

## What's the Problem with Underage Drinking?

Twelve-year-old Jenna rides her bike to and from school most days. Her route takes her past a large billboard advertising a popular malt liquor.

Fourteen-year-old Joshua loves to watch basketball on television. During a typical game, he sees many beer commercials.

At 15, Sarah enjoys going to movies with friends. Many of the movies she has seen lately include scenes of adults drinking alcohol with dinner and at parties. A recent favorite showed teenagers getting into a nightclub using fake identification.

A favorite T-shirt for 16-year-old Sam says, "I'm trying to graduate with a 4.0 ...blood alcohol level." His best friend's favorite sports shirt has an advertisement for a local bar on the back and "start drinking at 9 a.m. ...it's gotta be happy hour somewhere" on the front.

Following the homecoming dance, 17-year-old Lynne attends an all-night party at a friend's home. The parents greet the guests as they arrive and take their car keys because they are serving beer. They prefer that their children and their friends drink at their home in a "safe environment" since they assume that their children will be drinking anyway.

After moving his belongings into his college dormitory and bidding his parents farewell, 19-year-old Jeremy attends an off-campus "welcome party" with a new acquaintance. He learns a lot on his first night on campus - how to play a drinking game, where to get a fake ID (identification), and which bars have happy hours on Thursdays.

*Reducing Underage Drinking*, p. 71  
National Research Council  
Institute of Medicine

Individuals who begin drinking before the age of 15 are four times more likely to become alcohol dependent than those who begin drinking at age 21.

SAHMSA Report to Congress

Underage drinking is widespread throughout the United States. More than 13 million underage youth drink each year. In fact, according to recent research conducted by the Institute of Medicine (IOM), actual drinking patterns in the US suggest that “almost all young people use alcohol before they are 21” (*Reducing Underage Drinking: A Collective Responsibility*, 2004). The average age of first alcohol use has generally decreased since 1965. This in itself is troubling, because the age of the youth at the onset of drinking strongly predicts the development of alcohol dependence over the course of an individual's lifetime (*Reducing Underage Drinking: A Collective Responsibility*, 2004).

This early onset of alcohol use has triggered tragic health, social and economic problems for youths and their families: homicide, suicide, traumatic injury, drowning, burns, violent and property crime, high risk sex, fetal alcohol syndrome, alcohol poisoning, and a need for treatment for alcohol abuse and dependence (*Understanding Underage Drinking*, National Institute on Alcohol Abuse and Alcoholism, 2002).

As a prevention coordinator, it is likely that you are quite well-versed on the topic of alcohol prevention. However, it is also likely that many members of your school community are not as well versed as you. As you address the issue of underage drinking in your schools, it is important to keep in mind that many people have only just begun to understand that underage drinking is not just a matter of kids being kids -- but that underage drinking actually can lead to serious and enduring problems. These problems may include: academic failure, attendance issues, behavioral problems including social and emotional issues, suspension and incarceration, and even school violence (Dwyer, Osher, & Warger, 1998).

For more information on the connection between substance abuse prevention and academic success, see online course [\*Linking Violence and Substance Abuse Prevention to Academic Success\*](#)

For more information on the connection between alcohol and substance abuse and safety, see [\*Early Warning, Timely Response: A Guide to Safe Schools\*](#), which was produced and distributed by the U.S. Department of Education and Justice

line graph image

By looking at local, state and national data, you can gain a more complete understanding of the education, health, and safety issues, as well as high risk behaviors that are part of growing up in America. As stated earlier, numerous agencies and data collection systems at the state and national levels routinely gather and publicize a wealth of information around underage drinking. It is important for you as a coordinator to review these reports, and present the findings to your Advisory Committee. By doing this, your Advisory Committee can make informed decision about how to address the problem of underage drinking in your school and community. Be sure to keep in mind that some of the data may be a year or more old since it takes time to complete data collection, analysis, and compilation..

## Reasons to Review National Data

- ☀ **National or regional data can give you a broad idea of the scope of a problem beyond your community.** For example, if national survey data reveal a marked increase in alcohol use among eighth graders, and state data show this trend as well, then alcohol use among middle school students in your community may also have increased.
- ☀ **Comparing local data to state or national data can offer a different perspective on the rates of substance use and violence in your community.** It can help you ascertain whether the problem in your community is worse, about the same, or less than it is elsewhere.
- ☀ **Comparing your local data to larger populations can provide you with information that can help you evaluate your efforts.** For example, if a city teen alcohol prevention project evaluated its multi-year efforts and no significant changes appeared in alcohol use, and a comparison of city rates to statewide rates revealed that while rates of statewide alcohol use had increased, city rates had remained unchanged. This suggests that the alcohol prevention project might have had a positive effect after all.
- ☀ **National and state-level data collection instruments can serve as models for your own data collection.** You can use these surveys for ideas about how to frame your own survey questions and, if you use the same questions, you can make comparisons between your community and other localities.

Click here for more information on the importance of utilizing state and national data, see online course [Using Existing Data in Your Needs Assessment](#)

## Assessing the Problem

There are several national assessment surveys that study trends in underage drinking. This section will give you a brief overview of the three of the most prominent assessments: the Youth Risk Behavior Survey (YRBS), Monitoring the Future (MTF), and the National Survey on Drug Use and Health (NSDUH).

### ☀ [Youth Risk Behavior Surveillance Survey \(YRBSS\)](#)

The Youth Risk Behavior Survey was developed in 1990 to monitor priority health risk behaviors that

contribute markedly to the leading causes of death, disability, and social problems among youth. YRBSS includes a national school-based survey conducted by the CDC as well as state and local school-based surveys conducted by education and health agencies. Conclusions in the latest report are based on the responses of 15,214 students in grades 9 through 12. Most of these surveys were conducted in the spring of 2003. Students completed a self-administered questionnaire during a regular class period.

Click here to see the [list of high risk behaviors](#)

## **Monitoring the Future ( MTF)**

The Monitoring the Future (MTF) project, begun in 1975, studies changes in the beliefs, attitudes, and behavior of young people in the United States. The current study focuses on youth and tracks drug use trends and related attitudes among America's adolescents. It is conducted annually by the Institute for Social Research at the University of Michigan. MTF surveys a nationally representative sample of students in public and private secondary schools throughout the United States. In 2004, MTF surveyed nearly 50,000 students in 406 secondary schools. Students completed these surveys in a regular class period.

It is composed of three sub studies:

- An annual survey of high school seniors;
- Ongoing panel studies of representative samples from each graduating class since 1976
- Annual surveys of eighth and tenth graders.

## **National Survey on Drug Use and Health (NSDUH)**

The National Survey on Drug Use and Health provides estimates of trends in drug use. The survey provides yearly national and state level estimates of alcohol, tobacco, illicit drug, and non-medical prescription drug use. Other health-related questions also appear from year to year, including questions about mental health. The design also oversampled youths and young adults, so that each State's sample was approximately equally distributed among three major age groups: 12 to 17 years, 18 to 25 years, and 26 years or older.

The 2004 NSDUH report has separate chapters that discuss the national findings on eight topics: use of illicit drugs; use of alcohol; use of tobacco products; trends in lifetime use of substances; trends in initiation of substance use; prevention-related issues; substance dependence, abuse, and treatment; and mental health.

## **Scope of the Problem**

Due to differences in data collection, the results of assessment tools vary somewhat, but the trends are clear. Here's what we know:

- According to the NIAAA, alcohol is the drug of choice among youth. "A higher percentage of youth 12-17 use alcohol (28.7%) than use tobacco (11.9%), or illicit drugs (10.6%)" (National Survey on Drug Use and Health, 2004). Equally disturbing is the fact that tobacco and drug use for this age group is declining while alcohol use is staying fairly constant

Based on the latest mortality data available, motor vehicle crashes are the leading cause of death for people from 15 to 20 years old...19 percent of drivers aged 15 to 20 who were killed in motor vehicle crashes . . . had been drinking alcohol.

NHTSA, 2003

(NSDUH, 2004). Many young people are experiencing the consequences of drinking too much, at too early an age. As a result, underage drinking is now a leading public health problem in this country.

About half (50.3 percent) of Americans aged 12 or older reported being current drinkers of alcohol in 2004. This translates to an estimated 121 million people and is similar to the 2002 and 2003 estimates (National Survey on Drug Use and Health, 2004).

More than three-fourths of twelfth graders, two-thirds of tenth graders, and nearly half of eighth graders have drunk alcohol at some point in their lives (Monitoring the Future Study, University of Michigan, 2004).

34.3 percent of youths reported they have consumed alcohol in the past year. ([Table E.1](#), SAMHSA, Office of Applied Studies, National Survey on Drug Use and Health, 2002). This data has remained constant in the 2004

survey.

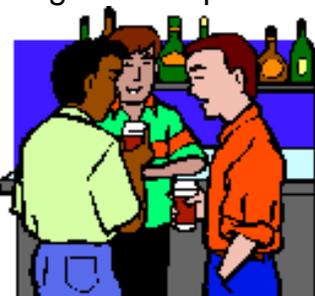
More young people use alcohol than tobacco or other drugs. Young adults aged 18 to 25 continued to have the highest rate of past month cigarette use (39.5 percent). The rate did not change significantly between 2002 and 2004. The rate of cigarette use among youths aged 12 to 17 declined from 13.0 percent in 2002 to 11.9 percent in 2004 (National Survey on Drug Use and Health, 2004).

In 2004, the rate of current illicit drug use was approximately 8 times higher among youths aged 12 to 17 who smoked cigarettes (47.5 percent) than it was among youths who did not smoke cigarettes (5.6 percent) (National Survey on Drug Use and Health, 2004).

Illicit drug use also was associated with the level of alcohol use. Among youths aged 12 to 17 who were heavy drinkers (i.e., drank five or more drinks on the same occasion on at least 5 different days in the past 30 days), 65.6 percent also were current illicit drug users, whereas among nondrinkers, the rate was only 5.0 percent (National Survey on Drug Use and Health, 2004).

20 percent of eighth graders, 35 percent of tenth graders, and 48 percent of twelfth graders reported binge drinking in the month prior to the 2002 survey. In 2004, use decreased for eighth graders, leveled for tenth graders, and increased some for twelfth graders (Monitoring the Future Study, University of Michigan, 2004).

Binge drinking is defined as consuming five or more alcoholic beverages in one drinking session. Due to differences in metabolism, this number drops to 4 or more drinks for females (Monitoring the Future Study, University of Michigan, 2004).



Binge drinking is not perceived as a significant risk by 44 percent of the twelfth graders (Monitoring the Future Study, University of Michigan, 2004).

In 2004, heavy drinking was reported by 6.9 percent of the population aged 12 or older, or 16.7 million people. These figures are similar to those of 2002 and 2003, when 6.7 and 6.8 percent, respectively, reported heavy drinking (National Survey on Drug Use and Health, 2004).

95 percent of twelfth graders say they have ready access to alcohol (Monitoring the Future Study, University of Michigan, 2004).

## **Underage drinking can result in a range of adverse short- and long-term consequences.**

Whether the consequences are acute in the form of a car crash or accumulated over a longer period of time, the underlying cause is the same - alcohol impairs one's decision-making capacity. In *Reducing Underage Drinking*, the Institute of Medicine reports that "young people who drink are more likely to engage in risk-taking behavior that can lead to illness, injury, and death. And these consequences appear to be more severe for those who start drinking at a young age." Peter M. Monti, professor of medical sciences and director of the Center for Alcohol and Addiction Studies at Brown University, tells us that alcohol can disrupt the adolescent brain's ability to learn life skills that can help one avoid trouble as an adult.

*"Alcohol, however, can disrupt the adolescent brain's ability to learn life skills. So, not only can heavy drinking during this time get the adolescent into trouble through behavior such as risk taking or drinking and driving, but it can also make the brain less able to learn important life skills that can help one avoid trouble as an adult."*  
(Monti 2005)



The National Institute of Alcohol Abuse and Alcoholism (NIAAA) has supported research on underage drinking including the effect of alcohol on the brain. You can find the latest information on this topic in NIAAA's journal, *Alcohol Research and Health*, "[The Effects of Alcohol on Physiological Processes and Biological Development](#)." The full text of the article, titled "Alcohol and Development in Youth: A Multidisciplinary Overview" is also available on the [NIAAA website](#).

"We want to send a wake-up call to parents that any use of alcohol for teens involves risk, not just binge drinking or drinking and driving. Alcohol can affect the developing adolescent brain," said Charles Curie, Administrator of Substance

Abuse and Mental Health Services Administration (SAMHSA), in a press release announcing a new public service ad campaign focused on underage drinking. "Parents of children and teens must change their attitudes toward teen drinking from acceptance to abstinence, and recognize the importance of talking to their children early and often about alcohol, especially before they've started drinking."

[Click here](#) for more information on how alcohol affects adolescents' brains

Short-term problems linked to alcohol use include the following:

### **Alcohol-related car crashes and other unintentional injuries such as burns, falls, and drowning**

Motor vehicle crashes were the leading cause of death among young persons aged 16 to 20 in 2002. In addition, 19 percent of drivers aged 15 to 20 who were killed in motor vehicle crashes in 2002 had been drinking alcohol (NSDUH, 2002). Each year about 1900 persons under 21 die

in motor vehicle crashes that involve underage drinking (NHTSA, 2003). Alcohol is also involved in about 1600 homicides and 300 suicides among persons under age 21 (CDC, 2004; Smith et. al., 1999; Levy, Miller, Cox, 1999; Hingson and Kenkel, 2004).

### **Physical problems such as hangovers or illnesses**

#### **Unwanted, unintended, and unprotected sexual activity**

"Significant numbers of young people . . . report engaging in risky sexual behaviors because of alcohol or drugs. More than a third (36%) of sexually active young people 15 to 24 say that drinking or drug use has influenced their decisions about sex — including more than a quarter (29%) of teens 15 to 17 and 37 percent of young adults 18 to 24.

Twenty-nine percent of sexually active young people 15 to 24 say they have “done more” sexually than they had planned while drinking or using drugs.

*"HIV/AIDS has been the sixth leading cause of death among 15- to 20-year-olds in the United States for over three years. One in five of the new AIDS cases diagnosed is in the 20 to 29 year age group, meaning that HIV transmission occurred during the teen years. Additionally, more than half of new cases of HIV infection in 1994 were related to drug use."*

CDC, "Facts About: Adolescents and HIV/AIDS"

Almost one quarter (23%) sexually active young people 15 to 24 report having had unprotected sex because they were drinking or using drugs — including 12 percent of teens 15 to 17 and twenty-five percent of young adults 18 to 24.

Because of something they did while drinking or using drugs, 26 percent of sexually active teens 15 to 17 have worried about STDs or pregnancy" (Kaiser Family Foundation survey, 2002).

### **Physical and sexual assault**

*"A survey of high school students found that 18 percent of females and 39 percent of males say it is acceptable for a boy to force sex if the girl is stoned or drunk."*

Youth and Alcohol: Dangerous and Deadly Consequences: Report to the Surgeon General, April 1992

[Click here](#) to learn more about the correlation between alcohol and sexual behavior

Problems related to the accumulated effects of long-term alcohol use include the following:

**Academic and/or social problems** ranging from excessive absences and disciplinary problems to school failure and dropping out of school.

**Memory problems.** Alcohol-induced memory impairments, such as "blackouts," are particularly common among young drinkers (Brown 2005).

**Increased risk of suicide and homicide.** Alcohol has been reported to be involved in 36 percent of homicides, 12 percent of male suicides, and 8 percent of female suicides involving people under 21 (Bonnie 2004). Homicide is the second leading cause of death for 15- to 24-year-olds (Alcohol Fact Sheet 2004).

## What Your Kids Are Not Telling You The real story on underage drinking.

Cute, bubbly and blonde, 15-year-old Allison Carpenter is your all-American girl. She makes good grades, hopes to be a cheerleader and attends a church youth group.

Yet, it doesn't strike her as a big deal to drink alcohol now and then. Usually it's beer, except for that one night this summer at the movies when she met an older guy.

He gave her hard liquor. She gave him oral sex. It was her first time for both - and after her mom picked her up, she was home in bed by 10:30 p.m.

Click [here](#) for the rest of the story.

Morgan, Gregory. "What your kids aren't telling you." MADD Online: *DRIVEN* magazine, Fall 2003

## Debunking the Myths of Underage Drinking

There are many misconceptions concerning adolescents and alcohol use. These issues confuse not only young people, but their parents and other responsible adults. Following are some of these myths. Click on the link to go to a related fact sheet with the real story about underage drinking.

- Myth: It's only a phase, a rite of passage to adulthood.  
Fact: Early alcohol use is a strong predictor of lifetime alcohol abuse and dependence.

[Click here](#) to learn more about *Drinking and the Future of Children*

- Myth: Everybody does it.  
Fact: 80 to 90 percent of middle school students don't drink.

[Click here](#) to learn more about *Kids and Alcohol*

Myth: "Alcohol relaxes me so I can do better in school."

Fact: Drinking alcohol negatively affects students' academic performance.

[Click here](#) to learn more about *Drinking and Academic Performance*

Myth: Drinking will make me feel better about myself.

Fact: Alcohol use in adolescence is associated with psychological distress and depression.

[Click here](#) to learn more about *Drinking and Mental Health*

Myth: Drinking helps me form meaningful relationships with people.

Fact: Underage drinking is linked to an increase in risky sexual behavior.

[Click here](#) to learn more about  
*Underage Drinking and Risky Behavior*

Myth: There are no long-term consequences of underage drinking.

Fact: Individuals who begin drinking before the age of 15 are four times more likely to become alcohol dependent than those who begin drinking at age 20 or older.

[Click here](#) to read *Alcohol Alert No. 59*

Myth: It doesn't really hurt anyone.

Fact: Alcohol has disinhibiting effects that increase the likelihood of unsafe activities.

[Click here](#) to read about the  
*Consequences of Underage Alcohol Use*

The Youth Risk Behavior Surveillance Survey (YRBSS) has more data about how alcohol influences a variety of health risk behaviors. The [information is available online](#) and is readily searchable by state, topic, specific question, gender, survey year, and more.

[Click here to print today's materials in PDF format.](#)

question mark  
image

## ***Discussion Questions***

Please think about the questions below and share your responses, comments, and/or any questions about today's material in the [Discussion Area](#) discussion area .

- How does underage drinking affect students at your school?
- Has your school assessed underage drinking and related behaviors among students? If so, is underage drinking a significant problem for your school?
- Have you compared your school data to national data? How do they compare?
- Do school and community members seem to be aware of the severity of the problem of underage drinking in your community?

### **References for Day 1 Materials:**

Bonnie, Richard J., and O'Connell, Mary Ellen. (Eds.) (2004). *Reducing Underage Drinking: A Collective Responsibility*. Washington: National Research Council, Institute of Medicine, The National Academies Press. Available: <http://www.nap.edu/books/0309089352/html/>

Centers for Disease Control and Prevention. General Alcohol Information. (2004). Alcohol Fact Sheet -- *Measures of Alcohol Consumption and Alcohol-Related Health Effects from Excessive Consumption*. Available [http://www.cdc.gov/alcohol/factsheets/general\\_information.htm](http://www.cdc.gov/alcohol/factsheets/general_information.htm)

Centers for Disease Control and Prevention. HIV/AIDS Prevention. (1994). *Facts About: Adolescents and HIV/AIDS*. Available: [http://www.aegis.com/pubs/Cdc\\_Fact\\_Sheets/1993/CDC93118.html](http://www.aegis.com/pubs/Cdc_Fact_Sheets/1993/CDC93118.html).

Centers for Disease Control and Prevention. (2003). *YRBSS: Youth Risk Behavior Surveillance System*. Available: <http://www.cdc.gov/mmwr/PDF/SS/SS5302.pdf>

Centers for Disease Control and Prevention. (2003). *YRBSS: Youth Online: Comprehensive Results*. Available: <http://apps.nccd.cdc.gov/yrbss/>

Dwyer, K., Osher, D., & Warger, C. (1998). *Early warning, timely response: A guide to safe schools*. Washington, DC: U.S. Department of Education.

Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2005). *Monitoring the Future national survey results on drug use, 1975-2004. Volume I: Secondary school students* (NIH Publication No. 05-5727). Bethesda, MD: National Institute on Drug Abuse.

The Henry J. Kaiser Family Foundation and The National Center on Addiction and Substance Abuse at Columbia University. (2002). *Substance Use and Risky Sexual Behavior: Attitudes and Practices Among Adolescents and Young Adults*. Available:

<http://www.kff.org/youthhivstds/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=14907>

Leadership to Keep Children Alcohol Free. *Youth*. Available:

<http://www.alcoholfreechildren.org/en/audiences/youth.cfm>

Monti, Peter M. Center for Alcohol and Addiction Studies. (2005). *Alcohol's damaging effects on adolescent brain function*. Available: [http://www.eurekalert.org/pub\\_releases/2005-02/ace-ade020705.php](http://www.eurekalert.org/pub_releases/2005-02/ace-ade020705.php)

Morgan, Gregory. (2003) *What Your Kids Are Not Telling You: The real story on underage drinking*. DRIVEN. Available: <http://www.madd.org/news/0,1056,7558,00.html>

National Association of State Boards of Education. (2000). *Fit, Healthy, and Ready to Learn: A School Health Policy Guide*. Virginia: National Association of State Boards of Education.

National Center for Statistics & Analysis of the National Highway Traffic Safety Administration. (2003). *Traffic safety facts 2002: alcohol*. Available: <http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2002/2002alcfacts.pdf>

National Institute on Alcohol Abuse and Alcoholism (NIAAA). Alcohol and development in youth — A multidisciplinary overview. *Alcohol Research and Health*. 28(3): 107-175, 2004/2005.

National Institute on Alcohol Abuse and Alcoholism (NIAAA). (2002). *NIAAA Initiative on Underage Drinking*. Available: <http://www.niaaa.nih.gov/about/underage.htm>

National Institute on Alcohol Abuse and Alcoholism (NIAAA). (2003). *Underage Drinking: A Major Public Health Challenge*. Available: <http://www.niaaa.nih.gov/publications/aa59.htm>

National Institute on Alcohol Abuse and Alcoholism (NIAAA). (1997). *Youth Drinking: Risk Factors and Consequences*. Available: <http://www.niaaa.nih.gov/publications/aa37.htm>

Strunin, L., and Hingson, R. Alcohol, drugs, and adolescent sexual behavior. *International Journal of the Addictions* 27(2):129-146, 1992.

Substance Abuse and Mental Health Services Administration. Center for Substance Abuse Prevention. (2002) *Making the Link factsheets*:

*Underage Drinking and Academic Performance*. Available:

<http://www.alcoholfreechildren.org/en/stats/Fct%20Sht-Acdmc%20Prfrmnc.pdf>

*Underage Drinking and Mental Health*. Available:

<http://www.alcoholfreechildren.org/en/stats/Fct%20ShtMntl%20Hlth.pdf>

*Underage Drinking and Risky Behavior*. Available:

<http://www.alcoholfreechildren.org/en/stats/Fct%20Sht-Rsky%20Bhvr.pdf>

U.S. Department of Health and Human Services. Substance Abuse and Mental Health Services Administration. *"Start Talking before they start drinking."* Press release announcing Public Service Advertising campaign, 2005.

U.S. Department of Health and Human Services. Substance Abuse and Mental Health Services Administration. Report to Congress. (2004). *Development of a Plan for Combating Underage Drinking*. Available:

[http://www.alcoholfreechildren.org/en/emplibrary/ICCPUD\\_Report\\_42004.pdf](http://www.alcoholfreechildren.org/en/emplibrary/ICCPUD_Report_42004.pdf)

U.S. Department of Health and Human Services. Substance Abuse and Mental Health Services Administration. (2004). *Summary of findings from the 2004 national survey on drug use and health (NSDUH)*. Rockville, MD: Author. Available: <https://nsduhweb.rti.org/>



## High Risk Behaviors

According to the YRBS, high risk behaviors, often established during childhood and early adolescence, include:

- Tobacco use.
- Unhealthy dietary behaviors.
- Inadequate physical activity.
- Alcohol and other drug use.
- Sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases, including HIV infection.
- Behaviors that contribute to unintentional injuries and violence.



## Making the Link

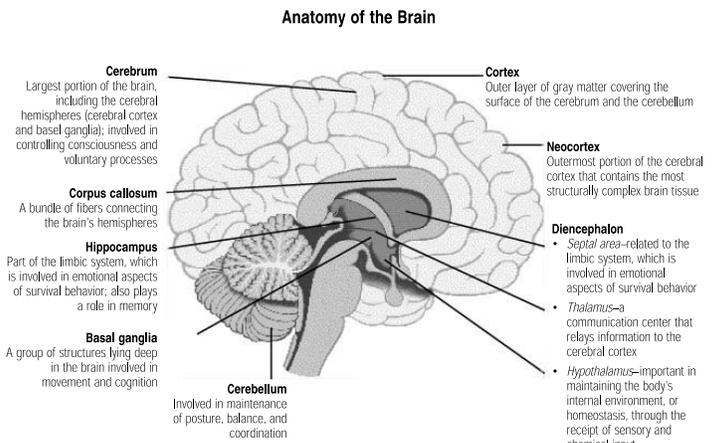
### Underage Drinking and the Developing Brain

#### Alcohol consumption is associated with structural damage to the brain.

- Results of autopsy studies show that individuals with a history of chronic alcohol consumption have smaller, lighter, more shrunken brains than nonalcoholic adults of the same age and gender.<sup>1</sup>
- Alcohol differs from illicit drugs in the complexity of its actions on the brain and other organs. While most illicit drugs work on one or several brain neurotransmitters, alcohol influences multiple neurotransmitter systems and brain circuits in ways that may differ from one drinker to the next.<sup>2</sup>
- Moderate consumption of alcohol affects the function of a variety of brain systems associated with emotion, learning, motivation, and coordination.<sup>3</sup>

#### Repeated exposure to alcohol can produce long-lasting changes in adolescent behavior and brain function.

- The hippocampus is the part of the brain where new memories are transferred from short-term to long-term storage. The hippocampus plays a prominent role in forming memories for events such as what you did last night, and facts like someone's name or phone number. Alcohol dramatically impairs the functioning of the hippocampus, and researchers now believe that this plays a critical role in the ability of alcohol to produce memory impairments, including blackouts.<sup>4</sup>
- MRIs used to assess the size of the hippocampus in subjects with adolescent-onset alcohol use disorders and in normal control subjects showed that the longer one abused alcohol, the smaller the hippocampus became.<sup>5</sup>
- Research suggests that heavy alcohol exposure produces more damage in the adolescent brain than the adult brain, including the hippocampus and regions associated with it.<sup>6</sup>
- Studies indicate that alcohol-dependent teens have impaired memory, altered perception of spatial relationships, and verbal skill deficiencies.<sup>7</sup>
- Cognitive impairments have been detected in adolescent alcohol abusers weeks after they stop drinking. The causes of these long-lasting changes are unclear, but they might involve brain damage and/or alterations in normal brain development.<sup>8</sup>



Source: Mattson, SN et al, MRI and prenatal alcohol exposure: Images provide insight into FAS, Alcohol Health Res World 18(1):49-52, 1994.

**Initiative Partners**

National Institute on Alcohol Abuse and Alcoholism (NIH)

The Robert Wood Johnson Foundation

Office of Research on Women's Health (NIH)

National Center on Minority Health and Health Disparities (NIH)

Office of Juvenile Justice and Delinquency Prevention (DOJ)

Substance Abuse and Mental Health Services Administration (DHHS)

National Highway Traffic Safety Administration (DOT)

<sup>1</sup> National Institute on Alcohol Abuse and Alcoholism (NIAAA). Imaging and Alcoholism: A Window on the Brain. Alcohol Alert No. 47, 2000. <http://www.niaaa.nih.gov/publications/aa47.htm> (accessed 10/28/02).

<sup>2</sup> Gordis, E. Statement made at Substance Abuse in the Twenty-First Century: Positioning the Nation for Progress, a conference of The National Center on Addiction and Substance Abuse at Columbia University and the Ronald Reagan Presidential Foundation, Simi Valley, CA, February 29, 2000.

<sup>3</sup> Eckardt MJ, File SE, Gessa GL et al. Effects of moderate alcohol consumption on the central nervous system. Alcohol Clin Exp Res 22(5): 998-1040, 1998.

<sup>4</sup> White AM, Matthews DB, Best PJ. Ethanol, memory and hippocampal function: a review of recent findings. Hippocampus 10: 88-93, 2000.

<sup>5</sup> De Bellis MD, Clark DB, Beers SR, et al. Hippocampal volume in adolescent-onset alcohol use disorders. Am J Psychiatry 157(5):737-744, 2000.

<sup>6</sup> Crews FT, Braun CJ, Hoplight B, et al. Binge ethanol consumption causes differential brain damage in young adolescent rats compared with adult rats. Alcohol Clin Exp Res 24(11):1712-23, 2000.

<sup>7</sup> Brown SA, Tapert SF, Granholm E, et al. Neurocognitive functioning of adolescents: effects of protracted alcohol use. Alcohol Clin Exp Res 24(2):164-171, 2000.

<sup>8</sup> Ibid.

## Sexual Risk Behaviors

The 2003 Youth Risk Behavior Surveillance Survey (YRBSS) gives you detailed data results instantly by location and health topic for all surveys from 1991-2003. [Click here](#) to see the rest of the data concerning risky sexual behavior.

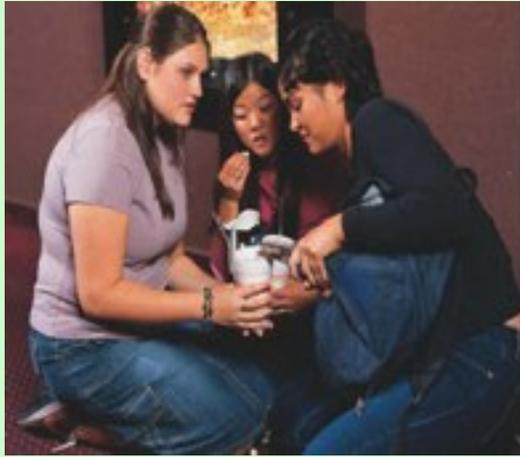
**Of students who had sexual intercourse during the past three months, the percentage who drank alcohol or used drugs before last sexual intercourse**

<b>Grade</b>	<b>T</b>	<b>F</b>	<b>M</b>
<b>T</b>	25.4 (±2.3)	21.0 (±2.5)	29.8 (±3.7)
<b>9</b>	24.4 (±4.9)	23.9 (±6.4)	24.7 (±7.8)
<b>10</b>	26.8 (±4.0)	23.1 (±3.8)	30.5 (±7.5)
<b>11</b>	24.7 (±3.6)	21.0 (±4.4)	28.8 (±5.1)
<b>12</b>	25.2 (±2.1)	17.6 (±3.4)	33.5 (±4.0)
<b>Sex T=Total F=Female M=Male</b> <b>Grade T=Total 9=9th Grade 10=10th Grade 11=11th</b> <b>Grade 12=12th Grade</b>			

Source: Centers for Disease Control and Prevention. (2003). *YRBSS: Youth Risk Behavior Surveillance System*. Available: <http://www.cdc.gov/mmwr/PDF/SS/SS5302.pdf>

## The real story on underage drinking

Journalist Gregory Morgan spent time with teens who regularly drink. Here's the full article "What Kids Are Not Telling You: The Real Story on Underage Drinking," originally published in MADD Online: *DRIVEN* magazine, Fall 2003.



Cute, bubbly and blonde, 15-year-old Allison Carpenter is your all-American girl. She makes good grades, hopes to be a cheerleader and attends a church youth group.

Yet, it doesn't strike her as a big deal to drink alcohol now and then. Usually it's beer, except for that one night this summer at the movies when she met an older guy.

He gave her hard liquor. She gave him oral sex. It was her first time for both - and after her mom picked her up, she was home in bed by 10:30 p.m.

### Wake-up Call

If Allison's story jolts every parent in the country, it should. According to a National Academy of Sciences (NAS) report, almost half of all eighth-graders have consumed alcohol and 44 percent of all the youth who have had drinks in the past year were described by their parents as nondrinkers. Even more alarming, 55 percent of children ages 12 to 17 are at moderate or high risk for substance abuse, according to the National Center on Addiction and Substance Abuse (CASA) at Columbia University. Snapshots like Allison's are found all over the country. And they don't make for a pretty scrapbook.

In exchange for their candor, the youth interviewed for this article are given pseudonyms and not identified by location. But from Washington state to Washington, D.C., from the Deep South to the Midwest, these are not the body-pierced, tattooed kids adults shake their heads at in malls. They are middle-class, average looking and active in extracurricular activities. They are in private and public schools and they are Caucasian, Hispanic and African-American.

They are Anykid USA.

### Risky Business

In Allison's case, she was hang-ing out in front of the movie theater, just like thousands of kids do on Friday nights.

"I was waiting for my friend to get something from her car and this guy came up and started asking all about me. He asked if I wanted to get out of the heat...you know, go see a movie or something," she says.

The guy, who Allison guessed to be maybe 20 or 21, bought tickets to a summer box office bomb. They sat in the back row, where he pulled out a bottle of liquor and offered her some.

"It tasted terrible, but it made me feel relaxed," she says. Before the opening scene of the movie was over, his right hand was underneath her skirt. "It was intense. I mean, it's embarrassing to talk about. I just, well, it didn't ever stop," she says.

While underage drinking does not always lead to sexual activity, it almost always causes teens to take more risks. Forty-four percent of sexually active teenagers report that they are more likely to have intercourse if they have been drinking.

For example, Kevin, an 18-year-old former high school football player on the A/B honor roll, says a favorite teen pastime is to watch videos of drunk teens doing stupid things. "Guys will get really drunk and do nasty things to mannequins at malls or jump off of roofs-then we'll all sit around and watch it on video later," he says.

He also says alcohol use is common in school.

"You'll see water bottles filled with clear alcohol, apple juice bottles with beer in them or cola bottles with some kind of hard liquor mixed in. It's easy to mix in the bathroom before you go to class," he says.

And while many of the interviewees say they do not regularly drink and drive, research shows that young drivers are more often involved in alcohol-related crashes than any other age group. In 2002, 27 percent of young male drivers and 11 percent of young female drivers who were involved in fatal crashes had been drinking at the time of the crash, according to the National Highway Traffic Safety Administration.

### **Snapshots of Alcohol Use**

Sometimes alcohol use leads to drug use. A cross-country runner, Justin, 15, says he used to drink heavily. But beer led to marijuana. And getting busted by his parents for marijuana use forced him to pull in the reins on everything.

"My friends and I agree: When you're drunk off beer, it's great. When you're high, it's great. When you combine beer with pot, it's basically the best," he says. "But since I got busted I have to be more careful. I'm more open to drinking now than smoking because I'm less likely to get caught drinking."

On the other side of the country, 18-year-old Jason is trying to get his life back on track after landing in the criminal justice system for selling drugs. He started drinking at age 15.

"When I drank, I usually mixed other drugs in with it," he says, adding that he has done marijuana, Ecstasy, cocaine and prescription pills.

Back in the movie theater crowd, 14-year-old Lindsey takes a prescription antidepressant to even out behaviors caused by obsessive-compulsive disorder. She also drinks, even though the prescription label warns against it.

"Since I'm on an antidepressant, I try to keep my drinking in moderation-no more than four bottles of beer or a couple shots every weekend or every other weekend," she says.

Then there's Mark, an 18-year-old who says regular alcohol use-and later marijuana use-

pushed him to steal money, get lazy with home-work and cheat on tests. In fact, statistics show that high school students who use alcohol or other substances are five times more likely than other students to drop out of school or to believe that earning good grades is not important. Alcohol and other drugs also made Mark more aggressive.

"One time I started a fight with a guy who was yelling something at this party-basically, he was just getting on my nerves," Mark says, admitting he would not have started the fight if he were sober.

He also says he is more sexually aggressive with girls when he's had alcohol. Now away at college, he says he often spends time with girls who have been drinking. "Girls are more relaxed with alcohol. I am too-it makes me more prone to be sexual. Usually it's just kissing, touching and oral sex," he says, adding that he had intercourse once when he was drunk. He's sure he didn't use a condom.

### Going 'All The Way'

Other stories of alcohol and high-risk sexual activity abound.

Ginger, 16, says she drinks about 12 to 16 beers a week. She has a deep, beautiful skin tone and dark eyes-eyes that don't flinch when she tells of how at age 15, her boyfriend gave her several beers and convinced her to "go all the way" with him. "I was in control. I knew what I was doing, even if there are parts of it I don't remember," she says.

Older does not necessarily mean wiser when it comes to underage drinking. Each year, drinking by college students ages 18 to 24 contributes to more than 70,000 sexual assaults and 400,000 young adults engaging in unprotected sex.



Debbie, a 20-year-old college student, is still haunted by the time she was so drunk she passed out on her boyfriend's bed.

"When I woke up I definitely didn't have a shirt on anymore. He was all over me-kissing my neck, groping me and trying to get my pants off," she says. "I'm so lucky I didn't get raped. I know girls who have."

Contrary to the stereotype, girls are not always the vulnerable party in drunken sexual encounters. Kevin says his best friend was taken advantage of by a girl.

"We were at a house party and this girl-a girl you wouldn't normally mess around with-was trying to get guys to do stuff with her," he says.

As the party got into full swing, Kevin and a buddy went to check on his best friend, who was passed out in an upstairs bedroom. "We walked in and she was on top of him; his pants were open. We thought he was enjoying it. Then we realized he wasn't even coherent," he says. "We took some pictures and got her off of him."

## Why They Drink

No doubt, social acceptance is a top motivation for underage drinkers. As Debbie, the college student, says, "It's not like I was pressured into drinking, but that's kind of what you do when you hang out with your friends. It's just the social norm."

Similarly, others say they drink for fun.

"I drink to be more social. It makes me more outgoing. Alcohol basically enhances anything you do," Mark says.

Ginger agrees, saying she feels like the life of the party when she's been drinking. Justin says he drinks for fun-and for the relaxed feeling. "Anything that gets me to that feeling is great. I don't mind mixing drinks. It gets you buzzed quicker," he says.

Besides drinking for social reasons, what might surprise parents is the big-time boredom that many underage drinkers say they are trying to beat.

"If you're bored, beer is key. It'll give you something to do even if you don't remember it," says Melissa, a 14-year-old who lives in a rural area.

There's boredom in the big city too. Remember Allison, a regular on the teen scene outside the movies? "You can only hang out at the movies or the mall so many times before it gets old," she says. In fact, she says, the main reason she drank and interacted sexually with a stranger this summer was boredom.

Some interviewees openly admit they like the feeling of losing control. Others feel like alcohol gives them more control-more courage to do things they might not ordinarily do. Other underage drinkers say that they are stressed out by their parents, their studies or life in general.

For example, 13-year-old Tyler says he doesn't drink much-maybe two beers in a sitting. But when he does, he's usually alone. "I've got school stress. Beer helps me calm down," he says.

And Justin, the one whose parents busted him for marijuana use, says he turned to beer and marijuana because of the pressure they put on him to get good grades. "If I'm stressed by my parents, getting drunk or high makes it all go away," he says.

## **A Matter of Trust**

Ironically, some of the teens want to be trusted by their parents, even though they know they are violating that trust.

"I know it sounds crazy, but you should trust your kids and let them learn from their own experiences. I'm glad my parents trust me even though I'm doing things I shouldn't. They're letting me make my own decisions," Melissa says.

Since he got busted, Justin says he is working hard to earn back his parents trust. Yet, he still drinks and also says he's pretty sure he'll drink and drive when he gets his license. "I'd like to think I won't, but it will probably happen sometime. It's going to come up," he says. And Tyler, the 13-year-old who drinks to calm his stress, says he used to drink a lot, back when he was 12. "I got caught and was grounded for a month. But I worked hard to earn my parents' trust back-that's why I don't drink as much now."

While such comments may sound hopeless, there is more to the story. In all three situations, the teens say their parents never talked to them about alcohol use-at least not until after they got caught, in the cases of Justin and Tyler.

"Before I got caught, if an anti-drug commercial came on TV they would say, 'Son, did you see that?' That was the extent of it," Justin says. "Even after I got caught, it was mostly a bunch of stuff from pamphlets that they threw in my face."

And Tyler says his parents have never warned him why he shouldn't drink. They just warned him that if he drinks again, he'll be grounded for twice as long.

## **Difficult to Escape**

While talking with your kids may help them make the right choices, it may not be a guarantee that alcohol won't affect their lives. Every day-sometimes at unpredictable times and places-kids face situations that involve alcohol. Sometimes they have a choice to walk away. Some-times exposure to alcohol catches them off guard, and they must be quick-thinking and aware of their surroundings.

Take Ethan for example. He grew up in a close-knit family that spent time around the dinner table. Ethan remembers his parents talking with him about the dangers of drinking. He heeded their warnings, but wishes he could have been more aware of what was going on around him one day near the end of his senior year.

Just eight days before graduation, he got to math class winded and sweaty from PE, so he asked a friend for a swig of his sports drink. "I took a couple decent-sized drinks before I knew it had alcohol in it," he says.

When his friend got busted, his "friend" told the principal Ethan had been drinking with him all day. With a blood alcohol level of .02 percent, Ethan was suspended and prevented

from graduating.

"Even though I didn't drink in high school, alcohol definitely affected me," he says. "I paid for my cap and gown and didn't even get to use it."

### **'I've Never Puked Once...'**

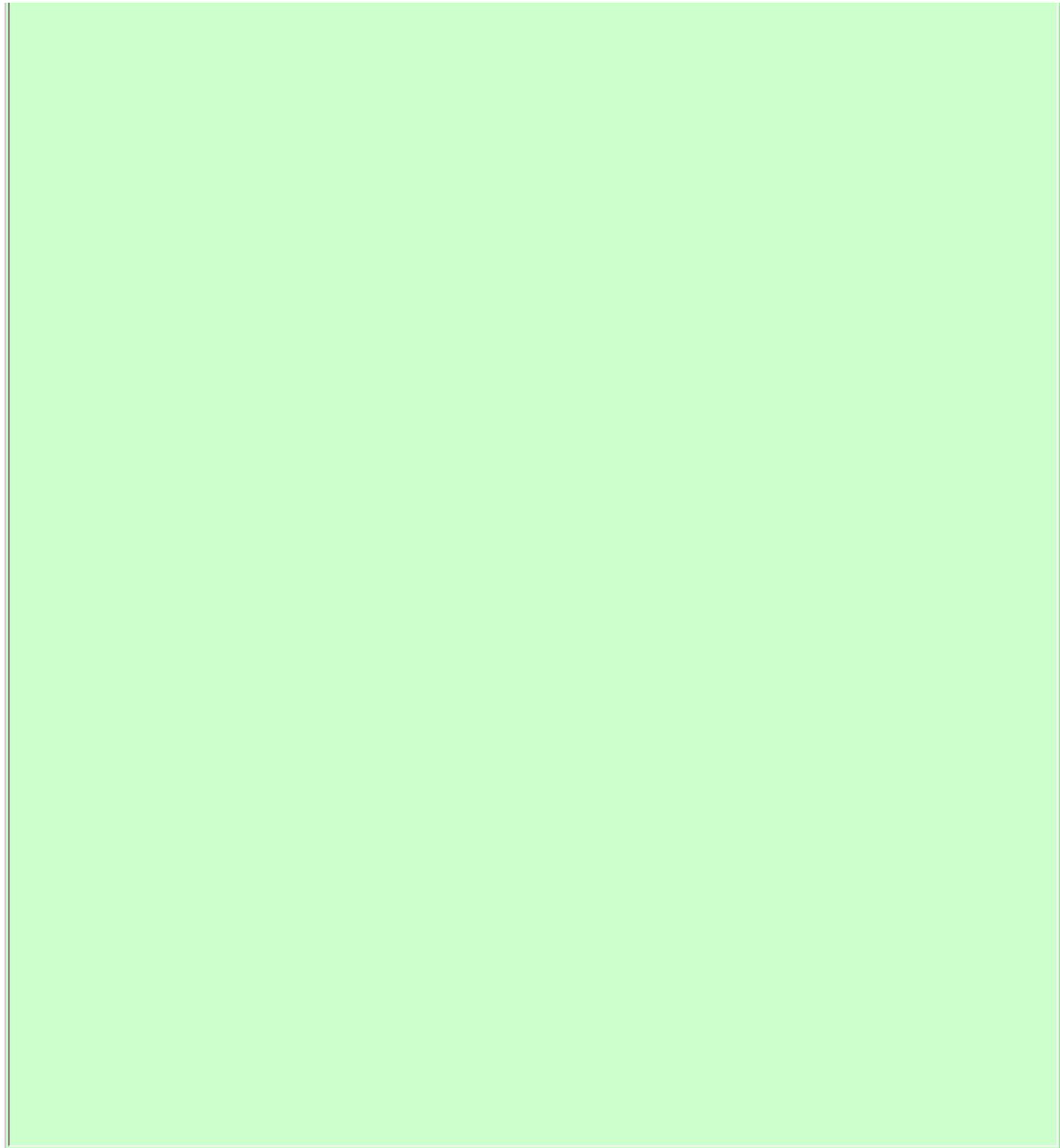
Back at the movie theater complex where Allison and other teens hang out, it's 9:30 on a Friday night and the younger crowd starts thinning as parents-some of whom have been inside the theaters-take their kids home.

Sitting at a table in a nearby court-yard coffee shop, 14-year-old Mitch says his parents have been out of touch with him since he started junior high. As long as his grades are Cs or better and he doesn't play his radio too loud, he doesn't have "to deal with them" much. As for alcohol use, he sipped his first beer at 9, but didn't "get into drinking" until age 11. "I've drunk up to 13 shots of liquor and I've never puked once," he brags, excusing himself from being interviewed to join his friends-one of whom arrived flaunting a 32-ounce cola reeking of whiskey. It takes six mouths and about 30 seconds to suck the drink dry-all while a security guard strolls the premises about 10 feet away. Obviously in command of the group, Mitch invites his friends to his table, boasting about being interviewed for a national magazine.

This impromptu panel of three girls and three guys, ranging in age from 13 to 15, say they drink what they can, where they can and when they can. They steal hard stuff from their parents, but admit beer is easier to come by-especially from those who have older siblings. They swap stories on how best to cover up the evening's alcohol use. One opts for breath strips while another says two sticks of cinnamon gum gets him by. Another remarks how handy it is that she's expected to wash her own laundry.

Finally, one of Mitch's 14-year-old friends asks what magazine they would be in. "Oh cool," he quips, after learning the interview was for DRIVEN. "I know about MADD-and boy would my mom be mad! I've been drinking all night."

Five minutes later his cell phone rings. It's his mom. She is on her way to pick him up, none the wiser.





## Making the Link

### Underage Drinking and the Future of Children

#### Early alcohol use is a strong predictor of lifetime alcohol abuse and dependence.

- ⇒ More than 40 percent of individuals who begin drinking before age 13 will develop alcohol abuse or alcohol dependence at some time in their lives.<sup>1</sup>
- ⇒ A national study reported that adults who started drinking prior to age 14, compared to those not starting until they were 21 years or older, were three times more likely to report consuming five or more drinks on a single day at least once per week, during the previous year.<sup>2</sup>
- ⇒ A study of 140 colleges and universities found that the frequency of heavy episodic drinking in high school was predictive of the frequency of heavy episodic drinking in college when controlling for a variety of other individual difference measures.<sup>3</sup>

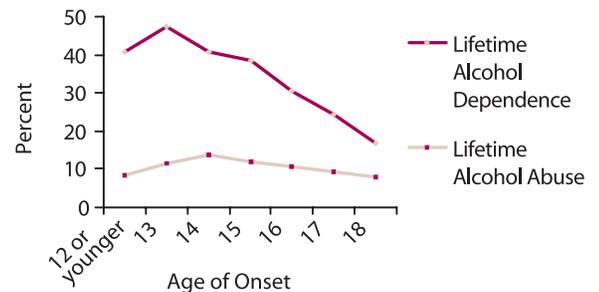
#### Early alcohol use is linked with health risks.

- ⇒ Adolescent females who drink exhibit higher levels of estradiol (an estrogen) and testosterone than nondrinking girls. High levels of estrogen may contribute to increased risk for specific diseases, including breast cancer; high levels of testosterone are associated with an increased risk of substance use.<sup>4</sup>
- ⇒ Adults who began drinking prior to age 14 were 12 times more likely to have ever been injured while under the influence of alcohol in their lifetime.<sup>5</sup>
- ⇒ Adults who began drinking before 14 were 11 times more likely than those who began drinking after age 21 to report ever being in a fight while drinking or after drinking.<sup>6</sup>

#### Early alcohol use is linked to academic achievement and future earning power.

- ⇒ Studies indicate that alcohol-dependent teens showed impaired memory, altered perception of spatial relationships, and verbal skill deficiencies.<sup>7</sup>
- ⇒ Seniors' college plans and frequent alcohol use are linked: 4.8 percent of seniors planning on none or under 4 years of college reported *daily drinking*, versus only 3.1 percent of seniors planning to complete 4 years of college. *Binge drinking* was reported by 34 percent of the first group of seniors versus 27.2 percent of the second group.<sup>8</sup>
- ⇒ According to a study on the economic costs of alcohol and drug abuse in the United States, males with a history of alcohol dependence who began drinking before age 15 earned less than those who began drinking later.<sup>9</sup>

Early Onset of Drinking and Lifetime Alcohol Abuse and Dependence



Source: Grant, et al. 1997.

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<sup>1</sup> Grant BE, Dawson DA. Age at onset of alcohol use and association with DSM-IV alcohol abuse and dependence: Results from the National Longitudinal Alcohol Epidemiologic Survey. *J Subst Abuse* 9:103-110, 1997.

<sup>2</sup> Hingson RW, Heeren T, Jamaka A, et al. Age of drinking onset and unintentional injury involvement after drinking. *JAMA* 284(12):1527-1533, 2000.

<sup>3</sup> Wechsler H, Dowdall GW, Davenport A et al. Correlates of college student binge drinking. *Am J Public Health* 85(7):921-926, 1995.

<sup>4</sup> Martin CA, Mainous AG, Curry T, et al.. Alcohol use in adolescent females: Correlates of estradiol and testosterone. *Am J Addiction* 8(1):9-14, 1999.

<sup>5</sup> Hingson, et al. Age of drinking onset.

<sup>6</sup> Hingson RW, Heeren T, Zakocs R. Age of drinking onset and involvement in physical fights after drinking. *Pediatrics* 108(4):872:877, 2001.

<sup>7</sup> Brown SA, Tapert SF, Granholm E, et al. Neurocognitive functioning of adolescents: Effects of protracted alcohol use. *Alcohol Clin Exp Res* 24(2): 164-171.

<sup>8</sup> Johnston LD, O'Malley PM, Bachman JG. Monitoring the Future national survey results on drug use, 1975-2002. Volume I: Secondary school students. Rockville, MD: National Institute on Drug Abuse, 2003.

<sup>9</sup> Harwood H, Fountain D, Livermore G. The economic costs of alcohol and drug abuse in the United States – 1992. Bethesda, MD: National Institute on Drug Abuse, 1998.



## Making the Link

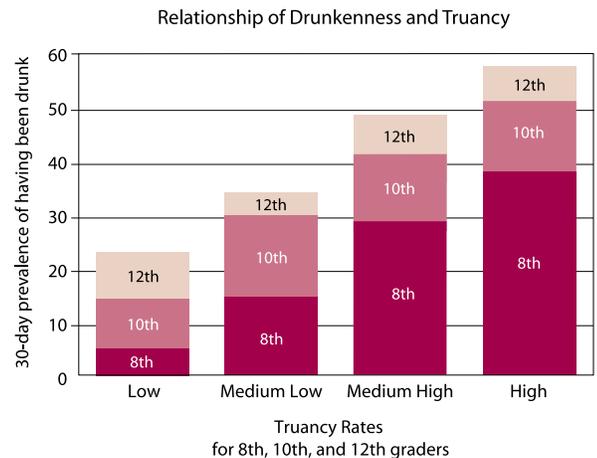
### Underage Drinking and Academic Performance

#### Research shows that drinking alcohol impairs brain function and adolescent memory.

- Studies indicate that alcohol-dependent teens showed impaired memory, altered perception of spatial relationships, and verbal skill deficiencies.<sup>1</sup>
- It takes less alcohol to damage a young brain than to damage a fully mature one, and the young brain is damaged more quickly.<sup>2</sup>

#### Drinking alcohol negatively affects students' academic performance.

- Students with high truancy rates were far more likely than students with low truancy rates to be drinkers or to get drunk.<sup>3</sup>
- Heavy drinkers and binge drinkers ages 12 to 17 were twice as likely to say their school work is poor than those who did not drink alcohol in the past month.<sup>4</sup>
- High school students who use alcohol or other drugs frequently are up to five times more likely than other students to drop out of school.<sup>5</sup>
- Among eighth graders, students with higher grade point averages reported less alcohol use in the past month.<sup>6</sup>
- Students drinking alcohol during adolescence have a reduced ability to learn, compared with those youth who do not drink until adulthood.<sup>7</sup>
- In a national survey of over 55,000 undergraduate students from 132 two and four-year colleges in the United States, 23.5 percent of students reported performing poorly on a test or assignment, and 33.1 percent said they had missed a class due to alcohol use in the previous 12 months.<sup>8</sup>
- College students who were frequent binge drinkers were eight times more likely than non-binge drinkers to miss a class, fall behind in schoolwork, get hurt or injured, and damage property.<sup>9</sup>



Levels of truancy are as follows: low = skipped 0 days and 0 classes in the past 4 weeks; medium low = skipped 1 day or 1 to 2 classes in the past 4 weeks; medium high = skipped 0 days and 3 to 10 classes, or 1 day and 1 to 5 classes, or 2 days and 0 to 2 classes, or 3 days and 0 classes in the past 4 weeks; and high = more than medium high.

Source: Monitoring the Future (1998).

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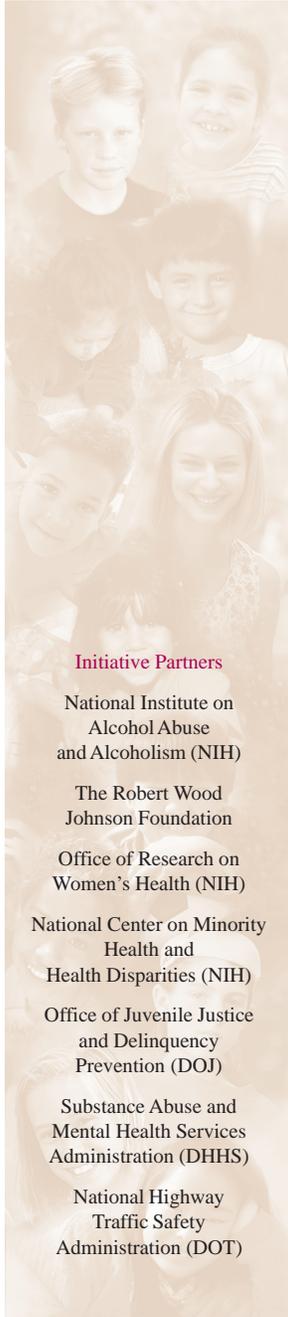
National Highway Traffic Safety Administration (DOT)

<sup>1</sup> Brown SA, Tapert SF, Granholm E, et al. Neurocognitive functioning of adolescents: effects of protracted alcohol use. *Alcohol Clin Exp Res* 24(2):164-171, 2000.  
<sup>2</sup> Swartzwelder HS, Wilson WA, Tayyeb MI. Age-dependent inhibition of long-term potentiation by ethanol in immature versus mature hippocampus. *Alcohol Clin Exp Res* 19(6):1480-1485, 1995.  
<sup>3</sup> O'Malley PM, Johnston LD, Bachman JG. Alcohol use among adolescents. *Alcohol Res Health* 22(2):85-93, 1998.  
<sup>4</sup> Greenblatt JC. Patterns of alcohol use among adolescents and associations with emotional and behavioral problems. Office of Applied Studies Working Paper. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2000.  
<sup>5</sup> The National Center on Addiction and Substance Abuse at Columbia University. *Malignant Neglect: Substance Abuse and America's Schools*. New York: Columbia University, 2001.  
<sup>6</sup> O'Malley, et al. Alcohol use among adolescents.  
<sup>7</sup> Swartzwelder, et al. Age-dependent inhibition.  
<sup>8</sup> Core Institute. 2000 Statistics on Alcohol and Other Drug Use on American Campuses. Carbondale II: Southern Illinois University at Carbondale, 2000.  
<sup>9</sup> Wechsler H, Dowdall G, Maenner G, et al. Changes in binge drinking and related problems among American college students between 1993 and 1997: Results of the Harvard School of Public Health College Alcohol Study. *J Am Coll Health*, 47(9):57-68, 1998.



## Making the Link

### Underage Drinking and Mental Health



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### Alcohol use in adolescence is associated with psychological distress and depression.

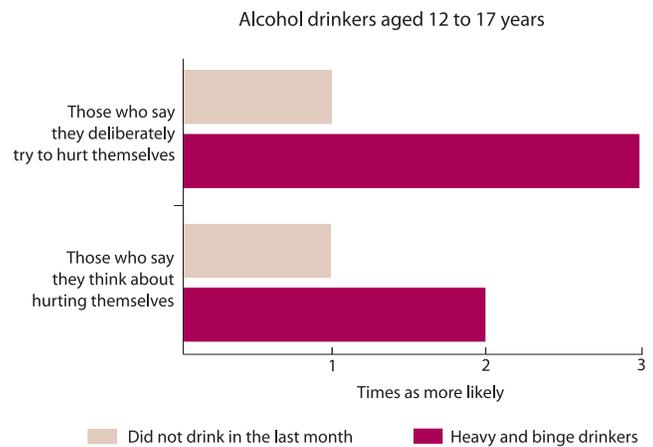
- ⇒ Among 12- to 17-year-olds who were current drinkers, 31 percent exhibited extreme levels of psychological distress and 39 percent exhibited serious behavioral problems.<sup>1</sup>
- ⇒ Twelve- to sixteen-year-old girls who were current drinkers were four times more likely than their nondrinking peers to suffer depression.<sup>2</sup>

### The severity of behavioral problems in adolescents is significantly associated with increased likelihood of adolescent alcohol use.

- ⇒ Past-month alcohol use was reported by approximately 14 percent of adolescents with low levels of behavioral problems, by 23 percent of those with intermediate problem scores, and by 38 percent of those with significant behavioral problems.<sup>3</sup>
- ⇒ Adolescents with serious behavioral problems were nearly three times more likely to use alcohol than those with low levels of behavioral problems.<sup>4</sup>

### There is a link between suicide and alcohol use in adolescents.

- ⇒ Twenty-eight percent of suicides by children ages 9 to 15 could be attributed to alcohol.<sup>5</sup>
- ⇒ Among eighth grade girls who drink heavily, 37 percent report attempting suicide, whereas 11 percent of girls who do not drink report attempting suicide.<sup>6</sup>
- ⇒ Using a national school sample, a study reported that suicide attempts among heavy-drinking adolescents were three to four times greater than among abstainers.<sup>7</sup>



Source: Office of Applied Studies, SAMHSA, National Household Survey on Drug Abuse (1994-6).

### Adolescents struggling with serious emotional disturbances (SED) face even greater challenges when they use alcohol.

- ⇒ Adolescents with high levels of SED were nearly twice as likely as adolescents with low levels of SED to have used alcohol in the past month.<sup>8</sup>
- ⇒ Adolescents with high levels of SED were five times as likely as those with low levels of SED to report alcohol dependence.<sup>9</sup>

<sup>1</sup> Substance Abuse and Mental Health Services Administration, Office of Applied Studies. The Relationship Between Mental Health and Substance Abuse Among Adolescents. (SMA) 99-3286. Rockville, MD: Substance Abuse and Mental Health Services Administration, 1999.

<sup>2</sup> Hanna EZ, Hsiao-ye Y, Dufour MC, et al. The relationship of drinking and other substance use alone and in combination to health and behavior problems among youth ages 12-16: Findings from the Third National Health and Nutrition Survey (NHANES III). Paper presented at the 23<sup>rd</sup> Annual Scientific Meeting of the Research Society on Alcoholism, June 24-29, 2000, Denver, CO.

<sup>3</sup> Substance Abuse and Mental Health Services Administration. The Relationship Between Mental Health and Substance Abuse Among Adolescents.

<sup>4</sup> Ibid.

<sup>5</sup> Unpublished data extrapolated by National Institute on Alcohol Abuse and Alcoholism from State Trends in Alcohol Mortality, 1979-1992; US Alcohol Epidemiologic Data Reference Manual, Volume 5. Rockville, MD: National Institute on Alcohol Abuse and Alcoholism, 1996.

<sup>6</sup> Windle M, Miller-Tutzauer C, Domenico D. Alcohol use, suicidal behavior, and risky activities among adolescents. J Res Adolesc 2(4):317-330, 1992.

<sup>7</sup> Ibid.

<sup>8</sup> Substance Abuse and Mental Health Services Administration. The Relationship Between Mental Health and Substance Abuse Among Adolescents.

<sup>9</sup> Ibid.



# Making the Link

## Underage Drinking and Risky Behavior

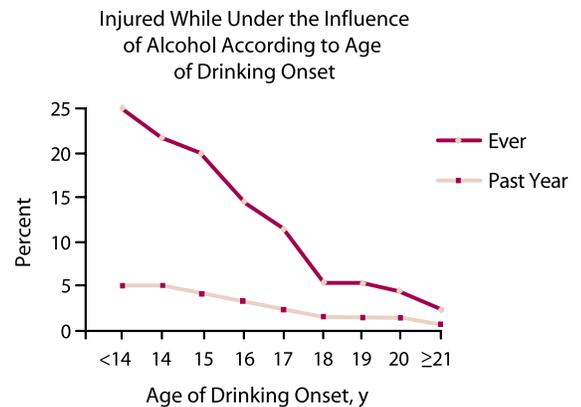
**A national survey reported that 13 percent of youths, aged 12 to 17, had at least one serious alcohol problem related to drinking in the past year.<sup>1</sup>**

### Underage drinking is linked to an increase in risky sexual behavior.

- According to a national survey of sexually active young people, 12 percent of teens aged 15 to 17 reported having unprotected sex as a result of having been drinking or using drugs. In addition, 24 percent reported that because of their substance use, they had “done more” sexually than they had planned.<sup>2</sup>
- Teenage girls who are heavy drinkers are five times more likely than nondrinkers to engage in sexual intercourse and a third less likely to use condoms, which can result in pregnancy and sexually transmitted diseases.<sup>3</sup>

### Underage drinking is linked to an increased risk of fatalities and unintentional injuries.

- In 2000, youths aged 12 to 17 who reported past year alcohol use (19.6 percent) were more likely than youths who did not use alcohol (8.6 percent) to be at risk for suicide.<sup>4</sup>
- Young drinking drivers are involved in fatal crashes at twice the rate of drivers aged 21 and older.<sup>5</sup>
- Early age of onset drinking may be an indicator of increased risk of alcohol-related injury. Those who start drinking before age 14 are 12 times more likely to be injured while under the influence of alcohol sometime in their life.<sup>6</sup>



No. of Respondents  
 130 845 1507 3155 2861 5693 2213 2078 7315

*P* < .001 for comparison of association between age of drinking onset and percentage engaging in each outcome

Source: Hingson, et al. 2000.

### Early initiation is linked to future alcohol use and dependency problems.

- According to a longitudinal study of students in three States, middle school students were almost three times more likely to use alcohol if they had previously used alcohol in elementary school.<sup>7</sup>
- If drinking is delayed until age 21, a child’s risk of serious alcohol related problems is decreased by 70 percent.<sup>8</sup>

<sup>1</sup> Substance Abuse and Mental Health Services Administration, National Household Survey on Drug Abuse Population Estimates 1998, Rockville, MD: U.S. Department of Mental Health and Human Services, 1999.  
<sup>2</sup> Kaiser Family Foundation. Survey Snapshot: Substance Use and Risky Sexual Behavior: Attitudes and Practices Among Adolescents and Young Adults. Menlo Park CA: The Henry J. Kaiser Foundation, 2002.  
<sup>3</sup> The National Center on Addiction and Substance Abuse at Columbia University. Substance Abuse and the American Woman. New York: Columbia University, June 1996.  
<sup>4</sup> Office of Applied Studies. Substance Abuse and Mental Health Services Administration. NHSDA Report: Substance Use and the Risk of Suicide Among Youths. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2002.  
<sup>5</sup> National Highway Traffic Safety Administration (NHTSA). 2000 Youth Fatal Crash and Alcohol Facts. Washington, DC: US Department of Transportation, 2001.  
<sup>6</sup> Hingson RW, Heeren T, Jamaka A, et al. Age of drinking onset and unintentional injury involvement after drinking. JAMA 284(12):1527-1533, 2000.  
<sup>7</sup> Wilson N, Battistich V, Syme L, et al. Does elementary alcohol, tobacco, and marijuana use increase middle school risk? J Adolesc Health 30(6):442-447, 2002.  
<sup>8</sup> Grant BF, Dawson DA. Age at onset of alcohol use and association with DSM-IV alcohol abuse and dependence: Results from the National Longitudinal Alcohol Epidemiologic Survey. J Subst Abuse 9:103-110, 1997.

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  - Substance Abuse and Mental Health Services Administration (DHHS)
  - National Highway Traffic Safety Administration (DOT)

# SAMHSA Publication: Consequences of Underage Alcohol Use

Alcohol -- the most widely used drug among youth -- causes serious and potentially life-threatening problems for this population. Research indicates that drinking is associated with risk-taking and sensation-seeking behavior among adolescents. Alcohol has disinhibiting effects that may increase the likelihood of unsafe activities.<sup>2</sup>

## Alcohol-Related Fatalities

In 1997, 21 percent of the young drivers 15 to 20 years old who were killed in crashes were intoxicated.<sup>3</sup> For young drivers, alcohol involvement is higher among males than among females. In 1997, 25 percent of the young male drivers involved in fatal crashes had been drinking at the time of the crash, compared with 12 percent of the young female drivers involved in fatal crashes.<sup>4</sup>

According to national data, drowning is the leading cause of injury-related death among adolescents and young adults. Factors contributing to youth drowning include alcohol which can severely affect a swimmer's coordination and judgment. Forty to 50 percent of young males who drown were drinking when they died, and an equal percentage of all diving accidents are alcohol related. <sup>5</sup>

Approximately 240,000 to 360,000 of the nation's 12

## DID YOU KNOW?

\*\* According to the Substance Abuse and Mental Health Services Administration (SAMHSA), 2.6 million young people do not know that a person can die of an overdose of alcohol.<sup>20</sup> Alcohol poisoning occurs when a person drinks a large quantity of alcohol in a short amount of time.

\*\* The amount of alcohol in the bloodstream is called the blood alcohol concentration or BAC. BAC is measured in percentages. For examples, a BAC of 0.10 percent means that a person has 1 part alcohol per 1,000 parts blood in the body. Most experts define a lethal dose of alcohol at about .40 to .50 percent; however, the level can be higher or lower for different individuals.<sup>21</sup>

\*\* Impaired driving can occur with very low blood alcohol percentages. For most

million current undergraduates will ultimately die from alcohol-related causes.<sup>6</sup>

## Physical and Mental Health

People who begin drinking before the age of 15 are four times more likely to develop alcohol dependence than those who wait until age 21. Each additional year of delayed drinking onset reduces the probability of alcohol dependence by 14 percent.<sup>7</sup>

Adolescents who drink heavily assume the same long-term health risks as adults who drink heavily. This means they are at increased risk of developing cirrhosis of the liver, pancreatitis, hemorrhagic stroke, and certain forms of cancer.<sup>8</sup>

Adolescents who use alcohol are more likely to become sexually active at an earlier age, to have sex more often, and to engage in unprotected sex, which places them at greater risk of HIV infection and other sexually transmitted diseases.<sup>9</sup>

One study showed that students diagnosed with alcohol abuse were four times more likely to experience major depression than those without an alcohol problem.<sup>10</sup>

Alcohol use among adolescents has been associated with considering planning, attempting, and completing suicide. Research does not indicate whether drinking causes suicidal behavior, only that the two behaviors are correlated.<sup>11</sup>

Drinking alcohol during pregnancy can lead to serious and permanent brain damage in the unborn child. This can result in mental retardation and severe emotional problems as the child grows up.<sup>12</sup>

## Academic Performance

A lower dosage of alcohol will damage a young brain compared to a fully mature brain, and young brains are damaged more quickly. Alcohol exposure during adolescence is linked with a reduced ability to learn compared with those not exposed until adulthood.<sup>13</sup>

young people, even one drink can adversely affect driving skills.<sup>22</sup>

**\*\* For young drivers 15 to 20 years old, alcohol involvement is higher among males than among females. In 1997, 25 percent of the young male drivers involved in fatal crashes had been drinking at the time of the crash, compared with 12 percent of the young females drivers involved in fatal crashes.<sup>23</sup>**

Alcohol is implicated in more than 40 percent of all college academic problems and 28 percent of all college dropouts.<sup>14</sup> At both 2- and 4-year colleges, the heaviest drinkers make the lowest grades.<sup>15</sup>

High school students who use alcohol or other substances are five times more likely than other students to drop out of school or to believe that earning good grades is not important.<sup>16</sup>

## Crime

About half of college students who are victims of crime are drinking when they are victimized.<sup>17</sup>

In a high percentage of serious crimes, alcohol is found in the offender, the victim, or both, and alcohol-related problems are disproportionately found in both juvenile and adult offenders. <sup>18</sup>

Ninety-five percent of violent crime on college campuses is alcohol related, and 90 percent of college rapes involve alcohol use by the victim and/or assailant.<sup>19</sup>

## Some Good News

SAMHSA programs like Girl Power! and Planet Teen are helping young people learn how to make healthy choices.

The laws are working. All states and the District of Columbia now have minimum drinking-age laws set at 21 years of age. The National Highway Traffic Safety Administration (NHTSA) estimates that these laws have reduced traffic fatalities involving drivers 18 to 20 years old by 13 percent. In 1997, an estimated 846 lives were saved by minimum drinking-age laws. Fifteen states have set 0.08 g/dl as the legal intoxication limit, and all 50 states and the District of Columbia have zero tolerance laws for drivers under the age of 21 (it is illegal for drivers under age 21 to drive with BAC levels of 0.02 g/dl or greater). <sup>24</sup>

Prevention programs are working. The rate of alcohol use among adolescents ages 12 to 17 fell from about 50 percent in 1979 to 21 percent in 1991 and has remained relatively stable

since.25

## Sources

- 1 National Institute on Alcohol Abuse and Alcoholism, Youth Drinking: Risk Factors and Consequences, Alcohol Alert No. 37, July 1997.
- 2 National Institute on Alcohol Abuse and Alcoholism, Ninth Special Report to the U.S. Congress on Alcohol and Health, Bethesda, MD: U.S. Department of Health and Human Services, 1997.
- 3 National Highway Traffic Safety Administration, Young Drivers Traffic Safety Facts 1997, Washington, D.C.: U.S. Department of Transportation, 1997.
- 4 Ibid.
- 5 Office of the Inspector General, Report to the Surgeon General, Youth and Alcohol: Dangerous and Deadly Consequences, Washington, DC: U.S. Department of Education, 1992.
- 6 National Center on Addiction and Substance Abuse, Rethinking Rites of Passage: Substance Abuse on America's Campuses, Columbia University, New York, 1994.
- 7 Grant, B. F., The impact of a family history of alcoholism on the relationship between age at onset of alcohol use and DSM-IV alcohol dependence: Results from the National Longitudinal Alcohol Epidemiologic Survey, Alcohol Health and Research World, Volume 22, 1998.
- 8 National Institute in Alcohol Abuse and Alcoholism, Alcohol Health and Research World, Volume 17, No. 2, 1993.
- 9 Office of the Inspector General, Report to the Surgeon General, Youth and Alcohol: Dangerous and Deadly Consequences, Washington, DC: U.S. Department of Education, 1992.
- 10 National Institute or Alcohol Abuse and Alcoholism, Youth Drinking: Risk Factors and Consequences, Alcohol Alert No. 37, July 1997.
- 11 Ibid.
- 12 National Institute on Alcohol Abuse and Alcoholism, Ninth Special Report to the U.S. Congress on Alcohol and Health, Bethesda, MD: U.S. Department of Health and Human Services, 1997.
- 13 Swartzwelder, H.S., Wilson, W.A., and Tayyeb, M.I., Age-dependent inhibition of long-term potentiation by ethanol in immature versus mature hippocampus, Alcoholism: Clinical Experimental Research, Volume 20, 1996.
- 14 National Center on Addiction and Substance Abuse, Rethinking Rites of Passage: Substance Abuse on America's Campuses, Columbia University, New York, 1994.
- 15 National Clearinghouse for Alcohol and Drug Information, Alcohol, Tobacco, and Other Drugs and the College Experience, Making the

Link, 1995.

16 National Institute on Drug Abuse, National Survey Results on Drug Use from The Monitoring the Future Study, 1975-1997, Volume I: Secondary School Students, Rockville, MD: Department of Health and Human Services, 1998.

17 National Center on Addiction and Substance Abuse, Rethinking Rites of Passage: Substance Abuse on America's Campuses, Columbia University, N.Y., 1994.

18 National Institute on Alcohol Abuse and Alcoholism, Ninth Special Report to the U.S. Congress on Alcohol and Health, Bethesda, MD: U.S. Department of Health and Human Services, 1997.

19 National Center on Addiction and Substance Abuse, Rethinking Rites of Passage: Substance Abuse on America's Campuses, Columbia University, New York, 1994.

20 Office of Substance Abuse Prevention, Too many young people drink and know too little about the consequences, Rockville, MD: U.S. Department of Health and Human Services, 1991.

21 National Institute on Alcohol Abuse and Alcoholism, Drinking and Driving, Alcohol Alert No. 31, January 1996.

22 Ibid.

23 National Highway Traffic Safety Administration, Young Drivers Traffic Safety Facts 1997, Washington DC: U.S. Department of Transportation, 1997.

24 Ibid.

25 Substance Abuse and Mental Health Services Administration, Summary of Findings from the 1998 National Household Survey on Drug Abuse, Rockville, MD: U.S. Department of Health and Human Services, 1999.

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*Underage Alcohol Use.* Available: <http://www.health.org/govpubs/rpo992/>