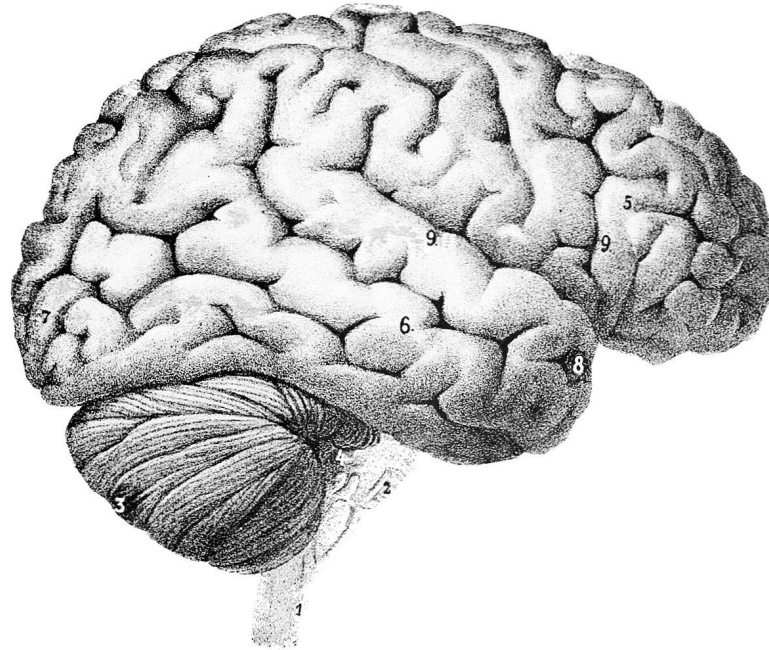


Supportive Services: TBI and Homelessness

- Educate
- Identify
- Advocate
- Support

“If You have seen one brain injury, You have seen one brain injury”

The brain and the human in which it resides, is unique and complicated. Each survivor will have their own story and the impacts brain injury has on their life.



Incidence of TBI in the Unhoused Community

Stubbs JL, Thornton AE, Sevick JM, Silverberg ND, Barr AM, Honer WG, Panenka WJ. Traumatic brain injury in homeless and marginally housed individuals: a systematic review and meta-analysis. *Lancet Public Health*. 2020 Jan;5(1):e19-e32. doi: 10.1016/S2468-2667(19)30188-4. Epub 2019 Dec 2. Erratum in: *Lancet Public Health*. 2019 Dec 18;: PMID: 31806487.

The lifetime prevalence of any severity of TBI in homeless and marginally housed individuals (18 studies, n=9702 individuals) was 53.1% (95% CI 46.4-59.7; I²=97%) and the lifetime prevalence of moderate or severe TBI (nine studies, n=5787) was 22.5% (13.5-35.0; I²=99%). The method used to ascertain TBI history, the age of the sample, and the sample size significantly moderated estimated lifetime prevalence of any severity of TBI. TBI was consistently associated with poorer self-reported physical and mental health, higher suicidality and suicide risk, memory concerns, and increased health service use and criminal justice system involvement.

Acquired Brain Injury

An acquired brain injury (ABI) is an injury to the brain that is not hereditary, congenital, degenerative, or induced by birth trauma. An acquired brain injury is the umbrella term for all brain injuries.

There are two types of acquired brain injury: traumatic and non-traumatic.

A history of TBI is often hidden among individuals living with behavioral health challenges (mental health and addiction), older adults, victims and perpetrators of intimate partner violence, the homeless and incarcerated individuals, adults and juveniles.

It is critical to identify TBIs to not only help with the specific impacts from that, but also because it can affect treatment of co-occurring conditions.

Common Causes of Brain Injuries

Traumatic Brain Injuries

Violence

Motor Vehicle Accidents

Falls

Weapons Blast

Sports Injuries

Non Traumatic Brain Injuries

Stroke

Anoxic/Hypoxic

Tumors

Infectious Disease

Toxins/SUD/Contaminants

Three Types of TBI

Mild TBI

Most TBIs that occur each year are mild TBIs or concussions.¹ A mild TBI or concussion is caused by:

- A bump, blow, or jolt to the head, or
- By a hit to the body that causes the head and brain to move quickly back and forth

This sudden movement can cause:

- The brain to bounce around or twist in the skull
- Chemical changes in the brain
- Stretching and damaging brain cells²

Moderate and Severe TBI

A moderate or severe TBI is caused by a bump, blow, or jolt to the head or by a penetrating injury (such as [from a gunshot](#)) to the head. In the United States, severe TBIs are linked to thousands of deaths each year.¹

For those who survive, a moderate or severe TBI may lead to long-term or life-long health problems that may affect all aspects of a person's life. These health problems have been described as being similar to the effects of a chronic disease.²

Physical symptoms

- Headache
- Nausea or vomiting
- Fatigue or drowsiness
- Problems with speech
- Dizziness or loss of balance

Sensory symptoms

- Sensory problems, such as blurred vision, ringing in the ears, a bad taste in the mouth or changes in the ability to smell
- Sensitivity to light or sound

Cognitive, behavioral or mental symptoms

- Loss of consciousness for a few seconds to a few minutes
- No loss of consciousness, but a state of being dazed, confused or disoriented
- Memory or concentration problems
- Mood changes or mood swings
- Feeling depressed or anxious
- Difficulty sleeping
- Sleeping more than usual

Moderate to severe traumatic brain injuries

Moderate to severe traumatic brain injuries can include any of the signs and symptoms of mild injury, as well as these symptoms that may appear within the first hours to days after a head injury:

Physical symptoms

- Loss of consciousness from several minutes to hours
- Persistent headache or headache that worsens
- Repeated vomiting or nausea
- Convulsions or seizures
- Dilation of one or both pupils of the eyes
- Clear fluids draining from the nose or ears
- Inability to awaken from sleep
- Weakness or numbness in fingers and toes
- Loss of coordination

Cognitive or mental symptoms

- Profound confusion
- Agitation, combativeness or other unusual behavior
- Slurred speech
- Coma and other disorders of consciousness

Post Concussion Syndrome

This is where the impacts from a concussion (mTBI) can last for week, months, or even years after the initial injury.

These effects can be compounded by further brain injuries.

Repetitive Head Injury

Repetitive head injury syndrome, which is now known as chronic traumatic encephalopathy, is a progressive neurodegenerative disorder affecting individuals subject to repeated head trauma.

Symptoms of CTE

Mood and behavior symptoms

Among individuals diagnosed with CTE, some report mood and behavior symptoms that can appear as early as the patient's 20s. Disorders reported include:

- Impulse control problems
- Aggression
- Mood swings
- Depression
- Paranoia
- Anxiety

Cognitive symptoms

Most patients with CTE eventually experience progressive disorders of thinking and memory, including problems with:

- Executive function
- Impaired judgment
- Short-term memory
- Dementia

Progressive cognitive symptoms related to CTE tend to appear later in life, sometimes in midlife, but more frequently in a patient's 60s or 70s. Patients may exhibit one or both symptom clusters. In some cases, symptoms worsen with time (even if the patient suffers no additional head impacts). In other cases, symptoms may be stable for years before worsening.

If cognitive symptoms appear in early or midlife, they could have another, more treatable cause than CTE. Sleep disorders and neuroendocrine disorders from damage to the pituitary gland can cause treatable cognitive changes. Learn what you can do to improve your lifelong brain performance at Operation Brain Health.

Sleep symptoms

A 2020 study from the UNITE Brain Bank suggests that problems with sleep, specifically symptoms associated with REM behavior disorder, may be related to CTE pathology.

SUD and TBI

The frontal lobe is highly susceptible to brain hypoxia (reduced oxygen).

Frontal lobe damage leads to potential loss of executive functions which are often required to participate, engage, and thrive in treatment • As a result of frontal lobe damage, survivors of overdose may have issues with noncompliance, poor follow through, or a lack of engagement • Decreased ability to participate and engage in treatment puts these individuals at increased risk for relapse

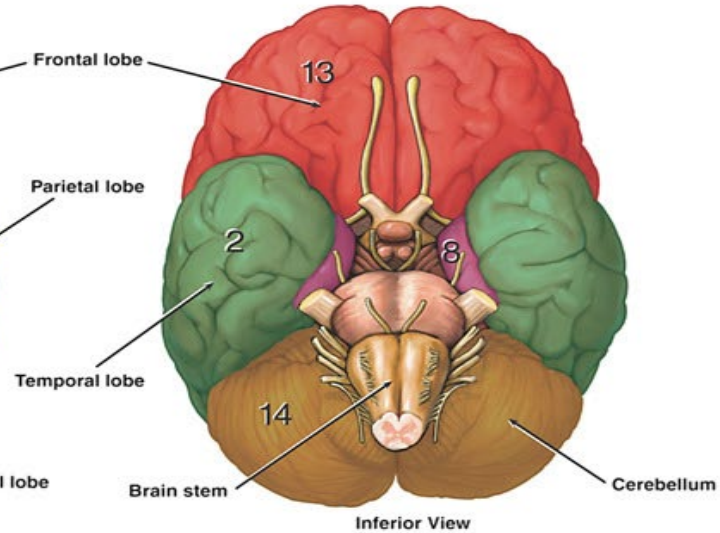
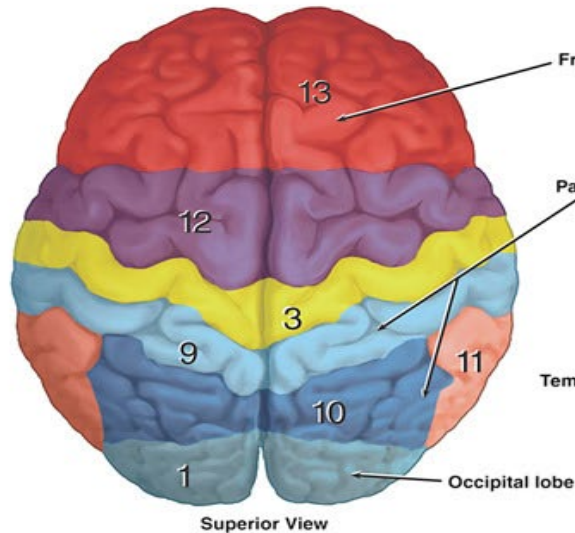
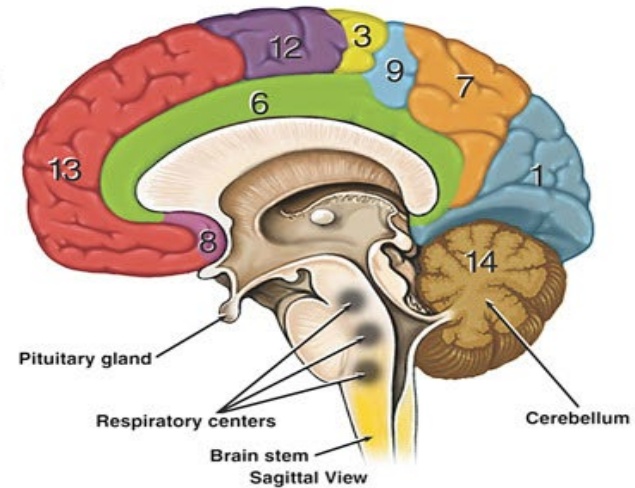
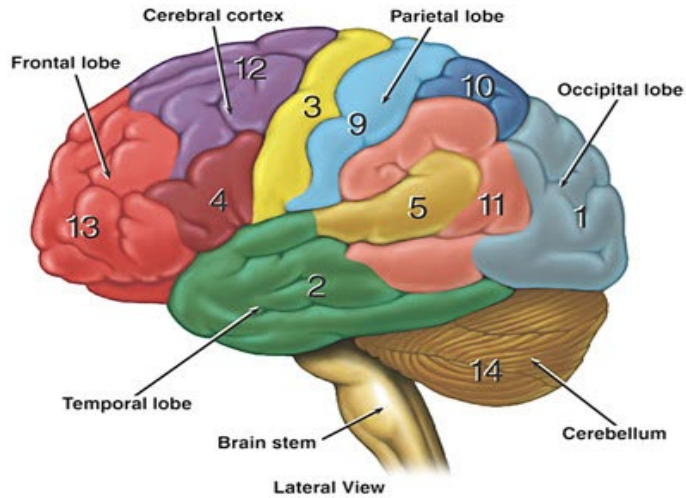
Overdose from Opiates oftentimes will result in depression of respiration leading to hypoxia. For those who overdose multiple times this can lead to cumulative damage.

Functional Areas of the Cerebral Cortex

- 1 **Visual Area:**
Sight
Image recognition
Image perception
- 2 **Association Area**
Short-term memory
Equilibrium
Emotion
- 3 **Motor Function Area**
Initiation of voluntary muscles
- 4 **Broca's Area**
Muscles of speech
- 5 **Auditory Area**
Hearing
- 6 **Emotional Area**
Pain
Hunger
"Fight or flight" response
- 7 **Sensory Association Area**
- 8 **Olfactory Area**
Smelling
- 9 **Sensory Area**
Sensation from muscles and skin
- 10 **Somatosensory Association Area**
Evaluation of weight, texture,
temperature, etc. for object recognition
- 11 **Wernicke's Area**
Written and spoken language comprehension
- 12 **Motor Function Area**
Eye movement and orientation
- 13 **Higher Mental Functions**
Concentration
Planning
Judgment
Emotional expression
Creativity
Inhibition

Functional Areas of the Cerebellum

- 14 **Motor Functions**
Coordination of movement
Balance and equilibrium
Posture



Supportive Services

Request For Services

Assessment—Screen for SUD & TBI

Understanding - How history informs Behavior

Prioritization—viewed through TBI-related awareness/needs

Strengths/Barriers—holistic

Objectives—supported by interventions

Interventions/Services

Outcomes

: <https://nhchc.org/clinical-practice/adapted-clinical-guidelines/tbi/>

ADAPTING YOUR PRACTICE Recommendations for the
Care of Patients Who Are Homeless or Unstably Housed
Living with the Effects of Traumatic Brain Injury