

Healthy Living

How various percentages of blood alcohol content affect the mind and body

Alcohol affects people in various ways. While some who consume alcohol may indicate they have a high tolerance for it, such individuals are not immune to the effects of alcohol. Alcohol contributes to physical and mental impairment regardless of a person's tolerance, and research has shown that certain symptoms of impairment can start to manifest when blood alcohol content (BAC) reaches certain levels. Understanding BAC and the effects that alcohol can have may discourage overconsumption.

What is BAC?

BAC indicates the amount of alcohol a person has in their blood. The Cleveland Clinic notes that alcohol is rapidly absorbed in the stomach and the intestines before it enters the bloodstream. The liver then metabolizes the alcohol to filter it out of the blood. However, when people consume alcohol faster than the liver can process it, their BAC increases. That's when side effects like intoxication can occur.

Does alcohol affect people differently?

The National Institute on Alcohol Abuse and Alcoholism notes that alcohol metabolism is controlled by genetic factors, including variations in the

enzymes that break down alcohol. So the speed at which someone becomes intoxicated can be much quicker for some people than others.

How do different levels of BAC affect the body?

The Cleveland Clinic notes that alcohol is a depressant, which is always good to keep in mind when consuming it. According to the Alcohol and Drug Foundation, depressants slow down the brain and body, which can lower energy levels, slow breathing, slow heart rate, and lower body temperature. The ADF also notes that depressants slow down a person's ability to respond to unexpected situations, which is one reason why drinking and driving is so dangerous. Drivers contend with an array of unexpected situations whenever they get behind the wheel, and a slowed response to such scenarios can be fatal for drivers, their passengers and others sharing the road.

The Cleveland Clinic notes that different BAC levels produce different side effects. But even a relatively low BAC can have an adverse physical and mental effect.

• .02: At this level, people consuming alcohol may experience a change in mood and feel more relaxed. However, a slight loss

in judgment also is typical with a BAC at .02.

• .05: Lowered inhibitions and alertness and impaired judgment are possible when BAC reaches .05.

• .08: This is the legal driving limit in all

50 states and Canada. Driving with a BAC level of .08 will merit an arrest in both the United States and Canada. At this level, a person may have reduced muscle coordination, struggle to identify dan-

gerous situations and suffer from impaired judgment and reasoning.

• .10: A BAC of .10 is considered severely impaired. Slower reaction time, slurred speech and slowed thinking is pos-

sible when BAC reaches .10.

While it's true that alcohol affects some people differently than others, all people who plan to consume alcohol are urged to do so responsibly and avoid driving if they plan to drink.

The many benefits of immunization

Over the course of the twentieth century, great strides were made in relation to diagnosing, treating and preventing disease. That work has continued into the twenty-first century, as the organization Voices for Vaccines notes that vaccines prevent more diseases now than they did even as recently as 30 years ago.

Despite the efficacy of vaccines, skepticism about them has been on the rise in recent years. According to the independent, nonpartisan policy institute the Center for American Progress, since the 2019-2020 school year, kindergarten vaccination rates for measles, mumps and rubella (MMR) have fallen below the 95 percent threshold required to maintain herd immunity. The herd immunity rate refers to the percentage of the population that must be immunized to prevent disease transmission. The reduced rate of MMR vaccination among kindergarten students is thus increasing their risk for MMR. Indeed, the Kaiser Family Foundation reports that

39 of the 50 states are now below the 95 percent herd immunity rate for measles.

The data noted by the Center for American Progress and the KFF is troubling and suggests the public may have a lot to gain from a refresher course on the numerous benefits of immunization.

• Vaccines have saved more than 150 million lives over the last half century. A 2024 study published in *The Lancet* estimated that vaccines saved 154 million lives across the globe between 1974 and 2024. Researchers behind the study also noted that 95 percent of the lives saved during that 50-year period were children younger than five years old.

• Vaccines have a lasting effect. A 2024 report from researchers with the Centers for Disease Control and Prevention noted that 117 million children were born in the United States between 1994 and 2023. The researchers estimated that over the lifetimes of those children, routine vaccinations would prevent 508 million cases of illness, 32

million hospitalizations, and one million deaths.

• Vaccines save money. Parents need not be reminded of the medical costs associated with children's health care. Vaccines can greatly reduce such costs, offering a net savings of \$540 billion in direct costs according to the 2024 report from the CDC. A separate report published in the journal *Pediatrics* in 2014 estimated that every dollar spent on childhood vaccination saves \$3 in direct medical care.

• Vaccines are thoroughly vetted prior to being approved. Voices for Vaccines notes that vaccines are among the most tested medical interventions in the world. Vac-

cines are subjected to a rigorous, multi-phased testing process, which includes three separate phases of clinical development involving human beings, before they can even be submitted to the Federal Drug Administration for regulatory review and approval.

Vaccine skepticism has risen in recent years. But immunization remains a vital component of public health and a highly effective way to reduce illnesses and diseases in the present and for years to come.



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