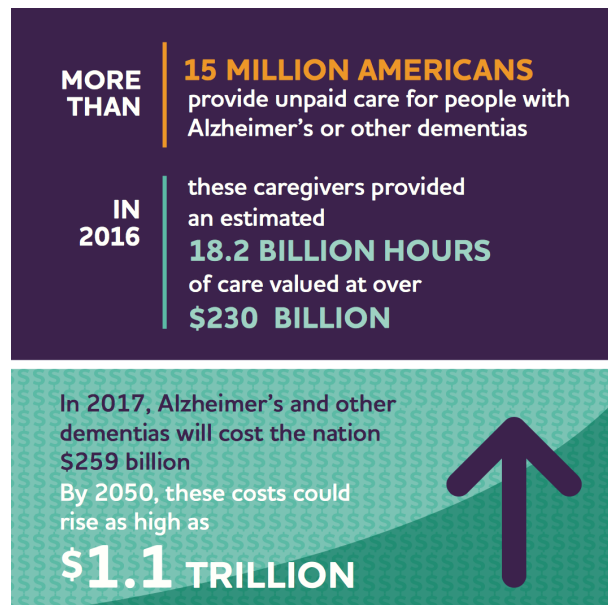


Crisis Intervention Team (CIT) Training



Cognitive Disorders and Brain Injuries

Student Guide



Alzheimer's

Symptoms are divided into two main categories:

Intellectual/Cognitive

Memory loss, communication difficulty, motor skill deficits, inability to interpret sensations properly.

Psychiatric

Personality changes, depression, hallucination, delusions

- Dementia is not only about memory loss!
- People with early dementia can be very good at hiding memory problems.
- People with dementia will often make up stories (confabulation).
- Paranoia is not unusual, and can draw police attention, even if memory problems aren't obvious.
- Agitation can also draw police attention.
- People with early dementia may become good at voiding responses or situations that can show memory problems. "Hey, it's good to see you." Therefore, even if it's awkward, you can ask them the day of the week and the calendar date. Don't forget to ask the year!

Delirium

Delirium is a serious disturbance in mental abilities that results in confused thinking and reduced awareness of your environment. The start of delirium is usually rapid — within hours or a few days.

Delirium can often be traced to one or more contributing factors, such as a severe or chronic medical illness, changes in your metabolic balance (such as low sodium), medication, infection, surgery, or alcohol or drug withdrawal.

Because symptoms of delirium and dementia can be similar, input from a family member or caregiver may be important for a doctor to make an accurate diagnosis.

Signs and symptoms of delirium usually begin over a few hours or a few days. They often fluctuate throughout the day, and there may be periods of no symptoms. Symptoms tend to be worse during the night when it's dark and things look less familiar. Primary signs and symptoms include those below.

Reduced awareness of the environment

This may result in:

- An inability to stay focused on a topic or to switch topics
- Getting stuck on an idea rather than responding to questions or conversation
- Being easily distracted by unimportant things
- Being withdrawn, with little or no activity or little response to the environment

Poor thinking skills (cognitive impairment)

This may appear as:

- Poor memory, particularly of recent events
- Disorientation, for example, not knowing where you are or who you are
- Difficulty speaking or recalling words
- Rambling or nonsense speech
- Trouble understanding speech
- Difficulty reading or writing

Behavior Changes

This may include:

- Seeing things that don't exist (hallucinations)
- Restlessness, agitation or combative behavior
- Calling out, moaning or making other sounds
- Being quiet and withdrawn — especially in older adults
- Slowed movement or lethargy
- Disturbed sleep habits
- Reversal of night-day sleep-wake cycle

Emotional Disturbances

This may appear as:

- Anxiety, fear, or paranoia
- Depression
- Irritability or anger
- A sense of feeling elated (euphoria)
- Apathy
- Rapid and unpredictable mood shifts
- Personality changes
- Types of delirium

Experts have identified three types of delirium:

- **Hyperactive delirium.** Probably the most easily recognized type, this may include restlessness (for example, pacing), agitation, rapid mood changes or hallucinations.
- **Hypoactive delirium.** This may include inactivity or reduced motor activity, sluggishness, abnormal drowsiness or seeming to be in a daze.
- **Mixed delirium.** This includes both hyperactive and hypoactive symptoms. The person may quickly switch back and forth from hyperactive to hypoactive states.

Delirium and dementia

Dementia and delirium may be particularly difficult to distinguish, and a person may have both. In fact, frequently delirium occurs in people with dementia.

Dementia is the progressive decline of memory and other thinking skills due to the gradual dysfunction and loss of brain cells. The most common cause of dementia is Alzheimer's disease.

Some differences between the symptoms of delirium and dementia include:

- **Onset.** The onset of delirium occurs within a short time, while dementia usually begins with relatively minor symptoms that gradually worsen over time.
- **Attention.** The ability to stay focused or maintain attention is significantly impaired with delirium. A person in the early stages of dementia remains generally alert.
- **Fluctuation.** The appearance of delirium symptoms can fluctuate significantly and frequently throughout the day. While people with dementia have better and worse times of day, their memory and thinking skills stay at a fairly constant level during the course of a day.

Symptoms & Signs Of Dementia



You find yourself struggling to remember recent events or dates



You find it hard to follow conversations or TV shows



You find yourself forgetting the names of friends or everyday objects



You find yourself repeating words, and forgetting what you were saying



You find difficulties thinking and responding



You feel anxious, depressed or angry and notice behavioral changes



You feel a decline in the ability to talk, read or write



You feel confused, even when in a familiar environment

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Dementia is a general term for a decline in mental ability severe enough to interfere with daily life. Memory loss is an example. Alzheimer's is the most common type of dementia.

Though dementia and brain injuries can have overlap in their symptoms, brain injuries are unpredictable in their consequences.

HOW TRAUMATIC BRAIN INJURY (TBI) AFFECTS DAILY LIFE

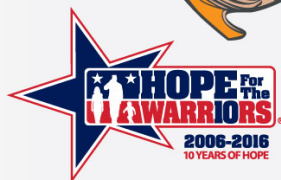
HEALTHY

- Frontal:
Concentration, Problem Solving, Speech
- Parietal:
Sense of Touch, Pain, Temperature
- Occipital:
Healthy Vision
- Temporal:
Memory, Organization
- Cerebellum:
Balance & Coordination
- Brainstem:
Breathing, Steady Heart Rate



TBI

- Frontal:
Lack of Focus, Irritability, Language Difficulty
- Parietal:
Difficulty with Reading, Spatial Misperception
- Occipital:
Blind Spots, Blurred Vision
- Temporal:
Problems with Short- & Long-Term Memory
- Cerebellum:
Difficulty Walking, Slurred Speech
- Brainstem:
Changes in Breath, Difficulty Swallowing



Data © Mayfield Clinic

Brain injuries affect who we are, the way we think, act, and feel. It can change everything about us in a matter of seconds. The most important things to remember:

- A person with a brain injury is a person first
- No two brain injuries are exactly the same
- The effects of a brain injury are complex and vary greatly from person to person
- The effects of a brain injury depend on such factors as cause, location, and severity

Traumatic Brain Injury

2.4 million people sustain a traumatic brain injury (TBI) each year. According to the Centers for Disease Control and Injury Prevention, the leading causes of TBI are:

- Falls (40.5%)
- Other/Unknown (19%)
- Struck by/against events (15.5%)
- Motor Vehicle-traffic crashes (14.3%)
- Assaults (10.7 %)

A Healthy Brain

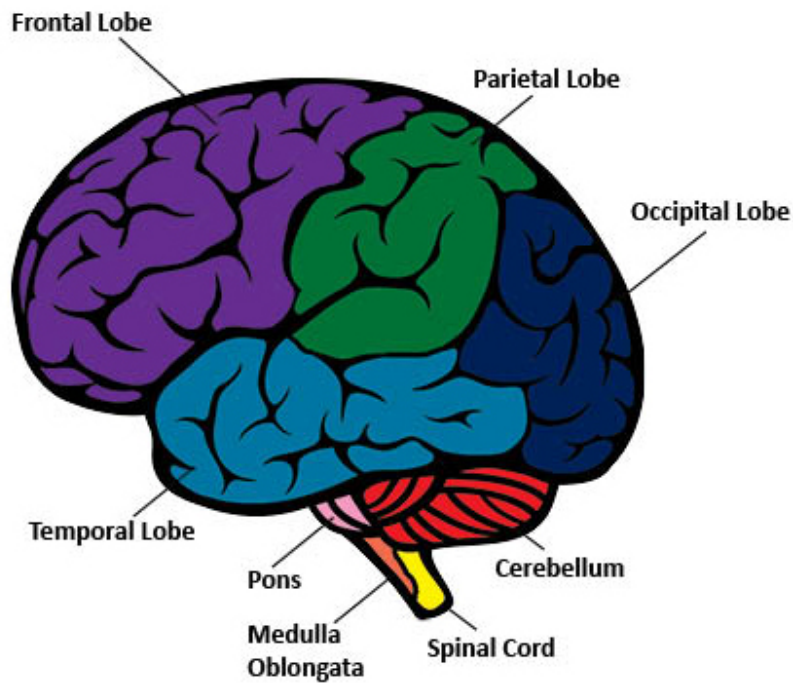
To understand what happens when the brain is injured, it is important to realize what a healthy brain is made of and what it does. The brain is enclosed inside the skull. The skull acts as a protective covering for the soft brain. The brain is made of neurons (nerve cells). The neurons form tracts that route throughout the brain. These nerve tracts carry messages to various parts of the brain. The brain uses these messages to perform functions. The functions include coordinating our body systems, such as breathing, heart rate, body temperature, and metabolism; thought processing; body movements; personality; behavior; and the senses, such as vision, hearing, taste, smell, and touch. Each part of the brain serves a specific function and links with other parts of the brain to form more complex functions. All parts of the brain need to be working well in order for the brain to work well. Even "minor" or "mild" injuries to the brain can significantly disrupt the brain's ability to function.

An Injured Brain

When a brain injury occurs, the functions of the neurons, nerve tracts, or sections of the brain can be affected. If the neurons and nerve tracts are affected, they can be unable or have difficulty carrying the messages that tell the brain what to do. This can change the way a person thinks, acts, feels, and moves the body. Brain injury can also change the complex internal functions of the body, such as regulating body temperature; blood pressure; bowel and bladder control. These changes can be temporary or permanent. They may cause impairment or a complete inability to perform a function.

Functions of the Brain

The brain is divided into main functional sections, called lobes. These sections or brain lobes are called the Frontal Lobe, Temporal Lobe, Parietal Lobe, Occipital Lobe, the Cerebellum, and the Brain Stem. Each has a specific function as described below.



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Parietal Lobe Functions

- Sense of touch
- Spatial perception
- Differentiation (identification) of size, shapes, and colors
- Visual perception

Occipital Lobe Functions

- Vision

Cerebellum Lobe Functions

- Balance
- Skilled motor activity
- Coordination
- Visual perception

Brain Stem Functions

- Breathing
- Arousal and consciousness
- Attention and concentration
- Heart rate
- Sleep and wake cycles

Frontal Lobe Functions

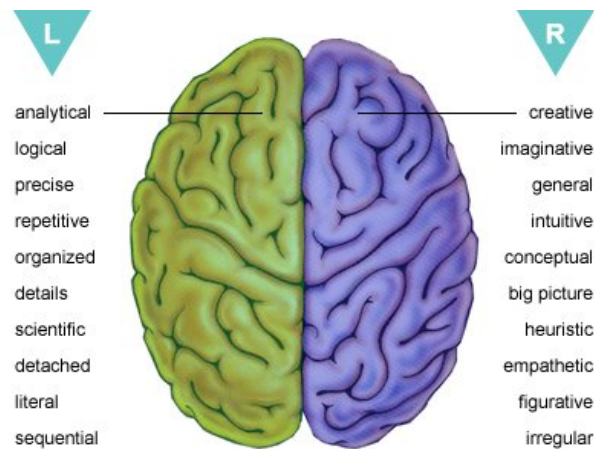
- Attention and concentration
- Self-monitoring
- Organization
- Speaking (expressive language)
- Motor planning and initiation
- Awareness of abilities and limitations
- Personality
- Mental flexibility
- Inhibition of behavior
- Emotions
- Problem solving
- Planning and anticipation
- Judgment

Temporal Lobe Functions

- Memory
- Understanding language (receptive language)
- Sequencing
- Hearing
- Organization

Right or Left Brain

The functional sections or lobes of the brain are also divided into right and left sides. The right side and the left side of the brain are responsible for different functions. General patterns of dysfunction can occur if an injury is on the right or left side of the brain.



Injuries of the left side of the brain can cause:

- Difficulties in understanding language (receptive language)
- Difficulties in speaking or verbal output (expressive language)
- Catastrophic reactions (depression, anxiety)
- Verbal memory deficits
- Impaired logic
- Sequencing difficulties
- Decreased control over right-sided body movements

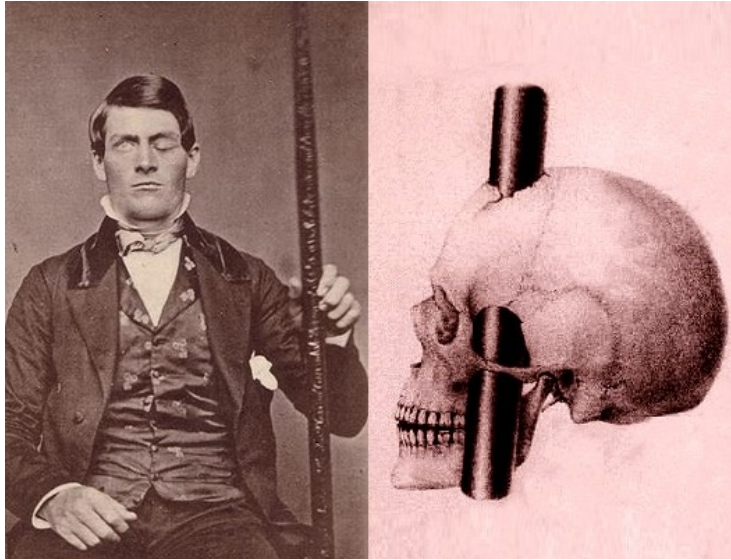
Injuries of the right side of the brain can cause:

- Visual-spatial impairment
- Visual memory deficits
- Left neglect (inattention to the left side of the body)
- Decreased awareness of deficits
- Altered creativity and music perception
- Loss of “the big picture” type of thinking
- Decreased control over left-sided body movements

Diffuse Brain Injury (The injuries are scattered throughout both sides of the brain) can cause:

- Reduced thinking speed
- Confusion
- Reduced attention and concentration
- Fatigue
- Impaired cognitive (thinking) skills in all areas

Phineas Gage



In 1848, Gage, 25, was the foreman of a crew cutting a railroad bed in Cavendish, Vermont. On September 13, as he was using a tamping iron to pack explosive powder into a hole, the powder detonated. The tamping iron—43 inches long, 1.25 inches in diameter and weighing 13.25 pounds—shot skyward, penetrated Gage’s left cheek, ripped into his brain and exited through his skull, landing several dozen feet away. Though blinded in his left eye, he might not even have lost consciousness, and he remained savvy enough to tell a doctor that day, “Here is business enough for you.”

Gage’s initial survival would have ensured him a measure of celebrity, but his name was etched into history by observations made by John Martyn Harlow, the doctor who treated him for a few months afterward. Gage’s friends found him “no longer Gage,” Harlow wrote. The balance between his “intellectual faculties and animal propensities” seemed gone. He could not stick to plans, uttered “the grossest profanity” and showed “little deference for his fellows.” The railroad-construction company that employed him, which had thought him a model foreman, refused to take him back. So Gage went to work at a stable in New Hampshire, drove coaches in Chile and eventually joined relatives in San Francisco, where he died in May 1860, at age 36, after a series of seizures.

In time, Gage became the most famous patient in the annals of neuroscience, because his case was the first to suggest a link between brain trauma and personality change. In his book *An Odd Kind of Fame: Stories of Phineas Gage*, the University of Melbourne’s Malcolm Macmillan writes that two-thirds of introductory psychology textbooks mention Gage. Even today, his skull, the tamping iron and a mask of his face made while he was alive are the most sought-out items at the Warren Anatomical Museum on the Harvard Medical School campus.

When asking about possible brain injuries, be straightforward and ask in a professional manner.

- Ask if the person ever hit in the head with a loss of consciousness?
- Ask if they were they hospitalized for a brain injury?
- And if they were hospitalized, did they need rehabilitation after the injury?
 - Relearning to walk, talk, or use their memory?
- Do they have a scar or scars?
- Did their personality and life situation change as compared to before the injury?

Tips for Communicating with People with Brain Injuries

- Some people with TBI may have trouble concentrating or organizing their thoughts. If you are in a public area with many distractions, consider moving to a quiet or private location, and try focusing on short-term goals.
- Be prepared to repeat what you say, orally or in writing. Some people with TBI may have short-term memory deficits.
- If you are not sure whether the person understands you, offer assistance completing forms or understanding written instructions and provide extra time for decision-making. Wait for the individual to accept the offer of assistance; do not "over-assist" or be patronizing.
- Be patient, flexible and supportive. Take time to understand the individual, make sure the individual understands you and avoid interrupting the person.

Keys for law enforcement:

- Try not to take behaviors caused by brain injuries, dementia, and delirium personally
 - Don't take them as a sign of disrespect
 - Don't misread them as a lack of desire for help.
 - Respect the Person (Emphasize the person not the disorder.)
 - Be aware of symptoms and potential limitations the individual may have.
 - Understand as much as you can, and do not be afraid to ask questions so you become more informed.
 - Get help when you are not certain.