

# ALCOHOL AND THE BRAIN

## HOW ALCOHOL CAN AFFECT YOUR BRAIN

### Fact 1

**There is no safe level of alcohol consumption for the brain.** Studies show that even low levels of alcohol consumption are associated with an increased risk of adverse brain outcomes.

### Fact 2

Even at low levels, **alcohol consumption increases the risk of health problems**, including alcohol dependence, cognitive impairment, dementia, anxiety, and depression.

### Fact 3

**Alcohol consumption increases the risk of health problems at any age**, from the young to older people.

### Fact 4

**Any episode of acute alcohol intoxication is a sign of brain dysfunction.** Although reversible, with repeated episodes and long-term increased levels of drinking, changes may not reverse.

## IMMEDIATE RISKS

### of alcohol use to the brain

**HEADACHES.** Alcohol use can trigger headaches and migraines both immediately after ingestion and the next day during a hangover.

**DISTURBED SLEEP.** Alcohol consumption has been linked to poor sleep quality and duration.

**COGNITIVE IMPAIRMENTS.** These include reduced attention, impulse control, judgment, decision-making, concentration, and learning deficits/difficulties.

**BLACKOUTS AND MEMORY IMPAIRMENTS.** Alcohol intoxication can lead to a temporary block in the transfer of memories from short- to long-term storage in the hippocampus, resulting in fragmented or completely blacked-out memories of events that occurred during intoxication.

**ALCOHOL INTOXICATION.** This causes psychomotor impairments that dramatically increase the risk of brain injuries from accidents, violence, and overdose.

**OVERDOSE.** Large amounts of alcohol slow the parts of the brain that control basic life-support functions, such as breathing, heart rate, and temperature control, and can lead to death.

## LONG-TERM RISKS

### of alcohol use to the brain\*

**DEFICITS IN EXECUTIVE FUNCTIONING.** These concern functions such as abstract reasoning, working memory, planning, inhibitory control, and problem-solving, which can lead to risky or thoughtless decision-making.

**ALCOHOL DEPENDENCE.** This is the result of not only the effects of alcohol on the brain, but a more complex behavioral disorder that can interfere with nutrition and social functioning. It is also associated with other diseases. If untreated, it can lead to several other conditions that can damage the brain and its function.

**DEMENTIA.** Alcohol-use disorders can cause lifelong brain damage, and they are a major risk factor for all types of dementia, especially early-onset dementia.

**DEPRESSION AND SUICIDE.** Alcohol is a depressant of the nervous system, and can increase the risk of depression and suicidal thoughts, attempts, and completed suicides.

**CHANGES IN SLEEP PATTERNS, MOOD, PERSONALITY, SHORTENED ATTENTION SPAN, PROBLEMS WITH COORDINATION, AND PSYCHIATRIC CONDITIONS SUCH AS ANXIETY AND DEPRESSION.** All these can result from long-term heavy drinking.

## WHAT CAN YOU DO TO PROTECT YOUR BRAIN?



### 1. AVOID ALCOHOL INTOXICATION.

2. Re-evaluate your alcohol use and replace it with a **HEALTHIER ACTIVITY OR HOBBY.**

3. **REDUCE YOUR DRINKING** to minimize the risk of alcohol-related harms.

4. Do not start drinking to improve your health; **NOT DRINKING IS THE HEALTHIEST CHOICE.**

5. **SEEK HELP** if you would like to discuss your alcohol use with a health professional.

\*For a full list of neuropsychiatric and other medical conditions associated with alcohol consumption, you can consult the WHO International Classification of Diseases.

Topiwala A, Ebmeier KB, Maullin-Sapey T, Nichols TE. No safe level of alcohol consumption for brain health: observational cohort study of 25,378 UK Biobank participants. medRxiv 2021 May;21256931.  
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PAHO/NMH/MH/21-0019

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