

The Surgeon General's Call to Action To Prevent and Reduce Underage Drinking 2007



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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MESSAGE FROM THE
HONORABLE MICHAEL O. LEAVITT

SECRETARY OF HEALTH AND HUMAN SERVICES

Each person at the Department of Health and Human Services shares the profound charge of helping Americans live longer, healthier lives.

I'm convinced that we need to create a culture of wellness in our society: To teach people about small steps they can take, and good choices they can make, that lead to better health.

Learned early, the lessons of good health will last a lifetime. Similarly, bad habits and the consequences of unhealthy choices also can have lasting effects.

That is why this *Surgeon General's Call to Action To Prevent and Reduce Underage Drinking* is so important.

This *Call to Action* is a reminder that underage drinking has serious social costs and often tragic personal consequences. More than that, this Call to Action demonstrates that each of us has the opportunity to prevent underage drinking.

The *Call to Action* also offers a way forward through the collaborative effort of societal change involving parents, police officers, colleges, and communities. This type of societal change requires the discipline and

determination to take small steps toward reducing underage drinking each day.

Many of these efforts are already underway, but much more must be done. The time to act is now.

It won't be easy. But the hard way is often the best way and the benefits of reducing underage drinking are significant and substantial.

I urge everyone to work with the Surgeon General and me so that together we can answer the call to reduce underage drinking, encourage good choices, and create a culture of wellness across the Nation.

Michael O. Leavitt

FOREWORD FROM THE ACTING SURGEON GENERAL

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Alcohol is the most widely used substance of abuse among America's youth. A higher percentage of young people between the ages of 12 and 20 use alcohol than use tobacco or illicit drugs. The physical consequences of underage alcohol use range from medical problems to death by alcohol poisoning, and alcohol plays a significant role in risky sexual behavior, physical and sexual assaults, various types of injuries, and suicide. Underage drinking also creates secondhand effects for others, drinkers and nondrinkers alike, including car crashes from drunk driving, that put every child at risk. Underage alcohol consumption is a major societal problem with enormous health and safety consequences and will demand the Nation's attention and committed efforts to solve.

For the most part, parents and other adults underestimate the number of adolescents who use alcohol. They underestimate how early drinking begins, the amount of alcohol adolescents consume, the many risks that alcohol consumption creates for adolescents, and the nature and extent of the consequences to both drinkers and nondrinkers. Too often, parents are inclined to believe, "Not my child." Yet, by age 15, approximately one-half of America's boys and girls have had a whole drink of alcohol, not just a few sips, and the highest prevalence of alcohol dependence in any age group is among people ages 18 to 20.

I have issued this *Surgeon General's Call to Action To Prevent and Reduce Underage Drinking* to focus national attention on this enduring problem and on new, disturbing research which indicates that the developing

adolescent brain may be particularly susceptible to long-term negative consequences from alcohol use. Recent studies show that alcohol consumption has the potential to trigger long-term biological changes that may have detrimental effects on the developing adolescent brain, including neurocognitive impairment.

Fortunately, the latest research also offers hopeful new possibilities for prevention and intervention by furthering our understanding of underage alcohol use as a developmental phenomenon—as a behavior directly related to maturational processes in adolescence. New research explains why adolescents use alcohol differently from adults, why they react uniquely to it, and why alcohol can pose such a powerful attraction to adolescents, with unpredictable and potentially devastating outcomes.

Emerging research also makes it clear that an adolescent’s decision to use alcohol is influenced by multiple factors. These factors include normal maturational changes that all adolescents experience; genetic, psychological, and social factors specific to each adolescent; and the various social and cultural environments that surround adolescents, including their families, schools, and communities. These factors—some of which protect adolescents from alcohol use and some of which put them at risk—change during the course of adolescence. Because environmental factors play such a significant role, responsibility for the prevention and reduction of underage drinking extends beyond the parents of adolescents, their schools, and communities. It is the collective responsibility of the Nation as a whole and of each of us individually.

The process of solving the public health problem of underage alcohol use begins with an examination of our own attitudes toward underage drinking—

and our recognition of the seriousness of its consequences for adolescents, their families, and society as a whole. Adolescent alcohol use is not an acceptable rite of passage but a serious threat to adolescent development and health, as the statistics related to adolescent impairment, injury, and death attest.

A significant point of the *Call to Action* is this: Underage alcohol use is not inevitable, and schools, parents, and other adults are not powerless to stop it. The latest research demonstrates a compelling need to address alcohol use early, continuously, and in the context of human development using a systematic approach that spans childhood through adolescence into adulthood. Such an approach is described in this *Call to Action*. Such an approach can be effective when, as a Nation and individually, we commit ourselves to solving the problem of underage drinking in America. We owe nothing less to our children and our country.

Kenneth P. Moritsugu, M.D., M.P.H.

SECTION 1

Underage Drinking in America: Scope of the Problem

Underage¹ alcohol consumption in the United States is a widespread and persistent public health and safety problem that creates serious personal, social, and economic consequences for adolescents, their families, communities, and the Nation as a whole. Alcohol is the drug of choice among America's adolescents, used by more young people than tobacco or illicit drugs (Johnston et al. 2006a; Johnston et al. 2006b; Substance Abuse and Mental Health Services Administration [SAMHSA] 2006). The prevention and reduction of underage drinking and treatment of underage youth² with alcohol use disorders (AUDs) are therefore important public health and safety goals. *The Surgeon General's Call to Action To Prevent and Reduce Underage Drinking* seeks to engage all levels of government as well as individuals and private sector institutions and organizations in a coordinated, multifaceted effort to prevent and reduce underage drinking and its adverse consequences.

The impetus for this *Call to Action* is the body of research demonstrating the potential negative consequences of underage alcohol use on human

¹ For the purpose of this document, *underage* refers to persons under the minimum legal drinking age of 21.

² For the purpose of this document, *youth* refers to children and adolescents under the age of 21.

maturation, particularly on the brain, which recent studies show continues to develop into a person's twenties (Giedd 2004). Although considerable attention has been focused on the serious consequences of underage drinking and driving, accumulating evidence indicates that the range of adverse consequences is much more extensive than that and should also be comprehensively addressed. For example, the highest prevalence of alcohol dependence in the U.S. population is among 18- to 20-year-olds (Grant et al. 2004) who typically began drinking years earlier. This finding underscores the need to consider problem drinking within a developmental framework. Furthermore, early and, especially, early heavy drinking are associated with increased risk for adverse lifetime alcohol-related consequences (Hingson et al. 2000, 2001, 2002). Research also has provided a more complete understanding of how underage drinking is related to factors in the adolescent's environment, cultural issues, and an adolescent's individual characteristics. Taken together, these data demonstrate the compelling need to address alcohol problems early, continuously, and in the context of human development using a systematic approach that spans childhood through adolescence into adulthood.

Underage drinking remains a serious problem despite laws against it in all 50 States; decades of Federal, State, Tribal, and local programs aimed at preventing and reducing underage drinking; and efforts by many private entities. Underage drinking is deeply embedded in the American culture, is often viewed as a rite of passage, is frequently facilitated by adults, and has proved stubbornly resistant to change. A new, more comprehensive and developmentally sensitive approach is warranted. The growing body of research in the developmental area, including identification of risk and protective factors for underage alcohol use, supports the more complex prevention and reduction strategies that are proposed in this *Call to Action*.

Underage Alcohol Use Increases With Age. As Figure 1 indicates, alcohol use is an age-related phenomenon. The percentage of the population who have drunk at least one whole drink (see Appendix A for the definition of a drink) rises steeply during adolescence until it plateaus at about age 21. By age 15, approximately 50 percent of boys and girls have had a whole drink of alcohol; by age 21, approximately 90 percent have done so.

Alcohol Use Increases Dramatically During Adolescence

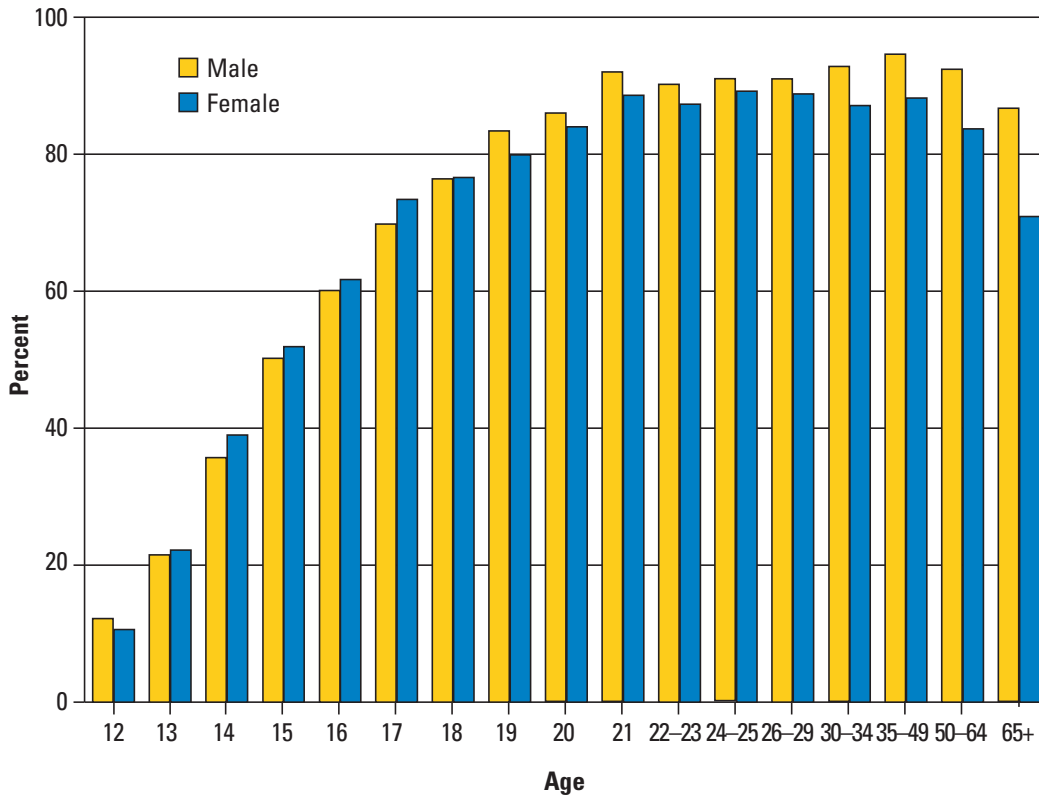


Figure 1: Percentage of Americans Who Have Ever Drunk Alcohol (A Whole Drink).

Source: SAMHSA data from 2005 National Survey on Drug Use and Health (NSDUH)

18- to 20-Year-Olds Have the Highest Prevalence of DSM-IV Alcohol Dependence

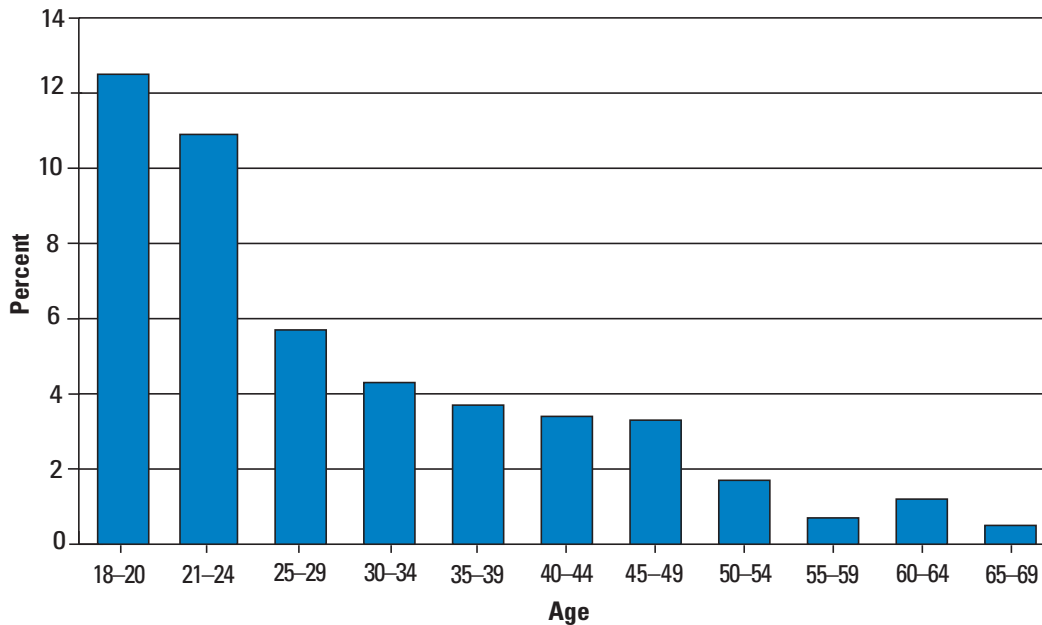


Figure 2: Prevalence of Past-Year DSM-IV Alcohol Dependence—U.S.

Source: Grant et al. 2004 (data from the National Epidemiologic Survey on Alcohol and Related Conditions)

There Is a High Prevalence of Alcohol Use Disorders Among the Young.

Early alcohol consumption by some young people will result in an alcohol use disorder—that is, they will meet diagnostic criteria for either alcohol abuse or dependence (see Appendix B). Figure 2 shows that the highest prevalence of alcohol dependence is among people ages 18–20. In other words, the description these young people provide of their drinking behavior meets the criteria for alcohol dependence set forth in the most recent editions of the *Diagnostic and Statistical Manual of Mental Disorders (DSM)*—*DSM-IV* and *DSM-IV-TR* (American Psychiatric Association 1994, 2000).

Even some youth younger than age 18 have an alcohol use disorder. According to data from the 2005 National Survey on Drug Use and Health (NSDUH), 5.5 percent of youth ages 12–17 meet the diagnostic criteria for alcohol abuse or dependence (SAMHSA 2006).

THE NATURE OF UNDERAGE DRINKING

Underage alcohol use is a pervasive problem with serious health and safety consequences for the Nation. The nature and gravity of the problem is best described in terms of the number of children and adolescents who drink, when and how they drink, and the negative consequences that result from drinking.

Alcohol Is the Most Widely Used Substance of Abuse Among America's Youth. As indicated in Figure 3, a higher percentage of youth in 8th, 10th, and 12th grades used alcohol in the month prior to being surveyed than used tobacco or marijuana, the illicit drug most commonly used by adolescents (Johnston et al. 2006b).

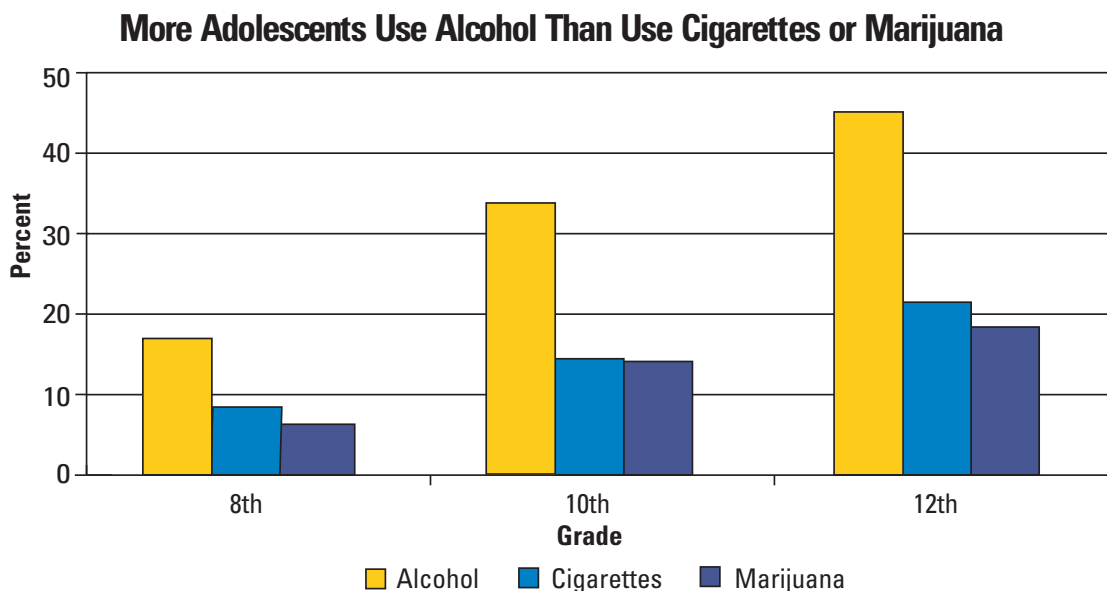


Figure 3: Past-Month Adolescent Alcohol, Cigarette, and Marijuana Use by Grade.

Source: Data from 2006 Monitoring the Future Survey

A Substantial Number of Young People Begin Drinking at Very Young Ages. A number of surveys ask youth about the age at which they first used alcohol. Because the methodology in the various surveys differs, the data are not consistent across them. Nonetheless, they do show that a substantial number of youth begin drinking before the age of 13. For example, data from recent surveys indicate that:

- Approximately 10 percent of 9- to 10-year-olds have started drinking³ (Donovan et al. 2004).
- Nearly one-third of youth begin drinking³ before age 13 (Grunbaum et al. 2004).
- More than one-tenth of 12- or 13-year-olds and over one-third of 14- or 15-year-olds reported alcohol use (a whole drink) in the past year (SAMHSA 2006).
- The peak years of alcohol initiation are 7th and 8th grades (Faden 2006).

Adolescents Drink Less Frequently Than Adults, But When They Do Drink, They Drink More Heavily Than Adults. When youth between the ages of 12 and 20 consume alcohol, they drink on average about five drinks per occasion about six times a month, as indicated in Figure 4. This amount of alcohol puts an adolescent drinker in the binge range, which, depending on the study, is defined as “five or more drinks on one occasion” or “five or more drinks in a row for men and four or

Adolescents Drink Less Often but More Per Occasion Than Adults

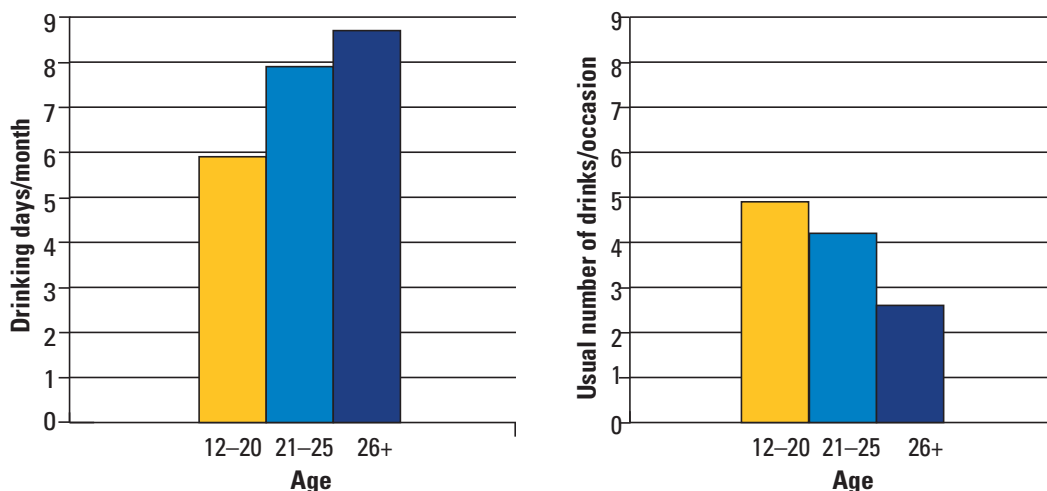


Figure 4: Number of Drinking Days per Month and Usual Number of Drinks per Occasion for Youth (12–20), Young Adults (21–25), and Adults (26 and older).

Source: SAMHSA data from 2005 NSDUH

³ Alcohol use in these studies was assessed by a single question asking youth whether they had ever consumed more than a few sips of alcohol.

more drinks in a row for women.” By comparison, adult drinkers age 26 and older consume on average two to three drinks per occasion about nine times a month (SAMHSA 2006).

Figure 5 provides a more detailed breakdown by age showing the number of days in the last month on which five or more drinks were consumed by adolescents and adults. (These data come from the NSDUH, which uses “5+” drinks as the definition of binge drinking for both males and females [SAMHSA 2006].) Distinct age-related patterns are evident for both boys and girls, with a steady increase in binge drinking days for girls through age 18 and boys through age 20.

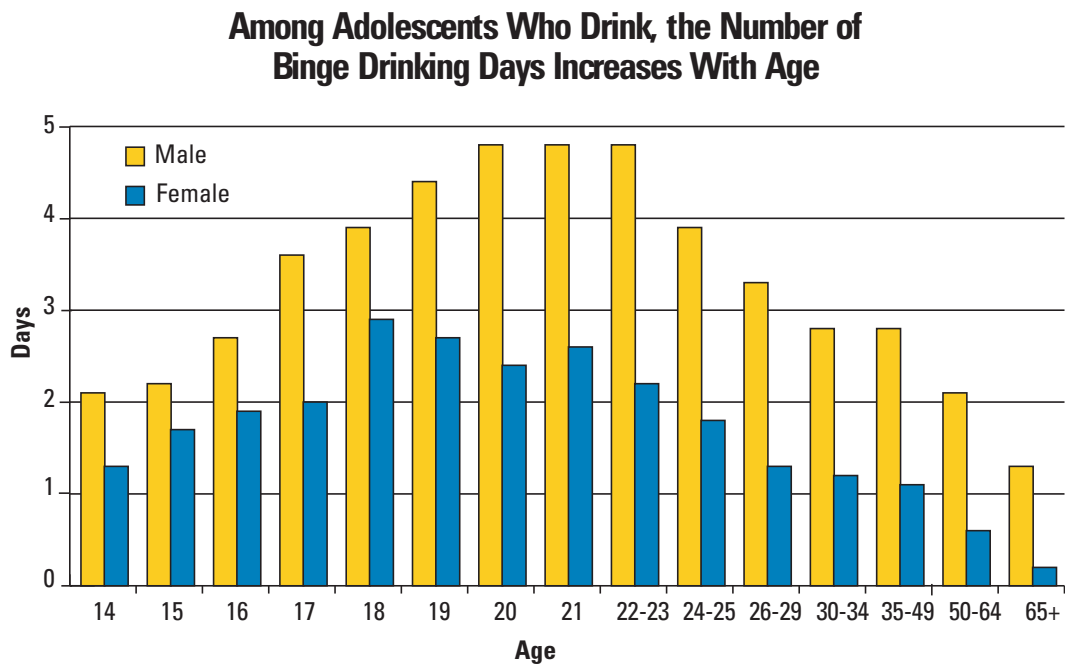


Figure 5: Number of Days in the Past 30 in Which Drinkers Consumed Five or More Drinks, by Age and Gender.

Source: SAMHSA data from 2005 NSDUH

Differences in Underage Alcohol Use Exist Between the Sexes and Among Racial and Ethnic Groups. Despite differences between the sexes and among racial and ethnic groups, overall rates of drinking among most populations of adolescents are high. In multiple surveys, underage males generally report more alcohol use during the past month than underage females. Boys also tend to start drinking at an earlier age

than girls, drink more frequently, and are more likely to binge drink. When youth ages 12–20 were asked about how old they were when they started drinking, the average age was 13.90 for boys and 14.36 for girls for those adolescents who reported drinking (Faden 2006). Interestingly, the magnitude of the sex-related difference in the frequency of binge drinking varies substantially by age (see Figure 5). Further, data from the Monitoring the Future survey show that while the percentages of boys and girls in the 8th and 10th grades who binge drink are similar (10.5 and 10.8, and 22.9 and 20.9, respectively), among 12th graders, boys have a higher prevalence of binge drinking compared to girls (29.8 compared to 22.8) (Johnston et al. 2006b).

While the percentage of adolescents of all racial/ethnic subgroups who drink is high, Black or African-American and Asian youth tend to drink the least, as shown in Figure 6 (SAMHSA 2006).

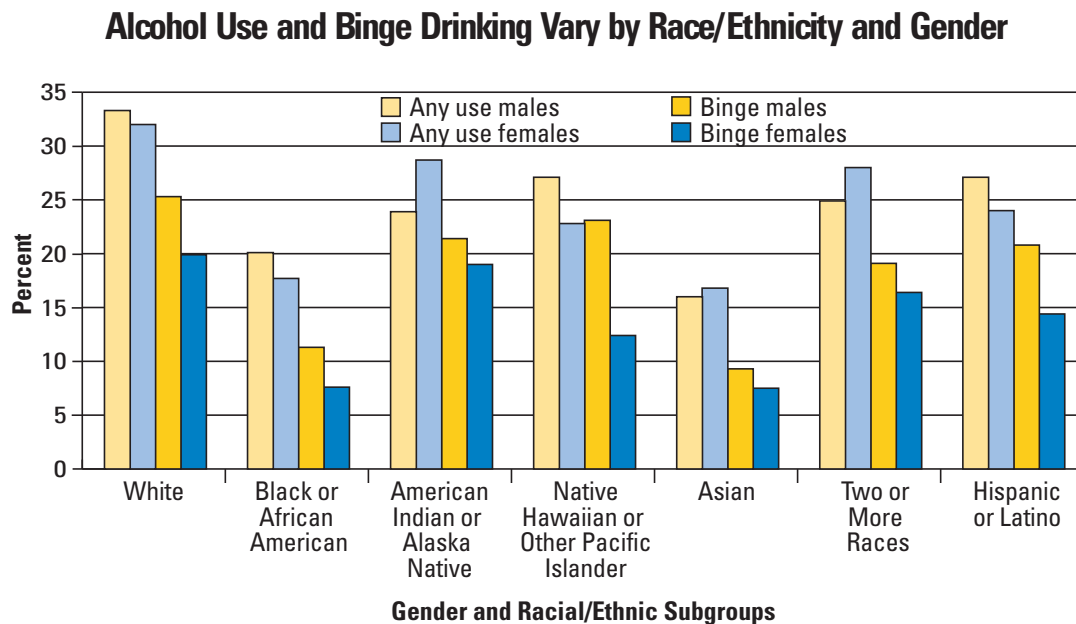


Figure 6: Alcohol Use and Binge Drinking in the Past Month Among Persons Ages 12–20 by Race/Ethnicity and Gender, Annual Averages Based on 2002–2005 Data.⁴ Source: SAMHSA, Office of Applied Studies, NSDUH (special data analysis)

⁴ Data were combined over 4 years to achieve a sufficient sample size for all racial/ethnic subgroups. It should be noted that, except for the “Hispanic or Latino” group, the racial/ethnic groups discussed in this report include only non-Hispanics. The category “Hispanic or Latino” includes Hispanics of any race.

Binge Drinking by Teens Is Not Limited to the United States. As shown in Figure 7, in many European countries a significant proportion of young people ages 15–16 report binge drinking. In all of the countries listed, the minimum legal drinking age is lower than in the United States. These data call into question the suggestion that having a lower minimum legal drinking age, as they do in many European countries, results in less problem drinking by adolescents.

A Significant Proportion of 15- to 16-Year-Old Students in Many European Countries Report Binge Drinking

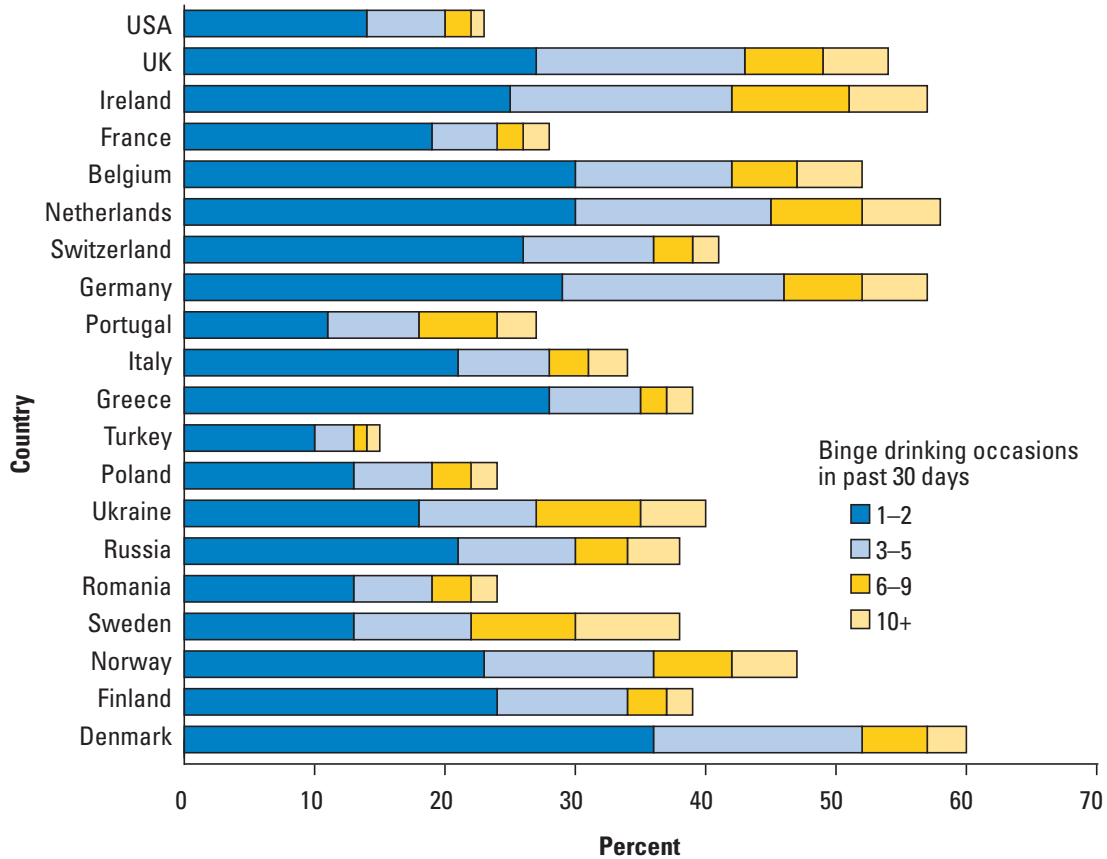


Figure 7: Percentage of European Students Ages 15–16 Who Have Engaged in Binge Drinking (5+ Drinks) Within the Past 30 Days.

Source: Hibell et al. 2004 (data from European School Survey Project on Alcohol and Drugs, 2003)

ADVERSE CONSEQUENCES OF UNDERAGE DRINKING

The short- and long-term consequences that arise from underage alcohol consumption are astonishing in their range and magnitude, affecting adolescents, the people around them, and society as a whole. Adolescence is a time of life characterized by robust physical health and low incidence of disease, yet overall morbidity and mortality rates increase 200 percent between middle childhood and late adolescence/early adulthood. This dramatic rise is attributable in large part to the increase in risk-taking, sensation-seeking, and erratic behavior that follows the onset of puberty and which contributes to violence, unintentional injuries, risky sexual behavior, homicide, and suicide (Dahl 2004). Alcohol frequently plays a role in these adverse outcomes and the human tragedies they produce. Among the most prominent adverse consequences of underage alcohol use are those listed below. Underage drinking:

- Is a leading contributor to death from injuries, which are the main cause of death for people under age 21. Annually, about 5,000 people under age 21 die from alcohol-related injuries involving underage drinking. About 1,900 (38 percent) of the 5,000 deaths involve motor vehicle crashes, about 1,600 (32 percent) result from homicides, and about 300 (6 percent) result from suicides (Centers for Disease Control and Prevention [CDC] 2004; Hingson and Kenkel 2004; Levy et al. 1999; National Highway Traffic Safety Administration [NHTSA] 2003; Smith et al. 1999).
- Plays a significant role in risky sexual behavior, including unwanted, unintended, and unprotected sexual activity, and sex with multiple partners. Such behavior increases the risk for unplanned pregnancy and for contracting sexually transmitted diseases (STDs), including infection with HIV, the virus that causes AIDS (Cooper and Orcutt 1997; Cooper et al. 1994).
- Increases the risk of physical and sexual assault (Hingson et al. 2005).

- Is associated with academic failure (Grunbaum et al. 2004).
- Is associated with illicit drug use (Grunbaum et al. 2004).
- Is associated with tobacco use (Shiffman and Balabanis 1995).
- Can cause a range of physical consequences, from hangovers to death from alcohol poisoning.
- Can cause alterations in the structure and function of the developing brain, which continues to mature into the mid- to late twenties, and may have consequences reaching far beyond adolescence (Brown et al. 2000; Crews et al. 2000; De Bellis et al. 2000; Swartzwelder et al. 1995*a*, 1995*b*; Tapert and Brown 1999; White and Swartzwelder 2005).
- Creates secondhand effects that can put others at risk. Loud and unruly behavior, property destruction, unintentional injuries, violence, and even death because of underage alcohol use afflict innocent parties. For example, about 45 percent of people who die in crashes involving a drinking driver under the age of 21 are people other than the driver (U.S. Department of Transportation Fatality Analysis Reporting System 2004). Such secondhand effects often strike at random, making underage alcohol use truly everybody's problem.
- In conjunction with pregnancy, may result in fetal alcohol spectrum disorders, including fetal alcohol syndrome, which remains a leading cause of mental retardation (Jones and Smith 1973).

Further, underage drinking is a risk factor for heavy drinking later in life (Hawkins et al. 1997; Schulenberg et al. 1996*a*), and continued heavy use of alcohol leads to increased risk across the lifespan for acute consequences and for medical problems such as cancers of the oral cavity, larynx, pharynx, and esophagus; liver cirrhosis; pancreatitis; and hemorrhagic stroke (reviewed in *Alcohol Research & Health* 2001).

Early Onset of Drinking Can Be a Marker for Future Problems, Including Alcohol Dependence and Other Substance Abuse.

Approximately 40 percent of individuals who report drinking before age 15 also describe their behavior and drinking at some point in their lives in ways consistent with a diagnosis for alcohol dependence. This is four times as many as among those who do not drink before age 21 (Grant and Dawson 1997).

Besides experiencing a higher incidence of dependence later in life, youth who report drinking before the age of 15 are more likely than those who begin drinking later in life to have other substance abuse problems during adolescence (Hawkins et al. 1997; Robins and Przybeck 1985; Schulenberg et al. 1996a); to engage in risky sexual behavior (Grunbaum et al. 2004); and to be involved in car crashes, unintentional injuries, and physical fights after drinking both during adolescence and in adulthood. This is true for individuals from families both with and without a family history of alcohol dependence (Hingson et al. 2000, 2001, 2002). Delaying the age of onset of first alcohol use as long as possible would ameliorate some of the negative consequences associated with underage alcohol consumption.

The Negative Consequences of Alcohol Use on College Campuses Are Widespread.

Alcohol consumption by underage college students is commonplace, although it varies from campus to campus and from person to person. Indeed, many college students, as well as some parents and administrators, accept alcohol use as a normal part of student life. Studies consistently indicate that about 80 percent of college students drink alcohol, about 40 percent engage in binge drinking,⁵ and about 20 percent

⁵ In college studies, *binge drinking* is usually defined as “five or more drinks in a row for men and four or more drinks in a row for women” (National Institute on Alcohol Abuse and Alcoholism [NIAAA] National Advisory Council). The definition was refined by the NIAAA National Advisory Council in 2004 as follows: “A ‘binge’ is a pattern of drinking alcohol that brings blood alcohol concentration (BAC) to 0.08 gram percent or above. For the typical adult, this pattern corresponds to consuming 5 or more drinks (male), or 4 or more drinks (female), in about 2 hours.” It is a criminal offense in every State for an adult to drive a motor vehicle with a blood alcohol level of 0.08 gram percent or above.

engage in frequent episodic heavy consumption, which is bingeing three or more times over the past 2 weeks (National Institute on Alcohol Abuse and Alcoholism [NIAAA] 2002). The negative consequences of alcohol use on college campuses are particularly serious and pervasive. For example:

- An estimated 1,700 college students between the ages of 18 and 24 die each year from alcohol-related unintentional injuries, including motor vehicle crashes (Hingson et al. 2005).
- Approximately 600,000 students are unintentionally injured while under the influence of alcohol (Hingson et al. 2005).
- Approximately 700,000 students are assaulted by other students who have been drinking (Hingson et al. 2005).
- About 100,000 students are victims of alcohol-related sexual assault or date rape (Hingson et al. 2005).

Underage Military Personnel Engage in Alcohol Use That Results in Negative Consequences. According to the most recent (2005) Department of Defense Survey of Health-Related Behaviors Among Military Personnel, 62.3 percent of underage military members drink at least once a year, with 21.3 percent reporting heavy alcohol use.⁶ Problems among underage military drinkers include: serious consequences (15.8 percent); alcohol-related productivity loss (19.5 percent); and as indicated by AUDIT scores,⁷ hazardous drinking (25.7 percent), harmful drinking (4.6 percent), or possible dependence (5.5 percent) (Bray et al, 2006).

Children of Alcoholics Are Especially Vulnerable to Alcohol Use Disorders. Children of alcoholics (COAs) are between 4 and 10 times more likely to become alcoholics than children from families with no

⁶ Heavy alcohol use in this survey refers to drinking five or more drinks per typical drinking occasion at least once a week.

⁷ The Alcohol Use Disorders Identification Test (AUDIT), which was developed by the World Health Organization consists of 10 questions scored 0 to 4 that are summed to yield a total score ranging from 0 to 40. It is used to screen for excessive drinking and alcohol-related problems. Scores between 8 and 15 are indicative of hazardous drinking, scores between 16 and 19 suggest harmful drinking, and scores of 20 or above warrant further diagnostic evaluation for possible alcohol dependence.

alcoholic adults (Russell 1990) and therefore require special consideration when addressing underage drinking. COAs are at elevated risk for earlier onset of drinking (Donovan 2004) and earlier progression into drinking problems (Grant and Dawson 1998). Some of the elevated risk is attributable to the socialization effects of living in an alcoholic household, some to genetically transmitted differences in response to alcohol that make drinking more pleasurable and/or less aversive, and some to elevated transmission of risky temperamental and behavioral traits that lead COAs, more than other youth, into increased contact with earlier-drinking and heavier-drinking peers.