After studying the material in this chapter, you should be able to

- Identify reasons Americans choose to drink or abstain from drinking.
- Describe the impact of alcohol misuse among college students.
- Define a standard drink and binge drinking.
- Identify factors that affect an individual’s BAC and response to alcohol.
- Describe the symptoms of alcohol poisoning and steps taken to assist someone with it.
- Define alcohol abuse, dependence, and alcoholism.
- List the effects of alcohol on the body.
- Evaluate your drinking habits and identify behaviors you can modify to reduce your risk.
It was just another Friday night at the frat house. The drinking started early and usually didn’t stop until dawn. One of the brothers, a popular easy-going guy named Ryan—not usually much of a drinker—was celebrating a big birthday: his twenty-first. Egged on by the hooting crowd, Ryan bolted down one drink after another, after another, after another.

Alcohol

By the time Ryan reached 12 drinks, he was slurring his words. As he kept chugging drinks, his face looked flushed; he started sweating heavily. When Ryan lurched to his feet, he swayed unsteadily for a few moments and then collapsed. At first everyone laughed. Then two of his buddies tried to revive him. They couldn’t. “He’s not breathing!” one of them shouted. Someone called 911, and paramedics rushed Ryan to the nearest hospital. His blood-alcohol concentration was several times above the legal limit. Despite intensive efforts by the medical team, nothing helped. Ryan’s twenty-first birthday was his last.

As Ryan’s tragic death shows, alcohol, when not used responsibly, can take an enormous toll. Alcohol and tobacco are the most widely used mind-altering substances in the world. Each dangerous in itself, drinking and smoking tend to go together. The more individuals smoke and drink, the less likely they are to eat a nutritious diet and follow a healthy lifestyle.

Even if you never drink to excess, you live with the consequences of others’ drinking. That’s why it’s important for everyone to know about the very real dangers of alcohol abuse. This chapter provides information that can help you understand, avoid, and change behaviors that could destroy your health, happiness, and life.

Drinking in America

Alcohol is the most widely used drug in the world. No medical conditions, other than heart disease, cause more disability and premature death than alcohol-related problems. No mental or medical disorders touch the lives of more families. No other form of disability costs individuals, employers, and the government more for treatment, injuries, reduced worker productivity, and property damage. The costs in emotional pain and in lost and shattered lives because of irresponsible drinking are beyond measure.

Many Americans drink alcohol; most do not misuse or abuse it. According to the most recent statistics available from the National Institute...
on Alcohol Abuse and Alcoholism, 52 percent of adults over age 18 are current regular drinkers; 13 percent are infrequent drinkers; 6 percent are former regular drinkers; 9 percent are former infrequent drinkers; and 20 percent are lifetime abstainers.\(^1\)

White men and women are more likely to drink than other adults. Seventy percent of white men say they drink, compared to 57 percent of black men, 55 percent of Asian men, and 58 percent of American Indian or Alaska Native men. Among women, 59 percent of white women drink, compared to 40 percent for blacks, 32 percent for Asians, and 45 percent for American Indian or Alaska Natives.\(^2\)

The current alcohol-use rate for blacks age 18 and older is significantly lower than the national adult average (44 percent versus 55 percent). Blacks also have a lower rate of binge drinking than other Americans (22 percent versus 26 percent).\(^3\)

Nearly three-quarters of Americans with graduate degrees drink, compared to 44 percent of those with less than a high school education. Richer people also drink more than poor ones. Among families with incomes below the poverty level, 45 percent drink, compared with 73 percent of those with incomes four or more times greater.\(^4\)

The median age of first alcohol use is 15. Drinking typically increases in the late teens, peaks in the early 20s, and decreases as people age. The median age of onset for alcohol-use disorders is 19 to 20.

Why People Don’t Drink

More Americans are choosing not to drink, and alcohol consumption is at its lowest level in decades. About a quarter of adults—31 percent of women and 18 percent of men—report drinking no alcohol in the last year.

With fewer people drinking alcohol, nonalcoholic beverages have grown in popularity. They appeal to drivers, boaters, individuals with health problems that could worsen with alcohol, those who are older and can’t tolerate alcohol, anyone taking medicines that interact with alcohol (including antibiotics, antidepressants, and muscle relaxers), and everyone interested in limiting alcohol intake. Under federal law, these drinks can contain some alcohol but a much smaller amount than regular beer or wine. Nonalcoholic beers and wines on the market also are lower in calories than alcoholic varieties.

Certain people should not drink at all. These include:

- Anyone younger than age 21. Underage drinking (discussed later in this chapter) poses many medical, behavioral, and legal dangers.
- Anyone who plans to drive, operate motorized equipment, or engage in other activities that require alertness and skill (including sports and recreational activities).
- Women who are pregnant or trying to become pregnant.
- Individuals taking certain over-the-counter or prescription medications. (See Consumer Alert, p. 445.)
- People with medical conditions that can be made worse by drinking.
- Recovering alcoholics.
Why People Drink

The most common reason people drink alcohol is to relax. Because it depresses the central nervous system, alcohol can make people feel less tense. Some psychologists theorize that men engage in confirmatory drinking; that is, they drink to reinforce the image of masculinity associated with alcohol consumption. Both genders may engage in compensatory drinking, consuming alcohol to heighten their sense of masculinity or femininity.

Here are some other reasons why men and women drink:

• **Social ease.** When people use alcohol, they may seem bolder, wittier, sexier. At the same time, they become more relaxed and seem to enjoy each other’s company more. Because alcohol lowers inhibitions, some people see it as a prelude to seduction.

• **Role models.** Athletes, some of the biggest celebrities in our country, have a long history of appearing in commercials for alcohol. Many advertisements feature glamorous men and women holding or sipping alcoholic beverages.

• **Advertising.** Brewers and beer distributors spend multimillions of dollars every year promoting the message: If you want to have fun, have a drink. Young people may be especially responsive to such sales pitches.

• **Relationship issues.** Single, separated, or divorced men and women drink more and more often than married ones.

Individuals with drinking problems often turn to alcohol for other reasons, including:

• **Psychological factors.** Both men and women may drink to compensate for feelings of inadequacy. Yet women who tend to ruminate or mull over bad feelings may find that alcohol increases this tendency and makes them feel more distressed.

• **Self-medication.** More so than men, some women feel it’s permissible to use alcohol as if it were a medicine. As long as they’re taking it for a reason, it seems acceptable to them.

• **Childhood traumas.** Female alcoholics often report that they were physically or sexually abused as children or suffered great distress because of poverty or a parent’s death.

• **Depression.** Women are more likely than men to be depressed prior to drinking and to suffer from both depression and a drinking problem at the same time.

• **Inherited susceptibility.** In both women and men, genetics accounts for 50 to 60 percent of a person’s vulnerability to a serious drinking problem.

Drinking on Campus

Young adults are the most frequent users of alcohol in the United States, and college students consume more alcohol more often and more dangerously than nonstudents the same age. (See How Do You Compare?) Many health experts consider the use and abuse of alcohol as the primary health concern for college students.

About one in three students increases alcohol use and encounters more related problems throughout the college years; a third do not change previous patterns; and a third decrease drinking.\(^5\) But alcohol can affect every aspect of a student’s life. Nearly 160,000 freshmen drop out of college after their first year for alcohol- or drug-related reasons, according to the CORE Institute, which surveys drinking practices on campuses. College drinking is responsible for an estimated 1,700 annual alcohol-related deaths, 599,000 injuries, more than 696,000 physical attacks, and more than 97,000 sexual assaults.\(^6\)

In the preliminary findings of an ongoing study of binge drinking and college students, alcohol significantly lowered GPAs in the first year of college. The undergraduates who binge showed significantly higher levels of both depression and anxiety; those who drank but did not binge demonstrated the greatest impulsivity; and those who binged within the 30 days prior to testing made significantly more errors on a test of spatial working memory.\(^7\)

Although the percentage of students who drink hasn’t changed much over the years, drinking on campus has. At many schools, students’ social lives revolve around parties, games, and
How Do You Compare?

Student Drinking

<table>
<thead>
<tr>
<th>Alcohol Consumption</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
</tr>
<tr>
<td>Never used</td>
<td>21.5</td>
</tr>
<tr>
<td>Used, but not in the last 30 days</td>
<td>12.2</td>
</tr>
<tr>
<td>Used 1–9 days</td>
<td>47.1</td>
</tr>
<tr>
<td>Used 10–29</td>
<td>17.3</td>
</tr>
<tr>
<td>Used all 30 days</td>
<td>1.9</td>
</tr>
<tr>
<td>Any use within the last 30 days</td>
<td>66.3</td>
</tr>
</tbody>
</table>

How Do You Compare?

As the figures above show, most undergraduates overestimate the number of students who drink—and drink frequently—and underestimate the number who don’t drink often at all. How do your perceptions and actual behavior compare? What role does alcohol play in your life? Describe its impact on you, your choices, and your behavior in your online journal.

Source: American College Health Association, American College Health Association-National College Health Assessment II: Reference Group Executive Summary Spring 2010 (Linthicum, MD: American College Health Association, 2010).

Bar crawls. More students drink simply to get drunk and drink more per drinking episode.

Overall, students drink more heavily on weekends than weekdays and at the beginning of each semester or quarter than during final exam periods. The highest drinking days include Halloween, New Year’s Eve, and St. Patrick’s Day.8

In a recent study that followed undergraduates for 70 days, students drank the most on weekends, with Fridays and Saturdays accounting for 60 percent of all drinks consumed and Thursdays or an additional 17 percent. The odds of drinking heavily, drinking enough to stumble around, and drinking enough to pass out were also greater on weekend days. Male undergraduates, those who started drinking at an early age, members of the Greek system, and those motivated by a desire to socialize and have fun were more likely to drink on weekdays as well as weekends.9

Alcohol consumption especially soars on “game days,” when a significant number of students engage in “extreme ritualistic alcohol consumption,” which is defined as consuming ten or more drinks on the same day for a male and eight or more for a female. In a recent study, about 16 percent of students—twice as many men as women—engaged in this level of drinking on game days.10

More college women drink, and they drink more than in the past. College women who drink are at much greater risk of unwanted sexual activity. In one study more than one in five reported some type of sexual assault.

College men drink more, more often, and more intensely than women. Caucasians drink more than African or Asian Americans. Fraternity and sorority members, athletes, and vigorous exercisers also use more alcohol more often than other students. The students who drink the least are those attending two-year institutions, religious schools, commuter schools, and historically black colleges and universities.

Why Students Don’t Drink

According to the National College Health Assessment, 21 percent of students report never using alcohol. Students who don’t drink give
various reasons for their choice, including not having access to alcohol, parental or peer pressure, being underage, costs, religious reasons, and not liking the taste.\textsuperscript{11}

African American students are more likely than white undergraduates to abstain and to report never having had an alcoholic drink or not having a drink in the past 30 days. They also drink less frequently and consume fewer drinks per occasion than whites.

Spiritual and religious values also influence drinking on campus. In a recent study, students at a religious college were four times less likely to be moderate or heavy drinkers compared with those at a public university. Students with the least tendency toward religious beliefs were 27 times more likely to be heavy drinkers than those with greater religiosity.\textsuperscript{12}

Character virtues also correlate with drinking choices. Temperance, which psychologists define as a combination of forgiveness, humility, prudence, and self-regulation, is associated with sexual abstinence, less risky drinking, and fewer negative consequences from drinking. Other character traits, including wisdom and courage, do not seem linked to a particular drinking pattern.\textsuperscript{13}

Why Students Drink

Undergraduates have always turned to alcohol for the same reasons. Away from home, often for the first time, many are excited by and apprehensive about their newfound independence. When new pressures seem overwhelming, when they feel awkward or insecure, when they just want to let loose and have a good time, they reach for a drink.

The following list summarizes the most common influences on student drinking

- **Social norms.** Compared with other factors, such as race, gender, year in school, and fraternity/sorority membership, social norms (discussed in Chapter 1) have the strongest association with how much college students drink. Students’ perceptions of how much their peers, particularly those closest to them, drink have more influence on their own drinking than do parents or resident advisors. Yet, students generally overestimate how much and how often their classmates drink.

- **Party schools.** Colleges and universities in the Northeast, those with a strong Greek system, and those where athletics predominate have higher drinking rates than others. Students who drank heavily before college are more likely to join a fraternity or sorority, and the environment in many Greek organizations fosters continued drinking. Students who never join or who drop out of a fraternity or sorority report less risky drinking behavior.

- **Living arrangements.** Drinking rates are highest among students living in fraternity and sorority houses, followed by those in on-campus housing (dormitories, residence halls) and off-campus apartments or houses. Students living at home with their families drink the least.

- **Celebrations.** A twenty-first birthday poses a common and serious risk. In a study of some 2,500 college drinkers, four in five reported drinking to celebrate their twenty-first birthdays, 12 percent (men and women) reported having 21 drinks, and about half drank more than they ever had before.\textsuperscript{14} Tailgating parties, big game rallies, Halloween bonfires, and other events fueled by “fun” also become occasions for drinking. The most notorious celebratory drinking occurs during Spring Break.

- **Participation in sports.** College athletes drink more often and more heavily than non-athletes. They may be at greater risk because many are younger than 21, belong to Greek organizations, have lower GPAs, or spend more time socializing than other students. Individual sports also matter. Male hockey and female soccer players drink the most; male basketball players and cross-country or track athletes of both sexes, the least. Female athletes may drink more than other college women because they are following the male athletic model of taking the lead, not just on the field, but also at the party or bar.

- **Coping.** Students turn to alcohol to cope with everyday problems and personal issues. Those with symptoms of depression who lack skills to cope with daily problems, particularly males, are more likely to drink than others. Students who feel angry, hostile,
Health on a Budget

Drink Less, Save More

Yet another good reason to control how much you drink is economic. The less spending money that college students have, the less they drink—and the less likely they are to get drunk and to suffer alcohol-related negative consequences. Here are some simple ways to spend less on alcohol:

- **Pace yourself.** Start with a soft drink and have a nonalcoholic drink every second or third drink.
- **Stay busy.** You will drink less if you play pool or dance rather than just sitting and drinking.
- **Try low-alcohol alternatives,** such as light beers and low- or no-alcohol wines.

- **Have alcohol-free days.** Don’t drink at all at least two days a week.
- **Drink slowly.** Take sips and not gulps. Put your glass down between sips.
- **Avoid salty snacks.** Salty foods like chips or nuts make you thirsty so you drink more.
- **Have one drink at a time.** Don’t let people top up your drinks. It makes it harder to keep track of how much alcohol you’re consuming.

nervous, guilty, or ashamed are more likely to drink in their dorm rooms and apartments than those who report positive moods. Students who score high in social anxiety report heavier drinking, even after a basic intervention designed to reduce alcohol consumption.15

- **Parental approval.** Students who believe that their parents approve of drinking are more likely to drink and to report a drinking-related problem. This relationship is even stronger in younger students and those who perceive that their mothers approve of drinking.

- **First-year transition.** Some students who drank less in high school than classmates who weren’t headed for college start drinking, and drinking heavily, in college—often during their first six weeks on campus and peaking during school breaks. Alcohol consumption declines over the course of an undergraduate education, but a substantial number of students continue to drink heavily through their third year.

Alcohol Expectancy

According to expectancy theory, an individual’s belief, rational or not, that a certain behavior or experience will have a particular effect, positive or negative, increases the probability of this effect. As many studies have shown, expectancy influences how much and how often individuals drink. College women generally expect positive social experiences when drinking alcohol; young adult men expect sexual arousal and more aggressive behavior.16

Many college students drink because they believe “liquid courage” will make them feel better—more at ease, less stressed, more sociable, less self-conscious.17 The behaviors most commonly reported by students when they drink reflect these expectations: flirting, dancing, telling jokes, and laughing harder or more frequently.

Defensive Drinking

In the most recent ACHA survey, the vast majority of students—97 percent—reported using at least one behavioral strategy to control their drinking and prevent alcohol-related problems. The most popular strategies were staying with the same group of friends throughout an event, choosing a designated driver, eating before and/or while drinking, sticking with only one form of alcohol, and deciding in advance not to exceed a set number of drinks.18 The more that students rely on protective behavioral strategies, the less alcohol they consume and the fewer alcohol-related problems they encounter.19 (For additional strategies, see Health on a Budget.)

High-Risk Drinking on Campus

The most common types of student high-risk drinking are binge drinking, predrinking, underage drinking, binge drinking combined with disordered eating, and consumption of caffeinated alcoholic beverages.

**Binge Drinking** According to the National Institute of Alcohol Abuse and Alcoholism, a binge is a pattern of drinking alcohol that brings blood alcohol concentration (BAC) (discussed later in this chapter) to 0.08 gram-percent or above. For a typical adult man, this...
pattern corresponds to consuming five or more drinks in about two hours; for a woman, four or more drinks.

In a recent study, binge drinkers consumed an average of eight drinks during their most recent drinking episode. Men consumed more drinks than women, and those between ages 18 and 34 drank more than older binge drinkers.20

Colleges vary widely in their binge-drinking rates—from 1 percent to more than 70 percent. The federal government has set a goal of cutting the current binge-drinking rate of 40 percent among college students in half as a goal for Healthy People 2010–2020. How do you think your campus compares?

Who Binge-Drinks in College?
An estimated four in ten college students drink at binge levels or greater. They consume 91 percent of all alcohol that undergraduates report drinking. (See Table 13.1.) Hundreds of studies have created a portrait of who they are and how they differ from others. Here are some of their characteristics.

- More likely to be male than female, although one in three women—up from one in four—reports binge drinking.
- More likely to be white than any other ethnic or racial group (least likely to be African American women).21
- More likely to be under age 24 than older.
- More likely to be enrolled in four-year colleges than two-year ones.
- More likely to live in states with fewer alcohol control policies.
- More likely to be involved in athletics and socialize frequently.
- More likely to be in a fraternity or sorority.
- More likely to be dissatisfied with their bodies, not exercise, eat poorly, and go on unhealthy diets.
- More likely to put themselves or others at risk by driving after drinking.
- Much more likely to miss classes or fall behind in schoolwork.
- More likely to abuse other substances, including nicotine, marijuana, cocaine, and LSD.
- Much more likely to engage in vandalism, be injured or hurt, engage in unplanned or unprotected sexual activity, or get in trouble with campus police.

Why Students Binge-Drink Young people who came from, socialized within, or were exposed to “wet” environments—settings in which alcohol is cheap and accessible and drinking is prevalent—are more likely to engage in binge drinking. Students who report drinking at least once a month during their final year of high school are over three times more likely to binge-drink in college than those who drank less frequently in high school.

The factors that most influence students to binge-drink are:

- Low price for alcohol. Beer, which is cheap and easy to obtain, is the beverage of choice among binge drinkers.
- Easy access to alcohol. In one study, the density of alcohol outlets (such as bars) near campus affected the drinking of students.
- Attending a school or living in a residence with many binge drinkers.

<table>
<thead>
<tr>
<th>Number of Drinks</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 or fewer</td>
<td>30.1</td>
<td>45.6</td>
<td>39.8</td>
</tr>
<tr>
<td>5</td>
<td>7.3</td>
<td>8.9</td>
<td>8.3</td>
</tr>
<tr>
<td>6</td>
<td>6.9</td>
<td>6.2</td>
<td>6.4</td>
</tr>
<tr>
<td>7 or more</td>
<td>28.6</td>
<td>12.0</td>
<td>18.0</td>
</tr>
</tbody>
</table>

| Reported number of times college students consumed five or more drinks in a sitting within the last two weeks: |
|--------------------------------------------------|---|---|---|
| N/A don't drink | Male | Female | Total |
| None | 22.3 | 21.7 | 22.0 |
| 1–2 times | 34.2 | 48.0 | 42.9 |
| 3–5 times | 25.7 | 21.6 | 23.0 |
| 6 or more times | 13.6 | 7.3 | 9.6 |
| 4.2 | 1.4 | 2.5 | 

Source: American College Health Association, American College Health Association—National College Health Assessment II: Reference Group Executive Summary Spring 2010 (Linthicum, MD: American College Health Association, 2010).
predrinking Consuming alcoholic beverages, usually with friends, before going out to bars or parties; also called pre-gaming, pre-loading, or front-loading.

- Belief that close friends were likely to binge.
- Drinking games—such as beer pong or drinking whenever a certain phrase is mentioned in a song or on a TV program—can result in high levels of intoxication in a short period of time.
- Parents who drank or did not disapprove of their children drinking.
- Recreational drinking before age 16.

Some educators view bingeing as a product of the college environment. More students binge-drink at the beginning of the school year and then cut back as the semester progresses and academic demands increase. Binge drinking also peaks following exam times, during home football weekends, and during Spring Break. Many new students engage in binge drinking for the first time very soon after they arrive on campus. Binges become less common in their subsequent years at school and almost always end with education. Real life, one educator notes, is “a strong disincentive” to this type of drinking.

Drinking Games Two-thirds of college students engage in drinking games that involve binge drinking.22 All share a common theme: becoming intoxicated in a short period of time. Men are more likely to participate than women and to consume larger amounts of alcohol.23 Players, who don’t monitor or regulate how much they’re drinking, are at risk of extreme intoxication. Drinking games have been implicated in alcohol-related injuries and deaths from alcohol poisoning.

Predrinking/Pregaming Drinking before going out has become increasingly common on college campuses, where predrinking (also called pregaming, preloading, or front-loading) is announced and celebrated in text messages, e-mails, blogs, YouTube videos, and Facebook entries.

In a recent study at ten Pennsylvania colleges, almost two thirds—64 percent—of undergraduates reported pregaming and consumed an average of 4.9 drinks during their last pre-event drinking episode. Social norms and assumptions about others’ drinking patterns influenced this drinking pattern. Undergraduates who estimated that the average student pregamed three or more times in the last two weeks were more likely to drink before an event and to drink heavily.24

Predrinkers consistently report much higher alcohol consumption during the evening and more negative consequences, such as getting into a fight, being arrested, or being referred to a university’s mandatory alcohol intervention program.

Why Is Predrinking Popular? College students predrink for a variety of reasons, including:

- Economic. Many say they want to avoid paying for expensive drinks at a bar, although most end up drinking just as much if not more than they do when they don’t drink beforehand.25 (For better ways to save money on booze, see Health on a Budget on p. 430.)
• **Intoxication.** A growing number of students seem to want to get drunk as quickly as possible.

• **Socializing.** Predrinking gives students a chance to chat with their friends, which often isn’t possible in noisy, crowded clubs or bars.

• **Anxiety reduction.** By drinking before meeting strangers, students say they feel less shy or self-conscious.

• **Group bonding.** Young men may use predrinking as what one researcher calls “a collective ritual of confidence building to prepare themselves for subsequent interactions with the opposite sex.”

**The Perils of Predrinking**  When students get together to drink before a game or a night out, they usually consume large quantities of alcohol quite rapidly. In part that’s because they’re drinking in places without restraints on how much they can drink. Various studies have shown that students drink more and have higher blood-alcohol concentrations on days when they predrink. They also are at greater risk of blackouts, passing out, hangovers, and alcohol poisoning.

In addition to drinking more alcohol, predrinkers are more likely to use other drugs, such as marijuana and cocaine. The combined effects of these substances further increase the risk of injury, violence, or victimization.

**Underage Drinking on Campus**  Each year, approximately 5,000 young people under the age of 21 die as a result of underage drinking. This figure includes about 1,900 deaths from motor vehicle crashes, 1,600 as a result of homicides, 300 from suicide, as well as hundreds from other injuries such as falls, burns, and drownings. Students under age 21 drink less often than older students, but tend to drink more heavily and to experience more negative alcohol-related consequences. More underage students report drinking “to get drunk” and drinking at binge levels when they consumed alcohol.

Underage college students are most likely to drink if they can easily obtain cheap alcohol, especially beer. They tend to drink in private settings, such as dorms and fraternity parties, and to experience such drinking-related consequences as doing something they regretted, forgetting where they were or what they did, causing property damage, getting into trouble with police, and being hurt or injured. The drinking behavior of underage students also depends on their living arrangements. Those in controlled settings, such as their parents’ home or a substance-free dorm, are less likely to binge-drink. Students living in fraternities or sororities are most likely to binge-drink, regardless of age.

**Binge Drinking and Disordered Eating**  The combination of two risky behaviors—disordered eating and heavy drinking—poses special dangers to students. As discussed in Chapter 7, disordered eating can range from excessive concern about weight to binge eating to extreme weight-control methods, such as purging. In some studies, as many as 60 percent of college women reported binging and purging, while 9 percent of college men reported some form of disordered eating. In a recent report, 63 percent of female students and 83 percent of males engaged in binge drinking; 48 percent also reported binge eating. In women, the combination of these behaviors increases the risk of many negative consequences, including blackouts, unintended sexual activity, and forced sexual intercourse.

---

**Your Strategies for Prevention**

**How to Manage Predrinking and Drinking without Getting Drunk**

Here are some strategies students frequently use:

• Eat before and/or during drinking.

• Keep track of how many drinks you’re having.

• Avoid drinking games.

• Decide in advance how many drinks to have.

• Alternate alcoholic and nonalcoholic beverages.

• Limit yourself to no more than one drink an hour.

• Have a friend let you know when you’ve had enough.

• Choose not to drink.
have banned some brands, but young people continue to combine energy drinks such as Red Bull with vodka or other forms of alcohol. The caffeine in these drinks may mask the depressant effects of alcohol, but it has no effect on the metabolism of alcohol by the liver and thus does not reduce breath alcohol concentrations or reduce alcohol-related risks.

Drinkers who consume alcohol mixed with energy drinks are three times more likely to reach the blood alcohol levels associated with binge drinking than are those who do not report mixing alcohol with energy drinks. They also are about twice as likely as other drinkers to report being taken advantage of sexually, taking advantage of someone else sexually, and driving or getting into a car with a driver under the influence of alcohol.27

Why Students Stop Drinking

Only 1 percent of students ages 18 to 24 receive treatment for alcohol or drug abuse. Nonetheless, as many as 22 percent of alcohol-abusing college students “spontaneously” reduce their drinking as they progress through college. Unlike older adults, who often hit bottom before they change their drinking behaviors, many college students go through a gradual process of reduced drinking. Researchers refer to this behavioral change as early cessation, natural reduction, natural recovery, or spontaneous recovery.

As with other behavioral changes, individuals must be ready to change their drinking patterns. In a recent study, students who binged frequently, who experienced more alcohol-related interpersonal and academic problems, who did not also use marijuana, and who lived in a residence hall where binge drinking was the norm showed a greater readiness to change.28

Why do students say they stop heavy drinking? One common response: “It was just getting old.” Some describe more specific reasons why alcohol lost its appeal, including vomiting, urinating in hallways, being physically fondled, sexual assault, violence, accidents, injuries, unprotected intercourse, and emergency room visits. Vicarious experiences, such as a roommate’s arrest for driving under the influence or a sorority sister’s date rape, have a powerful impact.
Alcohol-Related Problems on Campus

As many as 10 to 30 percent of college students experience some negative consequences of drinking.

In the National College Health Assessment, 35 percent of students who drank did something they later regretted; 31 percent forget they were with or what they did. Men were more likely than women to injure themselves, have unprotected sex, get involved in a fight, or physically injure another person. Women were more likely to have someone use force or threat of force to have sex with them. (See Table 13.2.) Students who drink heavily also are much more likely to abuse prescription drugs (see Chapter 12).

**Consequences of Drinking** Among the other problems linked to drinking are:

- **Atypical behavior.** Under the influence of alcohol, students behave in ways they normally wouldn’t. Male heavy drinkers are more prone to behave in ways that are considered “antisocial,” or contrary to the standards of our society, such as forcing or trying to force unwanted sexual contact, driving drunk, exposing themselves, or having sex with a stranger.

- **Academic problems.** The more that students drink, the more likely they are to fall behind in schoolwork, miss classes, have lower GPAs, and face suspensions. In general, students with an A average have three to four drinks per week, while students with D or F averages drink almost ten drinks a week. (See Figure 13.1.)

- **Risky sexual behavior.** About one in five college students reports engaging in unplanned sexual activity, including having sex with someone they just met and having unprotected sex.29

- **Sexual assault.** In a recent survey, almost 20 percent of undergraduate women reported some type of completed sexual assault since entering college. Most occurred after women voluntarily consumed alcohol; a few after they were unknowingly given a drug in their drinks.30

Alcohol increases the risk of violence among couples, especially violence both to and by the female partner. In a recent analysis, 30 percent of couples who reported violent behavior said they had used alcohol before or during the episode.31 In a study of college students, heavy drinking was associated with dating violence by men in their freshman year. Among women, heavy drinking in their sophomore year predicted dating violence in their junior year.32

### Table 13.2 Consequences of Drinking

<table>
<thead>
<tr>
<th>Consequence jams</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did something you later regretted</td>
<td>35.0</td>
<td>34.5</td>
<td>34.7</td>
</tr>
<tr>
<td>Forgot where you were or what you did</td>
<td>33.3</td>
<td>30.0</td>
<td>31.2</td>
</tr>
<tr>
<td>Got in trouble with the police</td>
<td>5.9</td>
<td>3.0</td>
<td>4.1</td>
</tr>
<tr>
<td>Had sex with someone without giving your consent</td>
<td>2.0</td>
<td>2.4</td>
<td>2.3</td>
</tr>
<tr>
<td>Had sex with someone without getting her or his consent</td>
<td>0.9</td>
<td>0.3</td>
<td>0.6</td>
</tr>
<tr>
<td>Had unprotected sex</td>
<td>19.2</td>
<td>16.1</td>
<td>17.3</td>
</tr>
<tr>
<td>Physically injured yourself</td>
<td>18.2</td>
<td>15.5</td>
<td>16.6</td>
</tr>
<tr>
<td>Physically injured another person</td>
<td>4.5</td>
<td>1.8</td>
<td>2.9</td>
</tr>
<tr>
<td>Seriously considered suicide</td>
<td>1.9</td>
<td>1.6</td>
<td>1.7</td>
</tr>
<tr>
<td>Reported one or more of the above</td>
<td>53.5</td>
<td>49.8</td>
<td>51.1</td>
</tr>
</tbody>
</table>

*Students responding “N/A, don’t drink” were excluded from this analysis.

Source: American College Health Association, American College Health Association-National College Health Assessment II: Reference Group Executive Summary Spring 2010 (Linthicum, MD: American College Health Association, 2010).

### Figure 13.1 Alcohol and Academic Success

• **Unintentional injury.** More than 30 percent of college drinkers have been hurt or injured as a result of drinking. They also are more likely to cause injury to others, to have a car accident, to suffer burns, and to suffer a fall serious enough to require medical attention.

• **Consequences beyond college.** Alcohol-related convictions, including carrying a false I.D. or driving under the influence of alcohol, remain on an individual’s criminal record and could affect a student’s graduate school and professional opportunities.

• **Illness and death.** Many students suffer short-term health consequences of drinking, such as headaches and hangovers. Heavy alcohol use in college students is associated with immunological problems and digestive and upper respiratory disorders. Even moderate drinking can contribute to infertility in women. Longer-term consequences of heavy drinking include liver disease, stroke, heart disease, and certain types of cancer. About 300,000 of today’s college students will eventually die from alcohol-related causes, including drunk-driving accidents, cirrhosis of the liver, various cancers, and heart disease.

**Drinking and Driving** Drunk driving is the most frequently committed crime in the United States. In the ACHA survey, 27 percent of students reported driving after having had any alcohol; 3 percent drove after five or more drinks. In a recent study, traditional-age undergraduates typically increased how often and how much they drank from ages 18 to 21 and then decreased the amount they drank on any one occasion from ages 21 to 23. Driving after drinking increased across this entire age range, with the biggest jump between ages 21 and 23.35 Alcohol impairs driving-related skills regardless of the age of the driver or the time of day it is consumed. However, younger drinkers and drivers are at greatest risk. Underage drinkers are more likely to drive after drinking, to ride with intoxicated drivers, and to be injured after drinking—at least in part because they believe that people can drive safely and legally after drinking.36

Although most drunk drivers are men, more young women than ever before are driving drunk and getting into fatal car accidents. More young women than men involved in deadly crashes had high blood-alcohol levels, according to a recent analysis of data from the National Highway Traffic Safety Administration.35 Of the 5,000 alcohol-related deaths among 18- to 24-year-olds, 80 percent were caused by alcohol-related traffic accidents. A young person dies in an alcohol-related traffic crash an average of once every three hours.36 Since states began setting the legal drinking age at 21, the National Highway Safety Board estimates that over 26,000 lives have been saved.37 Safety groups also attribute the decline in alcohol-related deaths to enforcement tools like sobriety checkpoints and to the states’ adoption of a uniform drunken-driving standard of a BAC of 0.08 percent.

In the last two decades, families of the victims of drunk drivers have organized to change the way the nation treats its drunk drivers. Because of the efforts of MADD (Mothers Against Drunk Driving), SADD (Students Against Destructive Decisions), and other lobbying groups, cities, counties, and states are cracking down on drivers who drink. Since courts have held establishments that serve alcohol liable for the consequences of allowing drunk customers to drive, many bars and restaurants have joined the campaign against drunk driving.

To prevent drunk-driving disasters, take the following steps:

• When going out in a group, always designate one person who won’t drink at all to serve as the driver.

• Never get behind the wheel if you’ve had more than two drinks within two hours, especially if you haven’t eaten.

• Never let intoxicated friends drive home.

• Call a taxi, drive them yourself, or arrange for them to spend the night in a safe place.

**“Secondhand” Drinking Problems** Heavy alcohol use can endanger both drinkers and others. Secondhand problems caused by other’s alcohol use include loss of sleep, interruption of studies, assaults, vandalism, and unwanted sexual advances. Students living on
campuses with high rates of binge drinking are two or more times as likely to experience these secondhand effects as those living on campuses with low rates. In one study, nearly three-quarters of campus rapes happened when the victims were so intoxicated that they were unable to consent or refuse.

How Schools Are Sobering Up

The National Institute on Alcohol Abuse and Alcoholism has studied interventions that effectively deal with college drinking problems. Programs that address alcohol-related attitudes and behaviors, use survey data to counter students’ misconceptions about their fellow students’ drinking practices, and increase students’ motivation to change their drinking habits have proved effective.36

- **Social norms.** This approach, which communicates actual facts about drinking behavior to dispel myths, is simple, cost-efficient, and effective. Its positive message is that most students on virtually every campus believe in and practice safety, responsibility, and moderation, rather than excess drinking.

- **Motivational enhancement.** This non-judgmental, supportive approach to personal change also has proved beneficial. In brief interventions, specially trained counselors help build students’ self-efficacy, in this case, their belief in their ability to change their drinking behavior.

- **Challenging alcohol expectancy.** As already noted, students who expect alcohol to affect them in specific ways (such as being more at ease socially or more sexually aroused) are more likely to experience such effects. Challenging the validity of such expectations has proven particularly effective as a group intervention for male students, but less so for women.37

- **Freshman education.** Since first-year students are at particular risk for alcohol-related problems, some schools focus on incoming freshmen with interventions that include self-surveys, group discussions about normal drinking behavior, and practical strategies for high-risk situations.

- **“E-interventions.”** Electronically based interventions including text messages, e-mails, and podcasts have become increasingly popular. Web-based interventions, such as The Alcohol e-CheckUpToGo (e-Chug), have shown promise in reducing alcohol-related problems among first-year students.

- **Alcohol policies.** University alcohol policies include campus alcohol bans, no alcohol at university-sponsored events, prohibition of beer kegs, limits on the maximum number of drinks served per student, and dry sorority and fraternity initiation activities. Studies suggest that students who attend schools that ban alcohol are less likely to engage in heavy binge drinking, more likely to abstain from using alcohol, and less likely to experience the secondhand effects of drinking.

Some college presidents and administrators have recommended lowering the minimum legal drinking age to 18 to reduce binge drinking by underage students. Critics point out that this approach might just shift the problem to high schools and might have a minimal impact on risky drinking on campus.38 (See Health in the Headlines: Campus Drinking.)

---

**Health in the Headlines**

**Campus Drinking**

Many schools are confronting the serious issues related to student drinking by setting up programs and changing their policies. To learn more about these approaches, access the Addiction portal of Global Health Watch (found under Health and Wellness), click on “alcoholism” and scan the latest news about student drinking and college alcohol policies. How does your school compare—both in terms of alcohol-related problems and in campus initiatives to prevent dangerous drinking? If you use alcohol, how have drinking programs and policies affected your alcohol consumption? Record your observations in your online journal.
Figure 13.2  How Many Standard Drinks Are You Drinking?

Margarita:
1 1/2 oz. tequila (80 proof) = 1.5 oz. x 40 percent alcohol = 0.6 oz. alcohol
3/4 oz. triple sec (60 proof) = 0.75 oz. x 30 percent alcohol = 0.23 oz. alcohol
Splash of sour mix
Dash of lime juice
Salt for the rim

Malt liquor:
16 oz. x 6.4 percent alcohol = 1 oz. alcohol = 2 drinks

Understanding Alcohol

Pure alcohol is a colorless liquid obtained through the fermentation of a liquid containing sugar. Ethyl alcohol, or ethanol, is the type of alcohol in alcoholic beverages. Another type—methyl, or wood, alcohol—is a poison that should never be drunk. Any liquid containing 0.5 to 80 percent ethyl alcohol by volume is an alcoholic beverage. However, different drinks contain different amounts of alcohol.

The types of alcohol consumed vary around the world. Beer accounts for most of the alcohol consumed in the United States. People in southern European countries such as France, Spain, Italy, and Portugal prefer wine.

Do you know what a “drink” is? Most students—particularly freshmen, sophomores, and women—don’t. In one experiment undergraduates defined a “drink” as one serving, regardless of how big it was or how much alcohol it contained. In fact, one standard drink can be any of the following:

- One bottle or can (12 ounces) of beer, which is 5 percent alcohol.
- One glass (4 or 5 ounces) of table wine, such as burgundy, which is 12 percent alcohol.
- One small glass (2 1/2 ounces) of fortified wine, which is 20 percent alcohol.
- One shot (1 ounce) of distilled spirits (such as whiskey, vodka, or rum), which is 50 percent alcohol.

All of these drinks contain close to the same amount of alcohol—that is, if the number of ounces in each drink is multiplied by the percentage of alcohol, each drink contains the equivalent of approximately ½ ounce of 100 percent ethyl alcohol.

Drinks at college parties vary greatly in their alcoholic content. It may be impossible for students to monitor their alcohol intake simply by counting the number of drinks they have. In one study, when asked to pour a liquid into cups of various sizes to reflect what they perceived to be one beer, one shot, or the amount of liquor in one mixed drink, undergraduates overpoured beer by 25 percent, shots by 26 percent, and mixed drinks by 80 percent.

The words bottle and glass also can be deceiving. Drinking a 16-ounce bottle of malt liquor, which is 6.4 percent alcohol, is not the same as drinking a 12-ounce glass of light beer (3.2 percent alcohol). The malt liquor contains 1 ounce of alcohol and is the equivalent of two drinks. Two bottles of high-alcohol wines (such as Cisco), packaged to resemble much less powerful wine coolers, can lead to alcohol poisoning, especially in those who weigh less than 150 pounds.

With distilled spirits (such as bourbon, scotch, vodka, gin, and rum), alcohol content is expressed in terms of proof, a number that is twice the percentage of alcohol: 100-proof bourbon is 50 percent alcohol; 80-proof gin is 40 percent alcohol. Many mixed drinks are equivalent to one and a half or two standard drinks; for instance, see the margarita in Figure 13.2.
Blood-Alcohol Concentration

The amount of alcohol in your blood at any given time is your blood-alcohol concentration (BAC). It is expressed in terms of the percentage of alcohol in the blood and is often measured from breath or urine samples. Law enforcement officers use BAC to determine whether a driver is legally drunk. All the states have followed the recommendation of the federal Department of Transportation to set 0.08 percent—the BAC that a 150-pound man would have after consuming about three mixed drinks within an hour—as the threshold at which a person can be cited for drunk driving (Figure 13.3).

Using a formula for blood-alcohol concentration developed by highway transportation officials, researchers calculate that when college students drink, their typical BAC is 0.079, dangerously close to the legal limit.

A BAC of 0.05 percent indicates approximately 5 parts alcohol to 10,000 parts other blood components. Most people reach this level after consuming one or two drinks and experience all the positive sensations of drinking—relaxation, euphoria, and well-being—without feeling intoxicated. If they continue to drink past the 0.05 percent BAC level, they start feeling worse rather than better, gradually losing control of speech, balance, and emotions. At a BAC of 0.2 percent, they may pass out. At a BAC of 0.3 percent, they could lapse into a coma; at 0.4 percent, they could die.

Many factors affect an individual’s BAC and response to alcohol, including the following:

• **How much and how quickly you drink.** The more alcohol you put into your body, the higher your BAC. If you chug a drink after dinner, your liver, which metabolizes about ½ ounce of alcohol an hour, won’t be able to keep up—and your BAC will soar.

• **What you’re drinking.** The stronger the drink, the faster and harder the alcohol hits. Straight shots of liquor and cocktails such as martinis will get alcohol into your bloodstream faster than beer or table wine. Beer and wine not only contain lower concentrations of alcohol, but they also contain nonalcoholic substances that slow the rate of absorption (passage of the alcohol into your body tissues). If the drink contains water, juice, or milk, the rate of absorption will be slowed. However, carbon dioxide—whether in champagne, ginger ale, or a cola—whisks alcohol into your bloodstream. Also, the alcohol in warm drinks—such as a hot rum toddy or warmed sake—moves into your bloodstream more quickly than the alcohol in chilled wine or scotch on the rocks.

• **Your size.** If you’re a large person (whether due to fat or to muscle), you’ll get drunk more slowly than someone smaller who’s drinking the same amount of alcohol at the same rate. Heavier individuals have a larger water volume, which dilutes the alcohol they drink.

• **Your gender.** Women have lower quantities of a stomach enzyme that neutralizes alcohol, so one drink for a woman has the impact that two drinks have for a man. Hormone levels also affect the impact of alcohol. Women are more sensitive to alcohol just before menstruation, and birth control pills and other forms of estrogen can intensify alcohol’s impact.

• **Your age.** The same amount of alcohol produces higher BACs in older drinkers, who have lower volumes of body water to dilute the alcohol than younger drinkers do. People over 50 may become impaired after only one or two drinks.

• **Your race.** Many members of certain ethnic groups, including Asians and Native Americans, are unable to break down alcohol as quickly as Caucasians. This can result in higher BACs, as well as uncomfortable reactions, such as flushing and nausea, when they drink.

• **Other drugs.** Some common medications—including aspirin, acetaminophen (Tylenol), and ulcer medications—can cause blood-alcohol levels to increase more rapidly. Individuals taking these drugs can be over the legal limit for blood-alcohol concentration after as little as a single drink.

• **Family history of alcoholism.** Some children of alcoholics don’t develop any of the usual behavioral symptoms that indicate
### Men

<table>
<thead>
<tr>
<th>Drinks</th>
<th>Body weight in pounds</th>
<th>Approximate blood alcohol percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>100</td>
<td>.00 .00 .00 .00 .00 .00 .00 .00 .00</td>
</tr>
<tr>
<td>1</td>
<td>120</td>
<td>.04 .03 .03 .02 .02 .02 .02 .02 .03</td>
</tr>
<tr>
<td>2</td>
<td>140</td>
<td>.08 .05 .04 .04 .03 .03 .03 .03 .03</td>
</tr>
<tr>
<td>3</td>
<td>160</td>
<td>.11 .08 .07 .06 .06 .05 .05 .05 .05</td>
</tr>
<tr>
<td>4</td>
<td>180</td>
<td>.15 .11 .09 .08 .07 .06 .06 .05 .05</td>
</tr>
<tr>
<td>5</td>
<td>200</td>
<td>.19 .13 .12 .11 .09 .08 .07 .06 .06</td>
</tr>
<tr>
<td>6</td>
<td>220</td>
<td>.23 .16 .14 .13 .11 .10 .09 .08 .08</td>
</tr>
<tr>
<td>7</td>
<td>240</td>
<td>.26 .19 .16 .15 .13 .12 .11 .10 .10</td>
</tr>
<tr>
<td>10</td>
<td>300</td>
<td>.38 .27 .23 .21 .19 .17 .16 .16 .16</td>
</tr>
</tbody>
</table>

Subtract 0.01 percent for each 40 minutes of drinking.
One drink is 1.25 oz. of 80 proof liquor, 12 oz. of beer, or 5 oz. of table wine.

### Women

<table>
<thead>
<tr>
<th>Drinks</th>
<th>Body weight in pounds</th>
<th>Approximate blood alcohol percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>90</td>
<td>.00 .00 .00 .00 .00 .00 .00 .00 .00</td>
</tr>
<tr>
<td>1</td>
<td>100</td>
<td>.05 .04 .03 .02 .02 .02 .02 .02 .02</td>
</tr>
<tr>
<td>2</td>
<td>110</td>
<td>.10 .08 .07 .06 .06 .05 .05 .05 .05</td>
</tr>
<tr>
<td>3</td>
<td>120</td>
<td>.15 .11 .10 .09 .08 .07 .06 .06 .06</td>
</tr>
<tr>
<td>4</td>
<td>130</td>
<td>.20 .15 .13 .11 .10 .09 .08 .08 .08</td>
</tr>
<tr>
<td>5</td>
<td>140</td>
<td>.25 .19 .16 .14 .13 .12 .11 .11 .11</td>
</tr>
<tr>
<td>7</td>
<td>160</td>
<td>.35 .27 .23 .21 .19 .17 .16 .16 .16</td>
</tr>
<tr>
<td>9</td>
<td>180</td>
<td>.45 .34 .29 .26 .23 .20 .19 .17 .17</td>
</tr>
<tr>
<td>10</td>
<td>190</td>
<td>.51 .38 .32 .28 .25 .23 .21 .19 .19</td>
</tr>
</tbody>
</table>

Subtract 0.01 percent for each 40 minutes of drinking.
One drink is 1.25 oz. of 80 proof liquor, 12 oz. of beer, or 5 oz. of table wine.

### Impairment Chart

<table>
<thead>
<tr>
<th>BAC</th>
<th>Impairments</th>
</tr>
</thead>
<tbody>
<tr>
<td>.01–.06 BAC</td>
<td>Relaxation, sense of well-being, loss of inhibition, lowered alertness</td>
</tr>
<tr>
<td>.06–.10 BAC</td>
<td>Blunted feelings, disinhibition, extroversion, reduced sexual pleasure</td>
</tr>
<tr>
<td>.11–.20 BAC</td>
<td>Emotional swings, anger, sadness, boisterous Impaired reaction time, gross motor control, staggering, slurred speech</td>
</tr>
<tr>
<td>.21–.29 BAC</td>
<td>Stupor, impaired sensations Severe motor impairment, memory blackouts</td>
</tr>
<tr>
<td>.30–.39 BAC</td>
<td>Not responsive, slowed heart rate, breathing, risk of death</td>
</tr>
<tr>
<td>.40+ BAC</td>
<td>Not responsive, death</td>
</tr>
</tbody>
</table>

Source: Adapted from data supplied by the Pennsylvania Liquor Control Board.
someone is drinking too much. It’s not known whether this behavior is genetically caused or is a result of growing up with an alcoholic.

- **Eating.** Food slows the absorption of alcohol by diluting it, by covering some of the membranes through which alcohol would be absorbed, and by prolonging the time the stomach takes to empty.

- **Expectations.** In various experiments, volunteers who believed they were given alcoholic beverages but were actually given nonalcoholic drinks acted as if they were guzzling the real thing and became more talkative, relaxed, and sexually stimulated.

- **Physical tolerance.** If you drink regularly, your brain becomes accustomed to a certain level of alcohol. You may be able to look and behave in a seemingly normal fashion, even though you drink as much as would normally intoxicate someone your size. However, your driving ability and judgment will still be impaired.

Once you develop tolerance, you may drink more to get the desired effects from alcohol. In some people, this can lead to abuse and alcoholism. On the other hand, after years of drinking, some people become exquisitely sensitive to alcohol. Such reverse tolerance means that they can become intoxicated after drinking only a small amount of alcohol.

**Moderate Alcohol Use**

Many people describe themselves as “light” or “moderate” drinkers. However, these are not scientific terms. It is more precise to think in terms of the amount of alcohol that seems safe for most people. The federal government’s Dietary Guidelines for Americans recommend no more than one drink a day for women and no more than two drinks a day for men. The American Heart Association (AHA) advises that alcohol account for no more than 15 percent of the total calories consumed by an individual every day, up to an absolute maximum of 1.75 ounces of alcohol a day—the equivalent of three beers, two mixed drinks, or three and a half glasses of wine.

Moderate alcohol use has been linked with some positive health benefits, including lower risks of heart disease. In addition, middle-aged women who report light to moderate drinking are less likely to put on excessive weight over time. However, even occasional binges of four to five drinks a day can undo alcohol’s positive effects.

The benefits of alcohol also are related to age. Below age 40 drinking at all levels is associated with an increased risk or death. Among people older than 50 or 60, moderate drinkers have the lowest risk of death.

Using a mathematical model, researchers have determined that alcohol-related problems occur at every drinking level, including just two drinks, but increase fivefold at three drinks and more gradually thereafter. Individuals who drink heavily have a higher mortality rate than those who have two or fewer drinks a day. However, the boundary between moderate and heavy drinking isn’t the same for everyone. For some people, the upper limit of safety is zero: Once they start, they can’t stop.

**Intoxication**

If you drink too much, the immediate consequence is that you get drunk—or, more precisely, intoxicated. Alcohol intoxication, which can range from mild inebriation to loss of consciousness, is characterized by at least one of the following signs: slurred speech, poor coordination, unsteady gait, abnormal eye movements, impaired attention or memory, stupor, or coma.

Medical risks of intoxication include falls, hypothermia in cold climates, and increased risk of infections because of suppressed immune function. Time and a protective environment are the recommended treatments for alcohol intoxication. Also follow these guidelines:

- Continually monitor the intoxicated person.
- If the person is “out,” check breathing, waking the person often to be sure he or she is not unconscious.
- Do not force the person to walk or move around.
- Do not allow the person to drive a car or ride a bicycle.
- Do not give the person food, liquid (including coffee), medicines, or drugs to sober the person up.
- Do not give the person a cold shower; the shock of the cold could cause unconsciousness.
Alcohol Poisoning

Because federal law requires colleges to publish all student deaths, the stories of young lives ended by alcohol poisoning have gained national attention. Yet many students remain unaware that alcohol, in large enough doses, can and does kill.

Alcohol depresses nerves that control involuntary actions, such as breathing and the gag reflex (which prevents choking). A fatal dose of alcohol will eventually suppress these functions. Because alcohol irritates the stomach, people who drink an excessive amount often vomit. If intoxication has led to a loss of consciousness, a drinker is in danger of choking on vomit, which can cause death by asphyxiation. Blood-alcohol concentration can rise even after a drinker has passed out because alcohol in the stomach and intestine continues to enter the bloodstream and circulate throughout the body.

The signs of alcohol poisoning include:
- Mental confusion, stupor, coma, or person cannot be roused.
- Vomiting.
- Seizures.
- Slow breathing (fewer than eight breaths per minute).
- Irregular breathing (ten seconds or more between breaths).
- Hypothermia (low body temperature), bluish skin color, paleness.

Alcohol poisoning is a medical emergency requiring immediate treatment. Black coffee, a cold shower, or letting a person “sleep it off” does not help. Without medical treatment, breathing slows, becomes irregular, or stops. The heart beats irregularly. Body temperature falls, which can cause cardiac arrest. Blood sugar plummets, which can lead to seizures. Vomiting creates severe dehydration, which can cause seizures, permanent brain damage, or death. Even if the victim lives, an alcohol overdose can result in irreversible brain damage.

Rapid binge drinking is especially dangerous because the victim can ingest a fatal dose before becoming unconscious. If you suspect alcohol poisoning, call 911 for help. Don’t try to guess the level of drunkenness. Tell emergency medical technicians the symptoms and, if you know, how much alcohol the victim drank. Prompt action may save a life. Here’s what to do:
- If the person is breathing less than twelve times per minute or stops breathing for periods of ten seconds or more, call 911.
- If the person is asleep and you are unable to wake him or her up, call 911.
- Look at the person’s skin. If it is cold, clammy, pale, bluish in color, call 911.
- Stay with a person who is vomiting. Try to keep him or her sitting up. If the person must lie down, keep him on his side with head turned to the side. Watch for choking; if the person begins to choke, call 911.

The Impact of Alcohol on the Body

Unlike food or drugs in tablet form, alcohol is directly and quickly absorbed into the bloodstream through the stomach walls and upper intestine. The alcohol in a typical drink reaches the bloodstream in 15 minutes and rises to its peak concentration in about an hour. The bloodstream carries the alcohol to the liver, heart, and brain (Figure 13.4).

Most of the alcohol you drink can leave your body only after metabolism by the liver, which converts about 95 percent of the alcohol to carbon dioxide and water. The other 5 percent is excreted unchanged, mainly through urination, respiration, and perspiration.

Alcohol is a diuretic, a drug that speeds up the elimination of fluid from the body, so drink water when you drink alcohol to maintain your fluid balance. And alcohol lowers body temperature, so you should never drink to get or stay warm.

Digestive System

Alcohol reaches the stomach first, where it is partially broken down. The remaining alcohol is absorbed easily through the stomach tissue into the bloodstream. In the stomach, alcohol triggers the secretion of acids, which irritate the stomach lining. Excessive drinking at one sitting...
may result in nausea; chronic drinking may result in peptic ulcers (breaks in the stomach lining) and bleeding from the stomach lining.

The alcohol in the bloodstream eventually reaches the liver. The liver, which bears the major responsibility of fat metabolism in the body, converts this excess alcohol to fat. After a few weeks of four or five drinks a day, liver cells start to accumulate fat. Alcohol also stimulates liver cells to attract white blood cells, which normally travel throughout the bloodstream engulfing harmful substances and wastes. If white blood cells begin to invade body tissue, such as the liver, they can cause irreversible damage. More than 2 million Americans have alcohol-related liver diseases, such as alcoholic hepatitis and cirrhosis of the liver.

Weight and Waists

At 7 calories per gram, alcohol has nearly as many calories as fat (9 calories per gram) and significantly more than carbohydrates or protein (which have 4 calories per gram). Since a standard drink contains 12 to 15 grams of alcohol, the alcohol in a single drink adds about 100 calories to your daily intake. A glass of wine contains as many calories as some candy bars; you would have to walk a mile to burn them off. In addition to being a calorie-dense food, alcohol stimulates the appetite so you’re likely to eat more. Obesity plus daily drinking boosts the risks of liver disease in men and women.45

Cardiorespiratory System

Alcohol gets mixed reviews regarding its effects on the cardiorespiratory system.

According to the American Heart Association, college students who drink excessively may double their levels of C-reactive protein (CRP), a biological marker for inflammation associated with a higher chance of cardiorespiratory problems. Although the long-term impact is unknown, researchers caution that high CRP levels could predict future risk of heart disease.46 However, several studies have shown that people who

Copyright 2011 Cengage Learning. All Rights Reserved. May not be copied, scanned, or duplicated, in whole or in part. Due to electronic rights, some third party content may be suppressed from the eBook and/or eChapter(s).
Editorial review has deemed that any suppressed content does not materially affect the overall learning experience. Cengage Learning reserves the right to remove additional content at any time if subsequent rights restrictions require it.
drink moderate amounts of alcohol have lower mortality rates after a heart attack, as well as a lower risk of heart attack compared to abstainers and heavy drinkers.

Some cardiologists contend that the benefits of moderate drinking may be overstated, especially because of alcohol’s contribution to the epidemic of obesity around the world. Consumption of two or more drinks per day may increase a person’s risk of pancreatic cancer by about 22 percent. Heavier drinking triggers the release of harmful oxygen molecules called free radicals, which can increase the risk of heart disease, stroke, and cirrhosis of the liver. Alcohol use can weaken the heart muscle directly, causing a disorder called cardiomyopathy. The combined use of alcohol and other drugs, including tobacco and cocaine, greatly increases the likelihood of damage to the heart.

**Cancer**

Overall past and current drinking may contribute to about 10 percent of all cancer cases in men and 3 percent in women. Alcohol consumption has been more specifically implicated as a cause of cancers of the oral cavity, pharynx, larynx, esophagus, liver, colon-rectum, and female breast. The risk increases above the recommended upper limit of two drinks a day for men and one drink for women.47

**Brain and Behavior**

At first when you drink, you feel up. In low dosages, alcohol affects the regions of the brain that inhibit or control behavior, so you feel looser and act in ways you might not otherwise. However, you also experience losses of concentration, memory, judgment, and fine motor control; and you have mood swings and emotional outbursts.

Moderate amounts of alcohol can have disturbing effects on perception and judgment, including the following:

- **Impaired perceptions.** You’re less able to adjust your eyes to bright lights because glare bothers you more. Although you can still hear sounds, you can’t distinguish between them or judge their direction well.

- **Dulled smell and taste.** Alcohol itself may cause some vitamin deficiencies, and the poor eating habits of heavy drinkers result in further nutrition problems.

- **Diminished sensation.** On a freezing winter night, you may walk outside without a coat and not feel the cold.

- **Altered sense of space.** You may not realize, for instance, that you have been in one place for several hours.

- **Impaired motor skills.** Writing, typing, driving, and other abilities involving your muscles are impaired. This is why law enforcement officers sometimes ask suspected drunk drivers to touch their nose with a finger or to walk a straight line. Drinking large amounts of alcohol impairs reaction time, speed, accuracy, and consistency, as well as judgment.

- **Impaired sexual performance.** While drinking may increase your interest in sex, it may also impair sexual response, especially a man’s ability to achieve or maintain an erection. As Shakespeare wrote, “It provokes the desire, but it takes away the performance.”

Moderate and heavy drinkers show signs of impaired intelligence, slowed-down reflexes, and difficulty remembering. Because alcohol is a central nervous system depressant, it slows down the activity of the neurons in the brain, gradually dulling the responses of the brain and nervous system. One or two drinks act as a tranquilizer or relaxant. Additional drinks result in a progressive reduction in central nervous system activity, leading to sleep, general anesthesia, coma, and even death.

Heavy alcohol use may pose special dangers to the brains of drinkers at both ends of the age spectrum. Adolescents who drink regularly show impairments in their neurological and cognitive functioning. Elderly people who drink heavily appear to have more brain shrinkage, or atrophy, than those who drink lightly or not at all. In general, moderate drinkers have healthier brains and a lower risk of dementia than those who don’t drink and those who drink to excess.
Interaction with Other Drugs

Alcohol can interact with other drugs—prescription and nonprescription, legal and illegal. Of the 100 most frequently prescribed drugs, more than half contain at least one ingredient that interacts adversely with alcohol. Because alcohol and other psychoactive drugs may work on the same areas of the brain, their combination can produce an effect much greater than that expected of either drug by itself. For example, the liver combines alcohol and cocaine to produce cocaethylene, which intensifies the drug’s effects and may increase the risk of sudden death. Alcohol is particularly dangerous when combined with other depressants and antianxiety medications. (See Consumer Alert.)

Immune System

Chronic alcohol use can inhibit the production of both white blood cells, which fight off infections, and red blood cells, which carry oxygen to all the organs and tissues of the body. Alcohol may increase the risk of infection with human immunodeficiency virus (HIV) by altering the judgment of users so that they more readily engage in activities such as unsafe sex that put them in danger. If you drink when you have a cold or the flu, alcohol interferes with the body’s ability to recover. It also increases the chance of bacterial pneumonia in flu sufferers.

Increased Risk of Dying

Alcohol kills. Alcohol is responsible for 100,000 deaths each year and is the third leading cause of

CONSUMER ALERT

Alcohol and Drug Interactions

<table>
<thead>
<tr>
<th>Drug</th>
<th>Possible Effects of Interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allergy, cold, flu medicines (Allegra, Benadryl, Claritin, Dimetapp, Sudafed, Tylenol Cold &amp; Flu)</td>
<td>Drowsiness, dizziness, increased risk for overdose.</td>
</tr>
<tr>
<td>Analgesics (painkillers)</td>
<td></td>
</tr>
<tr>
<td>Narcotic (Codeine, Demerol, Percodan, Vicodin)</td>
<td>Increase in central nervous system depression, possibly leading to respiratory failure and death. Iridation of stomach resulting in bleeding and increased susceptibility to liver damage.</td>
</tr>
<tr>
<td>Nonnarcotic (aspirin, acetaminophen, ibuprofen)</td>
<td></td>
</tr>
<tr>
<td>Antabuse (disulfiram: an aid to quit drinking)</td>
<td>Nausea, vomiting, headache, high blood pressure, and erratic heartbeat.</td>
</tr>
<tr>
<td>Antianxiety drugs (Valium, Librium, Ativan, Xanax)</td>
<td>Increase in central nervous system depression; decreased alertness and impaired judgment.</td>
</tr>
<tr>
<td>Antidepressants (Prozac, Zoloft, Celexa, Lexapro, Paxil, Wellbutrin, Luvox, and others)</td>
<td>Increase in central nervous system depression; certain antidepressants in combination with red wine could cause a sudden increase in blood pressure.</td>
</tr>
<tr>
<td>Antihistamines (Actifed, Dimetapp, and other cold medications)</td>
<td>Increase in drowsiness; decrease in ability to drive.</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>Nausea, vomiting, headache; some medications rendered less effective.</td>
</tr>
<tr>
<td>Central nervous system stimulants (caffeine, Dexedrine, Ritalin)</td>
<td>Stimulant effects of these drugs may reverse depressant effect of alcohol but do not decrease its intoxicating effects.</td>
</tr>
<tr>
<td>Cocaine</td>
<td>Intensification of cocaine’s effects; increased risk of sudden death.</td>
</tr>
<tr>
<td>Sedatives (Dalmane, Nembutal, Quaalude)</td>
<td>Increase in central nervous system depression, possibly leading to coma, respiratory failure, and death.</td>
</tr>
</tbody>
</table>
death after tobacco and improper diet and lack of exercise. The leading alcohol-related cause of death is injury. Alcohol plays a role in almost half of all traffic fatalities, half of all homicides, and a quarter of all suicides. The second leading cause of alcohol-related deaths is cirrhosis of the liver, a chronic disease that causes extensive scarring and irreversible damage. In addition, as many as half of patients admitted to hospitals and 15 percent of those making office visits seek or need medical care because of the direct or indirect effects of alcohol.

Young drinkers—teens and those in their early 20s—are at highest risk of dying from injuries, mostly car accidents. Older drinkers over age 50 face the greatest danger of premature death from cirrhosis of the liver, hepatitis, and other alcohol-linked illnesses.

Most studies of the relationship between alcohol consumption and death from all causes show that moderate drinkers—those who consume approximately seven drinks per week—have a lower risk of death than abstainers, while heavy drinkers have a higher risk than either group. In one ten-year study, never-drinkers showed no elevated risk of dying, while consistent heavier drinkers were at higher risk of dying of any cause than other men.

Experts in alcohol treatment are increasingly recognizing racial and ethnic differences in risk factors for drinking problems, patterns of drinking, and most effective types of treatment.

**Gender**

In general, men drink more frequently, consume a larger quantity of alcohol per drinking occasion, and report more problems related to drinking. More than half of women drink: They drink alone more often, binge less, have more regular drinking patterns, and drink smaller quantities than men.

The bodies of men and women respond to alcohol in different ways. Because they have a far smaller quantity of a protective enzyme in the stomach to break down alcohol before it’s absorbed into the bloodstream, women absorb about 30 percent more alcohol into their bloodstream than men—see Table 13.3. The alcohol travels through the blood to the brain, so women become intoxicated much more quickly. And because there’s more alcohol in the bloodstream to break down, the liver may also be adversely affected. In alcoholic women, the stomach seems to completely stop digesting alcohol, which may explain why female alcoholics are more likely to suffer liver damage than men.

An estimated 15 percent of women drink alcohol while pregnant, most having one drink or less per day. Even light consumption of alcohol can lead to fetal alcohol effects (FAE): low birth weight, irritability as newborns, and permanent mental impairment. A few drinking binges of four or more drinks a day during pregnancy may significantly increase the risk of childhood mental health and learning problems.

The babies of women who consume three or more ounces of alcohol (the equivalent of six or seven cocktails) are at risk of more severe problems. One of every 750 newborns has a cluster of physical and mental defects called fetal alcohol effects (FAE): Milder forms of FAS, including low birth weight, irritability as newborns, and permanent mental impairment as a result of the mother’s alcohol consumption during pregnancy.

### Table 13.3 How Alcohol Discriminates

<table>
<thead>
<tr>
<th>Ability to Dilute Alcohol</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average total body water:</td>
<td>52%</td>
<td>61%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ability to Metabolize Alcohol</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average total body water:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women have a smaller quantity of dehydrogenase, an enzyme that breaks down alcohol.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men have a larger quantity of dehydrogenase, which allows them to break down the alcohol they take in more quickly.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hormonal Factors, Part 1</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premenstrual hormonal changes cause intoxication to set in faster during the days right after a woman gets her period.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Their susceptibility to getting drunk does not fluctuate dramatically at certain times of the month.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hormonal Factors, Part 2</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol increases estrogen levels. Birth control pills or other medicines with estrogen increase intoxication.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol also increases estrogen levels in men. Chronic alcoholism has been associated with loss of body hair and muscle mass, development of swollen breasts and shrunken testicles, and impotence.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
fetal alcohol syndrome (FAS): small head, abnormal facial features, jitters, poor muscle tone, sleep disorders, sluggish motor development, failure to thrive, short stature, delayed speech, mental retardation, and hyperactivity.

Alcohol interferes with male sexual function and fertility through direct effects on testosterone and the testicles. In half of alcoholic men, increased levels of female hormones lead to breast enlargement and a feminine pubic hair pattern. Damage to the nerves in the penis by heavy drinking can lead to impotence. In women who drink heavily, a drop in female hormone production may cause menstrual irregularity and infertility.

Race

African American Community Overall, African Americans consume less alcohol per person than whites, yet twice as many blacks die of cirrhosis of the liver each year. In some cities, the rate of cirrhosis is ten times higher among African American than white men. Alcohol also contributes to high rates of hypertension, esophageal cancer, and homicide among African American men.

Hispanic Community The various Hispanic cultures tend to discourage any drinking by women but encourage heavy drinking by men as part of machismo, or feelings of manhood. Hispanic men have higher rates of alcohol use and abuse than the general population and suffer a high rate of cirrhosis. Moreover, American-born Hispanic men drink more than those born in other countries.

Few Hispanics with severe alcohol problems enter treatment, partly because of a lack of information, language barriers, and poor community-based services. Hispanic families generally try to resolve problems themselves, and their cultural values discourage the sharing of intimate personal stories, which characterizes Alcoholics Anonymous and other support groups. Churches often provide the most effective forms of help.

Native American Community European settlers introduced alcohol to Native Americans. Because of the societal and physical problems resulting from excessive drinking, at the request of tribal leaders, the U.S. Congress in 1832 prohibited the use of alcohol by Native Americans. Many reservations still ban alcohol use, so Native Americans who want to drink may have to travel long distances to obtain alcohol, which may contribute to the high death rate from hypothermia and pedestrian and motor-vehicle accidents among Native Americans. (Injuries are the leading cause of death among this group.)

Certainly, not all Native Americans drink, and not all who drink do so to excess. However, they have three times the general population’s rate of alcohol-related injury and illness. Cirrhosis of the liver is the fourth leading cause of death among this cultural group. While many Native American women don’t drink, those who do have high rates of alcohol-related problems, which affect both them and their children. Their rate of cirrhosis of the liver is 36 times that of white women. In some tribes, 10.5 out of every 1,000 newborns have fetal alcohol syndrome, compared with 1 to 3 out of 1,000 in the general population.

Asian American Community Asian Americans tend to drink very little or not at all, in part because of an inborn physiological reaction to alcohol that causes facial flushing, rapid heart rate, lowered blood pressure, nausea, vomiting, and other symptoms. A very high percentage of women of all Asian nationalities abstain completely. Some
sociologists have expressed concern, however, that as Asian Americans become more assimilated into American culture, they'll drink more—and possibly suffer very adverse effects from alcohol.

### Alcohol Problems

By the simplest definition, problem drinking is the use of alcohol in any way that creates difficulties, potential difficulties, or health risks for an individual. Like alcoholics, problem drinkers are individuals whose lives are in some way impaired by their drinking. The only difference is one of degree. Alcohol becomes a problem, and a person becomes an alcoholic, when the drinker can't “take it or leave it.” He or she spends more and more time anticipating the next drink, planning when and where to get it, buying and hiding alcohol, and covering up secret drinking. As many as one in six adults in the United States may have a problem with drinking.

**Alcohol abuse** involves continued use of alcohol despite awareness of social, occupational, psychological, or physical problems related to drinking, or drinking in dangerous ways or situations (before driving, for instance). A diagnosis of alcohol abuse is based on one or more of the following occurring at any time during a 12-month period:

- A failure to fulfill major role obligations at work, school, or home (such as missing work or school).
- The use of alcohol in situations in which it is physically hazardous (such as before driving).
- Alcohol-related legal problems (such as drunk-driving arrests).
- Continued alcohol use despite persistent or recurring social or interpersonal problems caused or exacerbated by alcohol (such as fighting while drunk).

**Alcohol dependence** is a separate disorder in which individuals develop a strong craving for alcohol because it produces pleasurable feelings or relieves stress or anxiety. Over time they experience physiological changes that lead to **tolerance** of its effects; this means that they must consume larger and larger amounts to achieve intoxication. If they abruptly stop drinking, they suffer withdrawal, a state of acute physical and psychological discomfort. A diagnosis of alcohol dependence is based on three or more of the following symptoms occurring during any 12-month period:

- **Tolerance,** as defined by either a need for markedly increased amounts of alcohol to achieve intoxication or desired effect, or a markedly diminished effect with continued drinking of the same amount of alcohol as in the past.
- **Withdrawal,** including at least two of the following symptoms: sweating, rapid pulse, or other signs of autonomic hyperactivity; increased hand tremor; insomnia; nausea or vomiting; temporary hallucinations or illusions; physical agitation or restlessness; anxiety; or grand mal seizures.
- **Drinking to avoid or relieve the symptoms of withdrawal.**
- **Consuming larger amounts of alcohol, or drinking over a longer period than was intended.**
- **Persistent desire or unsuccessful efforts to cut down or control drinking.**
- **A great deal of time spent in activities necessary to obtain alcohol, drink it, or recover from its effects.**
- **Important social, occupational, or recreational activities given up or reduced because of alcohol use.**
- **Continued alcohol use despite knowledge that alcohol is likely to cause or exacerbate a persistent or recurring physical or psychological problem.**

About a third of college students meet the diagnostic criteria for alcohol abuse, while 6 percent qualify for a diagnosis of alcohol dependence. Although many students reduce their alcohol consumption after college, others continue to drink heavily and face increased risk of alcohol-use disorders and alcohol-related problems and medical risks. (See Self Survey: Do You Have A Drinking Problem? to assess your drinking status.)

**Alcoholism,** as defined by the National Council on Alcoholism and Drug Dependence and
the American Society of Addiction, is a primary, chronic disease in which genetic, psychosocial, and environmental factors influence its development and manifestations. The disease is often progressive and fatal. Its characteristics include an inability to control drinking; a preoccupation with alcohol; continued use of alcohol despite adverse consequences; and distorted thinking, most notably denial. Like other diseases, alcoholism is not simply a matter of insufficient willpower but a complex problem that causes many symptoms, can have serious consequences, yet can improve with treatment.

**Causes of Alcohol Dependence and Abuse**

Although the exact cause of alcohol dependence and abuse is not known, certain factors—including biochemical imbalances in the brain, heredity, cultural acceptability, and stress—all seem to play a role. They include the following:

- **Genetics.** Scientists have not yet identified conclusively a specific gene that puts people at risk for alcoholism. However, epidemiological studies have shown evidence of heredity’s role. Studies of twins suggest that heredity accounts for two-thirds of the risk of becoming alcoholic in both men and women.

- **Stress and traumatic experiences.** Many people start drinking heavily as a way of coping with psychological problems.

- **Parental alcoholism.** According to researchers, alcoholism is four to five times more common among the children of alcoholics, who may be influenced by the behavior they see in their parents.

- **Drug abuse.** Alcoholism is also associated with the abuse of other psychoactive drugs, including marijuana, cocaine, heroin, amphetamines, and various antianxiety medications.

**Medical Complications of Alcohol Abuse and Dependence**

As previously discussed, excessive alcohol use adversely affects virtually every organ system in the body, including the brain, the digestive tract, the heart, muscles, blood, and hormones (look back at Figure 13.4, page 443). In addition, because alcohol interacts with many drugs, it can increase the risk of potentially lethal overdoses and harmful interactions. A summary of the major risks and complications follows:

- **Liver disease.** Chronic heavy drinking can lead to alcoholic hepatitis (inflammation and destruction of liver cells) and in the 15 percent of people who continue drinking beyond this stage, cirrhosis (irreversible scarring and destruction of liver cells). The liver eventually may fail completely, resulting in coma and death.

- **Cardiorespiratory disease.** Heavy drinking can weaken the heart muscle (causing cardiac myopathy), elevate blood pressure, and increase the risk of stroke.

- **Cancer.** Heavy alcohol use may contribute to cancer of the liver, stomach, and colon, as well as malignant melanoma, a deadly form of skin cancer.

- **Brain damage.** Long-term heavy drinkers may suffer memory loss and be unable...
Your Strategies for Prevention

How to Recognize the Warning Signs of Alcoholism

- Experiencing the following symptoms after drinking: frequent headaches, nausea, stomach pain, heartburn, gas, fatigue, weakness, muscle cramps, irregular or rapid heartbeats.
- Needing a drink in the morning to start the day.
- Denying any problem with alcohol.
- Doing things while drinking that are regretted afterward.
- Experiencing dramatic mood swings, from anger to laughter to anxiety.
- Having sleep problems.
- Experiencing depression and paranoia.
- Forgetting what happened during a drinking episode.
- Changing brands or going on the wagon to control drinking.
- Having five or more drinks a day.

Alcoholism Treatments

An estimated 8 million adults in the United States have alcohol dependence. Only a minority ever undergo treatment for alcohol-related problems. Until recent years, the only options for professional alcohol treatment were, as one expert puts it, “intensive, extensive, and expensive,” such as residential programs at hospitals or specialized treatment centers. Today individuals whose drinking could be hazardous to their health may choose from a variety of approaches, including medication, behavioral therapy, or both. Treatment that works well for one person may not work for another. As research into the outcomes of alcohol treatments has grown, more attempts have been made to match individuals to approaches tailored to their needs and more likely to help them overcome their alcohol problems.49

Men and women who have seriously remained sober for more than a decade credit a variety of approaches, including Alcoholics Anonymous (AA), individual psychotherapy, and other groups, such as Women for Sobriety. There is no one sure path to sobriety—a wide variety of treatments may offer help and hope to those with alcohol-related problems. Genetics may predict the success of specific therapies in helping individuals overcome alcohol dependence.50

Detoxification

The first phase of treatment for alcohol dependence focuses on detoxification, the gradual withdrawal of alcohol from the body. For 90 to 95 percent of alcoholics, withdrawal symptoms are mild to moderate. They include sweating; rapid pulse; elevated blood pressure; hand tremor; insomnia; nausea or vomiting; malaise or weakness; anxiety; depressed mood or irritability; headache; and temporary hallucinations or illusions. Withdrawal can be life-threatening when accompanied by medical problems, such as grand mal seizures, pneumonia, liver failure, or gastrointestinal bleeding. The standard treatment is a safer sedative, such as Valium or Ativan, with a gradual reduction in the dose.
Alcohol withdrawal delirium, commonly known as **delirium tremens**, or DTs, is most common in chronic heavy drinkers who also suffer from a physical illness, fatigue, depression, or malnutrition. Delirium tremens are characterized by agitated behavior, delusions, rapid heart rate, sweating, vivid hallucinations, trembling hands, and fever. The symptoms usually appear over several days after heavy drinking stops. Individuals frequently report terrifying visual hallucinations, such as seeing insects all over their bodies. With treatment, most cases subside after several days, although delirium tremens has been known to last as long as four or five weeks. In some cases, complications such as infections or heart arrhythmias prove fatal.

**Medical Treatments**

Antianxiety and antidepressive drugs are sometimes used in early treatment for alcoholism, especially for those with underlying mental disorders. Four drugs—disulfiram, naltrexone, acamprosate, and topiramate—are approved to reduce the persistent craving for alcohol. Vitamin supplements, especially thiamin and folic acid, can help overcome some of the nutritional deficiencies linked with alcoholism.  

The drug disulfiram (Antabuse), given to deter drinking, causes individuals to become nauseated and acutely ill when they consume alcohol. Antabuse interrupts the removal of acetaldehyde by the liver, so this toxic substance accumulates and causes nausea or vomiting. If individuals taking Antabuse drink at all or consume foods with alcoholic content, they become extremely ill. They must avoid foods cooked or marinated in wine and cough syrup preparations containing alcohol. Some individuals have reactions to the alcohol in after-shave lotion. A large amount of alcohol can make them dangerously ill; fatalities have occurred. Side effects are usually mild and include drowsiness, bad breath, skin rash, and temporary impotence. Because Antabuse does not reduce cravings for alcohol, psychotherapy and support groups remain a necessary part of treatment.

**Inpatient or Residential Treatment**

In the past, 28-day treatment programs in a medical or psychiatric hospital or a residential facility were the cornerstone of early recovery treatment. According to outcome studies, inpatient treatment was effective, with as many as 70 percent of “graduates” remaining abstinent or stable, nonproblem drinkers for five years after. However, because of cost pressures from the insurance industry, the length of stay has been reduced, and there’s been increasing emphasis on outpatient care.

**Outpatient Treatment**

Outpatient treatment may involve group therapy, individual supportive therapy, marital or family therapy, regular attendance at Alcoholics Anonymous (AA) or another support group, brief interventions, and relapse prevention. According to outcome studies, intensive outpatient treatment at a day hospital (with individuals returning home every evening) are as effective as inpatient care. Outpatient therapy continues for at least a year, but many individuals continue to participate in outpatient programs for the rest of their lives.

**Brief Interventions** These methods include individual counseling, group therapy, and training in specific skills—such as assertiveness—all packed into a six- to eight-week period. Offered at a growing number of centers, brief interventions may be most helpful for problem drinkers who are not physically dependent on alcohol. They have proved effective in reducing alcohol consumption up to one year compared with no intervention or standard care. However, at ten years, there is no difference in alcohol consumption among those who had a brief intervention and those who did not. This indicates the need for follow-up advice and counseling.

According to a recent review, Internet-based interventions can be more effective than simply providing printed materials in helping some alcoholics drink a little less. However, follow-up with a counselor has proven more effective in reducing weekly drinking frequency and alcohol consumption.

**Moderation Training** Highly controversial, this approach uses cognitive-behavioral techniques, such as keeping a diary to chart drinking patterns and learning “consumption management” techniques, such as never having more than one drink an hour.
Treatment programs in other countries, such as Great Britain and Canada, have long offered moderation training for problem drinkers who consume too much alcohol. However, most experts agree that the best—and perhaps only—hope for recovery for chronic alcoholics who are physically dependent on alcohol is complete abstinence.

12-Step Self-Help Programs  The best-known and most commonly used self-help program for alcohol problems is Alcoholics Anonymous (AA), which was founded more than 60 years ago and which has grown into an international organization that includes 2 million members and 185,000 groups worldwide. Acknowledging the power of alcohol, AA offers support from others struggling with the same illness, from a sponsor available at any time of the day or night, and from fellowship meetings that are held every day of the year. Because anonymity is a key part of AA, it has been difficult for researchers to study its success, but it is generally believed to be a highly effective means of overcoming alcoholism and maintaining abstinence. Its 12 steps, which emphasize honesty, sobriety, and acknowledgment of a “higher power,” have become the model for self-help groups for other addictive behaviors, including drug abuse (discussed in Chapter 12) and compulsive eating.

The average age of entry into AA is 30; about 60 percent of the members are men. Members encompass a wide range of ages, occupations, nationalities, and socioeconomic classes. People generally attend 12-step meetings every day when they first begin recovery; most programs recommend 90 meetings in 90 days. Many people taper off to one or two meetings a week as their recovery progresses. No one knows exactly how 12-step programs help people break out of addictions. Some individuals stop their drinking or other destructive behavior, simply on the basis of the information they get at meetings. Others bond to the group and use it as a social support and refuge while they explore and release their inner feelings—a process similar to what happens in psychotherapy.

Many individuals recovering from substance abuse—as many as one in ten Americans, by some estimates—will attend a 12-step meeting in their lifetime. For many with alcohol-related problems, AA is the first and only treatment they receive. Does AA work? Some studies have found that fewer than 1 in 30 people remain in AA after one year, although this may be because many are coerced to make their initial visits. However, continued AA attendance is modestly associated with abstinence and improved social functioning. According to the “helper theory principle,” when people with a condition help others with a similar problem, they also help themselves. This principle, fundamental to AA, may contribute to their continuing sobriety.24

Spirituality is another key and controversial component of AA, with 11 of its 12 steps explicitly referring to the importance of God or a higher power for recovery. Yet both spiritually oriented and atheistic individuals benefit equally from AA programs. In a ten-year study, individuals involved with AA reported significantly larger gains in religious practices, such as prayer, compared with those without such exposure. Individuals who maintain consistent AA membership reported the greatest increases in “God consciousness” and religious practices.

Harm Reduction Therapy  This controversial approach aims to help substance abusers reduce the negative impact of alcohol or drugs on their lives. Its fundamental principles include the following:

• While absolute abstinence may be preferable for many or most substance abusers, very few achieve it. Even these few will take time to reach this point and may relapse periodically.

• The field of medicine accepts and practices other types of treatments that preserve health and well-being even when people fail to comply with all recommended behaviors.

• Therapists cannot make judgments for clients, even though they should present accurate information and may even express their own beliefs.

• There are many shades of improvement in every kind of therapy. If a certain level of improvement is all a person is capable of reaching, that person should be encouraged.

Alternatives to AA  Secular Organizations for Sobriety (SOS) was founded in 1986 as an alternative for people who couldn’t accept the spirituality of AA. Like AA, SOS holds confidential meetings, celebrates sobriety anniversaries, and views recovery as a one-day-at-a-time process.
Rational Recovery, which also emphasizes anonymity and total abstinence, focuses on the self rather than spirituality. Members use reason instead of prayer and learn to control the impulse to drink by learning how to control the emotions that lead them to drink.

**Recovery**

Recovery from alcoholism is a lifelong process of personal growth and healing. The first two years are the most difficult, and relapses are extremely common. By some estimates, more than 90 percent of those recovering from substance use will use alcohol or drugs in any one 12-month period after treatment. However, approximately 70 percent of those who get formal treatment stop drinking for prolonged periods. Even without treatment, 30 percent of alcoholics are able to stop drinking for long periods. Those most likely to remain sober after treatment have the most to lose by continuing to drink: they tend to be employed, married, and upper-middle class. Recovering alcoholics who help other alcoholics stay sober are better able to maintain their own sobriety.

Most recovering alcoholics experience urges to drink, especially during early recovery when they are likely to feel considerable stress. These urges are a natural consequence of years of drinking and diminish with time. Mood swings are common during recovery, and individuals typically describe themselves as alternately feeling relieved or elated and then discouraged or tearful. Such disconcerting ups and downs also decrease over time. Patience—learning to take “one day at a time”—is crucial.55

Increasingly, treatment programs focus on relapse prevention, which includes the development of coping strategies and learning techniques that make it easier to live with alcohol cravings and rehearsal of various ways of saying “no” to offers of a drink. According to outcomes research, social skills training—a combination of stress management therapy, assertiveness and communication skills training, behavioral self-control training, and behavioral marital therapy—has proved effective in decreasing the duration and severity of relapses after one year in a group of alcoholics. A new approach to relapse behavior, “Mindfulness-Based-Relapse Prevention” teaches clients meditation techniques as a way of coping with cravings and high-risk relapse situations.

**Alcoholism’s Impact on Relationships**

Alcoholism shatters families and creates unhealthy patterns of communicating and relating. Separation and divorce rates are high among alcoholics.

Having a heavy drinker—a friend, family member, or colleague—in your life can put your own health and well-being at risk. In a recent study, those linked with a heavy drinker reported more symptoms such as chronic pain, anxiety, and depression.56

**Growing Up with an Alcoholic Parent**

An estimated 28 million children in the United States (or one of every four) are living in a household with an alcoholic adult. Parental alcoholism increases the likelihood of childhood ADHD, conduct disorder, and anxiety disorders. The experience often leads youngsters to play certain roles: The adjuster or “lost child” does whatever the parent says. The responsible child, or “family hero,” typically takes over many household tasks and responsibilities. The acting-out child, or “scapegoat,” shows his or her anger early in life by causing problems at home or in school and taking on the role of troublemaker. The “mascot” disrupts tense situations by focusing attention on himself or herself, often by clowning. Regardless of which roles they assume, the children of alcoholics are prone to learning disabilities, eating disorders, and addictive behavior.

Numerous studies have linked parental drinking to child abuse and neglect. Children of women who are problem drinkers have twice the risk of serious injury as children of mothers who don’t drink. Children with two parents who are problem drinkers are at even higher risk. As teenagers, children of alcoholics are more likely to report early sexual intercourse and face a greater risk of adolescent pregnancy.
Adult Children of Alcoholics

Growing up with an alcoholic parent can have a long-lasting effect. Adult children of alcoholics are at risk for many problems. Some try to fill the emptiness inside with alcohol, drugs, or addictive habits. Others find themselves caught up in destructive relationships that repeat the patterns of their childhood. They are likely to have difficulty solving problems, identifying and expressing their feelings, trusting others, and being intimate. In addition to their own increased risk of addictive behavior, they are likely to marry individuals with some form of addiction and keep on playing out the roles of their childhood. They may feel inadequate, not know how to set limits or recognize normal behavior, be perfectionistic, and want to control all aspects of their lives. However, not all adult children are alike or necessarily suffer from psychological problems or face an increased risk of substance abuse themselves.

Because the impact of alcoholism can be so enduring, support groups—such as Adult Children of Alcoholics, Children of Alcoholics, and Adult Children of Dysfunctional Families—have spread throughout the country in the last decade. These organizations provide adult children of alcoholics a mutually supportive group setting in which to discuss their childhood experiences with alcoholic parents and the emotional consequences they carry into adult life. Through such groups or other forms of therapy, individuals may learn to move beyond anger and blame, see the part they themselves play in their current state of unhappiness, and create a future that is healthier and happier than their past. [See Health in Action.]

Health in Action

If Someone Close to You Drinks Too Much

- Try to remain calm, unemotional, and factually honest in speaking about the drinker’s behavior. Include the drinker in family life.

- Discuss the situation with someone you trust: a member of the clergy, social worker, friend, or someone who has experienced alcoholism directly.

- Never cover up or make excuses for the drinker, or shield him or her from the consequences of drinking. Assuming the drinker’s responsibilities undermines his or her dignity and sense of importance.

- Refuse to ride with the drinker if he or she is driving while intoxicated.

- Encourage new interests and participate in leisure-time activities that the drinker enjoys.

- Try to accept setbacks and relapses calmly.

In addition to focusing on your friend or family member, take time to sort through your own feelings about the situation. Record your observations and concerns in your online journal.
Take Charge of Alcohol

If you use alcohol, develop a defensive drinking program. Check the steps that you have taken or will take in the future to stay in control of your alcohol intake.

_____ Finding alternative ways to soothe stress. Daily sessions of meditation have proven effective in helping high-risk student drinkers relax.

_____ Setting a limit on how many drinks you’re going to have ahead of time—and sticking to it.

_____ When you’re mixing a drink, measuring the alcohol.

_____ Alternating nonalcoholic and alcoholic drinks.

_____ Drinking slowly; not guzzling.

_____ Eating before and while drinking.

_____ Avoiding tasks that require skilled reactions during or after drinking.

_____ Not encouraging or reinforcing others’ irresponsible behavior.

_____ Checking out community resources. Are there chapters of AA and Al-Anon on campus? Find out more about the BACCHUS (Boost Alcohol Consciousness Concerning the Health of University Students) network, including programs in your area. Do these groups offer volunteer opportunities that interest you?

_____ Talking to your dormmates, fraternity brothers, sorority sisters, or roommates about steps you could take collectively, such as restricting drinking in rooms or setting up a “Seize the Keys” policy to prevent drunk driving.

---

Do You Have a Drinking Problem?

This self-assessment, the Michigan Alcoholism Screening Test (MAST), is widely used to identify potential problems. This test screens for the major psychological, sociological, and physiological consequences of alcoholism.

Answer Yes or No to the following questions, and add up the points shown in the right column for your answers.

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you enjoy a drink now and then?</td>
<td></td>
<td></td>
<td>(0 for either)</td>
</tr>
<tr>
<td>2. Do you think that you’re a normal drinker? (By normal, we mean that you drink less than or as much as most other people.)</td>
<td></td>
<td></td>
<td>(2 for no)</td>
</tr>
<tr>
<td>3. Have you ever awakened the morning after some drinking the night before and found that you couldn’t remember part of the evening?</td>
<td></td>
<td></td>
<td>(2 for yes)</td>
</tr>
<tr>
<td>4. Does your wife, husband, a parent, or other near relative ever worry or complain about your drinking?</td>
<td></td>
<td></td>
<td>(1 for yes)</td>
</tr>
<tr>
<td>5. Can you stop drinking without a struggle after one or two drinks?</td>
<td></td>
<td></td>
<td>(2 for no)</td>
</tr>
<tr>
<td>6. Do you ever feel guilty about your drinking?</td>
<td></td>
<td></td>
<td>(1 for yes)</td>
</tr>
<tr>
<td>7. Do friends or relatives think that you’re a normal drinker?</td>
<td></td>
<td></td>
<td>(2 for no)</td>
</tr>
<tr>
<td>8. Do you ever try to limit your drinking to certain times of the day or to certain places?</td>
<td></td>
<td></td>
<td>(0 for either)</td>
</tr>
<tr>
<td>9. Have you ever attended a meeting of Alcoholics Anonymous?</td>
<td></td>
<td></td>
<td>(2 for yes)</td>
</tr>
<tr>
<td>10. Have you ever gotten into physical fights when drinking?</td>
<td></td>
<td></td>
<td>(1 for yes)</td>
</tr>
<tr>
<td>11. Has your drinking ever created problems for you and your wife, husband, a parent, or other relative?</td>
<td></td>
<td></td>
<td>(2 for yes)</td>
</tr>
</tbody>
</table>
12. Have your wife, husband, or other family members ever gone to anyone for help about your drinking? _______ _______ (2 for yes)

13. Have you ever lost friends because of your drinking? _______ _______ (2 for yes)

14. Have you ever gotten into trouble at work or school because of your drinking? _______ _______ (2 for yes)

15. Have you ever lost a job because of your drinking? _______ _______ (2 for yes)

16. Have you ever neglected your obligations, your family, or your work for two or more days in a row because of drinking? _______ _______ (2 for yes)

17. Do you drink before noon fairly often? _______ _______ (1 for yes)

18. Have you ever been told you have liver trouble? Cirrhosis? _______ _______ (2 for yes)

19. After heavy drinking, have you ever had delirium tremens (DTs) or severe shaking, or heard voices or seen things that weren’t actually there? _______ _______ (2 for yes*)

20. Have you ever gone to anyone for help about your drinking? _______ _______ (5 for yes)

21. Have you ever been in a hospital because of your drinking? _______ _______ (5 for yes)

22. Have you ever been a patient in a psychiatric hospital or on a psychiatric ward of a general hospital where drinking was part of the problem that resulted in hospitalization? _______ _______ (2 for yes)

23. Have you ever been seen at a psychiatric or mental health clinic or gone to any doctor, social worker, or clergyman for help with any emotional problem where drinking was part of the problem? _______ _______ (2 for yes)

24. Have you ever been arrested for drunk driving, driving while intoxicated, or driving under the influence of alcoholic beverages? _______ _______ (2 for yes)

25. Have you ever been arrested, or taken into custody, even for a few hours, because of drunken behavior? _______ _______ (2 for yes)

(If Yes, how many times?) _______ **

*Five points for delirium tremens  
**Two points for each arrest

**Scoring**

In general, five or more points places you in an alcoholic category; four points suggests alcoholism; three or fewer points indicates that you’re not an alcoholic.
Making Change Happen

Your Alcohol Audit

We have no objection to drinking. What does concern us is drinking without thinking. When you drink without thinking, you give up control and turn your life over to alcohol. And when you lose control, you lose. You can end up a hapless spectator or a victim of consequences you never intended. A third of students report doing something they later regretted as a result of their drinking. “Your Alcohol Audit” in Labs for IPC can help you avoid this experience—ever or again. If just thinking about drinking makes you uneasy, definitely read the following and do this lab. The feeling is a red flag you shouldn’t ignore.

Get Real

In this section, you analyze your drinking by answering 12 questions, including the following three:

• When did you last have a drink? How many drinks did you have? Why did you choose to drink?

• How often do you drink? When do you drink? Where?

• Have you ever failed to do what was expected of you because of drinking? How often?

On a scale of 1 (no reason for concern) to 10 (I have a drinking problem), you rate your concern about the role of alcohol in your life.

Get Ready

In this stage, you research alcoholism in your family, going back to your grandparents. If drinking problems run in your family, you need to think about drinking even more carefully than other students. You also list what you see as the advantages of drinking (such as feeling less socially anxious) and then its negative consequences (such as headaches, hangovers, or blowing a test because you were too wasted to study).

Get Going

In this stage you set a drinking quota and write in your IPC Journal:

“My limit is ____ drink(s) whenever I drink.”

You keep to this limit through a variety of strategies, including the following:

• When “No” Isn’t Enough

Being with people who are drinking doesn’t mean you have to drink as much as they do. Here are some effective ways to get your message across. Rehearse the following two examples before you go out:

“Just have one beer.”

“I have a bet with someone (no need to say it’s you) to see how long I can go without drinking.”

OR

“I can’t stop at one, and I’m not going there tonight.”

“Why aren’t you drinking?”

“I’ve got practice/work/a job interview/whatever first thing tomorrow.”

Lock It In

Responsible drinking requires attention. Among other steps, you continue your alcohol audit for the rest of the term by using this format:

<table>
<thead>
<tr>
<th>Day of Week</th>
<th>Number of Drinks</th>
<th>Type of Drinks</th>
<th>Place Consumed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wednesday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thursday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saturday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunday</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Check how the amounts recorded compare with the goal you set at the beginning of the “Get Going” section.
Review Questions

1. Which of the following statements about the effects of alcohol on the body systems is true?
   a. In most individuals, alcohol sharpens the responses of the brain and nervous system, enhancing sensation and perception.
   b. Moderate drinking may have a positive effect on the cardiorespiratory system.
   c. French researchers have found that drinking red wine with meals may have a positive effect on the digestive system.
   d. The leading alcohol-related cause of death is liver damage.

2. Racial and ethnic patterns related to alcohol use include which of the following?
   a. Asian American women tend to have higher rates of alcoholism than Asian American men.
   b. Alcohol-related deaths are highest as a percentage of population among Native Americans.
   c. White Americans tend to have higher rates of cirrhosis of the liver than African Americans or Native Americans.
   d. The Hispanic culture discourages men from drinking because heavy drinking indicates a lack of machismo.

3. Alcoholism
   a. is considered a chronic disease with genetic, psychosocial, and environment components.
   b. is characterized by a persistent lack of willpower.
   c. may be classified as either Type A, which affects people who are high-strung, or Type B, which affects people who are more mild mannered.
   d. is easily controlled by avoiding exposure to social situations where drinking is common.

4. Which of the following statements about alcohol abuse and dependence is false?
   a. Alcohol dependence involves a persistent craving for and an increased tolerance to alcohol.
   b. An individual may have a genetic predisposition for developing alcoholism.
   c. Alcoholics often abuse other psychoactive drugs.
   d. Alcohol abuse and alcohol dependence are different names for the same problem.

5. Health risks of alcoholism include all of the following except
   a. hypertension.
   b. lung cancer.
   c. peptic ulcers.
   d. hepatitis.

6. Which of the following statements about alcoholism treatment is true?
   a. Inpatient treatment has been shown to be more effective than outpatient treatment.
   b. Alcoholism can be cured by detoxifying or ridding the body of all traces of alcohol.
   c. Antabuse is a medication given to alcoholics with underlying mental disorders.
   d. A combination of medical, behavioral, and self-help approaches may be necessary to treat alcohol abuse and dependence.

7. Which of the following statements about drinking on college campuses is true?
   a. The federal government has a goal to reduce the binge-drinking rate among college students to 20 percent.
   b. The number of women who binge-drink has decreased.
   c. Because of peer pressure, students in fraternities and sororities tend to drink less than students in dormitories.
   d. Students who attend two-year institutions tend to binge-drink when alcohol is available.

8. Responsible drinking includes which of the following behaviors?
   a. Avoid eating while drinking because eating speeds up absorption of alcohol.
   b. Limit alcohol intake to no more than four drinks in an hour.
   c. Take aspirin while drinking to lower your risk of a heart attack.
   d. Socialize with individuals who limit their alcohol intake.

9. Which of these is a standard drink?
   a. a margarita
   b. a 12-oz regular beer
   c. a double martini
   d. a 16-oz can of malt liquor

10. An individual’s response to alcohol depends on all of the following except
    a. the rate at which the drink is absorbed into the body’s tissues.
    b. the blood-alcohol concentration.
    c. socioeconomic status.
    d. gender and race.

Answers to these questions can be found on page 672.
Critical Thinking

1. Driving home from a friend’s twenty-first birthday party, 18-year-old Rick has had too much to drink. As he crosses the dividing line on the two-lane road, the driver of an oncoming car—a young mother with two young children in the backseat—swerves to avoid an accident. She hits a concrete wall and dies instantly, but her children survive. Rick has no record of drunk driving. Should he go to prison? Is he guilty of manslaughter? How would you feel if you were the victim’s husband? If you were Rick’s friend?

2. Have you ever been around people who have been intoxicated when you have been sober? What did you think of their behavior? Were they fun to be around?

3. What effects has alcohol use had in your life? Try making a list of the positive and negative effects your own alcohol use has had. Be specific. If you continue to drink at your current rate, what positive and negative effects do you think it will have on your future? What effects have other people’s drinking had on your life? List family members and friends who drink regularly and how their drinking has affected you.

Media Menu

Visit www.cengagebrain.com to access course materials and companion resources for this text that will:

- Help you evaluate your knowledge of the material.
- Allow you to prepare for exams with interactive quizzing.

Use the CengageNOW product to develop a Personalized Learning Plan targeting resources that address areas you should study.

Coach you through identifying target goals for behavioral change and creating and monitoring your personal change plan throughout the semester using the Behavior Change Planner available in the CengageNOW resource.

Internet Connections

www.factsontap.org
This excellent site is geared to college students. Sections include Alcohol & Student Life, Alcohol & Sex, Alcohol & Your Body.

www.collegedrinkingprevention.gov
This website, sponsored by the National Institute of Alcohol Abuse and Alcoholism, focuses on the college alcohol culture with information for students, parents, college health administrators, and more. The site also features information about alcohol abuse prevention, college alcohol policies, research topics, and factual information about the consequences of alcohol abuse and alcoholism.

www.al-anon.alateen.org
This site provides information and referrals to local Al-Anon and Alateen groups. It also includes a self-quiz to determine if you are affected by someone who has an alcohol problem.

www.nacoa.org
This association provides information about and for children of alcoholics. The website contains numerous links to relevant support groups.

Key Terms

The terms listed are used on the page indicated. Definitions of the terms are in the Glossary at the end of the book.

absorption 439
alcohol abuse 448
alcohol dependence 448
alcoholism 448
binge 430
blood-alcohol concentration (BAC) 439
delirium tremens (DTs) 451
detoxification 450
ethyl alcohol 438
fetal alcohol effects (FAE) 446
fetal alcohol syndrome (FAS) 447
predrinking 432
proof 438
relapse prevention 453
Making This Chapter Work for You

This page contains questions for this chapter only

**Chapter 13**

1. b; 2. b; 3. a; 4. d; 5. b; 6. d; 7. a; 8. d; 9. b; 10. c