

Frequently Asked Questions About Brain Injury



ALCOHOL AND BRAIN INJURY

Alcohol use and traumatic brain injury (TBI) are closely related. Up to two-thirds of people with TBI have a history of alcohol abuse or risky drinking. Between 30-50% of people with a TBI were injured while drunk, and about one-third were injured while under the influence of other drugs.

After a TBI, many people notice their brains are more sensitive to alcohol. Drinking increases the chances of getting injured again, can make cognitive (thinking) problems worse, and increases the chances of having emotional problems such as depression.

Alcohol and Brain Injury Recovery

Brain injury recovery continues for much longer than previously thought possible. Many people notice improvements for years following their injury. Alcohol slows down or stops brain injury recovery. Not drinking is one way to give the brain the best chance to heal.

Alcohol and the Risk of Additional Brain Injuries

After a brain injury, survivors are three-to-eight times more likely to have another brain injury. Drinking alcohol puts survivors at an even higher risk of having a second brain injury.

Alcohol and Mental Functioning

Alcohol and brain injury have similarly negative effects on mental abilities, such as memory and thinking flexibility. Alcohol magnifies some of the cognitive problems caused by brain injury. Alcohol may also affect brain injury survivors more than it did before their injury.

Alcohol and Mood

Depression is about eight times more common in the first year after a TBI than in the general population. Alcohol is a "depressant" drug and using alcohol can cause or worsen depression. Alcohol can reduce the effectiveness of anti-depressant medications. People who are taking antidepressants should not drink alcohol.

Cognitive Effects of Alcohol-Related Brain Injury

The cognitive effects of alcohol-related brain injuries are similar to those of other types of brain injury, and can result in:

- Impaired judgment and self-awareness
- Social isolation
- Depression and mood disorders
- Lack of motivation
- Distractibility and concentration issues
- Impulsivity and reckless behavior

Developed by the Brain Injury Alliance of Arizona – References available upon request

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OPIATE OVERDOSE AND THE BRAIN

Opiates directly impact the region of the brain that regulates breathing. During an overdose, the individual may have shallow and erratic breathing, or in some cases, stop breathing altogether. When the brain is deprived of oxygen for an extended period, a hypoxic or anoxic brain injury can occur. Anoxia is the complete lack of oxygen to the brain. Hypoxia is when the oxygen supplied to the brain is restricted. Anoxia is usually a result of hypoxia.

Brain Injury

Anoxia can be especially harmful to your brain. After about four to five minutes without oxygen, your brain can become permanently damaged. Without oxygen, your brain cells can die, and many of the functions that your brain controls can be affected. The longer your brain goes without sufficient oxygen, the more likely you are to experience long-term complications, or even death.

Signs and Symptoms of Anoxia

The symptoms of anoxia may not always be obvious at first. Your brain can last a few minutes without oxygen before any symptoms manifest. At times, symptoms may be delayed and can take several days or weeks to appear. Such symptoms may include:

- Mood and personality changes
- Memory loss
- Slurred speech or forgotten words
- Changes in judgment
- Trouble walking or moving arms and/or legs normally
- Weakness
- Feeling dizzy or disoriented
- Unusual headaches
- Trouble concentrating
- Seizures
- Hallucinations
- Passing out or sudden loss of consciousness

Cognitive Effects of Anoxia

The effects of anoxia can vary widely depending on the part of the brain that has been injured and the extent of the damage. Some of the major cognitive (thought) problems are:

- **Short-term memory loss.** This is the most common cognitive symptom.
- **Decline in executive functions.** Disruption of critical tasks such as reasoning, making judgments, and synthesizing information. This can lead to impulsive behavior, poor decision-making, and the inability to direct, divide, or switch attention.
- **Word Difficulty.** Commonly includes the inability to remember the correct word, selecting the wrong word for the situation, confusing similar words, and not understanding commonly-used words.
- **Visual disturbances.** Difficulty processing visual information can occur in some cases.

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STIMULANTS AND THE BRAIN

Stimulants affect the way that the brain works by causing changes in the ways nerve cells communicate with one another. Stimulants are a class of substances that increase certain types of cell-signaling and amplify various physiological processes throughout the brain and body. Many types of stimulant drugs are associated with heightened release of a chemical in the brain called dopamine, which can result in a powerful sense of well-being, increased energy, attention, and alertness.

Types of Stimulants

Prescription ADHD medications such as Adderall (amphetamine & dextroamphetamine) and Ritalin (methylphenidate), Methamphetamine (including crystal meth), and Cocaine (including crack cocaine), are examples of brain-altering stimulants.

Harmful Effect of Stimulant Use

- Increased heart rate
- Heightened blood pressure
- Very high body temperature
- Muscle shakes or tremors
- Agitation
- Confusion
- Hallucinations
- Paranoia or anxiety
- Difficulty concentrating or focusing
- Chronic exhaustion

Abuse/misuse of stimulants can amplify their effects to potentially lethal levels, leading to permanent brain injury or death. Toxic levels can result in heart attack, stroke, seizures, or even fatal overheating.

Long-term psychological impacts of abuse/misuse may include persistent anxiety, panic attacks, depression, hallucinations, delusions, and paranoia.

Cognitive Effects of Stimulant Use

Deficits in executive function, response regulation, and anxious-impulsive personality traits represent the most common long-term cognitive effects of stimulant abuse/misuse.

- **Decline in executive functions.** Disruption of critical tasks such as reasoning, making judgments, and synthesizing information. This can lead to impulsive behavior, poor decision-making, and the inability to direct, divide, or switch attention.
- **Decline in emotional response regulation.** Emotional response dysregulation can lead to behavioral problems and interfere with a person's social interactions and relationships at home, in school, or in the workplace. Symptoms of emotional response dysregulation include anger or behavioral outbursts, such as destroying or throwing objects, and aggression towards self or others.
- **Anxious-impulsive personality traits.** Characterized by little or no forethought, reflection, or consideration of consequences.

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