

# Drunk Driving and Effects of Alcohol on Cognitive Processes

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## ABOUT THE STUDY

Driving when under the influence of alcohol is known as drunk driving. Drunk driving is the offense of driving a vehicle after you have drunk more than the amount of alcohol that is legally allowed [1].

## Effects of alcohol on cognitive processes

Alcohol drastically alters biological functions that are essential for normal functioning and for driving. Alcohol is a depressant primarily affecting brain function. Alcohol has an immediate impact on the brain's most important areas, and "when the brain cortex is released from its functions of integrating and control, processes related to judgement and behaviour occur in an unorganised manner and the proper operation of behavioural tasks becomes disrupted," according to research. A variety of skills required to do daily tasks are compromised by alcohol. Alcohol drastically impairs a person's capacity to switch their focus from one thing to another "without considerably compromising sensory motor abilities," which is one of its principal consequences. This suggests that drunken persons are unable to adequately switch their focus without impairing their senses [2]. Additionally, drunken people have substantially less usable fields of vision than sober persons do. If the eyes must be rotated to the side to detect inputs or if the eyes must travel swiftly from one spot to another, the information the brain receives from the eyes "becomes disturbed." A person's capacity to drive is evaluated using a variety of testing procedures that reveal their level of drunkenness [3]. One of these is a tracking task, which assesses hand-eye coordination and requires the participant to keep an object moving along a predetermined course by rotating a steering wheel. This implies that inebriated people are unable to transfer their concentration effectively without losing their senses. Additionally, compared to sober people, inebriated people have much less usable fields of vision [4]. The information the brain receives from the eyes "becomes upset" if the eyes must quickly move from one place to another or must rotate to the side to detect inputs. Different testing techniques that identify a person's level of intoxication are used to assess their ability to drive. One of them is a tracking task, which tests hand-eye coordination

and has the subject turn a steering wheel to maintain an object moving along a predetermined path [5].

## Grand Rapids dip

The Grand Rapids Effect has been attributed in some writings to inaccurate statistics, to drivers exercising greater caution at low BAC levels, or to "experience" with alcohol. Other hypotheses include the influence of alcohol on essential tremor and other movement disorders, as well as the blocking effect of ethanol excitotoxicity, but these hypotheses are still speculative [6].

## Perceived recovery rate

An overestimation of how rapidly one's body is recuperating from the effects of alcohol is a direct result of alcohol on the brain. In a research with college students that was conducted and covered in the article "Why Drunk Drivers May Get Behind the Wheel," the students were assessed using "a concealed maze learning task as their BAC (Blood Alcohol Content) both climbed and decreased over an 8-hour period." The recovery of the underlying cognitive impairments that cause these errors is slower and more closely tied to the actual blood alcohol concentration than the more rapid reduction in participants' subjective feelings of intoxication, the researchers found through their study of the students. The mistakes increased as the students grew more intoxicated [7].

The individuals thought they were getting over the negative effects of drinking alcohol significantly faster than they actually were. The fact that so many people believe they can drive safely even though they are not yet completely sober suggests that the recovery rates do not coincide. This feeling of perceived recovery is a probable explanation. Making decisions when driving through crossroads or changing lanes is one of the most important aspects of being able to drive safely. This mental process and brain function are both impaired when drinking. While under the influence of alcohol, a person loses these crucial driving abilities [8].

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