

Overview of Brain Injury

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Brain Injury

Acquired Brain Injury ABI

An Acquired Brain Injury (ABI) covers ALL injuries to the brain – including both non-traumatic such as anoxic (lack of oxygen to the brain), or toxic (introduction of toxins or chemicals to the brain) and traumatic (external blows to the head from an outside source). Regardless of the cause of the brain injury, consequences of brain injury may be similar and the interventions may be the same.

Traumatic Brain Injury TBI

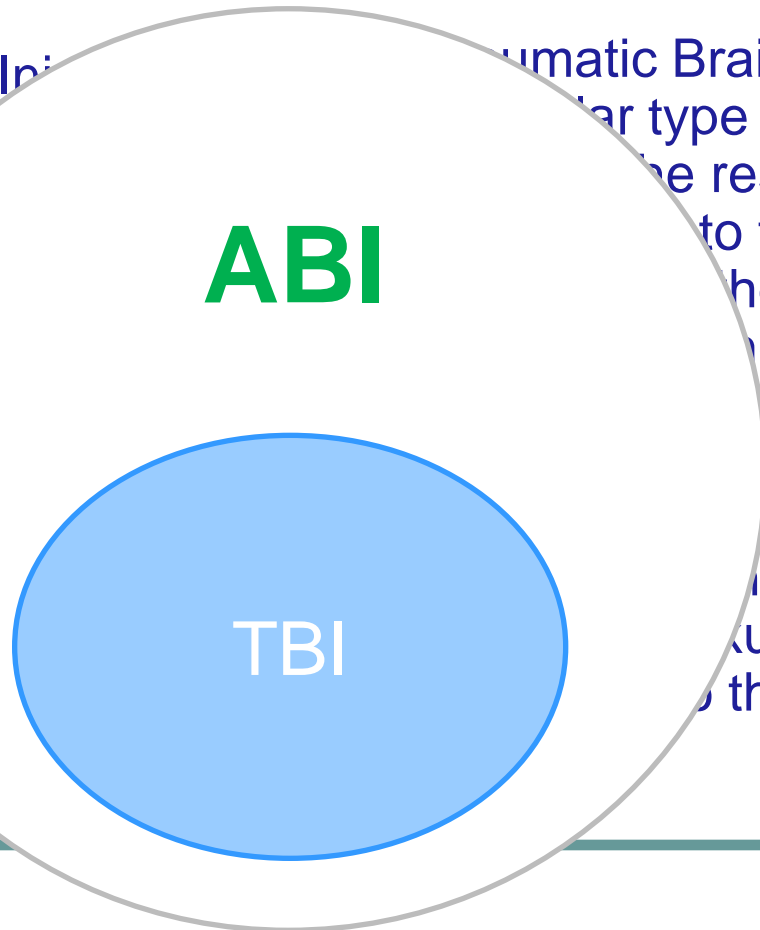
A Traumatic Brain Injury, “TBI” is a particular type of acquired brain injury; it is the result of an external blow to the head. A TBI can result in either an “open” head injury – where the skin and bone of the skull are actually penetrated and the brain may be exposed, or a “closed” head injury – where there is no lesion to the skin or skull but there is still damage to the brain within the skull.

Brain Injury - ABI

Acquired Brain Injury ABI

An Acquired Brain Injury (ABI) covers ALL injuries – including both non-traumatic (such as anoxic (lack of oxygen to the brain), stroke, infection (introduction of germs or chemicals to the brain), and traumatic (e.g., a blow to the head from a fall). Regardless of the cause of brain injury, the medical and the intervention are the same.

Traumatic Brain Injury TBI



Traumatic Brain Injury, TBI” is a specific type of acquired brain injury that is the result of an external force to the head. A TBI can be either an “open” (where the skin and skull are actually broken) or a “closed” head injury where the brain may be injured even though there is no lesion on the skull but there is damage to the brain within.

Severity of Injury does not equate to Long-Term Outcomes

Mild:	Loss of consciousness 0-30 minutes (concussion)
Moderate	Loss of consciousness <24 hours
Severe	Loss of Consciousness >24 hours

Definition of Concussion

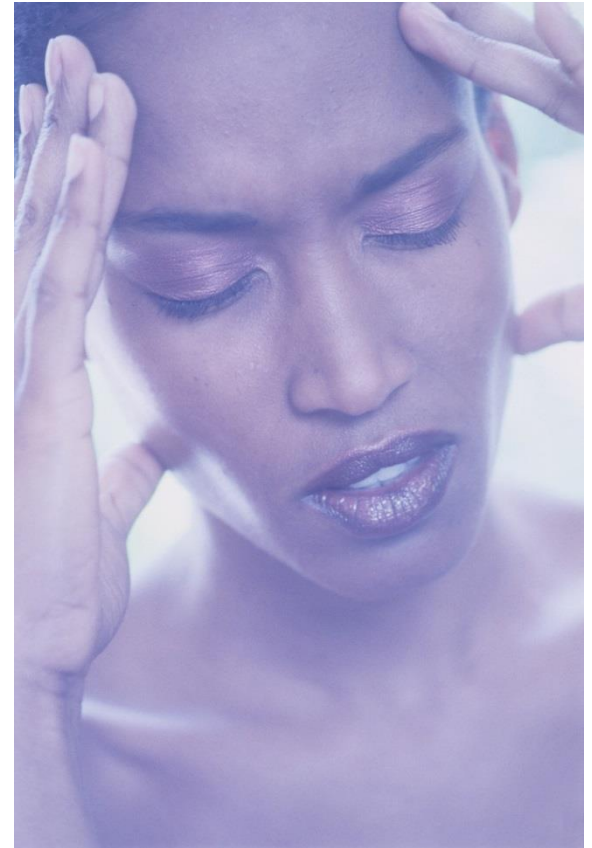
Concussion = American Academy of Neurology:

“any trauma induced alteration in mental status that may or may not include a loss of consciousness”



EFFECTS

- The way the person feels
 - Headache or fatigue
- How they think
 - Memory or concentration
- Change in emotions
 - Irritable or sad
- How they sleep
 - Trouble falling sleep



mTBI: THE HIDDEN EPIDEMIC

Symptoms may be subtle

- ➔ 90% of Concussions are not associated with a Loss of consciousness
- ➔ Concussive symptoms may develop over days

Often do not seek medical attention

- ➔ 90% of mTBI may go unreported

Peak 15-24 years, > age 75

- ➔ 2nd peak: ≤ 5 years

Injuries caused by abuse significantly complicates this picture

Incidence/Prevalence

- 1.7 million Americans sustain a TBI annually
- 52,000 die
 - 275,000 are hospitalized
 - 1,365,000 million are treated and released from an Emergency Department

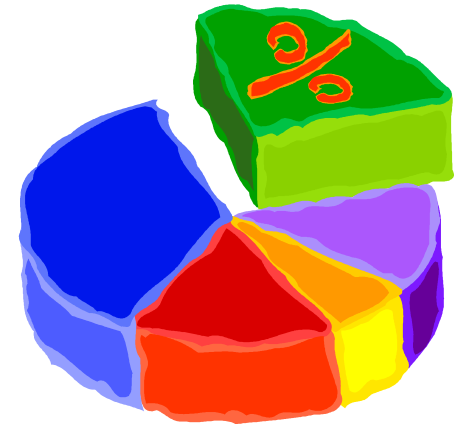
The number of people with TBI who are not seen in the ED or receive no care is unknown

CDC 2012

Colorado Statistics

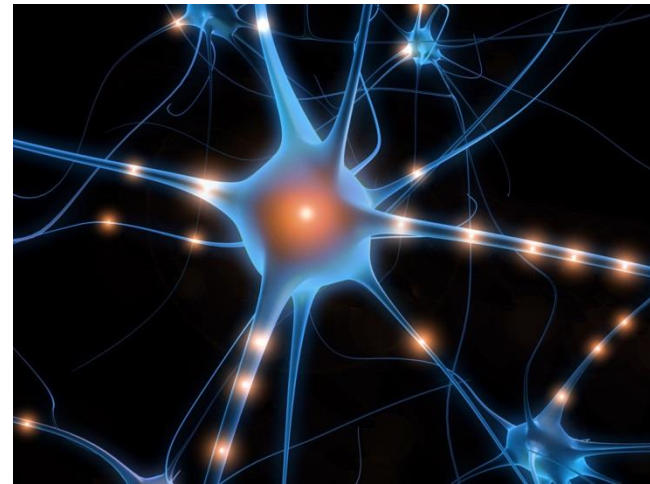
Annually
103.9/100,000

- 950 Deaths
- 5,200 Hospitalizations
- 27,000 ED visits



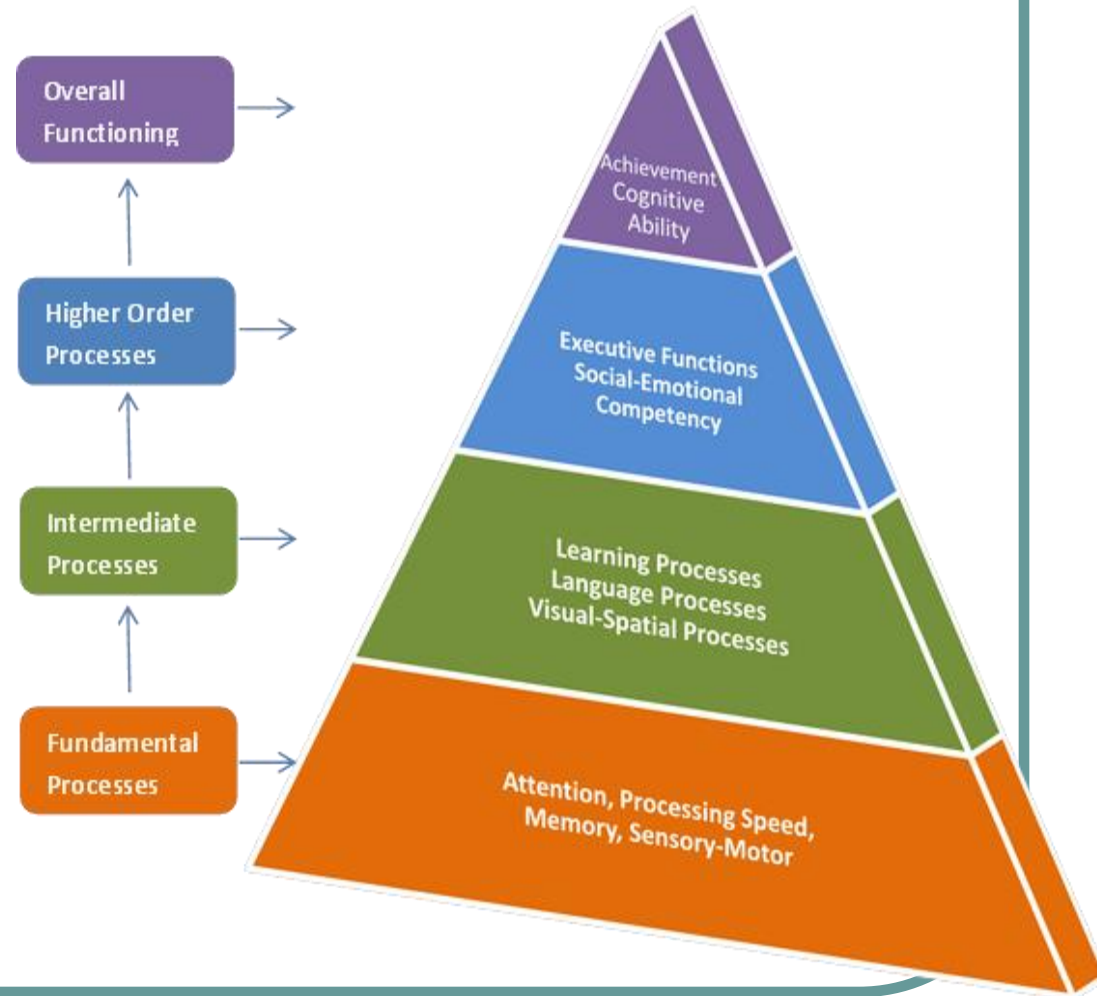
Colorado TBI Surveillance System (2007-2009)

Characteristics of Brain Injury and Accommodations



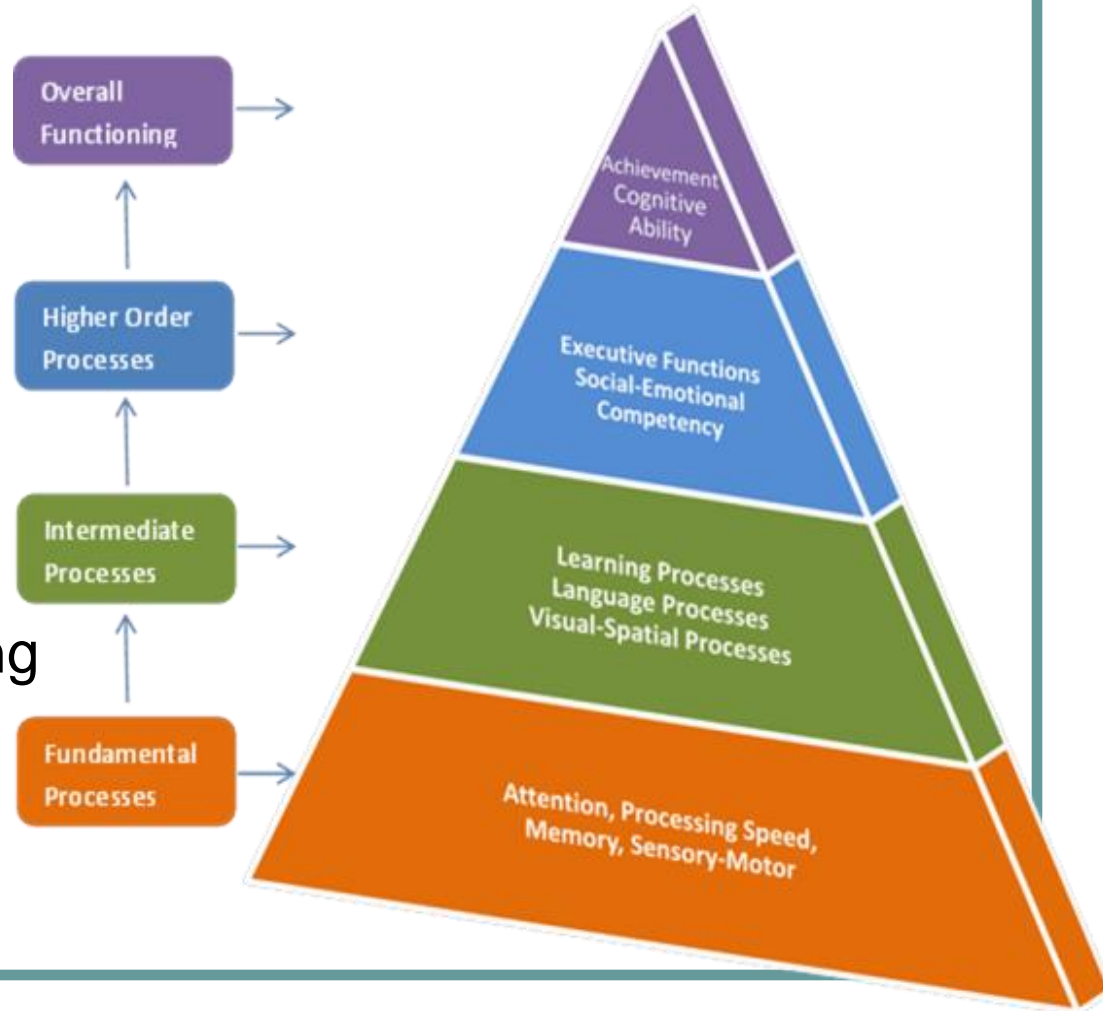
Domain Areas – Sensitive to TBI

- Attention
- Processing Speed
- Memory
- Sensory-Motor:
 - Fine Motor
 - Gross Motor



Domain Areas Sensitive to a TBI

- New Learning
- Language:
 - Receptive
 - Expressive
 - Social Pragmatics
- Visual-Spatial
- Social/Emotional/
Behavioral
- Executive Functioning
 - Initiation
 - Reasoning
 - Planning
 - Mental Flexibility



Behavior and TBI

- Environment is a critical factor when evaluating “behavior”
- Antecedent management is the key
- Can't vs. Won't
- Skill acquisition, skill generalization, skill deficit

Physical Changes

- Decrease in motor skills/clumsiness
- Decreased vision/hearing/smell
- Dizziness
- Headaches
- Fatigue
- Increased sensitivity to noise and bright lights

Help individual compensate for *Physical changes*

- 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.

Thinking Changes

➤ **Attention**

- Reduced concentration
- Reduced visual attention
- Inability to divide attention between competing tasks

➤ **Processing speed**

- Slow thinking
- Slow reading
- Slow formulation of either verbal and written responses

Help Individual compensate for changes in *Attention*

- Work on one task at a time.
- Limit distractions (both visual and verbal).
- Meet individually in quiet room.
- Redirect when focus is lost.
- Keep meetings time limited.
- Encourage rephrasing or recheck to ensure comprehension.
- Encourage client to take breaks when needed

Help individual compensate for changes in *Processing Speed*

- Allow additional time for individual to provide written and/or verbal responses.
- Slow down the speed of your discussions, speaking concisely, making sure individual understands.
- Don't rush the individual.
- Offer assistance with completing written forms.

Thinking Changes

➤ **Communication**

- Difficulty finding the right words, naming objects
- Disorganized in communication
- Impaired interpersonal skills

➤ **Learning and Memory**

- Information before TBI intact
- Difficulties with short term memory
- Reduced ability to learn new information

Help individual compensate for changes in *Communication*

- Help individual stay on topic; redirect when necessary.
- Ask individual to re-state aspects of a discussion to ensure comprehension.
- Encourage individual to prepare an “agenda” in advance.
- Avoid open-ended questions...use yes/no or structured formats where possible.

Help individual compensate for changes in *Learning and Memory*

- Provide written summary of discussed information
- Encourage individual to write down instructions/information, and review accuracy of these notes in session.
- Present new information in small, concise chunks.
- Check individual's understanding
- Keep interactions brief to minimize memory demands

Thinking Changes in “Executive Functioning”

Difficulty
planning/
setting goals

Problems
being
organized

Difficulty
being
flexible



Difficulty
problem
solving

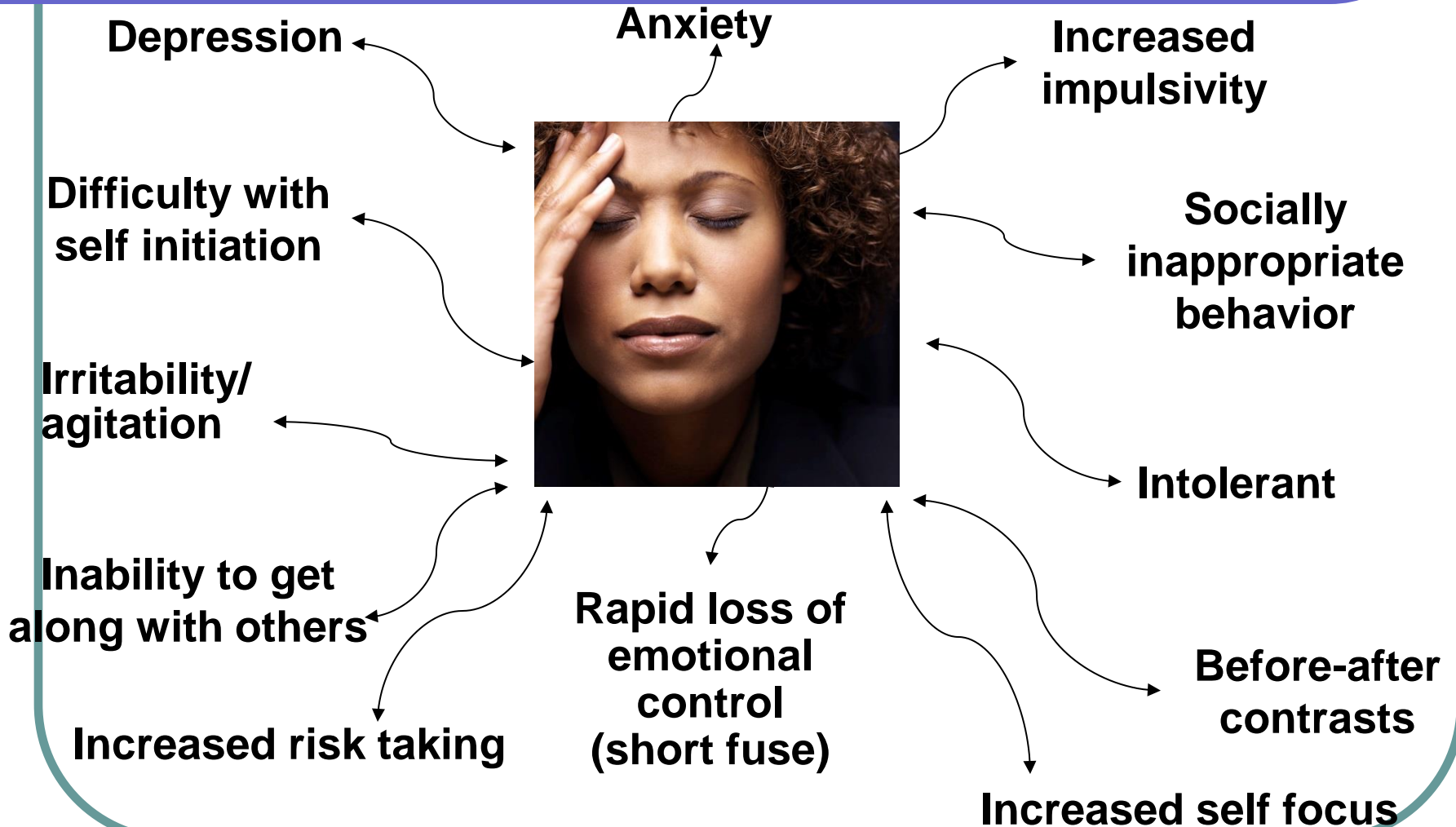
Difficulty
prioritizing

Decreased
awareness of
thinking changes
in self

Help individual compensate for changes in *Executive Functioning*

- Present information in factual manner, avoid abstract concepts.
- Help formulate alternative approaches.
- Provide written direction- summarize steps to be followed in plan. Breakdown “next” steps to be accomplished.
- Help prioritize and organize tasks to be accomplished.
- Keep things as structured as possible.

Emotional/Behavioral Changes



Help individual compensate for changes in *Emotions/Behaviors*

- Minimize anxiety with reassurance, education, and structure.
- Don't interpret lack of emotion as a sign of lack of interest.
- Provide neutral, but direct, feedback if the individual behaves inappropriately.
- Suggest breaks if the individual becomes irritable or agitated.
- Point out possible consequences of decisions, short- & long-term

Help individual compensate for changes in *Emotions/Behaviors*

- Establish an agenda and follow it
- Minimize the unexpected
- Provide advance notice of an upcoming change
- Avoid discussion when individual is fatigued or over-stimulated
- Provide written outline of expected behaviors and responsibilities

Resources

- Brain Injury Alliance of Colorado
www.biacolorado.org
- Colorado Brain Injury Program
www.tbicolorado.org
- Colorado Department of Education
www.cokidswithbraininjury.com

- www.brainline.org
- National On-Line Resource Center on Violence Against Women
(<http://www.vawnet.org/special-collections/DVBrainInjury.php#200>)
- www.usabia.org
- www.cdc.gov