



Harmful and underage college drinking are significant public health problems, and they exact an enormous toll on the lives of students on campuses across the United States.

Drinking at college has become a ritual that students often see as an integral part of their higher education experience. Some students come to college with established drinking habits, and the college environment can lead to a problem. According to the 2021 National Survey on Drug Use and Health (NSDUH), 49.3% of full-time college students ages 18 to 22 drank alcohol in the past month; and, of those, about 27.4% of students engaged in binge drinking during that same time frame.¹ For the purposes of this survey, binge drinking was defined as consuming 5 drinks or more on one occasion for males and 4 drinks or more for females. However, some college students drink at least twice that amount, a behavior that is often called high-intensity drinking.²

Consequences of Harmful and Underage College Drinking

Drinking affects college students, their families, and college communities.

Death

The most recent statistics from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) estimate that about 1,519 college students ages 18 to 24 die from alcohol-related unintentional injuries, including motor vehicle crashes.³

Assault

The most recent NIAAA statistics estimate that about 696,000 students ages 18 to 24 are assaulted by another student who has been drinking.⁴

Sexual Assault

Although estimating the number of alcohol-related sexual assaults is exceptionally challenging—since sexual assault is typically underreported—researchers have confirmed a long-standing finding that 1 in 5 college women experience sexual assault during their time in college.⁵ A majority of sexual assaults in college involve alcohol or other substances.^{6,7} Research continues in order to better understand the relationships between alcohol and sexual assault among college students. Additional national survey data are needed to better estimate the number of alcohol-related assaults.



What Is Binge Drinking?

Many college alcohol problems are related to binge drinking. NIAAA defines binge drinking as a pattern of drinking alcohol that brings blood alcohol concentration (BAC) to 0.08%—or 0.08 grams of alcohol per deciliter—or more. For a typical adult, this pattern corresponds to consuming 5 or more drinks (male), or 4 or more drinks (female), in about 2 hours.¹¹

Drinking this way can pose serious health and safety risks, including car crashes, drunk-driving arrests, sexual assaults, and injuries. Over the long term, frequent binge drinking can damage the liver and other organs.

Note: BAC of 0.08% corresponds to 0.08 grams per 100 milliliters.

Academic Problems

About 1 in 4 college students report experiencing academic difficulties from drinking, such as missing class or getting behind in schoolwork.⁸

In a national survey, college students who binge drank alcohol at least three times per week were roughly six times more likely to perform poorly on a test or project as a result of drinking (40% vs. 7%) than students who drank but never binged. The students who binge drank were also five times more likely to have missed a class (64% vs. 12%).⁹

Alcohol Use Disorder

Around 13% of full-time college students ages 18 to 22 meet the criteria for past-year alcohol use disorder (AUD), according to the 2021 NSDUH.¹⁰

Other Consequences

Other consequences include suicide attempts, health problems, injuries, unsafe sexual behavior, and driving under the influence of alcohol, as well as vandalism, damage, and involvement with the police.

Factors Affecting Student Drinking

Although some students come to college already having some experience with alcohol, certain aspects of college life—such as unstructured time, widespread availability of alcohol, inconsistent enforcement of underage drinking laws, and limited interactions with parents and other adults—can lead to a problem. In fact, college students have higher binge-drinking rates and a higher incidence of driving under the influence of alcohol than their noncollege peers.

The first 6 weeks of freshman year are a vulnerable time for heavy drinking and alcohol-related consequences because of student expectations and social pressures at the start of the academic year. Factors related to specific college environments also are significant. Students attending schools with strong Greek systems or prominent athletic programs tend to drink more than students at other types of schools. In terms of living arrangements, alcohol consumption is highest among students living in fraternities and sororities and lowest among commuting students who live with their families.

An often-overlooked preventive factor involves the continuing influence of parents. Research shows that students who choose not to drink often do so because their parents discussed alcohol use and its adverse consequences with them.



How Much Is a Drink?

To avoid binge drinking and its consequences, college students (and all people who drink) are advised to track the number of drinks they consume over a given period of time. That is why it is important to know exactly what counts as a drink.

In the United States, a standard drink (or one alcoholic drink-equivalent) is one that contains 0.6 fl oz or 14 grams of pure alcohol (also known as an alcoholic drink-equivalent), which is found in the following:

- » 12.0 oz of beer with about 5% alcohol content
- » 5.0 oz of wine with about 12% alcohol content
- » 1.5 oz of distilled spirits (e.g., gin, rum, tequila, vodka, and whiskey) with about 40% alcohol content

Unfortunately, although the standard drink (or alcoholic drink-equivalent) amounts are helpful for following health guidelines, they may not reflect customary serving sizes. A large cup of beer, an overpoured glass of wine, or a single mixed drink could contain much more alcohol than a standard drink. In addition, the percentage of pure alcohol varies within and across beverage types (e.g., beer, wine, and distilled spirits).

Addressing College Drinking

Ongoing research continues to improve our understanding of how to address the persistent and costly problem of harmful and underage student drinking. Successful efforts typically involve a mix of strategies that target individual students, the student body as a whole, and the broader college community.

Strategies Targeting Individual Students

Individual-level interventions target students, including those in higher risk groups such as first-year students, student athletes, members of Greek organizations, and mandated students. The interventions are designed to change student knowledge, attitudes, and behaviors related to alcohol so they drink less, take fewer risks, and experience fewer harmful consequences.

Categories of individual-level interventions include the following:

- » Education and awareness programs
- » Cognitive-behavioral skills-based approaches
- » Motivation and feedback-related approaches
- » Behavioral interventions by health professionals

Strategies Targeting the Campus and Surrounding Community

Environmental-level strategies target the campus community and student body as a whole. They are designed to change the campus and community environments where student drinking occurs. Often, a major goal is to reduce the availability of alcohol because research shows that reducing alcohol availability cuts consumption and harmful consequences on campuses as well as in the general population.

A Mix of Strategies Is Best

For more information on individual- and environmental-level strategies, visit NIAAA's *CollegeAIM* (which stands for *College Alcohol Intervention Matrix*) guide and interactive website. Revised and updated in 2020, *CollegeAIM* rates more than 60 alcohol interventions for effectiveness, cost, and other factors—and presents the information in a user-friendly and accessible way.

In general, the most effective interventions in *CollegeAIM* represent a range of counseling options and policies related to sales and access. After analyzing alcohol problems at their own schools, officials can use the



Alcohol Overdose and College Students

Thousands of college students are transported to the emergency room each year for alcohol overdose, which occurs when there is so much alcohol in the bloodstream that areas of the brain controlling basic life-support functions—such as breathing, heart rate, and temperature control—begin to shut down. Signs of this dangerous condition can include the following:

- » Mental confusion, stupor
- » Difficulty remaining conscious or inability to wake up
- » Vomiting
- » Seizures
- » Slow breathing (fewer than eight breaths per minute)
- » Irregular breathing (10 seconds or more between breaths)
- » Slow heart rate
- » Clammy skin
- » Dulled responses, such as no gag reflex (which prevents choking)
- » Extremely low body temperature, bluish skin color, or paleness

Alcohol overdose can lead to permanent brain damage or death, so a person showing any of these signs requires immediate medical attention. Do not wait for the person to have all the symptoms, and be aware that a person who has passed out can die. Call 911 if you suspect alcohol overdose.

CollegeAIM ratings to find the best combination of interventions for their students and unique circumstances.

Research suggests that creating a safer campus and reducing harmful and underage student drinking will likely come from a combination of individual- and environmental-level interventions that work together to maximize positive effects. Strong leadership from a concerned college president in combination with engaged parents, an involved campus community, and a comprehensive program of evidence-based strategies can help address harmful student drinking.



For more information, please visit:

<https://www.collegedrinkingprevention.gov/CollegeAIM>

According to the Substance Abuse and Mental Health Services Administration (SAMHSA), caution should be used when comparing estimates from the 2020 and 2021 NSDUH to those from prior years due to methodological changes. Prior to the COVID-19 pandemic, data were collected during in-home visits using computer assisted techniques. The COVID-19 pandemic necessitated a delay in data collection during 2020 and the introduction of web-based data collection with very limited in-person data collection. The criteria used to categorize AUD among respondents also changed in 2020 from the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) to the fifth edition (DSM-5), resulting in some differences in who is classified as having a substance use disorder. Specifically, DSM-5 criteria could lead to a diagnosis of AUD for some respondents, with too few symptoms to be diagnosed using DSM-IV criteria. Because these changes in data collection coincided with the spread of the COVID-19 pandemic and any related behavioral or mental health changes, we cannot fully separate the effects of methodological changes from true changes in the outcomes. Please see the [Methodological Summary and Definitions](#) for more information.

¹ Calculated using past 30-day quantity and frequency of alcohol use and past 30-day frequency of binge drinking (4+ drinks for females and 5+ drinks for males on the same occasion) from the 2021 NSDUH public-use data file. SAMHSA, Center for Behavioral Statistics and Quality [Internet]. 2021 National Survey on Drug Use and Health (NSDUH-2021-DS0001). Public-use file dataset, 2021. [cited 2023 Mar 3]. Available from: <https://www.datafiles.samhsa.gov/dataset/national-survey-drug-use-and-health-2021-nsduh-2021-ds0001>

² Hingshord RW, Zha W, White AM. Drinking beyond the binge threshold: predictors, consequences, and changes in the U.S. *Am J Prev Med.* 2017;52(6):717–27. PubMed PMID: [28526355](#)

³ Methodology for arriving at estimates described in Hingson R, Zha W, Smyth D. Magnitude and trends in heavy episodic drinking, alcohol-impaired driving, and alcohol-related mortality and overdose hospitalizations among emerging adults of college ages 18–24 in the United States, 1998–2014. *J Stud Alcohol Drugs.* 2017;78(4):540–48. PubMed PMID: [28728636](#)

⁴ Methodology for arriving at estimates described in Hingson R, Heeren T, Winter M, Wechsler H. Magnitude of alcohol-related mortality and morbidity among U.S. college students ages 18–24: changes from 1998 to 2001. *Annu Rev Public Health.* 2005;26:259–79. PubMed PMID: [15760289](#)

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⁶ Carey KB, Durney SE, Shepardson RL, Carey MP. Incapacitated and forcible rape of college women: prevalence across the first year. *J Adolesc Health.* 2015;56(6):678–80, 2015. PubMed PMID: [26003585](#)

⁷ Lawyer S, Resnick H, Bakanic V, Burkett T, Kilpatrick D. Forcible, drug-facilitated, and incapacitated rape and sexual assault among undergraduate women. *J Am Coll Health.* 2010;58(5):453–60. PubMed PMID: [20304757](#)

⁸ Wechsler H, Lee JE, Kuo M, Seibring M, Nelson TF, Lee H. Trends in college binge drinking during a period of increased prevention efforts. Findings from 4 Harvard School of Public Health College Alcohol Study Surveys: 1993–2001. *J Am Coll Health.* 2002;50(5):203–17. PubMed PMID: [11990979](#)

⁹ Presley CA, Pimentel ER. The introduction of the heavy and frequent drinker: a proposed classification to increase accuracy of alcohol assessments in postsecondary educational settings. *J Stud Alcohol.* 2006;67(2):324–31. PubMed PMID: [16562416](#)

¹⁰ SAMHSA, Center for Behavioral Statistics and Quality. 2021 National Survey on Drug Use and Health. Table 8.31B—Alcohol use disorder in past year: among people aged 18 to 22, by college enrollment status and demographic characteristics: percentages, 2021 [cited 2023 Jan 19]. Available from: <https://www.samhsa.gov/data/sites/default/files/reports/rpt39441/NSDUHDetailedTabs2021/NSDUHDetailedTabs2021/NSDUHDetTabsSect8pe2021.htm#tab8.31b>

¹¹ National Institute on Alcohol Abuse and Alcoholism [Internet]. Defining binge drinking. In: What Colleges Need to Know Now: An Update on College Drinking Research. Bethesda (MD): National Institutes of Health; 2007 [cited 2021 Oct 22]. Available from: https://www.collegedrinkingprevention.gov/media/1College_Bulletin-508_361C4E.pdf

