

# Medicines and Drugs

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## Personal Health Inventory

### What's Your Health Status?

Respond by writing *yes*, *no*, or *sometimes* for each item. Write *yes* only for items that you practice regularly.

- ▶ 1. I take medicines as prescribed by my doctor, am careful to follow directions, and never abuse or combine medicines.
- ▶ 2. I use over-the-counter drugs carefully and only as they are intended.
- ▶ 3. I avoid all illegal drug use.
- ▶ 4. I choose friends who avoid using drugs.
- ▶ 5. I would feel comfortable saying no to peers and friends if they offered me drugs.
- ▶ 6. I stay away from areas and events where I know illegal drugs are likely to be used or sold.
- ▶ 7. I never cover for a friend or peer who abuses drugs.
- ▶ 8. I don't attend parties if I know drugs will be used.
- ▶ 9. I know of resources to get help for drug problems and would feel comfortable passing the information along to someone who needed it.
- ▶ 10. I understand the dangers of drugs and am committed to avoiding high-risk situations.

### Quick Write

**Using Visuals.** Illegal drugs can seriously damage a person's physical, mental/emotional, and social health. In what specific ways can drugs impact an athlete's life?



For instant feedback on your health status, go to Chapter 23 Health Inventory at [health.glencoe.com](http://health.glencoe.com).



# The Role of Medicines

## VOCABULARY

medicines  
drugs  
vaccine  
analgesics  
side effects  
additive interaction  
synergistic effect  
antagonistic interaction

## YOU'LL LEARN TO

- Analyze ways that medicines promote health and prevent disease.
- Describe the difference between prescription and over-the-counter medicines.
- Analyze how laws, policies, and practices influence safe use of medicines.



What precautions do you take when you are about to use a medicine?

On a separate sheet of paper, write three types of medicine with which you are familiar, tell why each is taken, and explain what you know about proper use of that medicine.



**▲** Medicines are taken to fight illness, promote health, prevent disease, or reduce pain. *When was the last time you needed to use some type of medication?*

Medicines are taken for many different reasons. A person may sustain a painful injury while playing a sport or perhaps develop a chest cold accompanied by a hacking cough. To help overcome these ailments and regain their health, people often take medicines.

## Classification of Medicines

There are countless medicines that treat a wide range of health problems. **Medicines** are *drugs that are used to treat or prevent disease or other conditions*. **Drugs** are *substances other than food that change the structure or function of the body or mind*. All medicines are drugs, but not all drugs are medicines. Medicines can be sorted into four broad categories: medicines that

- ▶ help prevent disease.
- ▶ fight pathogens, or infectious agents that cause disease.
- ▶ relieve pain.
- ▶ help maintain or restore health and regulate the body's systems.

## Medicines That Prevent Disease

One main purpose of medicines is to prevent diseases before they occur. There are two main types of preventive medicines:

- ▶ **Vaccines.** A **vaccine** is a preparation introduced into the body to stimulate an immune response. These medicines contain weakened or dead pathogens that stimulate your body to produce specific **antibodies** against those pathogens. Once the antibodies are produced, they give your body long-lasting protection against these specific pathogens in the future.
- ▶ **Antitoxins.** These extracts of blood fluids contain antibodies and act more quickly than vaccines. They are produced by inoculating animals, such as sheep, horses, or rabbits, with specific toxins that stimulate the animal's immune system to produce antibodies. In humans, the injection of antitoxins neutralizes the effect of toxins, such as those that cause tetanus and diphtheria.

## Medicines That Fight Pathogens

Antibiotics are a class of chemical agents that destroy disease-causing microorganisms while leaving the patient unharmed. Antibiotics work either by killing harmful bacteria in the body or by preventing bacteria from reproducing. The chemical composition of each antibiotic is effective against a particular range of bacteria.

In recent years, strains of bacteria have emerged that are resistant to penicillin and other antibiotics. This drug resistance occurs when a bacterial strain undergoes a change in genetic structure as a result of overexposure to an antibiotic, making the bacterium “immune” to the medicine. For example, a bacteria called *pneumococcus* that causes ear and sinus infections and pneumonia is now resistant to penicillin. The overuse of antibiotics and failure to finish a prescription medication are two reasons why bacteria develop resistance. A new generation of broad-spectrum antibiotics has been developed that kill a wide variety of bacteria, including some penicillin-resistant strains.

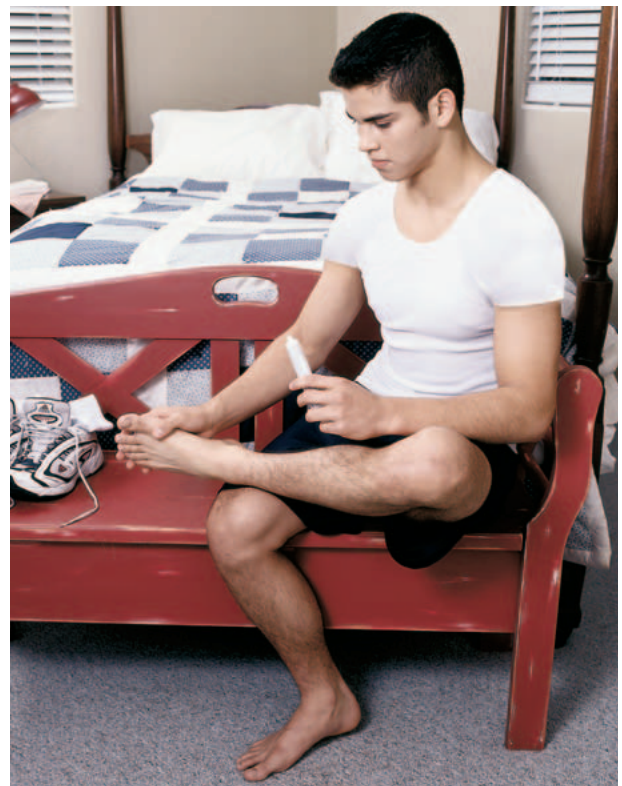
### ANTIVIRALS AND ANTIFUNGALS

Antibiotics have no effect on viruses. However, a new group of drugs called antivirals has been developed to treat some viral illnesses. Antiviral medicines often only suppress the virus; they don't kill it. Antifungals can cure or suppress infections such as athlete's foot and ringworm.

### hotlink

**antibodies** For more information on antibodies and vaccines, see Chapter 24, page 633.

🏆 **Athlete's foot can be controlled with antifungal medicines. Why is it important to use the correct medicine for a particular treatment?**






## Medicines That Relieve Pain

Probably the most common medicines are **analgesics**, or *pain relievers*. Analgesics range from comparatively mild medicines such as aspirin to strong narcotics, such as the opium-based morphine and codeine. Aspirin contains acetylsalicylic (uh-SEE-tuhl-sal-uh-SIL-ik) acid. Aspirin is used to relieve pain, reduce fever, and to treat arthritis.

Because of its widespread use, many people don't realize that aspirin can be dangerous. Even small amounts can irritate the stomach, especially when it's empty. Aspirin can cause dizziness and ringing in the ears. Children who take aspirin are at risk of developing Reye's syndrome, a potentially life-threatening illness of the brain and liver. Aspirin, therefore, should not be given to anyone under the age of 20 unless a health care professional directs otherwise. Some people who are sensitive to aspirin take acetaminophen (uh-see-tuh-MIH-nuh-fuhn) or ibuprofen (eye-byoo-PRO-fuhn) instead. Acetaminophen is the recommended analgesic for children.

## Medicines That Promote Health

Medicines that maintain or restore health enable many people with chronic disease to function at increased level of wellness. Such medicines include these:

 Medicines help many people with conditions such as asthma and diabetes live active, normal lives. **How are these diseases kept under control?**

- ▶ **Allergy medicines.** Many people rely on antihistamines and other medications to reduce the sneezing, itchy or watery eyes, and runny nose that often accompany allergies.
- ▶ **Body regulating medicines.** Some medicines maintain health by regulating body chemistry. Insulin is used to treat diabetes. Asthma sufferers use inhalers to relieve the swelling of bronchial tubes. Cardiovascular medicines are taken to regulate blood pressure, normalize irregular heartbeats, or regulate other functions of the cardiovascular system.
- ▶ **Antidepressant and antipsychotic medicines.** These medicines help normalize brain chemistry. For example, mood stabilizers are often used in the treatment of mood disorders, depression, and schizophrenia. Proper medication can help people with these problems live healthy, productive lives.
- ▶ **Cancer treatment medicines.** These medicines reduce rapid cell growth and help stop the spread of cancer cells. For instance, chemotherapy is used to kill fast-growing cancer cells. This medication, either applied to the skin or injected, results in serious side effects that usually disappear after treatment stops.


## Medicines and the Body

**M**edicines can have a variety of effects on individuals, or can cause different reactions. A person's reaction to a given medicine depends on how that medicine mixes with the chemicals in his or her body. Most medicines cause **side effects**, *reactions to medicine other than the one intended*. It's important to be aware of your reactions to medicines and report these to your health care provider. Patients should always tell their doctors about any medicines they are already taking when a new medicine is prescribed.

When medicines are taken together or when a medication is taken in combination with certain foods, the combination may produce different effects. In some cases, physicians make use of interactions to increase the effectiveness of a treatment. Other interactions may be harmful.



- ▶ **Additive interaction** occurs when *medicines work together in a positive way*. For example, both an anti-inflammatory and a muscle relaxant may be prescribed to treat joint pain.
- ▶ **Synergistic effect** is an *interaction of two or more medicines that results in a greater effect than when the medicines are taken alone*—one medicine increases the strength of the other. One medicine may boost the rate of digestion, for example, enabling a second medicine to be absorbed faster.
- ▶ **Antagonistic interaction** occurs when *the effect of one medicine is canceled or reduced when taken with another medicine*. For example, someone who receives an organ transplant must take antirejection medicines. If the person is diabetic and takes insulin, the antirejection medicine may decrease the effectiveness of the insulin.

 In addition to your health care provider, your local pharmacist is a person who can answer questions about medications. **What questions should you ask your pharmacist before taking a new medication?**

### Other Problems

A person may experience other problems when taking medicines:

- ▶ **Tolerance** is a condition in which the body becomes used to the effect of a medicine. The body then requires increasingly larger doses of the medicine to produce the same effect. Sometimes a person will experience “reverse tolerance.” In this condition, the body requires less of the substance to produce the desired effect.
- ▶ **Withdrawal** occurs when a person stops using a medicine on which he or she has a chemical dependence. For example, medicines containing codeine can lead to dependence. Symptoms of withdrawal, which include nervousness, insomnia, severe headaches, vomiting, chills, and cramps, gradually ease over time. Withdrawal sometimes requires medical intervention.



# Health Minute

## Safe Medicine Use

Reduce the risk of inappropriate use of medications by following these tips.

### Guidelines for safe medicine use:

- ▶ Keep medicine in the container in which it was originally packaged.
- ▶ Store medicines in a safe place that is out of the reach of children.
- ▶ Never disable or replace the child-resistant cap on a medicine container.
- ▶ Flush down the toilet any medicines that have passed their expiration date.

## Medicine Safety

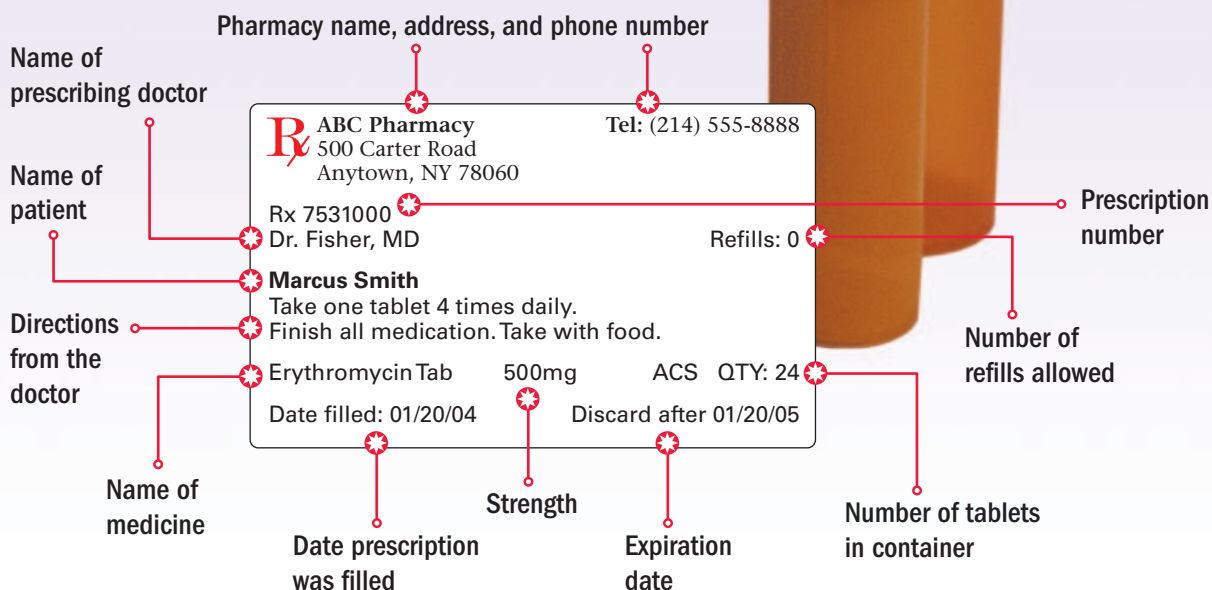
To minimize risks to the public, the federal government has established laws and policies for testing and approving new medicines. In the United States, all medicines must meet standards set by the Food and Drug Administration (FDA) before being approved and made available for sale. The FDA requires manufacturers to supply information about a medicine's chemical composition, intended use, effects, and possible side effects. One practice of the FDA is to determine how medicine should be released to the public.

- ▶ **Prescription medicines.** The FDA has ruled that certain medicines cannot be used without the written approval of a licensed physician. These prescription medicines are available only by means of a doctor's written instructions and can be dispensed only by a licensed pharmacist. **Figure 23.1** shows the information that must appear on every prescription medicine label.
- ▶ **Over-the-counter (OTC) medicines.** This group includes a wide variety of medicines that you can buy without a prescription. Although the FDA considers it safe to use these

FIGURE 23.1

## PRESCRIPTION MEDICINE LABEL

Prescription labels must carry certain information about the medicine. In order to use a medicine safely, always read the label carefully and talk to your doctor or pharmacist if you have any questions.



medications without medical supervision, any drugs can be harmful if not used properly.

When the FDA approves a medicine, it is saying that the medicine is safe when used as directed. FDA approval also means that a medicine is effective in treating the condition for which it is prescribed.

## Medicine Misuse

Medicines can help maintain or improve health, but it is the responsibility of individuals and families to use medicines and supplements as they are prescribed or intended. All medicines are packaged with instructions for use. Failing to follow these instructions is one example of medicine misuse that can have serious health consequences. Other examples include

- ▶ giving a prescription medicine to a person for whom it was not prescribed or taking another person's medicine.
- ▶ taking too much or too little of a medicine or taking a medicine for a longer or shorter period than prescribed.
- ▶ discontinuing use of a medicine without informing the health care professional.
- ▶ mixing medicines.

### Did You Know?



Ephedrine and creatine are dietary supplements sometimes misused by athletes to enhance performance. Ingredients in these substances produce druglike effects. Medical professionals report that these compounds may be related to increased numbers of heatstroke deaths since 1995. Ephedrine and creatine can seriously affect the heart and CNS. Side effects raise core body temperature to dangerous levels and reduce the body's ability to dissipate heat, resulting in heatstroke.



## Lesson 1 Review

### Reviewing Facts and Vocabulary

1. What are the four broad categories of medicines?
2. What government organization tests and approves all new medications?
3. List three specific examples of medicine misuse.

### Thinking Critically

4. **Synthesizing.** Analyze the influence of laws, policies, and practices on the public release of medicine in the United States.
5. **Evaluating.** Analyze the relationship and use of medicines that promote health and those that prevent disease. Give two examples.

### Applying Health Skills

**Accessing Information.** Using reliable resources, research the known benefits and risks of aspirin. Integrate the information you have found into a poster about safe aspirin use. Make sure your poster explains why dosages vary for infants, children, adults, and the elderly.



**SPREADSHEETS** Use a spreadsheet to organize information for your poster. See [health.glencoe.com](http://health.glencoe.com) for tips on how to use spreadsheets.



# Drug Use—A High-Risk Behavior

### VOCABULARY

**substance abuse**  
**illegal drugs**  
**illicit drug use**  
**overdose**  
**psychological dependence**  
**physiological dependence**  
**addiction**


### YOU'LL LEARN TO

- Define substance abuse and recognize the health risks involved.
- Analyze the harmful effects of drugs on the fetus.
- Analyze the harmful physical, mental/emotional, social, and legal consequences of drug use.



Substance abuse has effects both on individuals and on society as a whole.

List as many of the dangerous effects of drugs as you can think of that affect the user, the user's family and friends, and the rest of society.

 Substance abuse harms concentration and coordination. You cannot do your best if your body and mind are not functioning properly. *How will you protect your health and avoid substance abuse?*

No one starts using drugs with the intention of causing a drug-related injury or getting hooked on the drug. Substance abuse is a high-risk behavior. Recognizing the difference between drug misuse and substance abuse will help you avoid the risks associated with these potentially dangerous substances.

## What Is Substance Abuse?

As you learned in Lesson 1, medicine misuse occurs when people use medicines carelessly or in an improper way. However, some people misuse medicines intentionally to achieve a “high.” This is **substance abuse**, *any unnecessary or improper use of chemical substances for nonmedical purposes*. Substance abuse includes overuse or multiple use of a drug, use of an illegal drug, and use of a drug in combination with alcohol or other drugs.

Not all abused substances are medicines. Many are **illegal drugs**, or street drugs, *chemical substances that people of any age may not lawfully manufacture, possess, buy, or sell*. People who use illegal drugs are guilty of a crime called **illicit drug use**, *the use or sale of any substance that is illegal or otherwise not permitted*. This includes the selling of prescription drugs on the street.



## Factors That Influence Decisions About Drugs

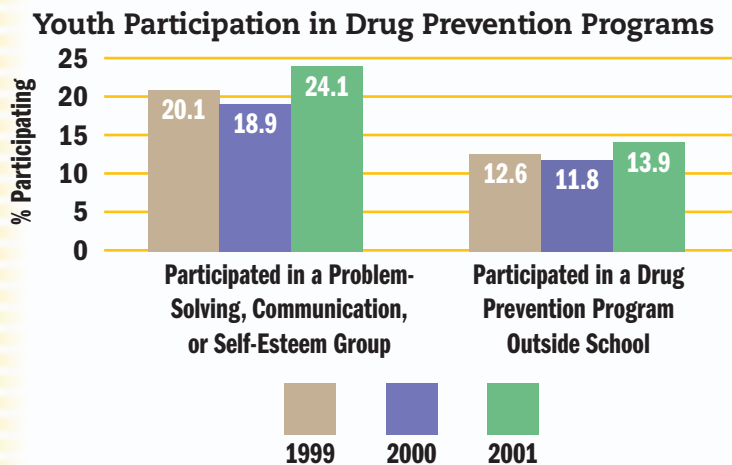
All teens are faced with choices about drug abuse. Many factors influence a teen's response to the opportunities to experiment with drugs, including the following:

- ▶ **Peer pressure** is the control and urging of friends or social groups to take a particular action. Teens whose friends and acquaintances avoid drug use can say no to drugs more easily than teens whose friends accept and even encourage drug use.

# Real-Life Application

## Analyzing Trends: Drug Prevention Programs

According to findings by a recent National Household Survey on Drug Abuse (NHSDA) more and more teens are getting involved in drug prevention programs. What effect do you think this has on teens making the decision to avoid drug use?




Source: Substance Abuse and Mental Health Services Administration: NHSDA Survey, 2001

### ACTIVITY

Write a newspaper article that describes factors that influence teens' choices about whether to use drugs. Include internal and external influences. How can teens benefit from participating in drug prevention programs and influence others in a positive and healthful way?

- In 2001, 24.1 percent of youths surveyed participated in a problem-solving, communication, or self-esteem group. The percentage of students who had participated in a drug prevention program outside of school was 13.9 percent.
- According to results of this survey, teens reporting an increase in the use of illicit drugs did not participate in such a program. What does this indicate about the influence drug prevention programs can have on a teen's decision to avoid drugs?
- Survey results also showed 55.9 percent of youths aged 12 to 17 indicated that they had talked with a parent in the past year about the dangers of alcohol and drug use. What effect do you think support from parents has on teens' participating in drug prevention programs?



 A strong, supportive system of family and friends can help a teen make the healthful decision to avoid drugs. *What other factors help you remain drug free?*

### hotlink

**hepatitis B** and **HIV** For more information on hepatitis B and HIV, see Chapters 24 and 25, pages 638 and 662.

- ▶ **Family members** can help teens resist drugs. Parents and other adults who avoid drug use and who discourage drug experimentation influence their teens to abstain from drugs.
- ▶ **Role models** are people you admire and want to imitate. Teens who look up to coaches, athletes, actors, and professionals who avoid and discourage drug use have an advantage in resisting drugs.
- ▶ **Media messages** can influence your impression of drug use. Messages from TV, digital media, film, and music, for example, may be misleading about the harmful effects of drugs.
- ▶ **Perceptions** of society's drug behavior are often inaccurate. According to the 2001 Youth Risk Behavior Survey, nearly 70 percent of high school students do not use drugs.

## The Health Risks of Drug Use

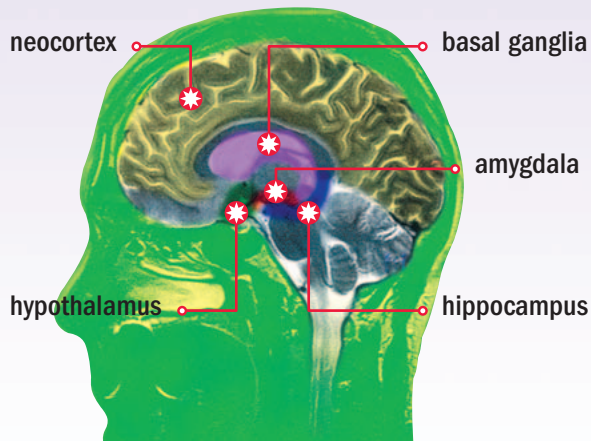
**I**llegal drugs have serious side effects that can range from minor to deadly. Unlike medicines, these substances are not monitored for quality, purity, or strength. The effects of such drugs is unpredictable. Drug abuse affects all sides of the health triangle.

- ▶ **Physical health.** Once a drug enters the bloodstream, it can harm a user's brain, heart, lungs, and other vital organs. A serious danger of drug abuse is the risk of overdosing. An **overdose** is a strong, sometimes fatal reaction to taking a large amount of a drug. Some drug use involves injecting substances through a needle, which can increase the risk of contracting diseases such as **hepatitis B** and **HIV**.
- ▶ **Mental health.** Drugs cloud reasoning and thinking, and users lose control of their behavior. As shown in **Figure 23.2** on page 595, the drug Ecstasy alters the brain's structure and function. People who experiment with drugs often lose sight of their values. While under the influence of drugs, teens may no longer recall the positive beliefs, values, and ideals they have used to guide their own conduct.
- ▶ **Social health.** Even people who are "just experimenting" with drugs do and say things they later regret. Substance abuse can have a negative effect on relationships with friends and family members. It can cause teens to be expelled from school or dropped from a school team, and it often has legal consequences. Substance abuse is a major factor in many crimes, suicides, and unintentional injuries.



## DRUG USE AND THE BRAIN

Ecstasy, a stimulant drug that speeds up the nervous system, affects parts of the brain controlling thinking, mood, memory, and perception.



### Understanding the Addiction Cycle

Teens who experiment with drugs will experience side effects, or unwanted reactions. The side effects can range from nausea and headaches to a loss of consciousness and even death, and can occur with a teen's first use of a drug. What may begin as a seemingly harmless pastime results in serious consequences. These consequences include:

- ▶ **Tolerance.** The body of the substance abuser needs more and more of the drug to get the same effect.
- ▶ **Psychological dependence.** *A condition in which a person believes that a drug is needed in order to feel good or to function normally, **psychological dependence** develops over time. The user has a continuing desire to take the drug for its effect.*
- ▶ **Physiological dependence.** A person who experiences the severe effects of withdrawal when he or she stops taking a drug has a **physiological dependence**, *a condition in which the user has a chemical need for the drug.* Symptoms of withdrawal can include nervousness, insomnia, severe nausea, headaches, vomiting, chills, and cramps. In some cases, death can result.
- ▶ **Addiction.** Anyone who takes drugs risks one of the most frightening side effects: **addiction**, *a physiological or psychological dependence on a drug.* Addiction causes persistent, compulsive use of a substance known by the user to be harmful. People who are addicted to a substance have great difficulty in stopping without professional intervention.

### hotlink

**addiction** For more information on addiction, see Chapter 22, page 578.

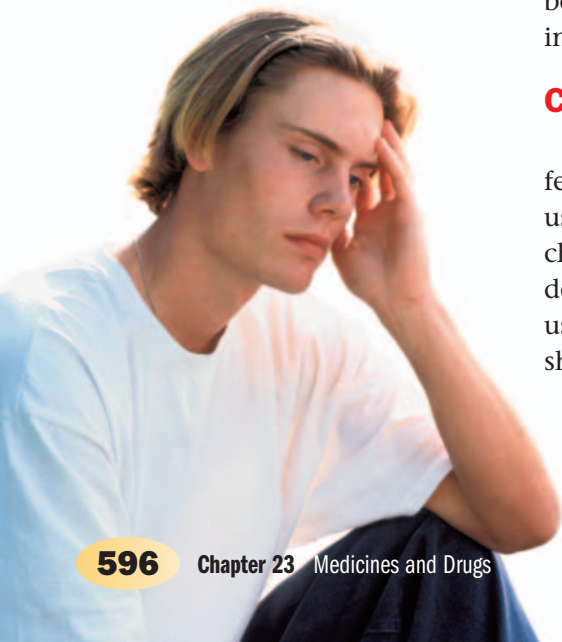
## CHARACTER CHECK

**Courage.** When you resist the pressure to use drugs, you demonstrate that you are responsible and that you have the courage to do the right thing. **Join with friends to visit elementary schools. Share with younger students the positive behaviors and actions you use to stay drug free.**

### hot link

**STDs** For more information about STDs, see Chapter 25, page 646.

⚠ **Experimenting even once with a drug can quickly lead to a harmful and damaging addiction. *What consequences of drug use affect family and friends?***



## Other Consequences of Drug Use

In addition to the physical risks to a person's health, substance abuse can damage a teen's performance in school, in sports, in relationships with friends, and in family life. The abuse of drugs adds pressure and stress to a period of life that is already filled with both.

### Consequences to the Individual

Drug use affects all aspects of a person's health. Mental and physical health suffer as tolerance, dependence, and addiction develop. The effects of drug use also influence emotional health. People who experiment with drugs tend to lose control more readily than those who do not. This tendency can lead to violence. Substance abuse is also a major factor in violent crimes, suicides, and both unintentional and intentional deaths. Drug use can lead to a relaxing of inhibitions. As a result, drug users are at risk for engaging in sexual activity, which can lead to unintended pregnancy or exposure to **STDs**.

### LEGAL CONSEQUENCES

Teens possessing, using, manufacturing, or selling drugs are committing the crime of illicit drug use. Being arrested leads to court fines and legal fees. Some states automatically suspend the driving privileges of minors convicted of a drug offense. Suspension from school, jail time, or probation also are consequences of arrest and conviction.

### Consequences for Family and Friends

Some people believe that their decision about drug use is their business and doesn't involve anyone else. That is not true. When an individual chooses to abuse drugs, the decision affects everyone in the user's life. Teens who become involved with drugs lose their interest in healthy activities and have little time for friends who value a drug-free lifestyle. Family members have a responsibility to be aware of the warning signs of drug use and encourage the individual to seek professional help.

### Consequences for Babies and Children

Substance abuse can cause considerable harm to developing fetuses, infants, and children of drug users. A pregnant female who uses drugs passes the drug through the placenta to her unborn child. The baby may be spontaneously aborted or born with birth defects, behavioral problems, or an addiction. If either parent is using injected drugs, the baby may be born with HIV caused by the sharing of infected needles by one or both parents. A nursing mother who uses drugs passes these substances through breast milk to her child. Babies born to mothers who used depressants or other drugs during pregnancy may be physically dependent on drugs and show severe withdrawal symptoms at birth.


Children of drug users are often neglected and abused because their addicted parents cannot properly care for them. These children may suffer a lifetime of physical and emotional problems and may need to seek help from health professionals later in life.

## Costs to Society

Drug abuse has consequences beyond the individual and family. One of the biggest burdens placed on society is a rise in drug-related crime and violence because the use of drugs decreases inhibitions, increases aggressiveness, and clouds judgment. Driving under the influence of an illegal substance can result in vehicle collisions and cause countless injuries and deaths.

Drug abuse also affects the nation's economy. According to a recent study by the Office of National Drug Control Policy, illegal drugs cost the American economy \$160 billion per year. The costs result from lost work hours and productivity caused by drug-related illnesses, jail time, accidents, and deaths; health costs and legal fees resulting from illegal drug use; and law enforcement costs and insurance costs from drug-related damages, injuries, and deaths.

The consequences of drug abuse—physical, mental, social, and legal—are 100 percent preventable. By choosing a drug-free lifestyle, you avoid these consequences.

 These teens recognize that using illegal drugs results in suspension or expulsion from school as well as legal consequences. **How can these consequences interfere with a teen's goals?**



## Lesson 2 Review

### Reviewing Facts and Vocabulary

1. What are *substance abuse* and *illegal drugs*?
2. What are the factors that influence a teen's decision about substance abuse?
3. Analyze and explain the harmful effects of drugs on the fetus.

### Thinking Critically

4. **Synthesizing.** List three costs of drug use to society, and give examples of how each of these costs might affect you.
5. **Evaluating.** What are some of the reasons that a substance abuser may have difficulties in achieving long-term goals?

### Applying Health Skills

**Advocacy.** With classmates, analyze the physical, mental, social, and legal consequences of drug use. Put your ideas in the form of a video or public service announcement to advocate a drug-free lifestyle.



### PRESENTATION SOFTWARE

Presentation software can help give your antidrug message a professional look. Find help in using presentation software at [health.glencoe.com](http://health.glencoe.com).





# Marijuana, Inhalants, and Steroids

## VOCABULARY

**marijuana**  
**paranoia**  
**inhalants**  
**anabolic-androgenic**  
**steroids**

## YOU'LL LEARN TO

- Analyze the physical, mental, social, and legal consequences of using marijuana, steroids, and inhalants.
- Analyze and apply strategies for avoiding the use of marijuana, inhalants, and steroids.
- Explain the negative effects of combining alcohol use with marijuana use.



Knowing the risks of substance abuse can help you stay drug free.

Write three reasons for saying no to drugs. Then, modify these reasons into effective refusal statements that you could use if someone offered you drugs.



**Marijuana is an illegal drug. It affects your memory, concentration, coordination, and reaction time. What strategies do you have for avoiding marijuana use?**

Suppose that someone dared you to go into your school's chemistry lab and swallow a mixture of unfamiliar chemicals. You'd think the idea was pretty crazy, wouldn't you? Yet, this is exactly what people do when they experiment with illegal drugs. No government agency inspects these substances, as is done with medicines, to make sure they're safe or pure. People who take illegal drugs are gambling with their lives.

## Marijuana

**Marijuana**, the common name for the Indian hemp plant *Cannabis*, is a plant whose leaves, buds, and flowers are smoked for their intoxicating effects. It is one of the most widely used illegal drugs, and is also known as grass, weed, or pot. It is often the first drug teens experiment with after alcohol. Hashish, or hash, is a stronger form of marijuana. Studies have shown that an individual who uses marijuana is 17 times more likely to use cocaine than one who has never used marijuana. Contrary to popular opinion, this drug is not harmless. All forms of marijuana are mind altering and can damage the user's health. When combined with other drugs, marijuana can be deadly.

## Marijuana and Addiction

As with other mood-altering drugs, marijuana raises levels of a brain chemical called dopamine. This chemical produces a pleasurable feeling. In some users, the drug triggers the release of so much dopamine that a feeling of intense well-being or elation is reached. When the drug wears off, however, the pleasure sensation stops, often dramatically. This abrupt letdown is called a “crash.” Marijuana contains *more* cancer-causing chemicals than tobacco smoke and carries the same health risks as smoking tobacco. Marijuana also interferes with the immune system, so the user becomes more susceptible to infections. Many of the physical effects of marijuana use are summarized in **Figure 23.3**.

### Did You Know?

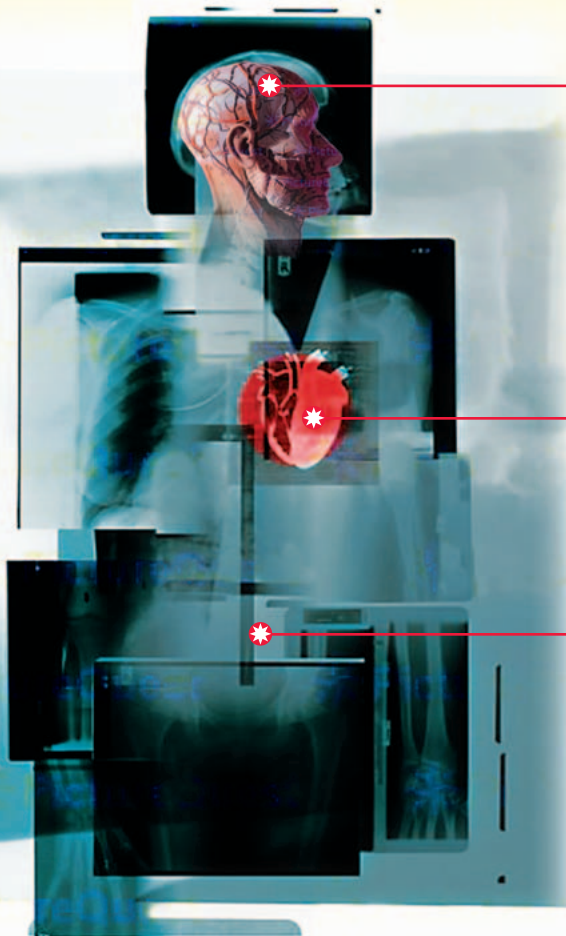


Marijuana contains 421 different chemicals, including d-alpha-tetrahydrocannabinol (THC), the main psychoactive ingredient in marijuana. THC is stored in body fat, and traces of it can be present in the blood for as long as a month. It has a lasting effect on the brain. This means that a marijuana user can fail a drug test weeks after using the drug.

FIGURE 23.3

## THE HEALTH RISKS OF MARIJUANA

The effects of marijuana use vary from person to person and can be influenced by an individual's mood and surroundings. In all cases, however, marijuana poses serious health risks.



- Hallucinations and paranoia
- Impaired short-term memory, reaction time, concentration, and coordination
- Distorted sense of time, sight, touch, and sound
- Decreased initiative and ambition
- Bloodshot eyes
- Dry mouth
- Lung irritation, coughing
- Heart and lung damage
- Increased risk of lung cancer
- Weakened immunity; increased susceptibility to colds, flu, and viral infections
- Increased appetite, leading to weight gain
- In pregnant females, increased risk of stillbirth and birth defects
- Changed hormone levels, affecting normal body development in teens
- In females, increased testosterone levels and risk of infertility
- In males, lowered sperm count and testosterone levels

## Risks to Mental/Emotional Health

Marijuana users experience slow mental reflexes and suffer sudden feelings of anxiety and **paranoia**, *an irrational suspiciousness or distrust of others*. The user may feel dizzy, have trouble walking, and have difficulty remembering events that just happened. Because short-term memory is adversely affected, problems at school and at work may develop. Users often experience distorted perception, loss of coordination, and trouble with thinking and problem solving.

### hotlink

**reproductive organs** For more information on keeping the reproductive organs healthy, see Chapter 18, pages 470 and 475.


## Risks to Growth and Development

For teens, marijuana poses physical risks to the **reproductive organs**. In males, regular use interferes with sperm production and lowers levels of testosterone, the hormone responsible for the development of adult male characteristics such as voice change, growth of body hair, and broadened shoulders. Females experience the opposite effect—an increase in testosterone levels. This may result in unwanted facial hair and can lead to infertility.

## Risks and Consequences of Driving Under the Influence

Driving under the influence of marijuana can be as dangerous as driving under the influence of alcohol because marijuana interferes with depth perception, impairs judgment, and slows reflexes. The penalties and legal consequences of driving under the influence of any drug, including marijuana, are strict. These include suspension of a driver's license, a fine, and often a jail term. Insurance premiums are increased when the driver's license is restored. If injury or death results from a drug-related accident, the impaired driver may face serious legal prosecution.



 Driving under the influence of marijuana can be dangerous. **What are some effects of marijuana use that could impair a person's ability to drive safely?**

## Inhalants

**I**nhalants are substances whose fumes are sniffed and inhaled to achieve a mind-altering effect. Most inhalants go immediately to the brain, causing damage and actually killing brain cells that will never be replaced. Inhalants include solvents and aerosols such as glues, spray paints, gasoline, and varnishes. They also include nitrates and nitrous oxides, which have medical uses. All inhalants are extremely dangerous, and many are labeled as poisons. These substances were never designed to be taken into the body and cause permanent nervous system and brain damage.



Most inhalants depress the central nervous system and produce effects that include a glassy stare, slurred speech, and impaired judgment. Inhalant use or huffing, inhaling the fumes from aerosol cans, can cause sudden death by increasing heart rate that results in cardiac arrest, or death by suffocation.

## Anabolic-Androgenic Steroids

**Anabolic-androgenic steroids** are synthetic substances that are similar to the male sex hormone testosterone. Anabolic refers to muscle building and *androgenic* refers to increased male characteristics. When used under a doctor's guidance, these substances help build muscles in patients with chronic diseases. Steroid use

### Health Skills Activity

#### Refusal Skills: No Means No!

At a recent wrestling competition, Chris lost to an opponent he had beaten several times before.

Afterward, his teammate Josh pulled him aside and said, "You know, that guy has been getting help to build muscles. You need steroids to make State."

Josh held out a pill. Chris shook his head. "No way!"

"You'll definitely take home the title if you just help yourself to a few of these pills," Josh said.

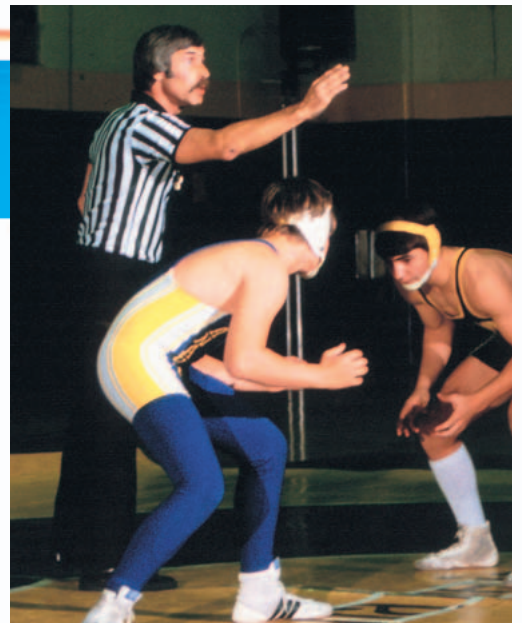
Chris repeated, "I said no and I mean no."

Josh persisted, "If you don't, you won't make State."

"The title is not so important that I should risk my health," Chris reasoned.

"It would just be for this season," Josh continued.

Chris changed the subject, "Hey, look. Jason's match is on. I'm going to check it out." Then Chris walked away.



#### What Would You Do?

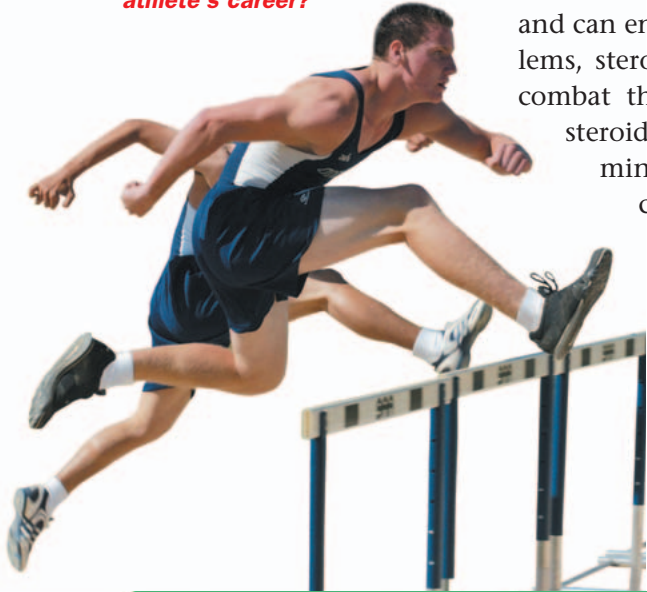
Write your own dialogue for this situation. Analyze and apply at least four refusal strategies for avoiding drugs.

#### Successful Refusal Techniques:

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

**Improving athletic performance through hard work and practice shows that you are a healthful, responsible person.**

***How could use of steroids harm rather than help an athlete's career?***



can cause mood swings; impaired judgment resulting from feelings of invincibility; and paranoia.

## Legal and Social Consequences of Steroid Use

All steroid use other than that prescribed by a licensed physician is illegal and dangerous. Although steroids can increase muscle strength, the associated tendons and ligaments don't get stronger. This discrepancy can result in injuries that take a long time to heal and can end an athlete's career. In addition to causing health problems, steroid users often turn to other illegal, addictive drugs to combat the side effects of steroids. Abusers may take anabolic steroids as pills or by injection. If needles are shared or contaminated, steroid users run the risk of exposure to disease-causing bacteria and viruses, including HIV.

Serious health risks are not the only consequences of steroid use. According to the Anabolic Steroids Control Act of 1990, the nonmedical use of steroids is illegal for people of all ages in the United States. As drug testing for athletes becomes more prevalent, athletes who fail a drug test for steroids can face exclusion from an event, expulsion from the team, monetary fines, and jail time.

## Lesson 3 Review

### Reviewing Facts and Vocabulary

1. Explain the relationship between marijuana use and alcohol use.
2. How does marijuana interfere with driving ability?
3. Analyze and examine the harmful effects of inhalants and steroids on body systems.

### Thinking Critically

4. **Analyzing.** Analyze the physical, mental, social, and legal consequences of using marijuana. What effect can use of this drug have on a teen's future?
5. **Synthesizing.** Why are younger students especially at risk for inhalant use? What can you do to help prevent younger students from trying inhalants?

### Applying Health Skills

**Practicing Healthful Behaviors.** Write a short story in which a teen is being pressured to use one of the drugs discussed in this lesson. Your story should show how the teen effectively analyzes and applies strategies to avoid the dangers associated with drug use.



**PRESENTATION SOFTWARE** You can use presentation software to incorporate appropriate art and graphics to illustrate your story. Find help in using presentation software at [health.glencoe.com](http://health.glencoe.com).

# Psychoactive Drugs

## VOCABULARY

**psychoactive drugs**  
**stimulants**  
**euphoria**  
**depressants**  
**narcotics**  
**hallucinogens**  
**designer drugs**

## YOU'LL LEARN TO

- Examine the harmful effects of psychoactive drugs on body systems.
- Explain the role psychoactive drugs play in putting teens in unsafe situations that include the risk of HIV, STDs, or unplanned pregnancies.
- Analyze the importance of alternatives to drug use.
- Analyze and apply strategies for avoiding psychoactive drugs.

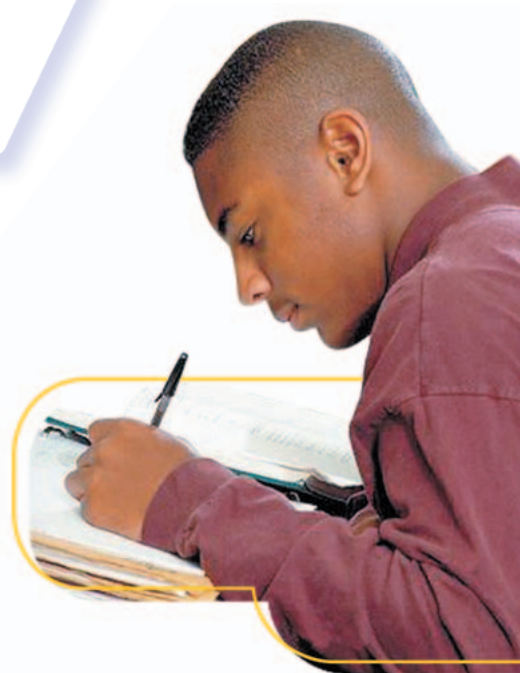


Teens have the opportunity to live healthy lives—to be the healthiest they can be. The best way to make the most of that opportunity is to make wise choices that have a positive effect on your health. On a sheet of paper, write three ways you can safeguard your health and avoid the harmful effects of drug use.

The central nervous system (CNS), which includes the brain and the spinal cord, is an amazingly complex part of the body. Every form of activity, from bending a finger to solving abstract problems, involves the central nervous system. **Psychoactive drugs**, chemicals that affect the central nervous system and alter activity in the brain, change the functioning of the CNS.

## Classification of Psychoactive Drugs

There are four main groups of psychoactive drugs: stimulants, depressants, narcotics, and hallucinogens (huh-LOO-suhn-uh-juhnhz). Some of these drugs have medicinal value when properly used. However, even under a doctor's supervision, they carry risks. When psychoactive drugs are misused or abused, a person's health and the proper function of all body systems are seriously affected. **Figure 23.4** on page 604 shows the health risks of these drugs on body systems. The effects on the developing brain and body of a teen can be especially damaging.



Your decision to stay healthy and drug free will help you succeed in school.

FIGURE 23.4

## HEALTH RISKS OF PSYCHOACTIVE DRUGS

Types of Drugs	Consequences to Your Health
<b>STIMULANTS</b>	
<b>Cocaine</b>	<ul style="list-style-type: none"> <li>• Nausea, abdominal pain, malnutrition</li> <li>• Chest pain, respiratory failure, death</li> <li>• Headache, stroke, seizure, heart attack, death</li> <li>• Exposure to HIV through contaminated needles</li> </ul>
<b>Crack</b>	<ul style="list-style-type: none"> <li>• Extreme addiction, with the same effects as pure cocaine</li> <li>• Rapid increase in heart rate and blood pressure can cause death</li> </ul>
<b>Amphetamines</b>	<ul style="list-style-type: none"> <li>• Decreased appetite, weight loss, and malnutrition</li> <li>• High blood pressure, rapid heartbeat, heart failure, death</li> <li>• Loss of muscle coordination, delirium, panic</li> <li>• Aggressiveness, increased tolerance, addiction</li> </ul>
<b>Methamphetamine</b>	<ul style="list-style-type: none"> <li>• Memory loss, heart and nerve damage</li> <li>• Increased tolerance, addiction</li> </ul>
<b>DEPRESSANTS</b>	
<b>Barbiturates</b>	<ul style="list-style-type: none"> <li>• Reduced heart rate and blood pressure</li> <li>• Fatigue, confusion, impaired muscle coordination</li> <li>• Impaired memory, loss of judgment</li> <li>• Reduced respiratory function, respiratory arrest, death</li> </ul>
<b>Tranquilizers</b>	<ul style="list-style-type: none"> <li>• Depression, unusual excitement, fever, irritability</li> <li>• Loss of judgment, dizziness</li> </ul>
<b>Rohypnol</b>	<ul style="list-style-type: none"> <li>• Confusion, inability to remember what happened</li> <li>• Decreased blood pressure, drowsiness, gastrointestinal disturbances</li> </ul>
<b>GHB</b>	<ul style="list-style-type: none"> <li>• Drowsiness, nausea, vomiting, loss of consciousness</li> <li>• Impaired breathing, coma, death</li> </ul>
<b>NARCOTICS</b>	
<b>Opium</b>	<ul style="list-style-type: none"> <li>• Nausea, constipation</li> </ul>
<b>Morphine</b>	<ul style="list-style-type: none"> <li>• Rapid onset of tolerance, addiction</li> </ul>
<b>Heroin</b>	<ul style="list-style-type: none"> <li>• Confusion, sedation, unconsciousness, coma</li> </ul>
<b>Codeine</b>	<ul style="list-style-type: none"> <li>• Reduced respiratory function, respiratory arrest, death</li> <li>• Exposure to HIV through contaminated needles</li> </ul>
<b>HALLUCINOGENS</b>	
<b>PCP</b>	<ul style="list-style-type: none"> <li>• Loss of appetite, depression</li> <li>• Panic, aggression, violent actions</li> <li>• Increased heart and respiratory function</li> </ul>
<b>LSD</b>	<ul style="list-style-type: none"> <li>• Delusions, illusions, hallucinations, flashbacks, convulsions, coma, and death</li> </ul>
<b>Ecstasy (MDMA)</b>	<ul style="list-style-type: none"> <li>• Confusion, depression, paranoia, muscle breakdown</li> </ul>
<b>Ketamine</b>	<ul style="list-style-type: none"> <li>• Kidney and cardiovascular system failure, death</li> <li>• Memory loss, numbness, impaired motor function</li> <li>• Nausea, high blood pressure, fatal respiratory reaction</li> </ul>



## Health Risks of Stimulants

**S**timulants are drugs that speed up the central nervous system. Some foods, such as coffee, tea, and cola, contain small amounts of a stimulant called caffeine. The **nicotine** in tobacco products is also a stimulant. Sometimes, stimulants are prescribed for specific medical conditions, for example, the medication used to treat hyperactivity. Although some stimulants have medical uses, many of these substances are used illegally. The most dangerous of the illegal stimulants are cocaine, amphetamines (am-FE-tuh-meenz), and methamphetamine (me-tham-FE-tuh-meen).

### Cocaine

Cocaine is a rapid-acting, powerful, highly addictive stimulant that interrupts normal functioning of the central nervous system. The purchase and possession of cocaine is illegal everywhere in the United States. Cocaine is a white powder extracted from the leaves of the coca plant. Cocaine users can experience a surge of self-confidence and **euphoria**, a feeling of intense well-being or elation. Effects of cocaine use can last from 20 minutes to several hours.


The feeling of confidence induced by cocaine use is followed by an emotional letdown. Regular use can lead to depression, fatigue, paranoia, and physiological dependence. Cocaine use can cause malnutrition and, especially among teens, cardiac problems. When cocaine is snorted, it shrinks the tiny blood vessels in the nose. Repeated use can lead to collapse of the nasal septum, the wall dividing the two halves of the nose. When users inject cocaine, they risk contracting HIV or hepatitis B from infected needles. Overdosing can result in cardiac arrest, respiratory failure, seizures, and death.

### Crack

An even more dangerous form of cocaine is crack. Also known as crack cocaine, rock, or freebase rock, crack is one of the most deadly drugs available. It is a very pure form of cocaine that reaches the brain seconds after being smoked or injected. Once in the blood, it causes heart rate and blood pressure to soar to dangerous levels. Death may result from cardiac or respiratory failure. Mixing cocaine and alcohol is extremely dangerous. These substances are combined in the liver, increasing the risk of death from liver failure.

### hotlink

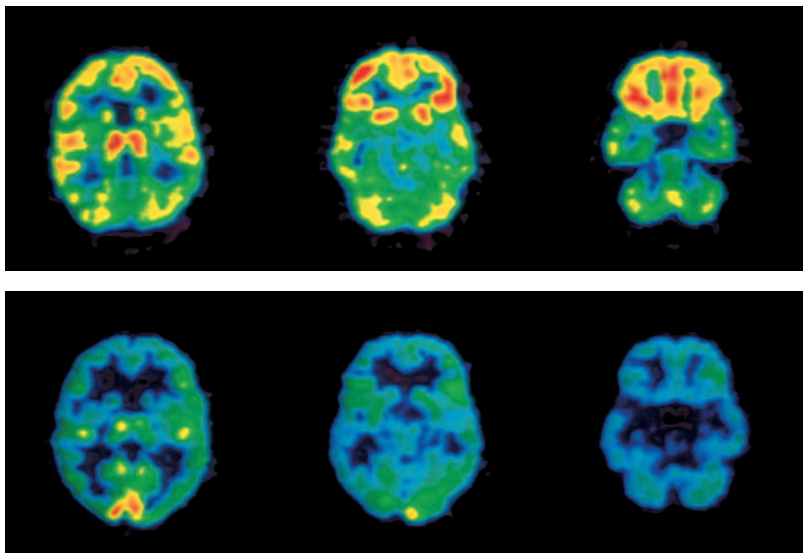
**nicotine** For more information on nicotine and tobacco products, see Chapter 21, page 540.

 **Crack cocaine is a concentrated form of cocaine that can cause death. What are the dangers of mixing cocaine with other drugs, such as alcohol?**



Get the latest research and information about the dangerous effects drugs can have on the brain at [health.glencoe.com](http://health.glencoe.com).

Source: National Institute on Drug Abuse



**A** The red areas in the normal brain scan (top) show memory and motor skill control. The brain scan on the bottom, taken one month after the subject's use of methamphetamine, indicates loss of memory and motor control.

## Amphetamines

Amphetamines are stimulants used in prescription medicines to reduce fatigue and drowsiness or to suppress the appetite. However, some people use amphetamines illegally to stay awake and alert, to improve athletic performance, or to lose weight. The easily developed tolerance to amphetamines causes a user to ingest more of the substance. Regular use of amphetamines can result in twitching, irregular heartbeat, paranoia, and heart and blood vessel damage.

## Methamphetamine

Methamphetamine, or meth, is a stimulant used in treating certain diseases, including Parkinson's disease and obesity. It is a white, odorless powder that easily dissolves in alcohol or water.

Because it is produced in makeshift labs, the drug is readily available, but its quality is uncertain. In recent years, this drug has been identified as one of the many dangerous and illegal substances called "club drugs," drugs associated with concerts and all-night parties called raves. Meth may provide a short-term feeling of euphoria. Often the use of this drug results in depression, paranoia, damage to the central nervous system, increased heart rate and blood pressure, and damage to brain cells. It can also cause death.

## Health Risks of Depressants

**D**epressants, or sedatives, are *drugs that tend to slow down the central nervous system*. Depressant drugs relax muscles, relieve feelings of tension and worry, and cause drowsiness. They can be dangerous because they slow the heart rate, lower blood pressure to dangerous levels, and interrupt the normal rate of breathing. One of the most commonly used depressants is alcohol. Two types of sedative medications are barbiturates (bar-BICH-uh-ruhts) and tranquilizers. Other widely-used depressants include Rohypnol and GHB. Combining depressants, even in small amounts, produces a *synergistic* effect. For example, a user combining alcohol and tranquilizers can overdose, causing shallow breathing, weak and rapid pulse, coma, and even death.

## Barbiturates

Barbiturates belong to a family of sedative-hypnotic drugs, or drugs that induce sleepiness. Barbiturate use can result in mood changes, sleeping more than normal, and coma. Barbiturates are rarely used for medical purposes. They are used illegally to produce a feeling of intoxication and to counteract the effects of stimulants. Combining barbiturates with alcohol can be fatal.

## Tranquilizers

Tranquilizers are depressants that reduce muscular activity, coordination, and attention span. Tranquilizers are prescribed to relieve anxiety, muscle spasms, sleeplessness, and nervousness. However, when tranquilizers are overused, physiological and psychological dependence occurs. Withdrawal from tranquilizers causes severe shaking. In extreme cases, coma or death can result.

# Hands-On Health ACTIVITY

## Refusing Drugs

Learning to say no to drugs is an important component in maintaining a drug-free life. By practicing refusal skills, you will find it easier to uphold your commitment to a substance-free lifestyle. In this activity you will practice effective ways to say no to drugs.

### What You'll Need

- pencil and paper
- one classmate

### What You'll Do

1. Divide a sheet of paper into two columns. In the left column, list five pressure lines someone might use to persuade you to use drugs.
2. Trade your paper with a classmate. Read your partner's list. In the right column, write an effective refusal statement responding to each

pressure line. Possibilities include: "No thanks, I don't do drugs"; "I'm on medication"; or "That stuff makes me sick."

3. Working with your partner, review your lists and role-play some of the most realistic scenarios. Take turns practicing refusal skills.
4. Which refusal statements did you find to be most effective? Remember and practice them to be prepared when someone tries to offer you drugs.

### Apply and Conclude

With your partner, plan a public service announcement that emphasizes the importance of refusal skills. Your announcement should demonstrate how to say no to drugs effectively.

## hotlink

**date-rape crimes** For more information about protecting yourself from date rape, see Chapter 13, page 350.

## Rohypnol

Rohypnol is a widely available club drug. This depressant, which is ten times as strong as tranquilizers, is better known as the date rape drug, used in crimes of dating violence. Rohypnol comes in tablet form and looks like ordinary aspirin. The drug's harmless appearance has made it a dangerously effective drug in **date-rape crimes**. The victims may be given the tablets without their knowledge. Rohypnol dissolves in carbonated beverages and may easily be slipped into a soft drink. The victim wakes up much later with no recollection of what may have happened during the last several hours. Unplanned pregnancies or exposure to HIV and STDs can result from such situations.

## GHB

Another club drug is gammahydroxy butyric acid (GHB). Like Rohypnol, it has been in used in date-rape crimes. GHB is available as a clear liquid, a white powder, and in a variety of tablets and capsules. A person can easily overdose on GHB. The drug leaves the blood relatively quickly, making it hard for emergency room personnel to determine that an overdose has occurred.

## Narcotics

**Narcotics** are *specific drugs derived from the opium plant that are obtainable only by prescription and are used to relieve pain*. Morphine, OxyContin, and codeine are examples of narcotics. Morphine is sometimes prescribed by medical professionals, and codeine is an ingredient in some cough medications. These drugs relieve pain by blocking pain messengers in the brain. Narcotic use can cause euphoria, drowsiness, constipation, pinpoint pupils, slow and shallow breathing, convulsions, coma, and death. Abuse of narcotics can cause addiction. Because narcotics are so addictive, pharmacists are required to keep records of all sales of these drugs.

## Heroin

Heroin, a highly addictive narcotic, is a processed form of morphine that is injected, snorted, or smoked. Heroin depresses the central nervous system and slows breathing and pulse rate. Heroin abuse can cause infection of the heart lining and valves, as well as liver disease. Infectious diseases such as pneumonia, HIV, and hepatitis B can result from the use of infected needles. Large doses may result in coma or death. Users easily develop tolerance, prompting increased usage. Withdrawal can be very painful. Fetal death may occur if the user is pregnant.



### What is OxyContin?

OxyContin is a prescription drug that contains oxycodone, a strong narcotic. When used properly under a doctor's supervision, it helps relieve moderate to severe chronic pain. When used illegally and in combination with alcohol or other depressants, however, OxyContin can be deadly. A side effect of this drug is suppression of the respiratory system, which can cause death from respiratory failure.



## Hallucinogens

**H**allucinogens are drugs that alter moods, thoughts, and sense perceptions including vision, hearing, smell, and touch. These drugs have no medical use. Phencyclidine (PCP), lysergic acid diethylamide (LSD), ketamine, and Ecstasy are examples of powerful and dangerous hallucinogens. These drugs overload the sensory controls in the brain. The brain then confuses and intensifies sensations and hallucinates. Hallucinogens also impair judgment and reasoning and increase heart and respiratory rates. The altered mental states caused by hallucinogens can last for several hours or several days. The effects are extremely unpredictable, and users sometimes harm themselves physically or demonstrate other violent behaviors.

### PCP

PCP is considered one of the most dangerous of all drugs, and its effects vary greatly from user to user. Users report distorted sense of time and space, increased muscle strength, and inability to feel pain. Overdoses of PCP can cause death, but most PCP-related deaths are caused by the destructive behavior that the drug produces. PCP users have died in fires because they became disoriented and had no sensitivity to the pain of burning. Flashbacks can occur at any time, causing panic, confusion, and lack of control.

### LSD

LSD is an extremely strong hallucinogen. Even a tiny amount can cause hallucinations and severe distorted perceptions of sound and color. Higher doses increase the risk of convulsions, coma, heart and lung failure, and death. Because LSD affects the brain's emotional center and distorts reality, users may experience emotions ranging from extreme euphoria to panic to deep depression. Flashbacks can involve a frightening range of emotions long after actual use of the drug.

### Ketamine

Ketamine is an anesthetic used for medical purposes, mostly in treating animals. Misused as a club drug, ketamine is often sold as a white powder to be snorted, like cocaine, or injected. The drug is also smoked with marijuana or tobacco. Ketamine causes hallucinations and dreamlike states. Its use may result in death by respiratory failure. The misuse of ketamine and the use of all other hallucinogens is illegal.



Illegal drugs can affect the human body in unpredictable ways. **What are some of the life-threatening effects of hallucinogens?**



## Did You Know?



The use of Ecstasy among teens appears to be increasing, probably because teens are being led to think that no significant risks are involved in the use of this drug. However, Ecstasy is extremely dangerous. Over 4,500 visits to the emergency room for Ecstasy-related incidents were reported in one year.

Ecstasy can cause dramatic increases in body temperature and may lead to muscle breakdown, kidney failure, and cardiovascular system damage.

## Ecstasy and Other Dangerous Drugs

**Designer drugs** are synthetic substances meant to imitate the effects of hallucinogens and other dangerous drugs. The designer drugs vary greatly in potency and strength. Designer drugs can be several hundred times stronger than the drugs they are meant to imitate. One of the most recognized designer drugs is *Ecstasy*, or MDMA. A combination stimulant and hallucinogen, Ecstasy may give a short-term feeling of euphoria but often causes confusion, depression, paranoia, psychosis, and even long-term damage to brain cells. Overdoses are common. Use can also result in uncontrollable tremors, paralysis, and irreversible brain damage.

### Consequences of Drug Use

Illegal drug use is associated with a variety of negative consequences, including health problems, addiction, and difficulties in school. Furthermore, drug use often leads to poor judgment, which may put teens at risk for unintentional injuries, motor vehicle collisions, violence, STDs, unintended pregnancy, and suicide. The best way to avoid these consequences is to refuse to use drugs and to avoid places where they are used. If you find yourself in a situation where drugs are present, leave. Choosing a drug-free life is one of the most important decisions you can make to protect your health.

## Lesson 4 Review

### Reviewing Facts and Vocabulary

1. Examine and identify the body systems most affected by psychoactive and designer drugs.
2. Examine and explain the harmful effects of stimulants and hallucinogens on the central nervous system.
3. What are the health risks for those who abuse narcotics?

### Thinking Critically

4. **Synthesizing.** Analyze the importance of alternatives to drug use. Develop and explain your strategy for preventing the use of addictive substances and for avoiding psychoactive drugs.
5. **Analyzing.** Explain the role psychoactive drugs play in putting teens in unsafe situations.

### Applying Health Skills

**Accessing Information.** Choose one of the drugs you learned about in this lesson. Research to evaluate its medical uses (if any), possible effects, and damage to body systems. Organize your findings in a chart similar to those shown in this lesson. Share the chart with your class.



**INTERNET RESOURCES** You may want to use the Internet for your research. Be sure to use reliable sources when accessing information on the Web. See [health.glencoe.com](http://health.glencoe.com) for Internet resources.

# Living Drug Free

## VOCABULARY

**drug-free school zones**  
**drug watches**


## YOU'LL LEARN TO

- Analyze and develop strategies for preventing drug use.
- Examine school and community efforts to curb drug use.
- Identify and assess community health services for getting help with the prevention and treatment of drug addiction and abuse.
- Analyze the importance of alternatives to drug and substance abuse.



**Make a word web with statements you can use to refuse drugs. Write and circle the words “Refusal Skills” in the middle of a sheet of paper. Then write refusal statements around the paper, and connect these to the circle with lines.**

Public opinion polls and national surveys clearly show that most Americans—children, teens, and adults—have taken a stand against illegal drugs. By working together, you and your family, peers, and community can stop the effects of drug abuse. Your attitudes and decisions about drugs and how you live your life make a statement to others. By deciding not to use drugs, you promote your own health and influence others to do the same.

 **Let others know your reasons for living drug free. *What can you do to share your opinion with others?***

## Resisting Pressure to Use Drugs

Peer pressure can be intense during the teen years, particularly in settings where using alcohol and other drugs may seem the norm. You may be told that “everybody’s doing it,” but the fact is that illegal drugs never become a part of most teens’ lives. In this country almost 58 percent of high school students have never tried marijuana, and more than 90 percent have never tried cocaine. So the claim that “everybody’s doing it” is simply not true.



## Health Minute

### Strategies for Avoiding the Dangers of Substance Abuse

#### If you're offered a drug:

- ▶ Be firm in saying that you're not interested.
- ▶ Keep it simple. Say, "No thanks," or "I don't need drugs."
- ▶ If the pressure continues, walk away.

#### Protect yourself against risks:

- ▶ Choose friends who share your commitment to staying drug free.
- ▶ Maintain your self-respect and be confident about your abilities.
- ▶ Take pride in your accomplishments.
- ▶ Use physical activity and relaxation techniques to handle stress.
- ▶ Stay involved in healthy activities and interests.
- ▶ Be aware of your surroundings, know what you are drinking, and cover drinks at parties. Never ride with people who are using drugs.
- ▶ Stay away from parties and places where drugs are present.

## Commitment to Be Drug Free

The first step in staying drug free is to make a firm and deliberate decision. The only way to avoid the pitfalls and dangers of substance abuse is to be fully committed to refusing them before drugs are offered. In many cases it also means steering clear of people who use drugs and of places where drugs are likely to be used or offered. Protective factors present in a teen's life can provide the support needed to live a drug-free life.

Making the commitment to abstain from drugs is a life-enhancing decision. It does not mean that you will be deprived of friends or fun. Quite the opposite is true—being drug free means being able to enjoy life and deal with its challenges and problems in healthful ways. It also shows the strength of your values and demonstrates good character and respect for yourself and others.

### REFUSAL SKILLS

To honor your commitment to living drug free, you can practice refusal skills. These are techniques that you can use to say no when others pressure you to use drugs. Consider all the harmful effects of drug use and all the benefits of a drug-free lifestyle. Doing so will help you stand up for what you believe without apologizing for or compromising your convictions.

## Efforts to Curb Drug Abuse

Individuals are only part of the key to curbing substance abuse. Schools and communities are working together to support students in their efforts to be drug free.

### School Efforts

All over the United States, **drug-free school zones** have been established. These are *areas within 1,000 feet of schools and designated by signs, within which people caught selling drugs receive especially severe penalties*. Efforts in and around schools to cut down on drug use include drug education classes, zero-tolerance policies, and expulsion of students found using drugs. In some areas police officers are assigned to patrol campuses. Security guards and locker searches also help protect teens from the dangers of drug abuse.


### Community Efforts

Communities across the nation are taking positive action to stop drug abuse. **Drug watches** are *organized community efforts by neighborhood residents to patrol, monitor, report, and otherwise try to stop drug deals and drug abuse*. Becoming involved in anti-drug programs in your community is a good way to protect your family and friends from the dangers and violence associated with drug abuse.



## Choosing Healthy Alternatives

There are healthier ways to cope with day-to-day problems than turning to drugs. You can find many ways to feel good about yourself without depending on harmful substances. Getting involved in school or community activities and choosing friends who value a drug-free lifestyle can give teens the focus they need to follow through on a commitment toward a more healthful life.

 Spending time with a parent or trusted adult can reinforce a teen's decision to live drug free.

## Becoming Drug Free

**F**or those teens already in trouble with drugs, it is never too late to get help. Admitting that there is a problem is the first step, and getting help is the essential next step in overcoming that problem. Teens may turn to individual counseling, support groups, or drug treatment centers for help. Support from parents, guardians, school counselors, or family doctors can guide teens to get help. **Figure 23.5** lists some warning signs of drug abuse. If you know of someone who shows these signs, encourage him or her to seek help. The following steps can guide you in offering help to a friend or family member who is using alcohol or other drugs.

- ▶ Identify specific sources of help in your community—drug counselors, treatment centers, or support groups.
- ▶ Talk to the person when he or she is sober. Express your affection and concern for the person, and describe his or her behavior without being judgmental.
- ▶ Listen to the person's response. Be prepared for anger and denial.
- ▶ Discuss the sources of help you have found. Offer to go with your friend or family member to a counselor or support group.



**FIGURE 23.5**

### WARNING SIGNS OF DRUG USE

Be alert to these signs that a person may have a drug problem.

- Gets drunk or high regularly, is often hung over
- Lies about the drugs he or she is using, or constantly talks about drugs
- Stops participating in activities that once were an important part of his or her life
- Changes eating or sleeping habits, shows rapid weight loss
- Has difficulty concentrating
- Takes unnecessary risks or participates in unsafe behaviors
- Gets in trouble with authorities, such as school administrators or police
- Seems withdrawn, depressed, tired, and cares less about personal grooming and appearance
- Has red-rimmed eyes and runny nose not related to cold or allergies
- Has “blackouts” and forgets what he or she did while under the influence

## Getting Help

**D**rug abuse is a treatable condition. Support groups, counseling services, and treatment centers are available in most communities. For teens, the first step in getting help is talking to a parent, teacher, school counselor, health care provider, or another trusted adult. If an adult is unable to recommend a treatment option, teens can call a toll-free hotline or a drug treatment center.

## Treatment Centers

For the most serious addictions, drug users attend treatment centers, facilities that provide medical supervision while a person goes through withdrawal and detoxification, or the removal of drugs from the user's body. Many of these centers provide medications to help with the physical and psychological effects of withdrawal.

## Exploring Issues

### Drug Testing: Yes or No?

It is estimated that substance abuse costs employers \$60 billion a year in decreased productivity, absenteeism, and unintentional injuries. In the interest of health, safety, and economics, many companies are testing employees for illicit drug use. This has triggered a debate over whether people should be tested, who should do the testing, and whether the results are reliable.

#### Viewpoint 1: Walker J., age 16

Drug testing protects all of us. I wouldn't want a firefighter or police officer who used drugs showing up if there were an emergency. It's not just emergency personnel, either. I wouldn't want a drug user as my mechanic, lawyer, doctor, or anything else. Everyone's job impacts others.

#### Viewpoint 2: Mackenzie P., age 17

I think drug testing should be restricted to people who are in jobs where public safety is involved—such as pilots or bus drivers—or to cases where there is reason to suspect substance abuse, such as after a workplace accident.

### ACTIVITIES


1. Who, if anyone, do you think should be tested for drugs in the workplace? Why? In what situations?
2. When people test positive for drugs, what should be done about it? Why?

Types of drug treatment centers include these:

- ▶ **Outpatient Drug-Free Treatment.** These programs usually do not include medications and often consist of individual or group counseling.
- ▶ **Short-Term Treatment.** These centers can include residential, medication, and outpatient therapies.
- ▶ **Maintenance Therapy.** Intended for heroin addicts, this treatment usually includes medication therapy.
- ▶ **Therapeutic Communities.** These are residences for people with a long history of drug abuse. The centers include highly structured programs that usually last from 6 to 12 months.

For people who have less serious addictions, or for those who are released from a treatment center, drug counseling is usually recommended. In either a private or a group setting, drug counselors help people adjust to life without drugs. In conjunction with counseling, many recovering drug users attend support groups. These meetings are gatherings of people who share a common problem and who work together to help one another cope and recover. Support groups are confidential and are usually free. Support groups are a popular treatment for addiction because they provide the long-term moral support that the recovering user needs to remain drug free.



 **Drug counseling and treatment can help a drug user break the cycle of addiction. *What local resources have counseling and support groups for drug users who want to quit?***

## Lesson 5 Review

### Reviewing Facts and Vocabulary

1. Identify some strategies that schools and communities have taken to decrease the availability of drugs.
2. List five signs of substance abuse.
3. How do support groups help substance abusers?

### Thinking Critically

4. **Analyzing.** Analyze the importance of healthy alternatives to drug use.
5. **Synthesizing.** Develop a list of strategies that might help reduce drug use in your school. Write these in a formal list, and submit your ideas to the school principal or school board.

### Health Skills Activity

**Refusal Skills.** Analyze and develop strategies for preventing the use of drugs. Prepare an insert on drug-refusal strategies for your school newspaper. Explain the dangers of drug abuse, and include examples of appropriate and effective refusal skills to avoid unsafe situations.



**WORD PROCESSING** Using a word-processing program can help give your work a personalized look. See [health.glencoe.com](http://health.glencoe.com) for tips on word processing.

## Interview About Steroid Use

An investigative journalist is a person who thoroughly investigates a particular topic and then writes about it. In this activity, you will become an investigative journalist researching the issue of anabolic-androgenic steroid use among amateur and professional athletes. You will then use your research to conduct an interview on the problems and controversies of steroid use among athletes.

### Question 1:

Ask a general question to discover what the person knows about the subject. Remember to prepare several appropriate follow-up questions in advance.

### Question 2:

Ask more specific questions, such as whether the person knows of recent studies, events, or legislation regarding the subject.

### Question 3:

Ask about any personal experience with the issue. Keep these questions appropriate to the occupation of the person you're interviewing.

### Question 4:

Ask for the interviewee's view of the subject. Note any interesting quotes to use in your article.

### ACTIVITY

Conduct research on the issue of steroid use among amateur and professional athletes. Cover the following areas in your research: history of steroid use, science of steroid use, how steroids act in the body, and legislation regarding steroid use. After your research, interview a sports physician, an athletic coach, a health teacher, or a law enforcement officer to add credibility to your research. Use the guidelines in the chart shown above

to help plan, organize, and write your interview questions. Compose as many questions as you consider appropriate, basing their content on your research. Keep good notes or record the interview.

### EXPRESS YOUR VIEWS

Write an article based on your interview. Gear your message toward teens, and warn them about the dangers of steroid use.



## CROSS-CURRICULUM CONNECTIONS



**Write a Fable.** Accidents, health problems, crime, and violence all result from drug abuse. Yet, many teens succumb to its lure. Write a fable with a moral that shows the dangers of drug use. Like the classic Aesop's fables, your fable should focus on an animal to make a point about risk-taking human behavior. Find out about a drug prevention program in your local elementary school system. Obtain permission to make your class's fables part of the program.



**Research and Report.** The social costs of drug abuse are so great that some schools have instituted mandatory drug testing for student athletes. However, some teens claim that drug testing is a violation of their constitutional rights. Research the historical writings that have shaped America's government, and write a letter to the editor of your school newspaper. Report on your research, and relate your findings to the social issues of drug abuse.



**Figure Drug Usage.** According to a recent Monitoring the Future Study, 74.5 percent of students in one year disapproved of marijuana use, and two years later 77.8 percent indicated disapproval. What is the change in percent disapproving over the two years?



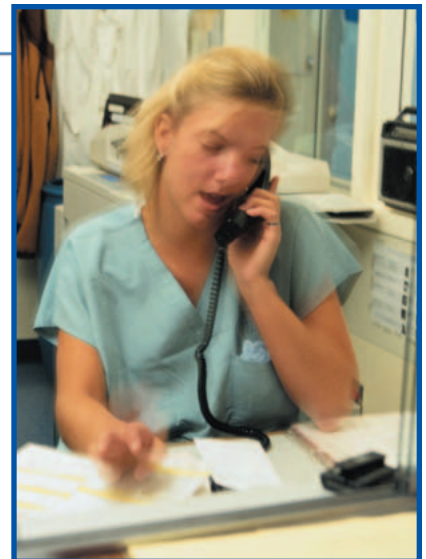
**Investigate Drug Effects.** Narcotics produce their effect on the brain and body by attaching to opioid receptors in the brain. Research the natural function of these receptors. List the similarities and differences between the substances produced by the body and the opiate family of drugs that attach to opioid receptors.

## CAREER Corner

### Medical Records Technician

Do you enjoy managing information? Do you have strong organizational skills and an eye for detail? If you can keep track of a variety of important data, consider a career as a medical records technician. These professionals maintain medical records of patients in hospitals, clinics, or doctors' offices. They track prescription medicines and other health information to ensure that the right treatments and medications are given to patients.

Medical records technicians are required to have an Associate's degree in information management from a community college or vocational/technical school. Find out more about this and other health careers by clicking on Career Corner at [health.glencoe.com](http://health.glencoe.com).



# Chapter 23 Review

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

**Lesson 1** Match each definition with the correct term.

analgesics	antagonistic interaction
additive interaction	vaccines
side effects	synergistic effect
drugs	medicines

1. Drugs that are used to treat or prevent disease or other conditions.
2. Pain relievers.
3. Reactions to medicine other than the one intended.
4. An interaction of two or more medicines that results in a greater effect than when each medicine is taken separately.

**Lesson 2** Fill in the blanks with the correct term.

substance abuse	illegal drugs
illicit drug use	overdose
psychological dependence	addiction
physiological dependence	

When a person uses (5), he or she is committing the crime of (6). In addition to legal problems, using drugs carries the risk of (7), which can be fatal. (8), a condition in which the body develops a chemical need for a drug, is another health risk of drug use.

**Lesson 3** Match each definition with the correct term.

anabolic-androgenic steroids	paranoia
marijuana	inhalants

9. An irrational suspicion or distrust of others.
10. Substances whose fumes are sniffed to give a mind-altering effect.
11. Synthetic substances that are similar to male sex hormones.

**Lesson 4** Match each definition with the correct term.

euphoria	designer drugs
stimulants	narcotics
hallucinogens	psychoactive drugs
depressants	

12. Pain-relieving drugs derived from the opium plant and legally obtainable only by prescription.
13. Drugs that alter moods, thoughts, and sense perceptions, including vision, hearing, smell, and touch.
14. Synthetic substances made to imitate the effects of hallucinogens and other dangerous drugs.

**Lesson 5** Identify each statement as True or False. If false, replace the underlined term with the correct term.

drug-free school zone	drug watches
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15. Drug free school zones are/is organized community efforts by neighborhood residents to patrol, monitor, report, and try to stop drug deals and drug abuse.
16. Drug watches are/is a designated area surrounding schools within which people caught selling drugs receive especially severe penalties.

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

**Lesson 1**

1. Analyze and describe two types of medicines that fight diseases.
2. What is the difference between an additive interaction and an antagonistic interaction?
3. Compare and contrast OTC and prescription medicines.

## Lesson 2

4. Why are illegal drugs dangerous to the user?
5. List three legal consequences of drug use for teens.
6. Analyze and explain the harmful effects of drugs on a fetus.

## Lesson 3

7. Marijuana raises the level of dopamine in the brain. What effect does this have on the body?
8. Examine and describe the physical consequences of inhalant use.
9. What can happen if an athlete uses steroids?

## Lesson 4

10. How does a stimulant affect the central nervous system?
11. What are the symptoms of a hallucinogen overdose?
12. List five harmful effects of “club drugs.”

## Lesson 5

13. List three strategies for staying drug free.
14. How are communities helping in the effort to promote health by stopping drug use?
15. List three types of centers in which drug users can be treated.

## ▶ THINKING CRITICALLY

1. **Evaluating.** The FDA regulates what manufacturers can say in advertisements for both prescription and OTC medicines. Do you think that such regulation is necessary? Support your answer. (LESSON 1)
2. **Analyzing.** What is the relationship between drug use and harmful situations such as violent crimes, HIV and STDs, unplanned pregnancies, and motor vehicle collisions? (LESSON 2)
3. **Evaluating.** Marijuana use lowers the level of testosterone in males. How might this fact affect a teen male’s development? (LESSON 3)
4. **Synthesizing.** In what ways are stimulants and depressants different? In what ways are they similar? (LESSON 4)
5. **Summarizing.** The commitment to be drug free can help in achieving personal goals. Make a list of your personal goals. Analyze the importance of alternatives to drug use to help you reach your goals. (LESSON 5)

## ▶ HEALTH SKILLS APPLICATION

1. **Accessing Information.** Research and analyze laws regulating the information that is required to be on all over-the-counter (OTC) medicine labels. Why does the FDA require this information to appear? (LESSON 1)
2. **Communication Skills.** Write a skit in which a teen expresses concern for a friend’s drug problem. The teen should use effective communication skills to discuss the dangers of drug use and to encourage the friend to seek help. (LESSON 2)
3. **Refusal Skills.** Imagine that you are at a party when someone you know suddenly offers you marijuana. Analyze and explain the refusal strategies you could apply. (LESSON 3)
4. **Stress Management.** Derek, who has been under a lot of stress, confides in you that he wants to take depressants to relax. What would you say to persuade him not to do so? What healthy alternatives for managing stress would you recommend? (LESSON 4)
5. **Goal Setting.** Make a goal to live drug free. Use the goal-setting steps to develop an action plan for honoring your commitment. (LESSON 5)