** dedicated to helping all persons with a brain injury thrive in their community

- Resource navigation for all ages – this is free, with 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
- Online resource directory specific to brain injury providers
- Statewide support groups
- Member of United States Brain Injury Alliance
Funds from surcharges on convictions of speeding tickets, DUI, DWAI, & the children’s helmet law

CO Department of Human Services

Community Grants

Services

Research Grants

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Resource Navigation

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
• Phone: 303.355.9969, toll-free 1.800.955.2443

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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

Join Our M

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

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