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Binge Drinking

Predictors, Patterns, and Consequences

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The National Institute on Alcohol Abuse and Alcoholism defines binge drinking as a pattern of consumption that causes blood alcohol concentration to rise to .08%—the legal limit for adults ages 21 or older operating a motor vehicle—or more. This level typically occurs after a woman consumes four drinks or a man consumes five drinks—in about 2 hours. Research suggests that three out of four adolescents who drink, and half of adults who drink, engage in binge drinking each month. Because of the impairments it produces, binge drinking increases the likelihood of a host of acute consequences, including injuries and deaths from falls, burns, drownings, car crashes, and alcohol overdoses. Of the roughly 88,000 deaths that result from alcohol use in the United States each year, more than half stem from binge drinking,¹ and binge drinking accounts for 77% (\$191.1 billion) of the annual economic cost of alcohol misuse.²

Several important questions related to binge drinking warrant further exploration. For instance, how have patterns of binge drinking changed in recent years in the United States? What is known about drinking at levels far beyond the standard binge thresholds? How does the peak number of drinks a person consumes relate to risks for experiencing alcohol-related harm? Are there unique risks of binge drinking for women? How does binge alcohol consumption affect brain development and function? What is the effect of binge drinking on organs other than the brain? The articles in this volume explore what is known about these and other topics related to binge drinking.

In **Adolescent Binge Drinking: Developmental Context and Opportunities for Prevention**, Chung and colleagues examine binge drinking among adolescents. National surveys suggest that drinking, including binge drinking, is declining among teens. The declines have been greater for young males than females, leading to a significant narrowing of differences in alcohol misuse between the genders. For instance, in the 1975 Monitoring the Future study, 49% of male high school seniors reported binge drinking, compared to only 26% of female seniors.³ By 2014, binge drinking declined in both genders, but more so for males, with 22% of males and 17% of females crossing the binge threshold. The authors examine the consequences of binge drinking for teens and discuss the developmental context in which adolescent drinking occurs.

Considerable research has focused on alcohol use, particularly binge drinking, among college students. Young adults in college are more likely to binge drink than their noncollege peers, though the differences are narrowing. Krieger and colleagues, in **The Epidemiology of Binge Drinking Among College-Age Individuals in the United States**, explore current knowledge of binge drinking and its consequences among college students and other young adults. As with binge drinking among high school students, binge drinking has declined among college students, but less so among college women. In contrast to the declines in binge drinking at colleges, binge drinking increased among young adults in the military and among young women in the general population. The authors examine the characteristics (i.e., race and ethnicity, Greek affiliation, and drinking motives) of young adults who engage in binge drinking relative to those who do not.

Traditionally, binge drinking has been studied using a single threshold, typically four or more drinks for females and five or more drinks for males, or just

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five or more drinks for both males and females. However, knowing that someone binge drank does not reveal how much alcohol he or she actually consumed. Using a single binge threshold has the unintended consequence of assigning the same level of potential risk to all binge drinkers, regardless of how much they drank. Recent studies have examined the prevalence and correlates of drinking at levels two and three times the standard binge thresholds, also known as high-intensity or extreme binge drinking. In **High-Intensity Drinking**, Patrick and Azar assess current knowledge of the prevalence of high-intensity drinking, the contexts in which it tends to occur (e.g., sporting events and 21st birthday celebrations), and the consequences of drinking at these high peak levels.

Recent studies suggest that long-standing differences between men and women in alcohol use are narrowing. This is concerning, given evidence that women might experience certain health effects of alcohol, such as cirrhosis of the liver and cardiovascular disease, at lower levels of consumption than men.⁴ In **Gender Differences in Binge Drinking: Prevalence, Predictors, and Consequences**, Wilsnack and colleagues examine changes in binge drinking and related outcomes in males and females, and they explore potential explanations for the convergence of alcohol misuse between the genders.

Over the past few decades, a paradigm shift has occurred in our understanding of brain development. It is now clear that brain development, once thought to taper off with the end of childhood, enters a unique phase during the adolescent years. Changes in the brain during adolescence lead to improvements in the ability to engage in complex social behaviors and to make forward-thinking decisions.⁵ Hiller-Sturmhöfel and Spear, in **Binge Drinking's Effects on the Developing Brain—Animal Models**, explore animal research findings demonstrating that repeated binge exposure during adolescence causes structural and functional damage in the brain that leads to social and cognitive deficits during adulthood. In **Effects of Binge Drinking on the Developing Brain: Studies in Humans**, Jones and colleagues discuss evidence from human research on the effects of repeated binge drinking on adolescent brain development and brain function, including lingering deficits in attention and memory.

The chronic health effects of alcohol misuse are well-documented. Alcohol consumption is associated with roughly half the liver cirrhosis deaths in the United States and increases the risk of cancers of the mouth, throat, liver, and breast. Yet the health effects of binge drinking are less well-known. In **Binge Drinking's Effects on the Body**, Molina and Nelson review what is known about the effects of binge drinking on organ systems, including the heart, gastrointestinal tract, and brain.

The research explored in this volume indicates that crossing the binge threshold increases the risk of acute harm, such as injuries, memory blackouts, and overdoses, and that the risk of negative outcomes increases further at higher peak levels of consumption. Repeated binge drinking during the teen years can alter the trajectory of adolescent brain development and cause lingering deficits in attention, memory, and other cognitive functions. Binge drinking can damage organs other than the brain, including the gastrointestinal tract, liver, and heart. While binge drinking declined in recent years for men in some age groups, women exhibited either smaller declines or increases, leading to gender convergence in alcohol use and related harms. Hopefully, insight into the prevalence and consequences of binge drinking, and the social and developmental contexts within which it occurs, will lead to improvements in prevention strategies aimed at minimizing binge drinking and the associated harms.

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