

## Effects and Consequences of Alcohol Consumption and its Impact on Brain

Panther Arena\*

Department of Medicine, University of Auckland, Auckland, New Zealand

### DESCRIPTION

Alcohol has been a part of human culture for thousands of years, often consumed as a social lubricant or for relaxation. However, it's important to recognize that alcohol consumption can have significant effects on the brain. While moderate drinking may not cause immediate harm, excessive or chronic alcohol use can lead to various neurological and cognitive impairments. In this article, we will discuss the effects of alcohol on the brain and the potential consequences of long-term alcohol abuse.

When alcohol is consumed, it enters the bloodstream and eventually reaches the brain. Once in the brain, alcohol affects the functioning of neurotransmitters, which are chemical messengers that transmit signals between brain cells. One of the neurotransmitters most affected by alcohol is Gamma-Amino-Butyric Acid (GABA), which is responsible for inhibiting or slowing down brain activity. Alcohol enhances the effects of GABA, leading to sedation and relaxation. This is why individuals may feel more relaxed or less anxious after consuming alcohol.

Another neurotransmitter affected by alcohol is glutamate, which is responsible for stimulating brain activity. Alcohol inhibits the release of glutamate, leading to a slowing down of brain function. This is why alcohol can impair coordination, judgment, and reaction time. It can also cause memory problems, as glutamate plays a crucial role in the formation of new memories.

Excessive alcohol consumption can lead to acute intoxication, commonly known as being drunk. Symptoms of acute intoxication include slurred speech, unsteady gait, impaired judgment and decreased inhibitions. While these effects may seem temporary, prolonged or heavy drinking can have long-lasting effects on the brain.

One of the most severe consequences of long-term alcohol abuse is the development of Alcohol Use Disorder (AUD), commonly known as alcoholism. AUD is a chronic brain disease characterized by an inability to control or stop drinking despite negative consequences. It affects various aspects of brain

function, including decision-making, impulse control, and emotional regulation.

Chronic alcohol abuse can also lead to structural changes in the brain. Studies have shown that long-term heavy drinking can cause shrinkage of the brain, particularly in areas related to memory and learning, such as the hippocampus. This can result in persistent memory problems and difficulty learning new information.

Furthermore, alcohol abuse can lead to the development of Wernicke-Korsakoff syndrome, a neurological disorder caused by a deficiency in thiamine (vitamin B1). This condition is characterized by confusion, memory loss and difficulty with coordination. It can have significant and irreversible effects on the brain if not treated promptly.

Alcohol also has the potential to damage the peripheral nervous system, which consists of nerves outside the brain and spinal cord. Peripheral neuropathy, a condition characterized by numbness, tingling and pain in the hands and feet is a common consequence of long-term alcohol abuse. This occurs due to alcohol's toxic effects on nerve cells.

It is important to note that not everyone who consumes alcohol will develop severe alcohol-related brain damage. Factors such as genetics, overall health and patterns of alcohol consumption can influence an individual's susceptibility to alcohol's effects. However, it is clear that excessive and chronic alcohol abuse significantly increases the risk of developing alcohol-related brain impairments.

### CONCLUSION

In conclusion, the brain has a remarkable ability to recover and heal to some extent, even after prolonged alcohol abuse. However, complete recovery may not be possible, and some brain damage may be irreversible. The most effective way to prevent alcohol-related brain damage is to avoid excessive or chronic alcohol consumption altogether. Alcohol consumption can have profound effects on the brain. From acute intoxication to chronic alcohol abuse leading to neurological and cognitive impairments, the consequences of excessive alcohol use are vast.

**Correspondence to:** Panther Arena, Department of Medicine, University of Auckland, Auckland, New Zealand, E-mail: Pantherarena@gmail.com

**Received:** 05-Jun-2023, Manuscript No. JALDD-23-25040; **Editor assigned:** 07-Jun-2023, Pre QC No. JALDD-23-25040 (PQ); **Reviewed:** 21-Jun-2023, QC No. JALDD-23-25040; **Revised:** 28-Jun-2023, Manuscript No. JALDD-23-25040 (R); **Published:** 07-Jul-2023, DOI: 10.35248/2329-6488.23.11.393.

**Citation:** Arena P (2023) Effects and Consequences of Alcohol Consumption and its Impact on Brain. J Alcohol Drug Depend.11:393.

**Copyright:** © 2023 Arena P. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.