

# The ABCs of BAC

## A Guide to Understanding Blood Alcohol Concentration and Alcohol Impairment

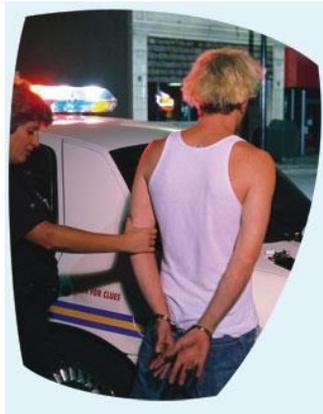
A Library and Resource Center on Alcohol, Tobacco, Other Drugs, Mental Health and Wellness

### Q: What is “BAC”?

**A:** The amount of alcohol in a person’s body is measured by the weight of the alcohol in a certain volume of blood. This is called the blood alcohol concentration, or “BAC.”

Alcohol is absorbed directly through the walls of the stomach and the small intestine, goes into the bloodstream, and travels throughout the body and to the brain.

Alcohol is quickly absorbed and can be measured within 30 to 70 minutes after a person has had a drink.



- **Your gender.** Women generally have less water and more body fat per pound of body weight than men. Alcohol does not go into fat cells as easily as other cells, so more alcohol remains in the blood of women.
- **Your weight.** The more you weigh, the more water is present in your body. This water dilutes the alcohol and lowers the BAC.
- **Food in your stomach.**

Absorption will be slowed if you’ve had something to eat.

### Q: Does the type of alcohol I drink affect my BAC?

**A:** No! A drink is a drink, is a drink.

A typical drink equals about half an ounce of alcohol (.54 ounces, to be exact). This is the approximate amount of alcohol found in:

- one shot of distilled spirits, or
- one 5-ounce glass of wine, or
- one 12-ounce beer.

### Q: What affects my BAC?

**A:** How fast a person’s BAC rises varies with a number of factors:

- **The number of drinks.** The more you drink, the higher the BAC.
- **How fast you drink.** When alcohol is consumed quickly, you will reach a higher BAC than when it is consumed over a longer period of time.

### Q: What about other medications or drugs?

**A:** Medications or drugs will not change your BAC. However, if you drink alcohol while taking certain medications, you may feel – and be – more impaired, which can affect your ability to perform driving-related tasks.

### Q: When am I impaired?

**A:** Because of the multitude of factors that affect BAC, it is very difficult to assess your own BAC or impairment. Though small amounts of alcohol affect one’s brain and the ability to drive, people often swear they are “fine” after several drinks – but in fact, the failure to recognize alcohol impairment is often a symptom of impairment.

While the lower stages of alcohol impairment are undetectable to others, the drinker knows vaguely when the “buzz” begins. A person will likely be too impaired to drive before looking – or maybe even feeling – “drunk.”

*(continued)*

**Q:** How will I know I'm impaired, and why should I care?

**A:** Alcohol steadily decreases a person's ability to drive a motor vehicle safely. The more you drink, the greater the effect. As with BAC, the signs of impairment differ with the individual.

In single-vehicle crashes, the relative risk of a driver with BAC between .08 and .10 is at least **11 times greater** than for drivers with a BAC of zero, and **52 times greater** for young males. Further, many studies have shown that even small amounts of alcohol can impair a person's ability to drive.

Every State has passed a law making it illegal to drive with a BAC of .08 or higher. A driver also can be arrested with a BAC below .08 when a law enforcement officer has probable cause, based on the driver's behavior.

**Q:** What can I do to stay safe when I plan on drinking?

**A:** If you plan on drinking, plan not to drive.

You should always:

- Choose a non-drinking friend as a designated driver, or
- Ask ahead of time if you can stay over at your host's house, or
- Take a taxi (your community may have a Safe Rides program for a free ride home), and
- Always wear your safety belt – it's your best defense against impaired drivers.

**The following chart contains some of the more common symptoms people exhibit at various BAC levels, and the probable effects on driving ability:**

Blood Alcohol Concentration (BAC) <sup>1</sup>	Typical Effects	Predictable Effects on Driving
<b>.02%</b>	<ul style="list-style-type: none"> <li>• Some loss of judgment</li> <li>• Relaxation</li> <li>• Slight body warmth</li> <li>• Altered mood</li> </ul>	<ul style="list-style-type: none"> <li>• Decline in visual functions (rapid tracking of a moving target)</li> <li>• Decline in ability to perform two tasks at the same time (divided attention)</li> </ul>
<b>.05%</b>	<ul style="list-style-type: none"> <li>• Exaggerated behavior</li> <li>• May have loss of small-muscle control (e.g., focusing your eyes)</li> <li>• Impaired judgment</li> <li>• Usually good feeling</li> <li>• Lowered alertness</li> <li>• Release of inhibition</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced coordination</li> <li>• Reduced ability to track moving objects</li> <li>• Difficulty steering</li> <li>• Reduced response to emergency driving situations</li> </ul>
<b>.08%</b>	<ul style="list-style-type: none"> <li>• Muscle coordination becomes poor (e.g., balance, speech, vision, reaction time, and hearing)</li> <li>• Harder to detect danger</li> <li>• Judgment, self-control, reasoning, and memory are impaired</li> </ul>	<ul style="list-style-type: none"> <li>• Concentration</li> <li>• Short-term memory loss</li> <li>• Speed control</li> <li>• Reduced information processing capability (e.g., signal detection, visual search)</li> <li>• Impaired perception</li> </ul>
<b>.10%</b>	<ul style="list-style-type: none"> <li>• Clear deterioration of reaction time and control</li> <li>• Slurred speech, poor coordination, and slowed thinking</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced ability to maintain lane positions and brake appropriately</li> </ul>
<b>.15%</b>	<ul style="list-style-type: none"> <li>• Far less muscle control than normal</li> <li>• Vomiting may occur (unless this level is reached slowly or a person has developed a tolerance for alcohol)</li> <li>• Major loss of balance</li> </ul>	<ul style="list-style-type: none"> <li>• Substantial impairment in vehicle control, attention to driving task, and in necessary visual and auditory information processing</li> </ul>

<sup>1</sup> Information in this table shows the BAC level at which the effect usually is first observed, and has been gathered from a variety of sources including the National Highway Traffic Safety Administration, the National Institute on Alcohol Abuse and Alcoholism, the American Medical Association, the National Commission Against Drunk Driving, and www.webMD.com.