



The Effects of Excessive Alcohol Intake on the Brain

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Introduction

Alcohol is recognized as a neurotoxin capable of disrupting critical communication and information-processing pathways within the brain. The impact of alcohol on the brain can manifest in both short-term and long-term contexts, contingent upon the quantity and frequency of consumption. This educational article delves into the prevalent and consequential repercussions of excessive alcohol intake on the intricate workings of the brain.

Short-term effects

Moderate alcohol consumption may induce a depressed mood, impaired inhibition, somnolence, and difficulties in forming new memories. Conversely, excessive alcohol consumption can precipitate a multitude of acute impairments, encompassing confusion, compromised motor coordination, impaired judgment, reduced reflexes, and memory lapse. In cases of severe intoxication, alcohol overdose can ensue when the liver struggles to metabolize alcohol efficiently, resulting in elevated blood alcohol concentrations. Such overdoses can manifest life-threatening symptoms including emesis, seizures, bradycardia, respiratory distress, hypothermia, and even coma. Furthermore, alcohol overdose carries the grim potential of inflicting permanent brain damage or, in the gravest scenarios, culminating in fatality.

Long-term effects

Prolonged, heavy drinking can induce enduring alterations in both the structure and function of the brain. These transformations may include reductions in neuronal size and alterations in the activity of neurotransmitters, the pivotal chemical messengers governing mood, cognition, and behavior. Chronic heavy drinking can also instigate nutritional deficiencies that compound the impairment of brain function, such as thiamine (vitamin B-1) defi-

ciency. Thiamine deficiency can precipitate Wernicke-Korsakoff syndrome, a variant of alcohol-related brain damage typified by confusion, memory deficits, visual disturbances, and coordination deficits. Moreover, protracted, heavy alcohol consumption augments susceptibility to mental health afflictions like depression and anxiety, along with severe neurological disorders like dementia and stroke.

Conclusion

Alcohol's impact on the brain is contingent upon the quantity and frequency of consumption. Excessive alcohol intake can be deleterious to the brain, both in the short and long term. Consequences encompass impaired memory, speech, judgment, balance, mood, mental health, and structural and functional alterations in the brain. Furthermore, it can culminate in life-threatening conditions such as alcohol overdose or poisoning, potentially leading to permanent brain damage or fatality. To mitigate or prevent these adverse effects on the brain, it is advisable to exercise prudence and restraint in alcohol consumption.

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