

# Alcohol Blackout

**Blackout** – Amnesia for places a person went or things they did while intoxicated; can involve spotty memory (fragmentary blackout, brownout, or grayout) or large missing chunks of time (en bloc blackout).

**Blacking out vs. Passing out** – Blacking out from alcohol implies that a person is awake and functioning but unable to create memories for events and actions. Passing out from alcohol implies a person is asleep or unconscious from drinking too much. The two states are quite different.

What does it mean when someone says they were “blackout drunk?” How does a blackout differ from “passing out” after drinking, and what are the possible dangerous effects of drinking enough to blackout?

Blackouts are periods of amnesia during which a person actively engages in behaviors like walking and talking but does not create memories for these events as they transpire. This results in missing periods of time in the person’s autobiographical record. Blacking out is quite different from passing out, which means either falling asleep from excessive drinking or literally drinking oneself unconscious.

All blackouts are not the same and are distinguished by the severity of the amnesia. The most common form of blackout involves spotty memories for events, with islands of memories separated by missing memories in between. This form often is referred to as a *fragmentary blackout*, a *grayout*, or a *brownout*. With this type of blackout, focusing on the islands of memories often helps cue recall for some, but not all, of the missing pieces. Full and complete amnesia often spanning hours or more is known as an *en bloc blackout*. With this severe form of blackout, trying to fill in the missing pieces typically is fruitless. The memories were never formed and so no amount of digging will uncover them. They simply don’t exist.

It seems that alcohol produces blackouts by shutting down circuits that involve the hippocampus, a brain area which plays a central role in consolidating memories for what happens in our day-to-day lives. Information coming into the brain from the world around us is processed in various brain areas and then funneled to the hippocampus, which somehow weaves the information together into a running record of facts and events in our lives, a process called consolidation. By interfering with how these memory circuits work, alcohol creates a void in the record-keeping system.

During a blackout, the ability to remember things that happened before the blackout typically is spared. Because of this, even in the midst of a blackout, a person can carry on conversations and even tell stories about events that happened years ago or earlier in the evening while they were intoxicated but not yet in the blackout. Outside observers typically are unaware that an individual is in a blackout. Depending on how much alcohol the person drank and how impaired other brain functions are, a person in the midst of a blackout could appear incredibly drunk—or not overly intoxicated at all.

Anything a person can do while they are drunk and not blacked out they can do while they are blacked out—they just won't remember it the next day. Depending on how impaired the brain regions involved in decisionmaking and impulse control are, the missing events could range from mundane behaviors, like brushing teeth, to dangerous and traumatic events like driving a car, getting into a fight, or committing—or being the victim of—a sexual assault or other crime.

Blackouts are surprisingly common, particularly among younger drinkers. Across four waves of the Harvard College Alcohol Study, which spanned the 1990s, roughly 1 in 4 male and female students each year experienced a blackout—defined as not being able to remember places that they went or things they did while drinking. Smaller studies by researchers at Duke University report that roughly 1 in 10 male and female college students and recent high-school graduates experienced at least 1 blackout in the 2 weeks before being surveyed.

Research suggests that there are several factors that can increase one's risk of blacking out, in particular drinking in ways that cause one's blood alcohol concentration (BAC) to rise quickly and reach a high level. The BAC rises quickly when lots of alcohol gets into the bloodstream at once. This could mean drinking on an empty stomach, doing shots, chugging alcoholic beverages, or all three. Being a female is also a risk factor for several reasons. Females are more likely to drink on an empty stomach than males, and they tend to drink beverages with higher concentrations of alcohol than beer, such as mixed drinks, shots, and wine. From a biological standpoint, they reach higher BACs than males after each drink as a result of differences in the amount of water in the body. In all cases, the best predictor that a drinker will black out is that they have blacked out before. Some people seem to be very susceptible to blackouts, whereas others are relatively resistant to the serious effects of alcohol on memory. Research with twins suggests that if one twin experiences blackouts the other is likely to experience them too, so it seems there is a genetic component to sensitivity to blackouts.

Blackouts aren't necessarily a sign of a problem with alcohol, but they are always a reason for concern and should prompt a person to consider their relationship with alcohol.