“I made a commitment to completely cut out drinking and anything that might hamper me from getting my mind and body together. And the floodgates of goodness have opened upon me—spiritually and financially.”

—Denzel Washington, Academy Award-winning actor and director

TEST YOUR DRUG IQ

True or False?

1. You cannot become addicted to heroin if you use it only once.
   FALSE: Many people die or become addicted after one use of certain substances, such as heroin.

2. Drinking alcohol is safer than using other drugs.
   FALSE: Alcohol, which many teens think is relatively harmless, can cause death by alcohol poisoning or from accidents related to alcohol, such as drinking and driving.

3. If you smoke once in a while, you won’t get hooked.
   FALSE: Tobacco is highly addictive, and it’s an addiction that is hard to shake. According to the Surgeon General, the probability of becoming addicted to nicotine after one exposure is higher than for other addictive substances.

Celebrity Drug Abuse

Research Certain musicians and other well-known personalities have had highly publicized bouts with drug abuse. Research the experience of one such celebrity. Why do you think this person may have turned to drugs? What other options do you think he or she may have had? Has this person tried to recover from drug addiction? How?

Present a multimedia report on the results of your research to your class, using video clips or other technology, if possible.
Visit www.glencoe.com to find regularly updated statistics about teen drug use. Using the information provided, determine the answer to this question: How many teens died from drug abuse last year? Visit www.glencoe.com to use Your Health Checklist, an interactive tool that helps you determine your health status.
Using Prescription and OTC Drugs Safely

• I will follow guidelines for the safe use of prescription and over-the-counter drugs.

A substance other than food that changes the way the body or mind functions is a drug. Some drugs, such as tobacco, cocaine, and marijuana, harm health. Other drugs, such as prescription drugs and over-the-counter (OTC) drugs, promote health. Drugs intended to promote health can harm your health if you do not follow guidelines for their safe use. In this lesson you will learn guidelines for the safe use of prescription drugs and OTC drugs.

What You’ll Learn
1. List and explain factors that influence the effects a drug will have on a person. (p. 405)
2. Discuss the ways that drugs are administered to the body. (p. 405)
3. Identify the difference between drug misuse and drug abuse. (p. 405)
4. Identify information that appears on a prescription and OTC drug labels. (pp. 406, 407)
5. List guidelines for the safe use of prescription and OTC drugs. (pp. 406–407)
6. Discuss the role of the FDA in regulating OTC drugs, prescription drugs, and herbal supplements. (p. 407)

Why It’s Important
Prescription and OTC drugs can be helpful if used properly. This lesson will help you learn to use prescription and OTC drugs safely.

Key Terms
• drug
• drug misuse
• drug abuse
• dose
• prescription drug
• brand-name drug
• generic-name drug
• over-the-counter (OTC) drug
• tamper-resistant package
• side effect

Writing About Using OTC Drugs Safely
Suppose that you have a cold and you visit a drugstore to find an OTC drug that will relieve your congestion. You find one that seems perfect for your symptoms, but the label says that people who have asthma should not use it. You have asthma. After you read the information on using OTC drugs safely on page 407, write a response to this situation in your health journal.
People use drugs in responsible and irresponsible ways. **Responsible drug use** is the correct use of legal drugs to promote health and well-being. An example of responsible drug use is taking a prescription drug for its intended purpose according to a physician’s instructions. However, drugs also may be misused and abused.

### What to Know About Drugs

**Drug misuse** is the incorrect use of a prescription or OTC drug. Examples of drug misuse include using another person’s prescription drug. The intentional use of a drug without medical or health reasons is **drug abuse**. Both legal and illegal drugs can be abused. Drug misuse and abuse can destroy both health and relationships.

#### Ways Drugs Enter the Body

**By mouth** The most common way of taking a drug is by swallowing it. A drug in the form of a pill, capsule, or liquid may be swallowed. After being swallowed, a drug travels to the stomach and small intestine and is absorbed into the bloodstream.

**By injection** Some drugs are injected using a syringe and a needle. A drug that is injected must be dissolved in liquid. The drug goes directly under the skin into a muscle or blood vessel, causing immediate results.

**By inhalation** Some drugs are inhaled through the nose or mouth. Drugs that are inhaled produce effects very quickly by entering the bloodstream through the lungs. Sniffing drugs through the nose so that they can be absorbed through the mucous membranes of the nasal passages is **snorting**. Snorting drugs may cause damage to the nose and nasal passages.

**By absorption** A drug that is absorbed enters the bloodstream through the skin or mucous membranes. A patch worn on the body that contains a drug that is absorbed through the skin is a **skin patch**.

A wax-coated form of a drug that is inserted into the rectum is a **suppository**. The absorption of a drug between the cheek and gum is **buccal absorption**. The absorption of a drug when it is placed under the tongue is **sublingual absorption**.

**By implantation** Some drugs are implanted, or placed, under the skin where they can be released into the bloodstream. Other factors, besides the ways a drug enters the body, also determine the effects of a drug. The **dose** is the amount of a drug that is taken at one time. The larger the dose, the greater the effect of the drug on the user.

Weight, age, feelings and health also influence the effects a drug will have on the user.

### Reading Review

1. What is the name of a patch, worn on the body, that contains a drug that is absorbed through the skin?
2. Describe buccal absorption.

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**Make the Connection**

**Substance Absorption**

For more information on how substances are absorbed into the body, see page 220, in Lesson 19.
A drug that is used to treat, prevent, or diagnose illness is a medicine. A medicine that fights specific illnesses and infections and can be obtained only with a prescription, a written order from a licensed health professional, is a prescription drug.

What to Know About Prescription Drugs

A prescription contains a patient’s name; the name of the drug; the form of the drug, such as pills or liquid; the dosage level; directions for use; the physician’s name, address, phone number, and signature; the Drug Enforcement Agency registration; and the refill instructions.

Legal matters Obtaining or using prescription drugs without a prescription is illegal. By law, prescription drugs must be prepared and sold by licensed pharmacists who are allied health professionals who dispense medications that are prescribed by physicians. Prescription drugs are obtained from a pharmacy. A pharmacy is a place where prescription drugs are legally dispensed.

Brand-name versus generic Pharmacists fill prescriptions with either brand-name or generic-name drugs. A drug with a registered name or trademark given to a drug by a pharmaceutical company is a brand-name drug. A drug that contains the same active ingredients as a brand-name drug is a generic-name drug.

Guidelines for the safe use of prescription drugs It is important to follow guidelines when using a prescription drug. Contact your physician if the drug does not seem to be producing the desired effects. If you are experiencing new or unexpected symptoms, report these to your physician. Often people will begin to feel better after a couple of days. However, do not stop taking the drug if you start feeling better. It is also important to carefully follow the instructions on the label. Follow instructions for storing the prescription drug. Keep all prescription drugs out of the reach of children. Since you do not know the effect a drug will have on your body, never take prescription drugs that have been prescribed for another person. Keep prescription drugs in their original containers. And finally, never take prescription drugs that appear to have been tampered with, are discolored, or have a suspicious odor.

FDA Ingredients in legal drugs must be listed as safe and effective by the Food and Drug Administration (FDA). The FDA approves any new ingredient, prescription drug, or OTC drug before it is distributed.

Did You Know?

Generic and brand names of a particular drug usually have therapeutic equivalence, which means two drugs are chemically the same and produce the same medical effects.
Think about the last time you went shopping. Perhaps you were in a supermarket and saw the drug section. You noticed many kinds of drugs on the shelves: aspirin, vitamins, and cold medicines. You saw many different kinds of over-the-counter drugs.

**What to Know About Over-the-Counter Drugs**

A drug that can be purchased without a prescription in stores such as grocery stores or drugstores is an over-the-counter drug (OTC). OTC drugs are medicines that are available without a prescription or a doctor’s direction. OTC drugs usually are taken to relieve signs and symptoms of an illness. Some drugs that were once only available by prescription are now OTC drugs. The Food and Drug Administration (FDA) requires that OTC drugs have labels with detailed information.

**Indication for use** A symptom or condition for which the OTC drug should be used is an indication for use. A symptom or condition for which the OTC drug should not be used is a contraindication for use.

**Guidelines for the Safe Use of OTC Drugs**

There are ways to be safe when taking an OTC drug. First, obtain permission from your parents or guardian to take an OTC drug.

Do not purchase an OTC drug if the tamper-resistant packaging is broken. A package that is sealed to assure the buyer that the package has not been opened previously is a tamper-resistant package. The FDA requires that all OTC drugs be placed in tamper-resistant packages.

Carefully follow the directions for use. Ask a pharmacist or physician if you have questions about the use of an OTC drug. Do not take more than the recommended dose, and do not take an OTC drug if you have a condition listed under the contraindications.

Stop using the OTC drug and notify a physician if you have unwanted side effects. A side effect is an unwanted body change that is not related to the main purpose of a drug. Do not take more than one OTC drug at a time without telling a pharmacist or physician.

Do not take an OTC drug after the expiration date. The effectiveness of a drug may change with time.

Do not participate in activities that put you at risk if you are taking an OTC drug that may cause drowsiness. For example, do not drive a motor vehicle, ride a bicycle, play a contact sport, or operate machinery while taking an OTC drug that may cause drowsiness.

1. Describe an indication for use for OTC drugs and a contraindication for OTC drug use.
2. If an OTC drug causes drowsiness, describe what activities you should not engage in and why.
You have probably heard or read a great deal on the news about dietary supplements. Dietary supplements are nutrients that are not a part of food and that may come in the form of pills, capsules, liquids, or powders. You may have seen stories that claim many benefits from using these substances, such as make you stronger or relieve stress. When prescribed by a health professional, dietary supplements may be helpful, especially if the body cannot get a certain nutrient from a daily diet. But sometimes, dietary supplements can be dangerous.

The Risks of Herbal Supplements

Chemicals from plants that contain nutrients and are taken in addition to or in place of foods in one’s diet are called herbal supplements. These supplements now have crossed from health food stores to supermarket drugstores.

Safety issues While many herbal supplements can be healthful, by no means are they safe for everyone. Suppose you buy a prescription or an OTC drug. You have learned that these products have been tested by the government. You can be fairly certain that they are safe to take, provided they are used responsibly.

This is not the case with herbal supplements. Manufacturers of herbal supplements, including vitamins and minerals, do not have to provide tests that show they are safe and effective before their products are sold to consumers. Manufacturers of supplements are responsible for providing accurate “supplement facts” labels and ingredients lists. The FDA steps in if there are health problems associated with supplements, or if they include a new ingredient that has not been shown to be safe. As a result, the use of herbals has come under much criticism.

**Ephedra** The herbal supplement ephedra is known for its stimulating effect. It provides energy and increased metabolism, with subsequent weight loss. But ephedra also is considered dangerous. The effects of ephedra, as reported to the FDA, include changes in blood pressure, headaches, chest pain, heart attack, stroke, and death. In December 2003, the FDA moved to ban ephedra from being distributed in the U.S. The ban went into effect in early 2004.

**Kava** Another herbal supplement receiving much attention is kava. Kava is an ingredient in plants from South Pacific islands. Kava, which is promoted for relaxation, is sold as a product that is supposed to relieve stress, anxiety, and tension. There appears to be evidence that kava causes liver diseases, such as hepatitis, cirrhosis, and liver failure.
Key Terms Review

Complete these fill-in-the-blank statements with the lesson Key Terms on the left. Do not write in this book.

1. ______ is the incorrect use of a prescription or OTC drug.
2. A drug purchased without a prescription is called a(n) ______.
3. An unwanted body change from a drug is called a(n) ______.
4. A drug with a trademark manufactured by a drug company is a(n) ______.
5. The general name for a substance other than food that changes the way the body works is a(n) ______.
6. A written order by a health professional for a drug is a(n) ______.
7. A drug that has the same ingredients as a brand-name drug is a(n) ______.
8. The amount of a drug taken at one time is a(n) ______.
9. A package that is sealed, which assures the user it has not been opened, is in a(n) ______.
10. ______ is the intentional use of a drug without medical or health reasons.
11. What are the five ways in which drugs can enter the body?
12. Of the five ways drugs can enter the body, which one allows the drug to be absorbed most quickly?
13. Name at least eight types of information that can be found on a prescription.
14. Describe the difference between indication of use and contraindication of use.

Critical Thinking

19. Why might a health professional prescribe a dietary supplement to one of his or her patients?
20. Why do you think some drugs require a prescription while other drugs are sold over the counter?
21. What is the difference between drug misuse and drug abuse?
22. Why might a person request a generic-name drug from a physician rather than a brand-name drug?

Real-Life Applications

23. If a peer offered you use of his or her prescription drug, what would you do?
24. What are some things to consider if you decide to take an herbal supplement?
25. Your parent has a prescription for headaches. You have a headache. Why do you think it would not be wise to take the prescription medicine?
26. What do you think are common illnesses for which people take OTC drugs?

Activities

Responsible Decision Making

27. **Determine** You have followed the directions on the label of an OTC cold medicine but feel no relief. You could double the dose. What should you do? Refer to the Responsible Decision-Making Model on page 61 for help.

Sharpen Your Life Skills

28. **Access Health Information** Working with a parent at home, read the labels of several OTC drugs, including the ingredients, the indications for use, and the contraindications for use. Ask your parents for help in understanding the labels.