

Competency 3:

Explore the stages of alcohol impairment and human behavior – BAC.

Learning Objectives

Examine the factors relating to Intoxication and BAC.

Compare / contrast the properties of differing alcoholic beverage categories.

Examine the stages and signs of intoxication.

Explore the consequences and risks of excessive alcohol use by customers.

Alcohol is a drug. It is classed as a depressant, meaning that it slows down vital functions—resulting in slurred speech, unsteady movement, disturbed perceptions and an inability to react quickly.

As for how it affects the mind, it is best understood as a drug that reduces a person's ability to think rationally and distorts his or her judgment.

Although classified as a depressant, the amount of alcohol consumed determines the type of effect. Most people drink for the *stimulant* effect, such as a beer or glass of wine taken to “loosen up.” But if a person consumes more than the body can handle, they then experience alcohol's depressant effect. They start to feel “stupid” or lose coordination and control.





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Alcohol and Public Health

What is alcohol?

Ethyl alcohol, or ethanol, is an intoxicating ingredient found in beer, wine, and liquor. Alcohol is produced by the fermentation of yeast, sugars, and starches.

Why do some people react differently to alcohol than others?

Alcohol affects every organ in the body. It is a central nervous system depressant that is rapidly absorbed from the stomach and small intestine into the bloodstream. Alcohol is metabolized in the liver by enzymes. However, the liver can only metabolize a small amount of alcohol at a time, leaving the excess alcohol to circulate throughout the body. The intensity of the effect of alcohol on the body is directly related to the amount consumed.

Blood Alcohol Concentration (BAC) refers to the percent of alcohol (ethyl alcohol or ethanol) in a person's blood stream. A BAC of .10% means that an individual's blood supply contains one part alcohol for every 1000 parts blood.

In Wisconsin, a person is legally intoxicated if he/she has a BAC of .08% or higher.

Factors that impact BAC:

- Number of standard drinks
- Amount of time in which drinks are consumed
- Body weight
- Water composition
- Enzyme production and levels
- Sex assigned at birth and corresponding hormone levels
- Medications
- Food

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



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Alcohol Use and Your Health



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Drinking too much can harm your health. Excessive alcohol use led to approximately 95,000 deaths and 2.8 million years of potential life lost (YPLL) each year in the United States from 2011 – 2015, shortening the lives of those who died by an average of 29 years.¹ Further, excessive drinking was responsible for 1 in 10 deaths among working-age adults aged 20-64 years.² The economic costs of excessive alcohol consumption in 2010 were estimated at \$249 billion, or \$2.05 a drink.³

What is a standard drink?

In the United States, a standard drink contains 0.6 ounces (14.0 grams or 1.2 tablespoons) of pure alcohol. Generally, this amount of pure alcohol is found in

- 12-ounces of beer (5% alcohol content).
- 8-ounces of malt liquor (7% alcohol content).
- 5-ounces of wine (12% alcohol content).
- 1.5-ounces of 80-proof (40% alcohol content) distilled spirits or liquor (e.g., gin, rum, vodka, whiskey).⁴



What is excessive drinking?

Excessive drinking includes binge drinking, heavy drinking, and any drinking by pregnant women or people younger than age 21.

- Binge drinking, the most common form of excessive drinking, is defined as consuming
 - For women, 4 or more drinks during a single occasion.
 - For men, 5 or more drinks during a single occasion.
- Heavy drinking is defined as consuming
 - For women, 8 or more drinks per week.
 - For men, 15 or more drinks per week.

Most people who drink excessively are not alcoholics or alcohol dependent.⁵



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Short-Term Health Risks

Excessive alcohol use has immediate effects that increase the risk of many harmful health conditions. These are most often the result of binge drinking and include the following:

- Injuries, such as [motor vehicle crashes](#), falls, drownings, and burns.^{6,7}
- Violence, including homicide, suicide, sexual assault, and intimate partner violence.⁶⁻¹⁰
- Alcohol poisoning, a medical emergency that results from high blood alcohol levels.¹¹
- Risky sexual behaviors, including unprotected sex or sex with multiple partners. These behaviors can result in unintended pregnancy or sexually transmitted diseases, including HIV.^{12,13}
- Miscarriage and stillbirth or [fetal alcohol spectrum disorders \(FASDs\)](#) among pregnant women.^{6,12,14,15}



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Just The Facts

BAC is set at 0.0% for those under 21 by the State of Wisconsin.

In Wisconsin, the Blood Alcohol Content (BAC) limit is set at 08% for drivers over 21 years of age for the first two offenses and a lower limit of 0.02% subsequently.

If a server provides alcohol to an intoxicated person, he or she can be held liable or sued if that individual harms a third party.

Generally speaking, the percentage of BAC in an individual's system can be estimated based upon their weight, consumption time, and amount consumed. It is understood that the smaller the individual the less alcohol needed to reach .08, which is Wisconsin's BAC limit.

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What is Responsible Beverage Service?

- ☑ Helping customers consume alcohol in a responsible manner while creating a welcoming enjoyable experience.
- ☑ A full understanding of local and state laws associated with the sale of alcohol.
- ☑ Supporting the safety of all customers.
- ☑ Protecting the community for which we live and work.
- ☑ Understanding of the direct relationship between the business' reputation and profitability / success.
- ☑ Understand that Intoxicated customers consume server attention, time, & energy they could spend providing good customer service.
- ☑ It supports reasonable customer supportive consumption.
- ☑ Understand the Legal Issues for You and the Organization - fines, suspension of license, mandatory sobriety programs.
- ☑ Servers must be willing and able to refuse service to already intoxicated patrons – It is against the Law.

Challenge Question 1

An individual's weight or gender can impact which of the following?

- ☒ Blood alcohol concentration
- ☐ Alcohol intoxication concentration
- ☐ Intoxicant level percent
- ☐ None of the above

Challenge Question 2

Blood alcohol concentration (BAC) refers to which of the following?

- ☐ The percent of alcohol in a single drink
- ☐ The amount of alcohol in a liter of intoxicant
- ☒ The percent of alcohol in a person's bloodstream
- ☐ None of the above

Challenge Question 3

Blood alcohol concentration is set at 0.0% for those individuals under which specific age?

- ☐ 18
- ☐ 19
- ☐ 20
- ☒ 21

Challenge Question 4

Responsible Beverage Service includes which statement?

- ☐ Supporting responsible consumption by all customers
- ☐ A full understanding of local and state laws associated with the sale of alcohol
- ☐ Supporting the safety of all customers including the community
- ☒ All the above