

Alcohol



Lesson 1 Choosing to Be Alcohol Free

Lesson 2 Harmful Effects of Alcohol Use

Lesson 3 Alcohol, the Individual, and Society



Researching Alcohol Issues on the Internet

The Internet can be a useful tool for finding information about health issues such as alcohol use and abuse. However, it is important to analyze the source of information found on the Web. Some credible Web resources may include

- ▶ nonprofit organizations.
- ▶ government departments.
- ▶ parent groups.

Visit the Eye on the Media section at health.glencoe.com to learn more about how to evaluate Web sources.

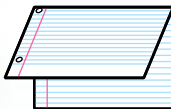
FOLDABLES™ Study Organizer

Before You Read

Make this Foldable to help you organize what you learn about alcohol and about choosing to be alcohol free. Begin with four sheets of 8½" x 11" paper or four sheets of notebook paper.

▶ Step 1

Fold four sheets of paper in half along the short axis.



▶ Step 2

On each sheet, make a cut 1" from the edge of the paper. Cut through the top flap only.



▶ Step 3

Staple the four sheets together at the 1" tabs and label them: The Facts About Alcohol, Factors That Influence Alcohol Use, Avoid Alcohol: Avoid Unsafe Situations, and Being Alcohol Free.



As You Read

As you read and discuss the material in the chapter, use your Foldable to define terms and record what you learn under the appropriate tabs.

SPOTLIGHT ON HEALTH

Using Visuals. How can you and your peers let others know that you've decided to live alcohol free?

Choosing to Be Alcohol Free

Guide to Reading

Building Vocabulary

As you read this lesson, write each new highlighted term and its definition in your notebook.

- ▶ ethanol (p. 562)
- ▶ fermentation (p. 562)
- ▶ depressant (p. 563)
- ▶ intoxication (p. 563)
- ▶ alcohol abuse (p. 565)

Focusing on the Main Ideas

In this lesson, you will learn how to:

- ▶ **Identify** factors that influence decisions about alcohol use and your health.
- ▶ **Examine** the physical, mental/emotional, social, and legal consequences of alcohol use.
- ▶ **Discuss** the role alcohol plays in unsafe situations.
- ▶ **Develop** strategies for preventing the use of alcohol.

Reading Strategy

Predict

- ▶ Scan all the headings, subheadings, and pictures in this lesson. Write a few sentences describing what information you believe this lesson contains.

Quick Write

Write a short paragraph describing what you think might help a teen choose to be alcohol free.



Recognizing the health risks of alcohol will help you make the decision to stay alcohol free. *How can avoiding alcohol use help you succeed in school?*

For many people the image is a familiar one: energetic young adults playing sports, cooking out, living life to the fullest. The purpose of this attractive advertisement scene is to promote and sell a drug—alcohol—that is addictive, physically damaging, and often an entry into the use of other drugs. In reality, alcohol is a lethal drug with harmful effects that include physical, mental/emotional, social, and legal consequences, including serious health problems to the drinker and those around him or her and even death caused by disease, violence, and motor vehicle accidents.

The Facts About Alcohol

Alcohol, or more accurately, **ethanol**—the type of alcohol in alcoholic beverages—is a powerful and addictive drug. Ethanol can be produced synthetically and naturally through the fermentation of fruits, vegetables, and grains. **Fermentation** is the chemical



action of yeast on sugars. Water, flavoring, and minerals are mixed with ethanol to produce a variety of beverages, such as beer and wine. Alcohol also can be processed to create spirits, or liquors, such as whiskey, rye, and vodka.

Immediate Effects of Alcohol Consumption


At first drinking alcohol may provide a kind of energy “rush.” This initial reaction masks alcohol’s true effects as a **depressant**, a drug that slows the central nervous system. Alcohol quickly affects a person’s motor skills by slowing reaction time and impairing vision. Clear thinking and good judgment also diminish. A variety of factors, including a person’s body size and stomach contents, determines alcohol’s effect. For this reason, the amount of alcohol that leads to intoxication varies from person to person. **Intoxication** is the state in which the body is poisoned by alcohol or another substance and the person’s physical and mental control is significantly reduced.



Factors That Influence Alcohol Use

Despite the many problems associated with alcohol use, many teenagers still choose to drink. Why? Several reasons influence teens in their choice to use—or not use—alcohol:

- ▶ **Peer pressure.** It’s normal for teens to want to feel accepted within a group. The desire to fit in is strong. Teens who choose friends who avoid alcohol use are more likely to be alcohol free than teens whose friends accept alcohol use.
- ▶ **Family.** Family members can help teens be alcohol free. Parents who discourage and avoid the use of alcohol are more likely to have teens who do the same. In fact, teens cite parental disapproval as the number one reason for not using alcohol.
- ▶ **Media messages.** Many media messages on TV and radio and in movies make alcohol use appear exciting, attractive, and fun. Many of these messages feature elements targeted to a teen audience, such as young, attractive people engaging in problem-free drinking in a partylike atmosphere. The message of many ads is “To fit in, drink alcohol.” However, teens who recognize these messages and their meanings are more likely to resist negative influences.

 Your family, friends, and peers influence your decisions about avoiding the use of alcohol. **Analyze the importance of alternatives to alcohol and substance use.**

Did You Know?

Through the media teens are exposed to alcohol use in many forms.

- By the time teens reach ninth grade, most will have seen more ads for beer or wine than for any other product.
- A recent study found that 93 percent of the 200 most popular movie rentals depicted alcohol use.
- A review of top-selling rap recordings found alcohol mentioned in 47 percent of the songs.

Reading Check

Describe What are some factors that determine alcohol's effect on different people?

Advertising Techniques

Companies that produce alcoholic beverages spend billions of dollars each year and use various strategies to advertise and sell their products. Advertisements appear on billboards, can be seen or heard on television and radio, and fill magazines and newspapers. Alcohol companies sponsor sporting events, music concerts, art festivals, exhibits, and other community events. They do this to

Real-Life Application

Seeing Through Alcohol Advertising

What media images come to mind when you think of advertisements for alcohol? Many advertisers appeal to emotions and desires to influence people to buy their products. By understanding the ways in which advertisers market alcohol, teens can make the informed choice to avoid using it.



ACTIVITY

Use a critical eye when looking at advertisements in magazines and newspapers and on billboards, television, and the Internet. Select three examples of alcohol advertising. For each example, ask yourself these questions:

1. **What is really being advertised?** Write a paragraph that analyzes how the ad appeals to an emotion or a desire in a particular audience.
2. **What is the hidden message?** Create a caption that describes what the advertisers want the intended audience to believe about drinking alcohol.
3. **What is the truth?** Explain why the ad is misleading, using at least three facts about alcohol use that the ad does not mention.

Demonstrate what you have learned from your analysis by writing a statement on the truthfulness of alcohol advertising.

What is really being advertised?

The ad is “selling” physical attractiveness. It appeals to an internal influence that most people share: the desire to be among friends who enjoy being together.

What is the hidden message?

“You need our beer to have fun with your friends.”

What is the truth?

Drinking beer is not the reason people are enjoying the party. This picture is staged. In fact, drinking alcohol impairs coordination; the ability to play volleyball would be affected. None of the risks of alcohol use are shown.

associate their products with attractive and healthy people having fun. It is important to thoroughly analyze and interpret media messages that encourage the consumption of alcohol.

Alcohol's Role in Unsafe Situations

Alcohol use can be dangerous and even deadly. Alcohol-related motor vehicle accidents are the number one cause of death and disability among teens. Alcohol use also is linked with deaths by drowning, fire, suicide, and homicide. Even if you are not drinking but are around people who are, you have an increased risk of being seriously injured, involved in a vehicle crash, and affected by violence. Alcohol-related incidents can be damaging to the health and safety of the user and those associated with the user.

Alcohol and the Law

If you are under 21, it is illegal to buy, possess, or consume alcohol. For teens who break the law, the legal consequences can be very negative. Teens can be arrested, fined, and sentenced to a youth detention center. By breaking the law, the offender risks both damaging his or her reputation and losing the trust and respect of friends and family members.

Alcohol, Violence, and Sexual Activity

Teens can protect their health by avoiding situations where alcohol is present. Teens who drink alcohol are more likely to be victims or perpetrators of violent crimes such as rape, aggravated assault, and robbery. They are also more likely to become involved in fights, resulting in school or police action.

Alcohol use and sexual activity are a dangerous mixture. Alcohol impairs a person's judgment, lowers inhibitions, and compromises moral standards. Teens who use alcohol are more likely to become sexually active at earlier ages, to engage in sexual activity more often, and to engage in unprotected sexual activity more often than teens who do not use alcohol. The effects of such careless sexual activity can be unplanned pregnancy, HIV, STDs, and negative mental and social consequences.

Alcohol Abuse

Most young people do not live in families in which alcohol abuse is a problem. However, it is estimated that 25 percent of all youth *are* exposed to family **alcohol abuse**—*the excessive use of alcohol*—at some time before they reach the age of 18. Young people who live in a household in which a family member abuses alcohol are at a high risk for neglect, abuse, economic hardship, and social isolation. Sometimes these problems can lead a young person to try alcohol

CHARACTER CHECK

Responsibility. Demonstrate your commitment to a lifestyle that does not include alcohol use by taking responsibility for your decisions.

Write and sign a pledge to stay alcohol free. Share your pledge with your parents and friends.

Encourage your friends to sign pledges, too.

Did You Know?

Alcohol use is a serious matter. It is a key factor in

- 33 percent of suicides.
- 50 percent of homicides.
- 62 percent of assaults.
- 68 percent of manslaughter cases.
- 50 percent of head injuries.
- 41 percent of traffic fatalities.
- domestic abuse and injury, child abuse and neglect, and workplace injuries.
- more than half of all drowning incidents.

Health Skills Activity

Refusal Skills: Avoiding Alcohol

Chantelle has been invited to a party at her friend Natasha's house. When Chantelle arrives, she is surprised to see people drinking alcoholic beverages. Natasha's parents are not at home.

Chantelle walks over to Natasha. "What kind of party is this?" she asks.

"It's a *high-school party*," Natasha says. "Here, have a beer."

"No, thanks," Chantelle responds. "Won't your parents be upset if they see this?"

"Don't worry," Natasha says. "They won't be home for hours. Here, have a drink. It'll loosen you up."

Chantelle knows she needs to communicate her refusal and leave the party. What should she do?



What Would You Do?

Apply the following refusal skills to write a response for Chantelle.

1. Say no in a firm voice.
2. Explain why you are refusing.
3. Suggest alternatives to the proposed activity.
4. Back up your words with body language.
5. Leave if necessary.



Choosing to be alcohol free allows you to reach your potential and achieve your goals.

as an escape. However, drinking only makes the situation worse. Studies indicate that a person who begins drinking as a teen is four times more likely to develop alcohol dependence than an adult is.


Alcohol and Extracurricular Activities

The negative consequences of alcohol use for teens can extend to their eligibility for participation in extracurricular activities, including athletics. Most schools have adopted a zero-tolerance policy for students found using alcohol. If caught, students may become ineligible to participate or may be suspended from their activities or from school. A student's future social, college, and job prospects could be damaged.

Being Alcohol Free

Deciding to be alcohol free is an important step in achieving a healthy lifestyle. Many people, especially teens, make the commitment to stay alcohol free. This commitment helps you:

- ▶ **Maintain a healthy body.** Avoiding alcohol use protects body organs from damage and decreases the chance of injury.
- ▶ **Make responsible decisions.** Having a clear head helps you make decisions to protect your health and the health of others.
- ▶ **Avoid risky behavior.** Teens who avoid alcohol reduce their risk of drinking and driving, participating in sexual activity, and being a victim or perpetrator of a violent crime.
- ▶ **Avoid illegal activities.** Purchasing and possessing alcohol are against the law for anyone under the age of 21. You can avoid arrest and legal problems by being alcohol free.

 **Call home for a ride if you find yourself in a situation where alcohol is present. What other refusal strategies can you demonstrate to avoid unsafe situations?**



Strategies for Preventing Use of Alcohol

Even if the pressure to use alcohol becomes intense, saying no is much easier when you're prepared. If you find yourself in a situation in which alcohol is present, be assertive: refuse to drink, leave the situation quickly, and call for a ride home. Your best defense is to avoid situations in which alcohol is present. Practice refusal skills to build confidence. A prepared individual knows methods for effectively expressing feelings and opinions on health issues.

LESSON 1 REVIEW

Reviewing Facts and Vocabulary

1. Define the terms *alcohol*, *depressant*, and *intoxication*.
2. Identify and explain ways families can have a positive influence on teens' decisions about alcohol use.
3. Describe and demonstrate two effective refusal strategies for avoiding the use of alcohol.

Thinking Critically

4. **Analyzing.** Explain the depressant effects of alcohol. How might alcohol affect your ability to make healthful decisions?
5. **Synthesizing.** Explain the role alcohol plays in unsafe situations such as HIV, STDs, unplanned pregnancies, and motor vehicle accidents.

Applying Health Skills

Advocacy. Prepare a pamphlet or an article for your school newspaper that advocates an alcohol-free lifestyle. Describe the risks and consequences of alcohol use. Be sure to explain the benefits of being alcohol free and to include strategies you have developed for preventing use of alcohol.

After You Read

Problems and Solutions. Make a T chart. On the left side, list facts about alcohol and its role in unsafe situations. On the right side, list ways to be alcohol free.

Harmful Effects of Alcohol Use

Guide to Reading

Building Vocabulary

As you read this lesson, write each new highlighted term and its definition in your notebook.

- ▶ metabolism (p. 569)
- ▶ blood alcohol concentration (p. 570)
- ▶ binge drinking (p. 571)
- ▶ alcohol poisoning (p. 571)

Focusing on the Main Ideas

In this lesson, you will learn how to:

- ▶ **Describe** the short-term effects of alcohol use.
- ▶ **Discuss** the consequences of drinking and driving.
- ▶ **Explain** the dangers of drug/alcohol use.
- ▶ **Develop** refusal strategies concerning alcohol use.

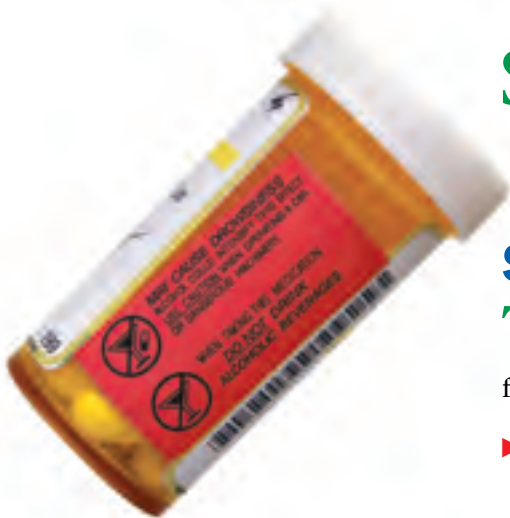
Reading Strategy

Predict

- ▶ Scan the headings, subheadings, and photo captions. Write a short paragraph predicting what you think will be taught in this lesson.

Quick Write

Make a list of all the negative effects of alcohol use that you can think of.



Many over-the-counter and prescription drugs carry warning labels about alcohol interactions. *Analyze how these warnings help protect users from health risks.*

Statistics confirm that drinking alcohol is a high-risk behavior. Nevertheless, some teens feel pressured to drink alcohol. Finding out about the physical effects alcohol has on the body can help you strengthen your commitment to staying alcohol free.

Short-Term Effects of Drinking

The short-term effects of alcohol are different for each individual. Many of these effects are described in **Figure 22.1**. Some factors that influence the onset of these effects include:

- ▶ **Body size and gender.** A small person feels the effect of the same amount of alcohol faster than a large person does. In general, alcohol moves into the bloodstream faster in females.
- ▶ **Food.** Food in the stomach slows down the passage of alcohol into the bloodstream.
- ▶ **Amount and rate of intake.** As the amount of alcohol consumed increases, the level of alcohol in the bloodstream also rises. When a person drinks alcohol faster than the liver can break it down, intoxication results. When blood alcohol levels become too high, alcohol poisoning can occur.

Alcohol and Drug Interactions

Interactions between medications and alcohol can lead to illness, injury, and even death. In fact, alcohol-drug interactions are a factor in about one-fourth of all emergency room admissions. To understand why these interactions occur, you must understand how the body works. When a drug enters the body, it travels through the bloodstream to its target organ or tissue. Over time, the body metabolizes the drug. **Metabolism** is the process by which the body breaks down substances. Alcohol travels through the bloodstream to the brain. At the same time, the liver metabolizes the alcohol in the bloodstream and makes it less active. Then the kidneys filter the neutralized particles and other waste products from the blood and produce urine, which is excreted.

The presence of both alcohol and medication or another drug within a person's body can be very dangerous. Most over-the-counter medicines and prescription drugs warn users against drinking alcohol while on that drug. It is important that you recognize that use of alcohol and other drugs contributes to accidents, crime, and suicide. This is because alcohol combined with medicines or other drugs can result in a *multiplier effect*, in which the medication has a greater or different effect than if it were taken alone. Both prescription drugs and over-the-counter medicines, such as aspirin, can alter the ways in which alcohol affects the body. Labels on medicines that might cause reactions warn against combining them with alcoholic beverages.

Did You Know?

Females become intoxicated faster and stay that way longer than do males of comparable size. Why?

- Females have a higher percentage of body fat and less water in their bodies than males. As a result, alcohol in females is less diluted and has a stronger and more lasting effect.
- The enzyme that controls alcohol processing is 70 percent more effective in males than in females.

FIGURE 22.1

SHORT-TERM EFFECTS OF ALCOHOL

Physical and mental impairment begin with the first drink of alcohol and increase as more alcohol is consumed.

Nervous System	Cardiovascular System	Digestive System	Respiratory System
<ul style="list-style-type: none"> • Brain. The brain becomes less able to control the body. Movement, speech, and vision may be affected. • Memory. Thought processes are disorganized, and memory and concentration are dulled. • Judgment. Judgment is altered and coordination is impaired. 	<ul style="list-style-type: none"> • Heart. With a low intake, alcohol causes an increase in heart rate and blood pressure. At higher intake levels, heart rate and blood pressure decrease and heart rhythm becomes irregular. Risk of cardiac arrest increases. • Blood Vessels. Alcohol causes the blood vessels to expand. The increased surface area of the blood vessels allows body heat to escape and the body's temperature to drop. 	<ul style="list-style-type: none"> • Stomach. Some alcohol passes quickly from the stomach into the bloodstream. Stomach acid production increases and often results in nausea and vomiting. • Liver. Toxic chemicals are released as the liver metabolizes alcohol. These chemicals cause inflammation and scarring. • Kidneys. Alcohol causes the kidneys to increase urine output, which can lead to dehydration. 	<ul style="list-style-type: none"> • Lungs. Carbon dioxide formed by the liver is released from the body through the lungs. • Breathing. Alcohol depresses nerves that control involuntary functions such as breathing. If an excessive amount of alcohol is consumed, breathing may slow, become irregular, or stop.

TOPIC Reducing Accidents

Go to health.glencoe.com and click on Web Links to learn how alcohol or drug use impairs driving.

ACTIVITY Using this link, decide which fact you believe is most convincing about the dangers of impaired driving. Write a short paragraph explaining your choice.

These are some typical alcohol-drug interactions:

- ▶ Alcohol may slow down a drug's absorption by the body. This increases the length of time that the alcohol or drug is in the body and increases the risk of harmful side effects from the drug.
- ▶ Frequent drinking may increase the number of metabolizing enzymes in the body. This can cause medications to be broken down faster than normal, decreasing their effectiveness.
- ▶ Metabolizing enzymes can change some medications into chemicals that can damage the liver or other organs. For example, when taken with alcohol, acetaminophen, a common painkiller and fever reducer, can cause serious liver damage even when it is used in small amounts.
- ▶ Alcohol can increase the effects of some drugs. For example, antihistamines, which are taken for colds or allergies, react with alcohol and cause excessive dizziness and sleepiness. This effect is especially dangerous if you are operating machinery or driving.

Driving Under the Influence

Drinking alcohol impairs vision, reaction time, and coordination. When drinking is mixed with driving, the results can be disastrous and even deadly. In fact, *driving while intoxicated* (DWI), also known as *driving under the influence* (DUI), is the leading cause of death among teens. A person is said to be intoxicated when his or her blood alcohol concentration exceeds the state's legal limit.

Blood alcohol concentration (BAC) is the amount of alcohol in a person's blood, expressed as a percentage. In most states driving while

intoxicated is defined as having a 0.1 percent BAC, although in some states the figure is 0.08. However, signs of intoxication can begin to appear at BACs as low as 0.02. **Figure 22.2** on the next page illustrates the alcohol content of some common alcoholic beverages. Remember that for anyone under 21, there is no acceptable BAC percentage. Medical researchers have found that drinking of any sort

- ▶ slows reflexes.
- ▶ reduces a person's ability to judge distances and speeds.
- ▶ increases risk-taking behaviors.
- ▶ reduces a person's concentration while increasing forgetfulness.

Alcohol-related vehicle fatalities are a leading cause of death for teens.

What other consequences are associated with risk-taking such as drinking and driving?



Consequences of DWI

When a person is stopped for drinking and driving, a police officer will administer a field sobriety test before the person is given a breathalyzer test to measure BAC. The consequences for a teen caught driving while intoxicated or driving under the influence may include

- ▶ harm to the driver and others.
- ▶ severely restricted driving privileges and/or immediate confiscation of a driver's license.
- ▶ alcohol-related injuries, property damage, and death.
- ▶ living with regret and remorse from these consequences.
- ▶ loss of parental trust and respect.
- ▶ arrest, jail time, court appearance, and a heavy fine or bail.
- ▶ a police record and possible lawsuits.
- ▶ higher insurance rates.

Like drinking and driving, riding in a vehicle with a driver who has been drinking is also a serious matter. Every day at least a dozen teens are killed in alcohol-related crashes. Never ride in a vehicle with a driver who has been drinking. If you are faced with this situation, demonstrate refusal strategies: find a ride with someone who has not been drinking, or call home to have someone come to get you. Using refusal skills shows that you understand the role of individual responsibility regarding personal risk behavior.

Binge Drinking

Recent studies show that **binge drinking**, *drinking five or more alcoholic drinks at one sitting*, is a serious problem among young people. Rapid binge drinking is especially dangerous because it is possible to consume a fatal dose of alcohol.

Alcohol Poisoning


It is very dangerous, and can be deadly, to drink a large amount of alcohol. **Alcohol poisoning** is *a severe and potentially fatal physical reaction to an alcohol overdose*. Alcohol acts as a depressant and shuts down involuntary actions such as breathing and the gag reflex that prevents choking. It's common for a person who has consumed too much alcohol to vomit because alcohol is a stomach irritant. If the involuntary actions are shut down, a person can choke and be asphyxiated by his or her own vomit.

FIGURE 22.2

COMPARING BEER, WINE, AND SPIRITS

Each of these beverages contains the same amount of pure alcohol—about 0.5 ounces.

Drink	Alcohol by Volume	Alcohol Content
Beer 12 oz.	4%	0.5 oz.
Wine 5 oz.	10%	0.5 oz.
Vodka or Whiskey 1.25 oz.	40%	0.5 oz.



Hands-On Health **ACTIVITY**

Saying No to a Driver Who Has Been Drinking

You've heard the statement "Don't drink and drive." It's also dangerous to ride in a car if you suspect the driver has been drinking. Here are some strategies you can demonstrate to refuse that ride.

- **Make a firm commitment to yourself not to ride with someone who has been drinking. If you know that alcohol will be available at a party, don't go.**
Direct Statements: "I am not riding with you. You have been drinking."
Excuses: "I forgot to tell you—my dad is picking me up."
Insults: "You are really crazy to drive after drinking."
Humor: "I'm not getting in that car with you; I value my life."
Alternate suggestion: "Give me the keys; I'll drive."
- **When you suspect a driver has been drinking, be prepared to make the right choice for your health and safety. Be strong. Find another way home.**

What You'll Need

- 1 index card per student
- hole punch
- colored pencils or markers
- scissors

What You'll Do

1. Working with a small group, brainstorm a list of refusal strategies a teen can use to avoid riding in a car with a driver who has been drinking.
2. Write and present a skit that has dialogue showing one or more successful refusal skills. Be sure that every group member has a part.
3. Act out your skit for the class. Analyze each skit for the dialogue you think is most effective. Remember

and practice these statements so that you'll be prepared if a drinking driver offers you a ride.

Apply and Conclude

On your own, cut a 3" × 5" index card in half so that you have a 3" × 2½" card. Write "Don't Ride with a Drunk Driver" on the card. Then write at least two statements you can use to refuse such a ride. Use markers to make the card eye-catching. After your teacher laminates the card, punch a hole in it and place it on your key ring.



Effects of Alcohol Poisoning


Passing out is a common effect of drinking too much alcohol. Alcohol doesn't stop entering a person's bloodstream after he or she passes out, however. Instead, alcohol in the stomach and intestines continues to enter the bloodstream, and blood alcohol concentration continues to rise. For this reason, it's dangerous to assume that a person who has consumed a lot of alcohol will be fine if left to "sleep it off."

Symptoms that indicate alcohol poisoning include

- ▶ mental confusion, stupor, coma, inability to be roused, vomiting, and seizures.
- ▶ slow respiration—10 seconds between breaths or fewer than 8 breaths a minute.
- ▶ irregular heartbeat.
- ▶ hypothermia, or low body temperature—pale or bluish skin color.
- ▶ severe dehydration from vomiting.

A person who exhibits any of these signs or has passed out may die if left untreated. If you suspect that a person has alcohol poisoning, call 911 immediately.



 **The consequences of binge drinking can have serious effects on a person's health. *What should you do if you suspect someone has alcohol poisoning?***

LESSON

2

REVIEW

Reviewing Facts and Vocabulary

1. Define *blood alcohol concentration* and *metabolism*.
2. Examine the short-term effects of alcohol use. List three ways alcohol impairs the functioning of the nervous system.
3. What are the signs of alcohol poisoning?

Thinking Critically

4. **Analyzing.** Explain why it's dangerous to mix alcohol and medications or other drugs.
5. **Synthesizing.** Associate risk-taking with consequences such as drinking and driving. Describe the legal and financial consequences of operating a motor vehicle while under the influence of alcohol.

Applying Health Skills

Advocacy. Prepare a public service announcement to get the word out about the health risks of binge drinking. Include facts about alcohol's effects on the body, as well as the risks involved with rapid binge drinking and how it can cause alcohol poisoning. Demonstrate effective refusal strategies to avoid these risks.

After You Read

Analyze a Graph. After reviewing Figure 22.2, on page 571, determine how many of each drink would need to be consumed to meet your state's BAC.



Alcohol, the Individual, and Society

Guide to Reading

Building Vocabulary

As you read this lesson, write each new highlighted term and its definition in your notebook.

- ▶ fetal alcohol syndrome (FAS) (p. 576)
- ▶ alcoholism (p. 576)
- ▶ alcoholic (p. 576)
- ▶ recovery (p. 578)
- ▶ detoxification (p. 578)
- ▶ sobriety (p. 578)



- ▲** Compare the healthy liver (top) with the liver that has been damaged by alcohol use. *Explain the relationship between a healthy liver and an alcohol-free lifestyle.*

Focusing on the Main Ideas

In this lesson, you will learn how to:

- ▶ **Identify** the goals of *Healthy People 2010* to reduce risk behaviors associated with alcohol use.
- ▶ **Compare** the effects of alcohol use on body systems and the risk of disease caused by alcohol use.
- ▶ **Describe** the harmful effects of alcohol on a fetus.
- ▶ **List** community health-related services for prevention and treatment of alcoholism and alcohol use.

Reading Strategy

Organize Information

- ▶ **Fold your paper into three sections.** Label the sections **Physical, Mental/Emotional, and Social.** As you read, list ways that the use of alcohol affects each part of the health triangle in the appropriate sections.

Quick Write

One devastating effect of alcohol use is alcoholism. Write a short paragraph describing the effects of alcoholism on society.

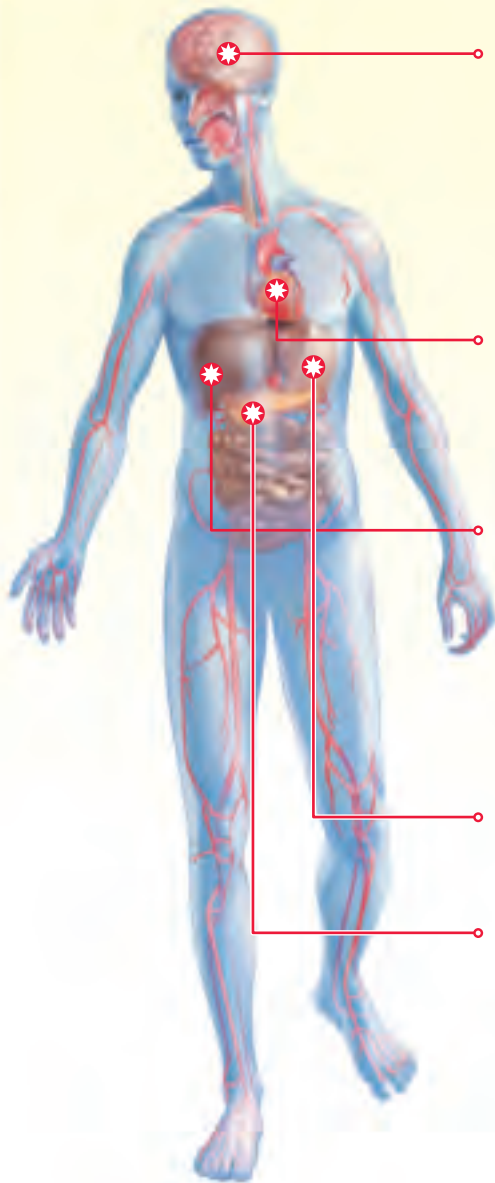
The costs of alcohol use are far-reaching and relate to individual, family, and community health. One goal of *Healthy People 2010* is to reduce a number of risk behaviors associated with alcohol. This includes reducing average annual alcohol consumption, binge drinking, and the total number of alcohol-related deaths and deaths due to alcohol-related vehicle crashes. Health-literate teens are able to determine how the use of alcohol and other drugs contributes to accidents, crime, and suicide.

Long-Term Effects of Alcohol on the Body

Alcohol use has long-term effects on the user and on others as well. Excessive alcohol use over a prolonged period of time can damage most body systems. These effects are more severe in the body of a young person. In teens alcohol use can interfere with growth and development. **Figure 22.3** shows some of the long-term effects of alcohol abuse.

LONG-TERM EFFECTS OF ALCOHOL ABUSE

Alcohol affects many of the major organs in the body, and long-term drinking can cause death. The worst damage occurs after years of abuse, but some damage occurs with only moderate drinking.



Changes to the Brain

- **Addiction**—inability to stop drinking.
- **Loss of brain functions**—loss of verbal skills, visual and spatial skills, and memory.
- **Brain damage**—long-term excessive use of alcohol can lead to major brain damage and even to a reduction of brain size. Moderate drinking can destroy brain cells; however, the brain can regain some of its lost abilities over time if a person stops drinking.

Cardiovascular Changes

- **Heart**—damage to heart muscle.
- **Enlarged heart**—from increased workload caused by alcohol.
- **High blood pressure**—damages the heart and can cause heart attack and stroke.

Liver Problems

- **Fatty liver**—fats build up in the liver and cannot be broken down; excess fat blocks the flow of blood to liver cells, leading to cell death.
- **Alcoholic hepatitis**—inflammation or infection of the liver.
- **Cirrhosis**—liver tissue is replaced with useless scar tissue; the disease can lead to liver failure and death unless a liver transplant is performed.

Digestive System Problems

- **Irritation**—digestive lining is damaged; can lead to stomach ulcers and cancer of the stomach and esophagus.

Pancreas Problems

- **Lining of the pancreas**—swells to block the passage from the pancreas to the small intestine. Chemicals the small intestine needs for digestion can't pass through the blocked area. The chemicals begin to destroy the pancreas itself, causing pain and vomiting. A severe case can lead to death.

Alcohol During Pregnancy

When a pregnant female drinks, so, in effect, does her fetus. Alcohol passes from the mother's body into the bloodstream of the fetus. Unlike the adult liver, the fetus's liver is not developed enough to process the alcohol. As a result, a female who drinks during pregnancy risks permanent damage to the fetus. Drinking

Reading Check

Describe How does alcohol abuse affect many of the body's major organs (Figure 22.3)?

during the first few weeks of pregnancy—when many women do not yet realize they are pregnant—can be especially harmful to a baby’s central nervous system. Infants born to mothers who drink during pregnancy may be at risk of **fetal alcohol syndrome (FAS)**, a group of alcohol-related birth defects that include physical and mental problems.

Effects of Fetal Alcohol Syndrome (FAS)

The effects of fetal alcohol syndrome are both severe and lasting. An FAS baby may be born with a small head and deformities of the face, hands, or feet. Heart, liver, and kidney defects, as well as vision and hearing problems, are common. FAS babies experience slow growth and coordination and have difficulties with learning, attention, memory, and problem solving.

FAS is the leading known cause of mental retardation in the United States. The good news is that it’s totally preventable—provided that expectant mothers understand two things: there is no safe amount of alcohol to drink and no safe time in which to drink it. Even small amounts of alcohol can harm a fetus.



Alcoholism

One of the most devastating effects of alcohol use is **alcoholism**, a disease in which a person has a physical or psychological dependence on drinks that contain alcohol. Alcoholism is characterized by an impaired ability to study, work, and socialize normally.

GOVERNMENT WARNING:

(1) ACCORDING TO THE SURGEON GENERAL, WOMEN SHOULD NOT DRINK ALCOHOLIC BEVERAGES DURING PREGNANCY BECAUSE OF THE RISK OF BIRTH DEFECTS.


(2) CONSUMPTION OF ALCOHOLIC BEVERAGES IMPAIRS YOUR ABILITY TO DRIVE A CAR OR OPERATE MACHINERY AND MAY CAUSE HEALTH PROBLEMS.

Alcoholics

An **alcoholic** is an addict who is dependent on alcohol. Some alcoholics may display harmful behaviors such as drunken driving and violent or aggressive actions. Others may become quiet and withdrawn. Alcoholism is not limited to any age, race, ethnic, or socioeconomic group. Alcoholics may be middle-aged business

people or high-school athletes. Regardless of background, alcoholics can develop serious health problems, such as cirrhosis of the liver and brain damage. An alcoholic might display these symptoms:

- ▶ **Craving.** An alcoholic has a compulsion, or strong need, to drink; he or she cannot manage tension and stress without drinking.
- ▶ **Loss of control.** An alcoholic cannot limit his or her drinking and is preoccupied with alcohol.

 **Avoiding tobacco, alcohol, and other drugs is an important decision a female can take toward a healthy pregnancy.**
Analyze the harmful effects on the fetus of alcohol.

- ▶ **Physical dependence.** When not drinking, an alcoholic may experience withdrawal symptoms, such as nausea, sweating, shakiness, and anxiety.
- ▶ **Tolerance.** An alcoholic experiences a need to drink increasingly greater amounts of alcohol in order to feel its effects.
- ▶ **Health, family, and legal problems.** An alcoholic often suffers repeated injuries, receives multiple drunk driving citations, and has frequent arguments and generally poor relationships with family members.

Factors Affecting Alcoholics


Growing scientific evidence suggests a genetic link to alcoholism. In fact, the American Academy of Child and Adolescent Psychiatry reports that children of alcoholics are four times more likely than other children to become alcoholics. However, this does not necessarily mean that a person with such a genetic predisposition will become an alcoholic. Other environmental factors, such as family, friends, culture, peer pressure, availability of alcohol, and stress, also put a person at risk for alcoholism. There is, however, one guarantee: You can protect yourself against this disease by making the healthy choice to stay alcohol free.

Stages of Alcoholism

According to the American Medical Association, alcoholism develops in three stages. All alcoholics do not experience each stage equally.

- ▶ **Stage 1—Abuse.** Typically, alcoholism begins with social drinking in an attempt to relax. Over time, a physical and psychological dependence on alcohol to manage stress develops. At this point a person begins to drink and become intoxicated regularly, which can result in blackouts and memory loss. Often, a person begins to lie or make excuses about his or her drinking. The person needs to consume more alcohol to feel the desired effect. He or she may be a problem drinker.
- ▶ **Stage 2—Dependence.** The person reaches a point where he or she cannot stop drinking and is physically dependent on the drug. Alcohol becomes the person's central focus. The drinker tries to hide the problem, but performance on the job, at school, and at home soon suffers. The drinker makes excuses and blames others for problems.



 **Family members of alcoholics also experience the negative effects of alcoholism. *List ways a person can avoid the risks of alcoholism.***

- ▶ **Stage 3—Addiction.** In the final stage of alcoholism, drinking is the *most* important thing in a person’s life. The person is addicted to the drug and his or her life is out of control, although frequently he or she does not realize or acknowledge this fact. Because liver damage is common at this stage, less alcohol may be required to produce intoxication. If the alcoholic stopped drinking, he or she would experience severe withdrawal symptoms.



Infer How does alcoholism affect the family and friends of an alcoholic?

STEPS TO RECOVERY

Step 1: Admission

The person admits to having a drinking problem and asks for help.

Step 2: Detoxification

The person goes through **detoxification**, a process in which the body adjusts to functioning without alcohol.

Step 3: Counseling

The person receives counseling to help him or her learn to live without alcohol.

Step 4: Recovery

The person takes responsibility for his or her own life.

Effects on Family and Society

There are an estimated 14 million alcoholics in the United States. Health-literate teens understand how the social environment influences the health of the community. Alcohol use is a major factor in the four leading causes of accidental death—car accidents, falls, drownings, and house fires. Alcohol also plays a major role in violent crimes, such as homicide, forcible rape, and robbery. For example:

- ▶ About 40 percent of violent crimes, totaling about 3 million annually, are alcohol-related.
- ▶ Two-thirds of victims who encounter **domestic violence** report that alcohol was a factor in the crime.
- ▶ Nearly half of all homicide victims have alcohol in their bloodstreams.

Often, alcoholism has indirect, as well as direct, effects on people associated with alcoholics. These people may be involved in a process known as *codependency*. Codependents learn to ignore their own needs and focus their energy and emotions on the needs of the alcoholic. In the process codependents lose their trust in others, their self-esteem, and, at times, their own health.




Treatment for Alcohol Abuse

Although alcoholism cannot be cured, it *can* be treated. A health-literate individual knows how to access school and community health services for self and others. *The process of learning to live an alcohol-free life* is called **recovery**. As many as two-thirds of all alcoholics who try to recover do so with proper treatment. The goal of treatment programs is to stop or control the intake of alcohol. Counseling and medication can help an alcohol user set goals to deal with problems of alcohol abuse. **Sobriety**, *living without alcohol*, is a lifelong commitment. Many resources are available to help people who have a drinking problem. Help is also available for the families and friends of problem drinkers. Some of these programs are described in **Figure 22.4**.

FIGURE 22.4

WHERE TO GET HELP FOR ALCOHOL ABUSE

There are many places to get information about treatment for alcohol dependency. The goal of these programs is to provide support for alcoholics, family members, and friends affected by alcoholism.

Al-Anon/ Alateen	Alcoholics Anonymous	National Association for Children of Alcoholics	National Clearinghouse for Alcohol and Drug Information	National Drug and Treatment Referral Routing Service
 <p>helps families and friends of alcoholics deal with and recover from the effects of living with an alcoholic</p>	<p>provides help for alcohol users of all ages</p>	<p>provides help for children of alcoholics</p> 	<p>provides information about alcohol and other drugs</p>	<p>provides treatment referral and information about treatment facilities</p> 

LESSON

3

REVIEW

Reviewing Facts and Vocabulary

1. Identify three serious effects of alcohol abuse.
2. Define *sobriety*. Explain why sobriety is a lifelong commitment.
3. What steps must an alcoholic take during the recovery process?

Thinking Critically

4. **Analyzing.** Explain how damage can occur in the body of the developing fetus when a pregnant woman drinks alcohol.
5. **Synthesizing.** Alcoholism can have devastating effects on people associated with an alcoholic. Explain ways that these individuals can be affected, and tell how and where those living with an alcoholic can get help.

Applying Health Skills

Accessing Information. Consult your school counselor or use the phone book to identify available health-related services in the community for families with alcohol-related problems. Research the availability of family counseling. Explain why these sources are valid. Share your information in a flyer or pamphlet.

After You Read

Explain. Write a summary describing the three stages of alcoholism. After completing the summary, write a brief paragraph describing what sources of help are available in your community.





Keeping the Lid on the Bottle

Teens can make a difference when it comes to preventing underage drinking.

Kasey Folsie, 16, is a member of the Louisiana Alliance to Prevent Underage Drinking. He works to enact laws that make it harder for those who are underage to buy alcohol, such as registration tags for beer kegs. These tags would allow police to trace kegs back to whomever purchased it and punish that person if the beer was being served to underage drinkers. Kasey is also working to offer teens a place to talk about alcohol issues. “Kids don’t really have anywhere to turn at my school,” says Kasey. “It would definitely help if we had someone to talk one on one with students to deal with alcohol and drug questions.”

Things weren’t all that different at Andrew Araiza’s Mary Carroll High School in Corpus Christi, Texas. Andrew says that many teens “don’t consider all the problems associated with alcohol, like poisoning, accidents, and suicide.”

Andrew is executive vice president of Texans Standing Tall, a coalition of youths and adults against underage drinking. He has successfully lobbied to remove liquor ads from the state’s hunting license handbook and helped lower the legal blood alcohol limit from .1 to .08. Andrew

says, “Having peer-group talks, where a teen with a problem describes what happened to him or her—that would get the message across.”

Thanks to Ann Miller, 18, that message is coming through loud and clear at Oregon’s Canby High. She educates teens about drinking, counsels those with problems, and encourages them to attend a local youth-oriented Alcoholics Anonymous meeting. The result is a greater awareness in the school of the drawbacks of alcohol use and a population of teens who aren’t afraid to ask for help. “People with a drinking problem have got to have good treatment available and good support from the adults around them,” says Miller. ■

TIME
to **THINK...**

About Blood Alcohol Level

On the Internet or your school’s media center, look up government statistics about alcohol-related traffic accidents. Use those statistics to come up with three powerful reasons why people should not drink and drive.

Health Skills Application



1. Practicing Healthful Behaviors. What physical, mental, social, and legal consequences are faced by students who are caught using or possessing alcohol? (LESSON 1)



2. Communication Skills. Suppose a friend who has been drinking is going to drive himself or herself and others home. How would you respond to this situation? (LESSON 2)



3. Advocacy. Find out about groups at your school that advocate for an alcohol-free lifestyle. Get involved with a group, using what you have learned about the consequences of drinking to get local stores to advocate for less advertising of alcohol products. (LESSON 3)



Substance Abuse Counselor

Do you like helping friends with their problems? Would you enjoy counseling people who need to find help for alcohol abuse problems in their families? As a substance abuse counselor, you would assess and treat people with substance problems and help those who live with alcoholics or substance abusers.



More than half of all counselors in the United States have a master's degree. Most states require some form of credentials, certification, license, or registry before someone can become a counselor. Find out more about this and other health careers by clicking on Career Corner at health.glencoe.com.



Parent Involvement

Advocacy. With your parents or guardians, learn about SADD—Students Against Destructive Decisions. Learn when, where, and why it was founded, what its mission is, and how you and your family can get involved. Draw up a contract for all family members to sign that includes a commitment never to drink and drive and never to ride with any driver who has been drinking—even a family member.



School and Community

Support Programs. Locate an alcohol treatment program in your community. Contact the agency and find out how the program works, what is required of participants, and how people are supported during the recovery process. Report to your class what you have learned.

After You Read

Use the notes you have taken in your Foldable to review what you have learned. Look at the labels, recall what you know about that main idea, then check your responses by looking under the tabs.



► **EXPLORING HEALTH TERMS** Answer the following questions on a sheet of paper.

Lesson 1 Fill in the blanks with the correct term.

alcohol abuse
depressant
ethanol

fermentation
intoxication

Drinks that contain (**_1_**) act as a (**_2_**) on the central nervous system. Drinking alcohol can lead to physical and mental impairment that is called (**_3_**). (**_4_**) puts family members at risk for neglect, physical abuse, and economic hardship.

Lesson 2 Match each definition with the correct term.

blood alcohol concentration
binge drinking

metabolism
alcohol poisoning

- The process by which the body breaks down substances.
- Drinking five or more alcoholic drinks at one sitting.
- The amount of alcohol in a person's blood expressed as a percentage.
- A severe and potentially fatal physical reaction to an alcohol overdose.

Lesson 3 Fill in the blanks with the correct term.

alcoholism
detoxification
sobriety

alcoholic
fetal alcohol syndrome
recovery

- _____ is a condition in which a fetus has been adversely affected mentally and physically by the mother's alcohol use during pregnancy.
- A(n) _____ has an addiction to alcohol.
- _____ is a process in which the body adjusts to functioning without alcohol.

► **RECALLING THE FACTS** Use complete sentences to answer the following questions.

- List three factors that influence alcohol use.
- What are some of the risks of alcohol use?
- Describe the effects that alcohol has on the body.
- What impact can alcohol use have on a teen's education and career goals?
- Describe one typical alcohol-drug interaction.
- What are some factors that affect an individual's short-term reaction to alcohol?
- What are some physical, mental, social, and legal consequences of driving while intoxicated or driving under the influence?
- Explain how alcohol poisoning can cause a person's blood alcohol concentration to continue to rise even after the person stops consuming alcohol.
- What are some specific goals of *Healthy People 2010* for reducing ways in which alcohol affects the family and society?
- What is a safe amount of alcohol that a mother can drink during pregnancy?
- Describe the symptoms an alcoholic might display.
- Describe two programs that offer help to alcoholics and their families. Explain the services they provide.



▶ WRITING CRITICALLY

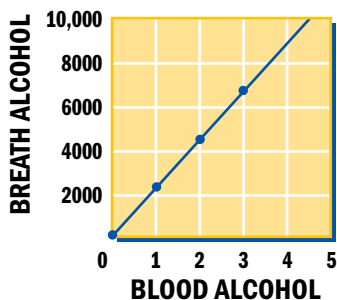
- 1. Narrative.** Write a one-page story describing how a teen uses refusal skills when asked to go to a party where no adults will be present and alcohol will be served. Show how an alcohol-free activity is both healthy and fun.
- 2. Descriptive.** Write a scenario describing two teens. One teen has developed a drinking problem. The other teen is a friend who wants to help. Should the friend talk to the problem drinker or consult with a trusted adult? What steps would you take to help the friend?

Standardized Test Practice



Read the paragraph below and then answer the questions.

Law enforcement officers use special machines that people breathe into to determine the blood alcohol level of the person being tested. How can a person's breath show how much alcohol is in the person's blood? Alcohol is absorbed from many parts of the body directly into the bloodstream. As the blood passes through the lungs, a certain amount of alcohol moves from the blood to the lungs and is exhaled. The amount of alcohol exhaled depends on the concentration of alcohol in the blood. When body temperature and blood cell composition are normal, the relationship between breath alcohol and blood alcohol is shown on the machine's graph.



- Kim breathes into the machine and exhales 3150 mL of air. According to the graph, how many milliliters of blood are equivalent to this volume of air?

A 1 mL
 B 1.5 mL
 C 3 mL
 D 2100 mL

- What type of function is shown on the graph?

F exponential
 G higher degree
 H linear
 I quadratic

- An increase in body temperature of 1.8°F results in an increase of 7 percent in the machine's test results. If a graph similar to the one shown were drawn for a person with a temperature of 97°F , would the slope be greater or less than the slope of this graph? Explain.