

# Chapter 11

## Medications and Drugs

### Lesson 11.1


#### Medications

### Lesson 11.2

#### Drugs

### Lesson 11.3

#### Drug Abuse and Addiction

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## What's Your Health and Wellness IQ?

Take this quiz to see what you do and do not know about drug abuse and addiction and how using drugs can affect health. If you cannot answer a question, pay extra attention to that topic as you study this chapter.



### Health and Wellness IQ

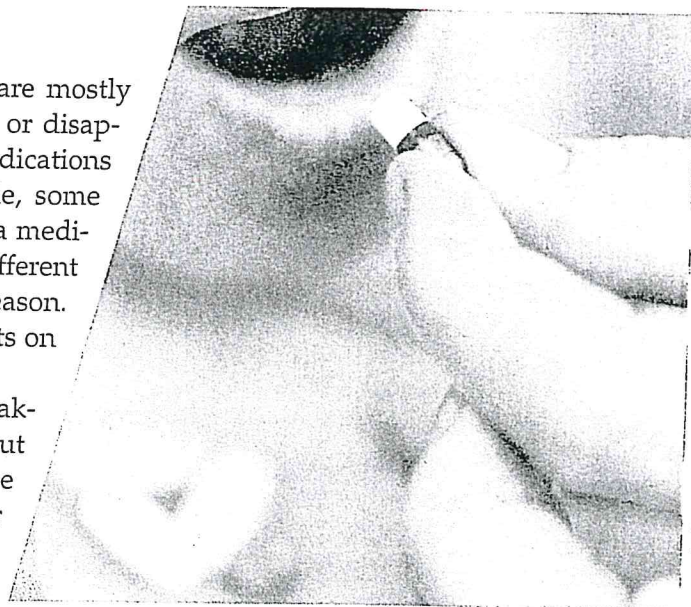
1. Over-the-counter and prescription medications cannot be abused like other drugs, such as cocaine or heroin.	True	False	It Depends
2. Some medications can have different effects depending on whether they are taken with food, alcohol, or other medicines.	True	False	It Depends
3. More people die each year from drug overdose due to the misuse of prescription drugs than from other drug use.	True	False	It Depends
4. People only suffer serious consequences if they use a drug many times or over a long period of time.	True	False	It Depends
5. People who are addicted to a drug must take larger and larger amounts of it to experience the same effect.	True	False	It Depends
6. People who are addicted to drugs can stop using drugs relatively easily whenever they choose to do so.	True	False	It Depends
7. Because marijuana is a gateway drug, it is not dangerous.	True	False	It Depends
8. A person who uses inhalants just once can die.	True	False	It Depends
9. A person's environment is a risk factor for whether he or she will abuse or become addicted to drugs.	True	False	It Depends
10. Drug addiction is a relatively easy problem to treat, as long as the person wants to stop using drugs.	True	False	It Depends

1. Identify each statement as True, False, or It Depends. Choose It Depends if a statement is true in some cases, but false in others.
2. Revise each False statement to make it true.
3. Explain the circumstances in which each It Depends statement is true and when it is false.

## Setting the Scene

Chances are, your experiences with medications are mostly positive—after taking them, your symptoms lessened or disappeared and you felt better. People sometimes use medications in ways that hurt their health, however. For example, some people may take more than the prescribed amount of a medication or another person's medication to experience different sensations. Some people use drugs for this same reason. Medication and drug abuse can have devastating results on a person's health.

In this chapter you'll learn how medications, when taken properly, can improve health. You'll also learn about the ways in which both medications and drugs can be abused. This chapter will also review some strategies for the prevention and treatment of medication and drug abuse and addiction.



# Lesson 111

## Medications

### Key Terms E-Flash Cards

In this lesson, you will learn the meanings of the following key terms.

analgesics

euphoria

medication

medication abuse

medication misuse

opiates

opioids

over-the-counter (OTC)

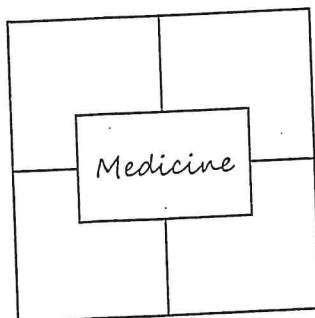
medications

prescription medications

### Before You Read

#### Medicinal Knowledge

Create a 4-square organizer like the one shown below and place the word *medicine* in the middle. Record 4 facts you know or think you know about medicine.



### Lesson Objectives

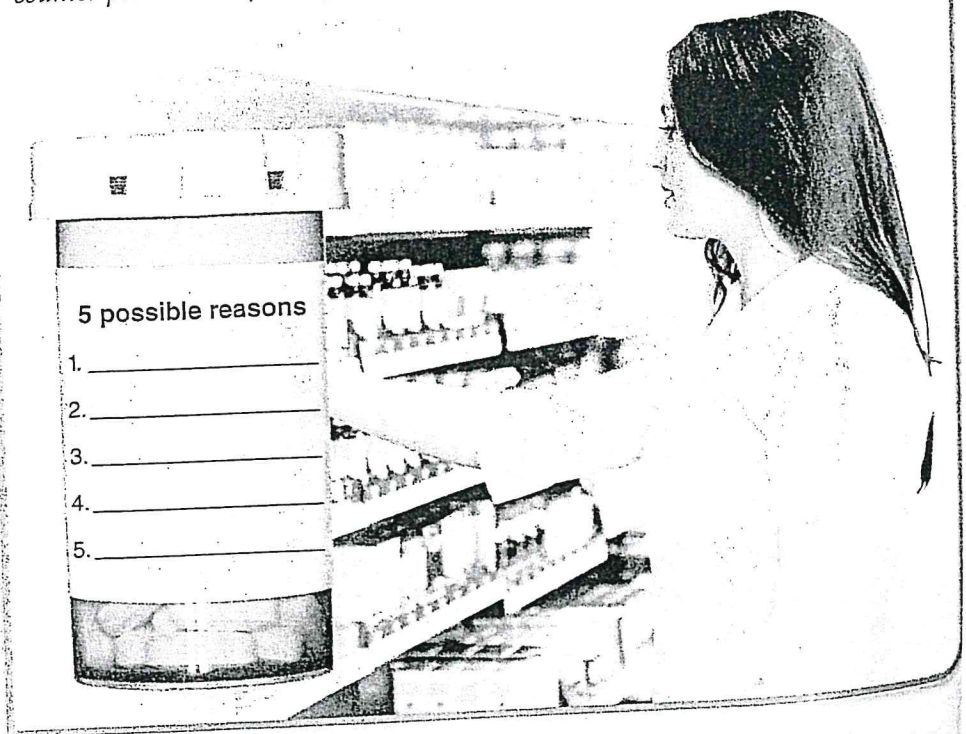
After studying this lesson, you will be able to

- identify the main reasons people use medications;
- differentiate between over-the-counter and prescription medications;
- describe different ways to take medications;
- summarize common health risks associated with taking medications; and
- list safe strategies for using medications.

### Warm-Up Activity

#### Explaining Medication

On a separate sheet of paper, list 5 specific reasons why someone may need to take medications. What kinds of diseases and disorders might require a medication? If you know of someone who is taking medication, is that person using an over-the-counter product or a prescription product?



In this lesson you will learn about medicine and how, when used safely, it can be an effective way to improve health. You'll learn about different types of medicines and the ways they can be taken. Health risks involved with taking medicines will also be reviewed. Finally, you will learn safe strategies for taking medicines.

## Uses for Medications

A *medication* (also called *medicine*) is a substance used to treat disease or relieve pain. Sometimes people use medications to help them function in daily life. There are four main reasons people use medications:

- *treat* symptoms of an illness;
- *cure* a disease;
- *manage* a disease; or
- *prevent* a disease.

## Types of Medications

In the United States, companies developing new medications must run tests to prove the medications are safe before selling them. These tests are called *clinical trials*. After a company tests a new medication, the *Food and Drug Administration (FDA)* must then approve it. The FDA is a government agency that is responsible for making sure medications are safe to use, effective, and secure from tampering.

Before determining whether medications are ready to be approved for use by the public, the FDA reviews the company's evidence about the chemicals in the medication, the side effects, and the medication's ability to impact the condition it is designed to treat. The FDA also decides whether a medication should be sold with or without a doctor's prescription.

## Over-the-Counter Medications

*Over-the-counter (OTC) medications* are sold to people without a doctor's prescription. Over-the-counter medications are generally safe to use without specific instructions from a doctor or pharmacist. These medicines can easily be purchased at local stores and pharmacies (Figure 11.1).

OTC medications are used to treat the symptoms of many relatively minor health conditions. The most commonly used OTC medications are *analgesics* (pain relievers), such as aspirin, acetaminophen, and ibuprofen.

*medication*  
a substance used to treat a disease or relieve pain

*over-the-counter (OTC) medications*  
medications that are sold without a doctor's prescription

*analgesics*  
medications that relieve pain

Figure 11.1

Over-the-counter medications can be purchased at a local drugstore with or without a prescription. Which over-the-counter medications do you occasionally use?



*prescription medications medication that can only be sold to a person with a prescription from a doctor or other licensed healthcare professional*

## Prescription Medications

*Prescription medications* can only be sold to a person with a prescription from a doctor or other licensed healthcare professional. The doctor will determine how much of the medication a patient needs for treatment. The prescribed medication is obtained through a licensed pharmacist. A person cannot get more of the prescribed medication without an approval for a refill from the healthcare professional. Different types of prescription medications have different functions:

- *Antibiotics* kill or slow the growth of bacteria.
- *Anesthetics* eliminate or reduce pain.
- *Vaccinations* work with the body's natural immune system to reduce the risk of developing an infection or disease.

With many prescription medications, doctors will routinely check therapeutic medication levels by ordering blood tests to see how much of the medicine is in the body. If therapeutic levels are too high or too low, then the medication could either produce harmful results or not be effective at all.

### Figure 11.2

Many different methods are used to deliver medicine into the body: taking pills, applying cream, or drinking a medicine in liquid form. *Why do you think there are so many different ways to take medicine?*

## Ways to Take Medications

Medications are delivered, or taken, in many different ways (Figure 11.2). Medications that come in the pill, tablet, capsule, or liquid forms can be swallowed. Liquid medications can also come in drop form—drops are applied to a particular part of the body. For example, a liquid antibiotic to treat an eye infection may be applied to the eye using a dropper.

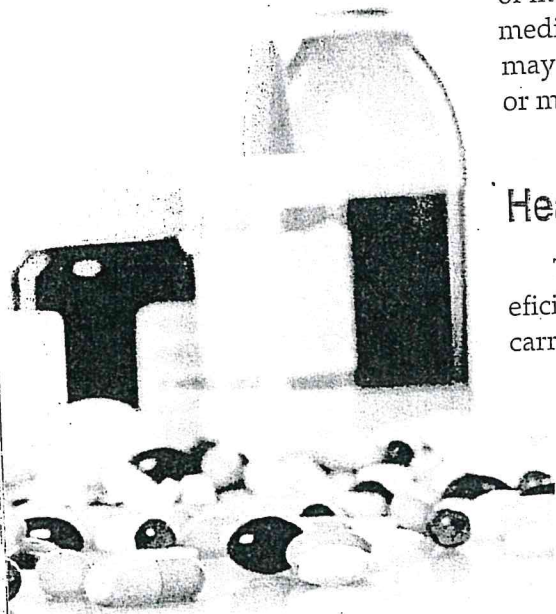
Medications in cream, gel, or ointment forms are rubbed on a particular part of the body. Transdermal patches have a specific dosage of medication on a patch that is placed on the skin, which absorbs the medication into the bloodstream. If you have asthma or allergies, you may treat your symptoms with medications you inhale into your nose or mouth. Medications may also be injected directly into the body.

## Health Risks of Taking Medications

Taking over-the-counter and prescription medications can be beneficial for your health. Using these medications, however, can also carry some risks.

### Side Effects

All medications, even OTC medications, can have side effects. For example, many medications used to treat cold symptoms may cause drowsiness. In some cases, medications can have more serious side effects, such as hallucinations, dizziness, and stomach bleeding and ulcers.



Over-the-counter medications can even cause life-threatening problems. *Reye's syndrome* is a rare but potentially fatal disease in children. Because some evidence suggests that aspirin can trigger this disease, children under 18 years of age should never be given aspirin.

### Medication Interactions

Some medications cause health risks by interacting with other medications, dietary supplements, foods, or drinks. Many medications should not be taken with alcohol because alcohol use can reduce the medication's effectiveness and produce side effects.

### Medication Sensitivities

Sometimes the same medication can have different effects on different people, which can cause further health risks. One person might experience a benefit from using only a small amount of a medication while another requires a larger amount.

### Allergic Reactions

People can experience an adverse reaction to medication. In some cases these reactions can be relatively minor, such as vomiting, nausea, or a rash. In other cases, these reactions can be much more serious and even life-threatening. People are most often allergic to antibiotics.

### Treat Symptoms, Not Causes

A drawback of using OTC medications is that they typically relieve the symptoms of a health problem but do not treat the underlying cause of these symptoms. A *symptom* is something that is experienced by an individual, such as a headache, sore throat, or nausea. Sometimes symptoms can clearly indicate the cause of a health problem.

In other cases, however, symptoms are not so clearly linked with their cause. If you have pain in your muscles, the cause of this pain may be difficult to determine. For example, muscle pain could be caused by an injury resulting from exercise. It could also be caused by an infection or disorder, such as lupus.

When the cause of a symptom is not clear, you should make it a priority to see a health professional. A professional can consider the symptoms and the different factors that might be causing these symptoms.

## Health in the Media

### The Media and Prescription Medication Use

In the United States and New Zealand, commercials and advertisements for prescription medications are common and legal. In other countries, however, these types of advertisements are illegal.

Marketing messages for prescription medications lead many people to believe that taking a particular medicine is the best solution for their health problem. Health experts often recommend, however, that people try other strategies before taking medications, which are expensive and can cause unwanted side effects. When you see a prescription medication commercial, pay attention to the side effects being described. Commercials are required to include this information.



#### Thinking Critically

1. Do you think commercials for prescription medications should be legal or illegal in the United States? Explain your answer.
2. Do you think consumers should be skeptical about ads promoting prescription medications? Why or why not?

Figure 11.3

Drug labels give instructions regarding how a medication should be used and warn of possible side effects associated with the drug. Look at prescription drug labels to see if you can identify the types of information called out in the example at the right.

Number used by the drugstore to identify this drug for your refills	Local Pharmacy 123 MAIN STREET ANYTOWN, USA 11111 NO 0060023-08291	Doctor's name DR. C. JONES	Prescription fill date DATE 06/23/19
Person who gets this drug	JANE SMITH 456 MAIN STREET ANYTOWN, US 11111		
Instructions about how often and when to take this drug	TAKE ONE CAPSULE BY MOUTH THREE TIMES DAILY FOR 10 DAYS UNTIL ALL TAKEN		
Name of drug and strength of drug	AMOXICILLIN 500MG CAPSULES		
Number of refills before certain date	QTY MRG NO REFILLS - DR. AUTHORIZATION REQUIRED USE BEFORE 06/23/20 SLF/SLF		

*medication misuse*  
any use of medicine that does not follow the medicine's instructions  
*medication abuse*  
the intentional use of medicines for reasons other than the prescribed purpose

Suppose you take medication to relieve the pain of a sore throat. Although this medication will temporarily reduce the pain of swallowing, it will not actually treat the bacteria or virus causing your sore throat. If you have strep throat, you will need to see a doctor and will probably be prescribed an antibiotic.

### Medication Misuse

*Medication misuse* involves not following a medication's instructions. Following the exact instructions will help you avoid many potential health risks. People may misuse medication unintentionally because they forgot or do not understand what their doctor told them. They might misunderstand the label or instructions for taking the medication. Medication misuse includes instances in which people stop taking a medication before they should. It is important to carefully read the labels on both OTC and prescription medications before taking them. Otherwise, medications may not be effective and increased health risks, such as unpleasant side effects, may result.

### Medication Abuse

*Medication abuse* involves the intentional use of medications for purposes other than those intended by the prescribing doctor (Figure 11.4). You may be surprised to learn that more people die in the United States each year from overdoses caused by prescription medications than from the use of drugs. The most commonly abused prescription medications are opioids, depressants, and stimulants.

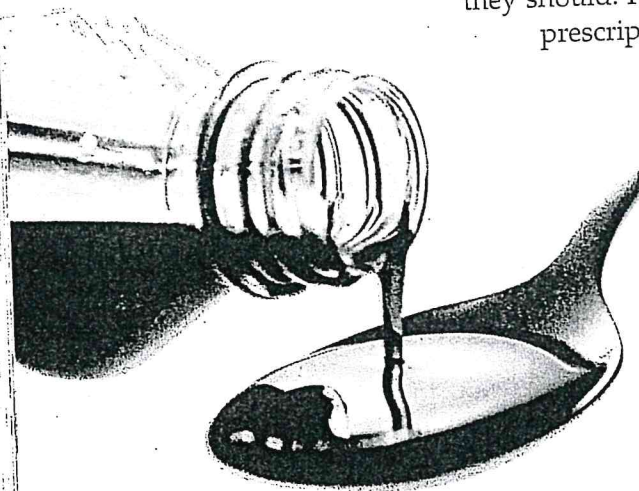


Figure 11.4

One in 10 teenagers have reported abusing cough medicine.

**Opioids.** *Opiates* are substances originating from the poppy plant, which contains opium. *Opioids* (synthetic opiates) are prescription medications typically prescribed to relieve pain (Figure 11.5). They include hydrocodone, codeine, morphine, and oxycodone. Examples of opioid medication include Vicodin®, OxyContin®, Percocet®, Kadian®, and Avinza®.

Using opioids causes people to feel euphoric, which is one reason these medications are misused and abused. A person may be prescribed an opioid by a doctor to relieve pain. Over time, the person may become psychologically and physically dependent on the medication. Continued opioid use leads the nerve cells in the brain to stop producing endorphins, which are natural painkillers. This leads the person to become physically dependent on taking opioids to relieve pain.

Opioid use can lead to numerous side effects, including drowsiness, dizziness and weakness, nausea, impaired coordination, confusion, sweating and clammy skin, and constipation.

Taking opioids is dangerous because they slow breathing and decrease a person's pulse and blood pressure. A person who abuses opioids can become unconscious and even die. People who combine opioids with alcohol or other depressants are at increased risk of experiencing a fatal drug overdose.

**Depressants.** *Depressants*, which are also called *sedatives* or *tranquilizers*, are used to reduce anxiety and increase a person's ability to relax and stay calm (Figure 11.6). Examples of depressant medication include Valium®, Xanax®, Ambien®, Lunesta®, Nembutal®, and Mebaral®. These medications are also used to help people sleep. A slang term for depressants is *downers*. Depressants include anti-anxiety medications, sleep medications, and *barbiturates*, which are more frequently used for surgical procedures or seizure disorders.

Depressants slow the central nervous system, causing a person's rate of breathing and heart rate to decrease. Depressant use can lead to side effects that include drowsiness and sleepiness, slowed and slurred speech, poor concentration, lack of coordination, confusion, and lowered inhibitions.

A person who takes relatively small amounts of a sedative may experience only a feeling of relaxation. Taking larger amounts, however, can dangerously decrease the heart rate and breathing, causing a person to lose consciousness and even die.

**Stimulants.** Stimulants are medications used to increase energy, alertness, and attention (Figure 11.7). Slang terms for stimulants include *speed*, *uppers*, and *vitamin R*. They are available both with a prescription and over-the-counter. People who have attention deficit hyperactivity disorder (ADHD) are often prescribed stimulants. Examples of OTC stimulants include energy pills and appetite suppressants. Using OTC stimulants can be extremely dangerous and even life-threatening.

Common stimulants, such as *amphetamines*, increase the level of dopamine in the brain, producing *euphoria* (intense happiness). Although the brain naturally produces dopamine, stimulant use leads to a rapid increase in dopamine levels, which increases the likelihood of becoming addicted over time. Side effects of stimulant use are listed in Figure 11.8 on the next page.

*opiates*  
substances that come from  
the poppy plant  
*opioids*  
synthetic opiates that are  
prescribed for pain relief

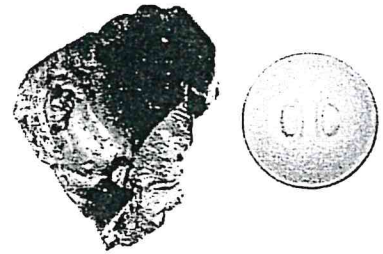


Figure 11.5

Opium (above left), often found in prescription medications such as OxyContin (right); is a substance that relieves pain.

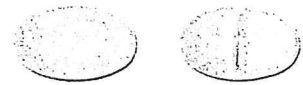


Figure 11.6

Prescription drugs such as Xanax, which contain depressants, slow the body's central nervous system and may lead to drowsiness.



Figure 11.7

Prescription drugs that contain stimulants, such as these amphetamines, increase dopamine levels in the brain and lead to alertness and concentration.

*euphoria*  
a feeling of intense happiness  
caused by high levels of  
dopamine in the brain



**Figure 11.8 Prescription Medications and Their Side Effects**

Drug	Side Effects	Long-Term Consequences
<b>opioids</b> (hydrocodone, codeine, morphine, and oxycodone)	drowsiness, dizziness, weakness, nausea, vomiting, impaired coordination, confusion, sweaty and clammy skin, constipation	dependence, tolerance, slower breathing rates, low blood pressure, unconsciousness, coma, death (especially when combined with alcohol or other depressants)
<b>depressants and sedatives</b> (antianxiety medications, sleep medications, and barbiturates)	drowsiness and sleepiness, slowed and slurred speech, poor concentration, lack of coordination, confusion, lowered inhibitions	dependence, tolerance, depression, chronic fatigue, breathing problems, difficulty sleeping, coma, death (often by overdose)
<b>stimulants or amphetamines</b> (ADHD medication, energy pills, weight-loss supplements)	increased blood pressure and heart rate, decreased quality of sleep, decreased appetite (possibly leading to malnutrition), apathy, depression	dependence, tolerance, feelings of hostility and paranoia, increased body temperature, irregular heartbeat, increased risk of heart attack and stroke

**Personal Profile**

**Are You at Risk of Abusing Drugs?**

*These questions will help you assess your risk of using drugs. I carefully read the instructions before taking any type of medication. yes no*

*I never take a medication prescribed for someone else. yes no*

*I tell a doctor or pharmacist about any medications or supplements I'm taking. yes no*

*I do not have family members who regularly misuse or abuse some type of medication or drugs. yes no*

*I do not have friends who regularly misuse or abuse some type of medication or drugs. yes no*

*I do not take risks because I am more concerned about the consequences. yes no*

*I avoid going to parties where drugs are present. yes no*

*I feel confident that I could refuse a friend's offer to try drugs. yes no*

*Add the number of no answers to assess your risk of developing problems related to drug use. The more no answers you have, the greater your risk.*

**Safe Strategies for Using Medications**

Carefully reading and following OTC and prescription medication usage instructions can help avoid misuse and abuse of medications and reduce health risks (Figure 11.9). The instructions should be provided on the medication label, or with the medication box or container. The instructions should include the following:

- how much of the medication to take
- how to take the medication (by mouth, through injection, by inhalation)
- how to store the medication
- how long to wait before taking more medication
- possible side effects, such as dizziness or drowsiness
- whether you should take this medication with food or drink
- whether this medication interacts with other substances that should therefore be avoided

Talking to your doctor or pharmacist before taking any medication is important as well. You need to let them know if you are taking other medications regularly, including OTC medications and even herbal supplements. You also need to let them know if you have any allergies to medications. Other strategies for using medications safely include the following:

- Never use a medication prescribed for someone else or let someone else use medication prescribed for you. Prescriptions are given specifically for one person, based on that person's symptoms, age, weight, and height, and cannot be used safely by anyone else.
- Never take more than the recommended dosage of a medication. This can lead to accidental overdosing and other serious problems.
- Do not give OTC medications intended for adults to infants or children. There are OTC medications specifically intended for children's use.
- Store medications safely in their original containers and keep them away from where pets or younger children might reach them.
- Check expiration dates and safely discard any medications that have expired.

**Drug Facts**

<b>Active ingredient (in each tablet)</b> Chlorpheniramine maleate 2 mg	<b>Purpose</b> Antihistamine
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**Uses** temporarily relieves these symptoms due to hay fever or other upper respiratory allergies:  
 ■ sneezing ■ runny nose ■ itchy, watery eyes  
 ■ itchy throat

**Warnings**  
 Ask a doctor before use if you have  
 ■ glaucoma  
 ■ a breathing problem such as emphysema or chronic bronchitis  
 ■ trouble urinating due to an enlarged prostate gland

Ask a doctor or pharmacist before use if you are taking tranquilizers or sedatives

**When using this product**  
 ■ You may get drowsy ■ Avoid alcoholic drinks  
 ■ Alcohol, sedatives, and tranquilizers may increase drowsiness  
 ■ Be careful when driving a motor vehicle or operating machinery  
 ■ Excitability may occur, especially in children

If pregnant or breastfeeding, ask a health professional before use.  
 Keep out of reach of children. In case of overdose, get medical help or contact a Poison Control Center right away.

**Directions**

Adults and children 12 years and over	Take 2 tablets every 4 to 6 hours; not more than 12 tablets in 24 hours
Children 6 years to under 12 years	Take 1 tablet every 4 to 6 hours; not more than 6 tablets in 24 hours
Children under 6 years	Ask a doctor

**Other information** Store at 20-25°C (68-77°F)  
 ■ Protect from excessive moisture

**Inactive ingredients** D&C yellow no. 10, lactose, magnesium stearate, microcrystalline cellulose, pregelatinized starch

**Therapeutic substance in drug**

**Product type**

**Symptoms or diseases the drug treats**

**When not to use this drug, when to stop taking it, when to see a doctor, and possible side effects**

**Read carefully: how much to take, how often to take it, and when to stop taking it**

**Other things in the drug, such as colors or flavorings**

**More information on how to store the drug**

**Figure 11.9**

Over-the-counter medication drug labels include information such as which diseases the medication treats, what the correct dosage is, and possible side effects.

If a health problem does not go away after using OTC medication, see a healthcare professional. Let your doctor know right away if you feel worse after taking a medication, or if you start to develop symptoms such as a rash, vomiting, or difficulty breathing. These symptoms may indicate that you are having an allergic reaction to the medication and need to immediately seek emergency medical care.

## Lesson 11.1 Review



### Know and Understand

1. List four main reasons people use medications.
2. Which government agency is responsible for making sure medications are safe to use?
3. What are the three most commonly abused prescription medications?
4. List three side effects that may occur as a result of stimulant use.
5. Differentiate between over-the-counter and prescription medications. Give an example of each.
6. Compare medication misuse and medication abuse.

### Real World Health

Create a warning poster that could be placed on the wall by the medicine cabinet in your bathroom. Make the poster colorful so it gets the attention of young children in your home. Make sure you include the essential facts that children need to know about the dangers of medications if not taken properly and with adult supervision.

# Lesson 11.2

## Drugs

### Key Terms



E-Flash Cards

In this lesson, you will learn the meanings of the following key terms.

- bath salts
- club drugs
- cocaine
- crystal meth
- drug abuse
- drug overdose
- drugs
- hallucinogens
- heroin
- hypoxia
- inhalants
- marijuana

### Before You Read

#### Sticky Notes

Your teacher will pass out sticky notes. As you read this lesson, mark the text with sticky notes to indicate points of interest, confusion, or a place where you remembered a connection to something you already know. When you have finished the lesson, discuss the concepts you have selected with a fellow student.

### Lesson Objectives

After studying this lesson, you will be able to

- name common types of drugs;
- identify side effects caused by different types of drugs;
- summarize the impact of drugs on the brain; and
- describe negative consequences people who abuse drugs often experience.

### Warm-Up Activity

#### Media Versus Reality

Take a few minutes to think about how drugs are portrayed in the media and what you know about drugs in your environment. Pick three or four examples from both the media and your environment and describe them briefly in a chart like the one shown below. Do not mention names or places in your descriptions of the real instances of drug use.

Compare your examples and form a conclusion as to whether or not the media realistically portrays drug use. Write a paragraph stating your conclusion. Include specific examples from your chart that support your conclusion.

Media Examples
Realistic Examples



The word *drugs* refers to substances that cause a physical or psychological change in the body. Most drugs are illegal and can be very dangerous. In this lesson you will learn about some common types of drugs and the harmful effects they can have on the body.

*drugs*  
substances that cause physical or psychological changes in the body and brain

## Marijuana

Marijuana is the most commonly used illegal drug in the United States, according to the National Survey on Drug Use and Health. *Marijuana* is a drug made up of dried parts of the Cannabis plant (Figure 11.10). Although marijuana is usually smoked as a cigarette (a joint) or in a pipe, it can also be brewed into tea or mixed into food and eaten. Slang terms for marijuana include *weed*, *pot*, *Mary Jane*, and *grass*.

*marijuana*  
a drug composed of the dried parts of the Cannabis plant

The active ingredient in marijuana is a chemical called *delta-9-tetrahydrocannabinol (THC)*. Upon entering the bloodstream, this chemical is carried to the brain and other organs. THC affects the parts of the brain that control pleasure, memory, thinking, concentration, sensory and time perception, and movement.

## Side Effects

People who use marijuana experience a number of impairments, including distorted perceptions, poor coordination, difficulty thinking and solving problems, and problems with learning and memory. The effects of marijuana on learning and memory can last for days or weeks after the acute effects of the drug wear off.

Marijuana use can also lead to cardiovascular problems. People who use marijuana show a substantial increase in heart rate. Research has shown that a person's risk of experiencing a heart attack in the first hour after smoking marijuana is five times higher than their usual risk.

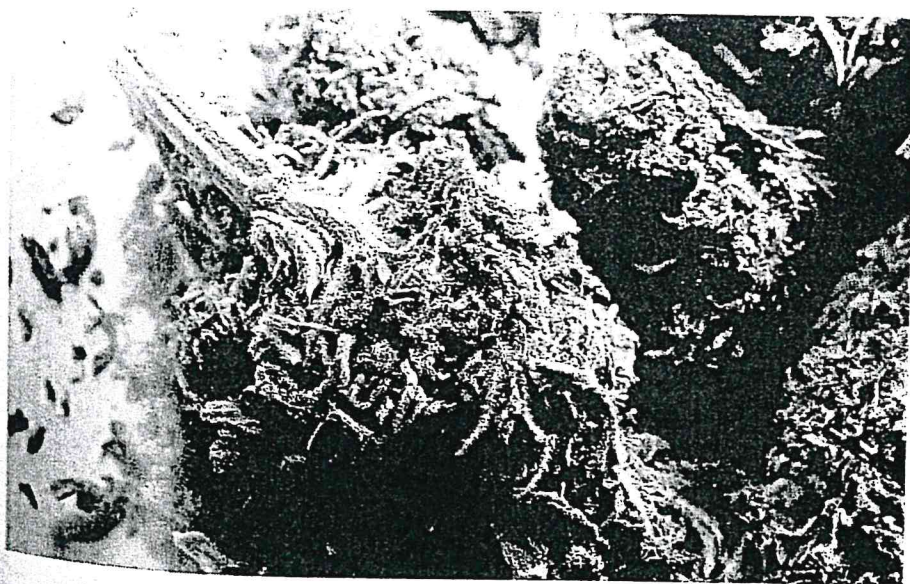


Figure 11.10

Marijuana comes from the dried part of the Cannabis plant and is usually smoked in a cigarette.

People tend to ingest marijuana by smoking it, so they are susceptible to the same respiratory problems that afflict tobacco smokers. Minor respiratory problems include daily cough, more frequent chest illnesses, and an increased risk of lung infection.

Like tobacco smoke, marijuana smoke contains carcinogens, or cancer-causing substances. Marijuana smoke contains 50–70% more carcinogens than tobacco smoke. Marijuana users also expose their lungs to more carcinogenic smoke than cigarette smokers. They tend to inhale the smoke more deeply into their lungs and hold it there longer than people who smoke cigarettes.

## Legalization of Marijuana

Until recently, marijuana has been illegal to sell, buy, and use across the United States. Today, a number of states and the District of Columbia allow adults with a doctor's prescription to legally buy and use marijuana. The THC in marijuana, which is an FDA-approved medication, helps ease the symptoms of various medical conditions, including nausea cancer patients going through chemotherapy experience. In 2014, Colorado was the first state to allow citizens over the age of 21 to buy a limited amount of marijuana for recreational or nonmedical use. The majority of Americans who use marijuana, however, do so illegally.



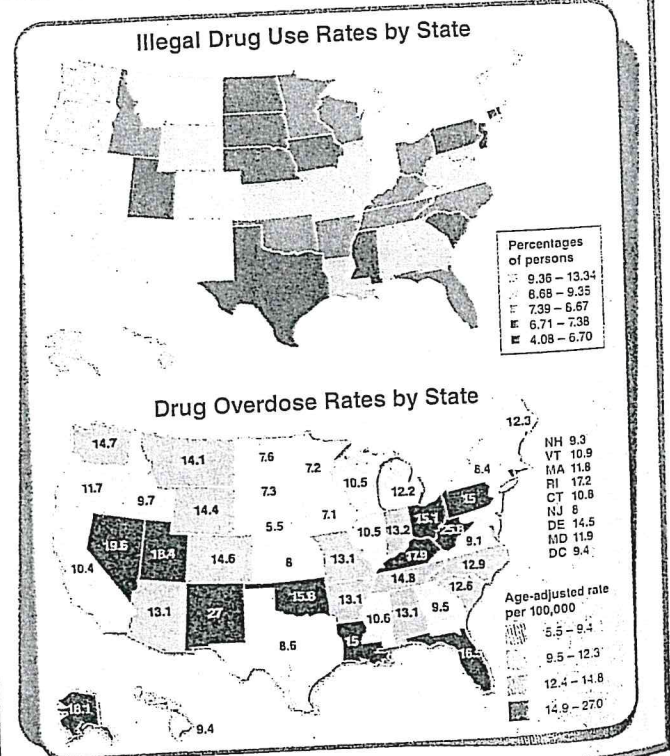
## Local and Global Health

### Rates of Illegal Drug Use around the Country

The rates of illegal drug use vary by state. For each state, the rate of illegal drug use is the proportion of people in the state who use illegal drugs. This is the ratio of the number of people who use these drugs in the state to the total population of the state. According to the color-coded maps shown here, some states have more illegal drug use than others. Drug overdoses are also more common in some states than in other states. Use these color-coded maps to answer the following questions.

#### Thinking Critically

1. In which states do 9.36% or more of the population report using some type of illegal drug?
2. In which states do fewer than 7.39% of the population report using illegal drugs?
3. Which two states report the highest rate of deaths by drug overdoses? Which state reports the lowest rate?



Although the THC in marijuana is approved by the FDA, the marijuana plant is not. The use of marijuana even for medicinal purposes can still pose health risks. Therefore, there is much debate on both federal and state levels of government about whether marijuana should be legalized. Research about medicinal uses for marijuana is ongoing.

Marijuana is commonly called a *gateway drug* because people who use it are more likely to abuse other, more potent and dangerous illegal drugs.

## Cocaine

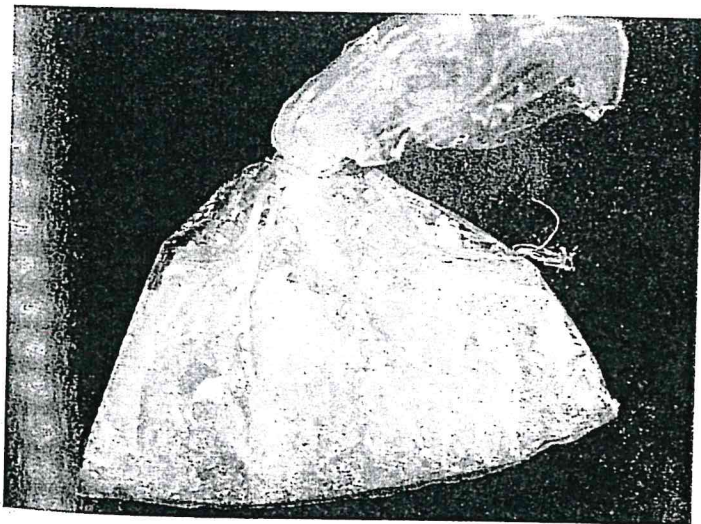
*Cocaine*, a stimulant, is a white powder that comes from the leaves of a coca plant. Cocaine can be snorted through the nose, dissolved in water and injected, or smoked. This illegal drug can also be processed into a solid substance known as *crack cocaine*, which can be smoked or injected. Slang terms for cocaine include *blow*, *coke*, *crack*, *candy*, *rock*, or *snow*.

Like amphetamines, cocaine stimulates the central nervous system by raising levels of the neurotransmitter dopamine in the brain. The increased level of dopamine makes users feel more energetic and mentally alert and less fatigued.

Cocaine can have both short- and long-term negative effects on many different body systems. These side effects include increased body temperature, heart rate, and blood pressure; headaches; abdominal pain and nausea; and paranoia. Cocaine use can also lead to sudden death due to a heart attack or stroke.

## Crystal Meth

*Crystal meth*, a manufactured form of methamphetamine, consists of clear crystal chunks (Figure 11.11). This drug is usually smoked, but it can also be snorted into the nose, injected directly into the bloodstream, or swallowed. Slang terms for this drug include *meth*, *ice*, *crank*, *crystal*, or *speed*. Crystal meth is a very powerful and extremely addictive illegal drug. People who use this drug quickly become physically and psychologically addicted to its use.



### *cocaine*

*a stimulant made of white powder that comes from the leaves of coca plants*

### *crystal meth*

*a manufactured drug that acts as an amphetamine and looks like clear crystal chunks*

Figure 11.11

Crystal meth is an extremely addictive illegal drug that causes erratic behavior and severe anxiety. *Why do you think people use drugs like crystal meth, which are so dangerous?*

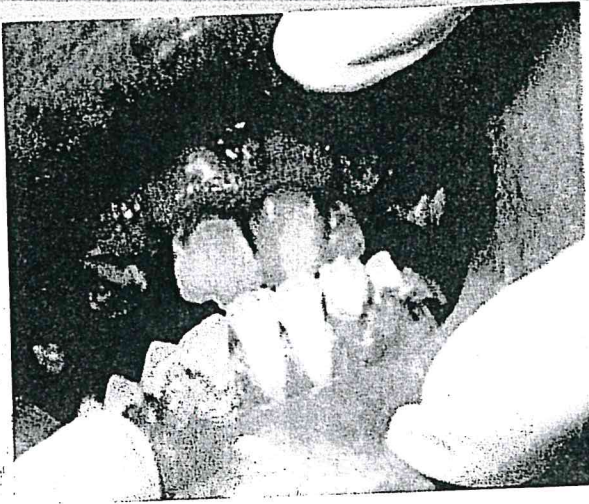


Figure 11.12

One of the more visible side effects of abusing crystal meth is damaged, blackened teeth.

*bath salts*  
manufactured drugs that include the stimulant methylenedioxypyrovalerone (MDPV) and are often found in insect repellent, incense, or plant feeder

*hallucinogens*  
drugs that cause hallucinations and alter a person's sense of reality

Crystal meth has many short-term side effects, which are similar to those of cocaine. These side effects include

- erratic and violent behavior;
- mood swings;
- increased blood pressure and irregular heart rate;
- homicidal and suicidal thoughts;
- tooth decay and cracked teeth (Figure 11.12);
- hallucinations;
- severe anxiety and paranoia; and
- difficulty sleeping.

Long-term use of crystal meth can lead to brain damage, coma, stroke, and death.

## Bath Salts

*Bath salts* are manufactured drugs that contain a stimulant called *methylenedioxypyrovalerone* (MDPV). These drugs are not to be confused with bathing products. Bath salts, which are chemically similar to amphetamines, often come in a white or brown crystalline powder and are marketed as different products, such as incense, plant feeder, or insect repellent. Some people ingest, snort, or inject bath salts. Slang terms for this drug include *cloud nine*, *ivory wave*, *vanilla sky*, *bliss*, or *blue silk*.

Using bath salts can lead to serious side effects, including

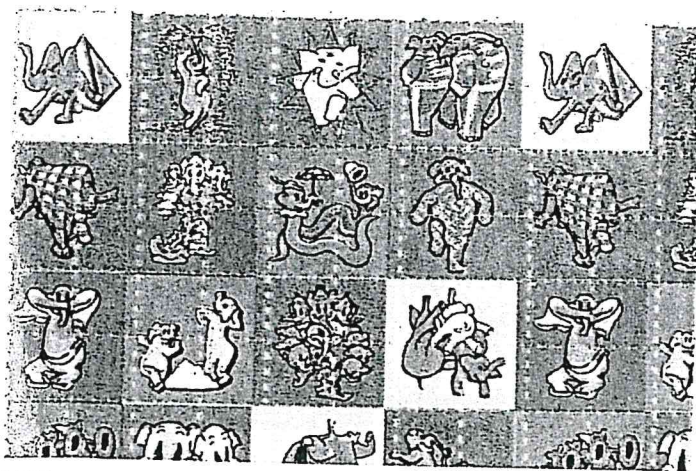
- paranoia;
- chest pains;
- headaches and nausea;
- hallucinations;
- increased heart rate and blood pressure;
- suicidal thoughts; and
- death.

## Hallucinogens

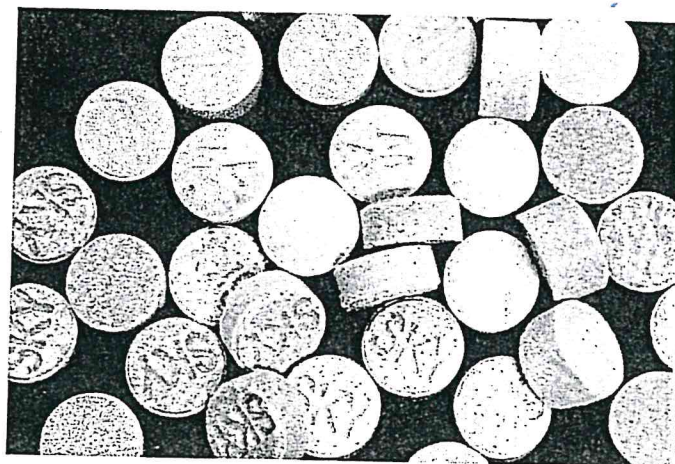
*Hallucinogens* are drugs that change a person's perception of reality. After taking this type of drug, people see, hear, or feel things that are not real. These drugs can be manufactured chemically or created from plants. Hallucinogens can be swallowed as pills or capsules, applied to absorbent paper and dissolved in the mouth, and mixed in foods or beverages. These drugs can also be snorted or smoked.

Some of the most commonly known hallucinogens are

- *LSD* (lysergic acid diethylamide), a drug created from a fungus (Figure 11.13A);
- *Mescaline*, a drug created from the peyote cactus;



LSD



MDMA

Figure 11.13

- *Psilocybin* (4-phosphoryloxy-N, N-dimethyltryptamine), which is found in certain types of mushrooms;
- *PCP* (phencyclidine), a drug initially developed for use as an anesthetic; and
- *MDMA* (3,4-methylenedioxymethamphetamine), meth, "Molly" or "ecstasy," a manufactured drug (Figure 11.13B).

Researchers believe that hallucinogens work, by temporarily disrupting the function of neurotransmitters in the body. Hallucinogens impact many natural processes, including hunger, mood, sexual behavior, aggression, sleep, learning, memory, pain, and sensory perceptions. People who use hallucinogens experience a variety of negative side effects, including

- increased heart rate and blood pressure;
- profuse sweating;
- tremors and uncoordinated movements;
- muscle weakness and numbness;
- sleep disturbances;
- anxiety;
- loss of appetite, nausea, and vomiting;
- confusion;
- delusions and hallucinations, and an inability to discern fantasy from reality;
- mood disturbances, increased anxiety and depression; and
- panic reactions and paranoia, including severe, terrifying thoughts and feelings of despair, fear of losing control, or fear of insanity and death.

Long-term abuse of hallucinogens can have even more serious consequences. These include memory loss; difficulties with speech and thinking; seizures; loss of balance; blurred vision; and a decrease in blood pressure, pulse rate, and respiration. Flashbacks, or recurrences of certain effects of the drugs, such as visual disturbances, may also occur. These flashbacks can happen suddenly, without warning, within a few days or more than a year after using the drug.

(A) LSD is often added to absorbent paper divided into small squares with images printed on them. A square is one dose. (B) MDMA is usually distributed in the form of colorful tablets. Like many street drugs, MDMA tablets often contain ingredients users do not expect. Tablets such as these may be marketed as Ecstasy, but contain other dangerous drugs.



In some cases, even a single use of a hallucinogen can lead to death. Hallucinogen use can cause the blood vessels in the heart and brain to narrow, which can result in a heart attack or stroke. Elevations in blood pressure, heart rate, and body temperature can contribute to brain damage. Hallucinogens can also cause a severe drop in the level of sodium in the blood, which can cause brain swelling and seizures.

## Heroin

The drug known as *heroin* is an opiate derived from morphine—a naturally occurring substance found in poppy plants (Figure 11.14). Heroin, in its pure form, is often mixed or “cut” with other substances. Some substances used to cut heroin may be toxic or poisonous. Heroin can be injected, snorted, or smoked. Slang terms for heroin include *blacktar*, *big H*, and *brown sugar*.

People who use heroin often develop a dependency on the drug and find it very difficult to stop using it. Also, people who use heroin do not know how much of the drug they are consuming in its pure form, which can be especially dangerous.

Heroin users report an initial feeling of pleasure or euphoria, known as a *high*, as the drug enters the brain. Many less positive effects soon follow, however, including dry mouth, severe itching, difficulty thinking, drowsiness, nausea, and vomiting.

Taking heroin and other opiates is dangerous because these drugs slow breathing and decrease a person’s pulse and blood pressure. Someone who abuses opiates can become unconscious and even die.

## Club Drugs

The term *club drugs* refers to several different types of drugs that may be abused by teenagers and young adults at parties, bars, and concerts. These drugs include Flunitrazepam (Rohypnol, or *roofies*) and gamma-hydroxybutyrate (GHB), ketamine, MDMA (ecstasy, or *Molly*), LSD, and other methamphetamines. Club drugs are often taken as a liquid, or in powder form mixed with a liquid. Some types may also be ground up and snorted or injected into the body.

Depending on the drug, side effects can include memory loss, impaired attention, delirium, intense drowsiness, coma, and death. These drugs can also be addictive, so people who attempt to stop using a club drug may experience unpleasant withdrawal effects, such as anxiety, nausea, and tremors.

In some cases, depressants or sedatives are given to people without their knowledge, which is dangerous and illegal. *Date rape drugs* are sedatives that can be slipped into someone’s food or drink to make him or her drowsy and less able to resist unwanted sexual advances. Drugs that are commonly used for this purpose include “roofies” and GHB.



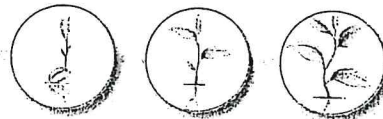
Figure 11.14

Above is a bag of raw heroin decks (bricks) that was confiscated during a drug bust. The illegal operation, called a *heroin mill*, generated millions of dollars from the sale of the drug.

**heroin**  
an opiate drug derived from morphine and often mixed with sugar, powdered milk, or other drugs

**club drugs**  
a category of drugs that are often used at parties, bars, or concerts; include LSD, ecstasy, GHB, and Flunitrazepam (roofies)

## Health across the Life Span



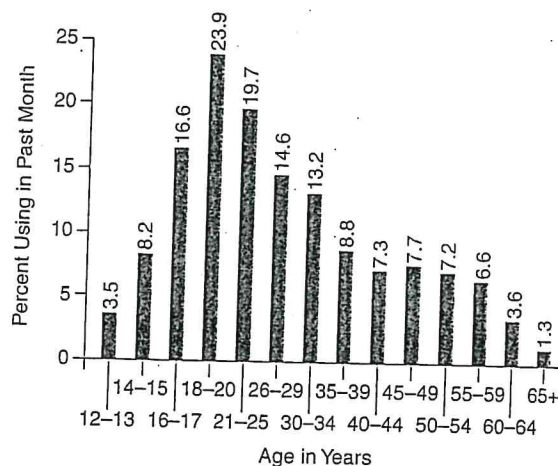
### Rates of Illegal Drug Use by Age

To examine the rate of drug use the Substance Abuse and Mental Health Services Administration sponsors an annual study. Drug use is much more common among people in certain age groups. The bar graph at the right shows the percentage of people, by age group, who used illegal drugs in the month before the study.

#### Analyzing Data

1. Which three age groups are especially at risk of using and becoming addicted to illegal drugs?
2. Why do you think drug use increases with age until the late teens and early 20s, and then starts to decrease?

Illicit Drug Use among Persons Aged 12 or Older, by Age



## Anabolic Steroids

Some people use anabolic steroids to treat medical conditions. Other people use anabolic steroids illegally to help them gain strength and increase muscle size. These drugs can be taken orally, injected, or applied as a gel or cream (Figure 11.15). Slang terms are not common, but they can include *roids* or *juice*. See Figure 11.16 on the next page for common side effects of steroid use. Some side effects of steroid use are specific to gender and age:

- Men experience shrinking of the testicles, reduced sperm count, infertility, baldness, development of breasts, and increased risk of prostate cancer.
- Women experience growth of facial hair, baldness, changes in or disruption of the menstrual cycle, and a deepened voice.
- Adolescents experience stunted growth (caused by premature maturation of the skeleton and accelerated pubertal changes), which leads to a risk of not achieving expected height if steroid use occurs before the adolescent growth spurt is complete.

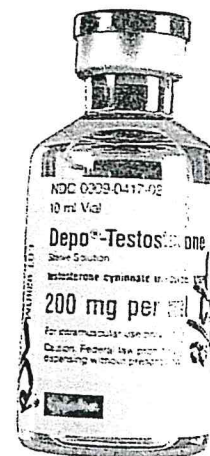


Figure 11.15

The use of steroids can lead to increased muscle mass and strength, but can also cause serious consequences such as heart attack or stroke.

*inhalants*  
chemicals that people breathe in to experience some type of high

## Inhalants

*Inhalants* are chemicals that people breathe in to experience some type of high. These chemicals are inhaled into the nose or mouth in several ways. Chemical fumes may be sniffed or snorted from a container, which is called *huffing*. Chemicals can also be sprayed directly into the nose or mouth. Because the euphoria produced by the chemicals lasts just a few minutes, people tend to use inhalants repeatedly to maintain the feeling.

**Figure 11.16 Illegal Substances and Their Side Effects**

Drug	Side Effects	Long-Term Consequences
<b>marijuana</b> (weed, pot, Mary Jane, grass)	distorted perceptions, poor coordination, difficulty with thinking and problem solving, learning and memory problems	cardiovascular and respiratory problems
<b>cocaine</b> (blow, coke, crack, candy, rock, snow)	increases in body temperature, heart rate, and blood pressure; headaches; abdominal pain; nausea; paranoia	highly addictive; heart attacks, respiratory failure, strokes, and seizures; in rare cases, sudden death occurs during or immediately after first use
<b>crystal meth</b> (meth, ice, crank, crystal, speed)	increased wakefulness; decreased appetite; mood swings; increased blood pressure and body temperature; irregular heart rate; hallucinations, severe anxiety, and paranoia; homicidal and suicidal thoughts	dependence, tolerance, tooth decay and cracked teeth, malnutrition, skin sores caused by scratching, brain damage, coma, stroke, death
<b>bath salts</b> (cloud nine, ivory wave, vanilla sky, bliss, blue silk)	paranoia, chest pains, headaches, nausea, hallucinations, increased heart rate and blood pressure, suicidal thoughts	dependence, tolerance, suicidal thoughts, death
<b>hallucinogens</b> (LSD, peyote, psilocybin, PCP, MDMA, or ecstasy)	delusions and hallucinations; increased heart rate and blood pressure; extreme anxiety; profuse sweating; cramping, tremors and uncoordinated movements; muscle weakness and numbness; sleep disturbances; paranoia	memory loss; difficulty speaking and thinking; seizures; loss of balance; blurred vision; drops in blood pressure, pulse rate, and respiration; flashbacks
<b>heroin</b> (blacktar, big H, brown sugar)	feelings of euphoria; dry mouth, nausea, and vomiting; severe itching; difficulty thinking; drowsiness	highly addictive, cardiovascular problems, spontaneous abortion, death
<b>club drugs</b> (GHB, Rohypnol, ketamine)	impaired attention, learning ability, and memory; amnesia, delirium, and hallucinations; sleep problems	dependence, tolerance, impaired motor function, seizures, coma, death
<b>anabolic steroids</b> (roids, juice)	acne, oily hair, swelling of the legs and feet, persistent bad breath	addictive; increased risk of developing heart disease, stroke, and cancer; high blood pressure; liver damage; severe mood swings and anger; hallucinations; paranoia
<b>inhalants</b> (liquids, aerosols, gases, nitrites)	slurred speech; memory problems; lack of coordination, muscle spasms, and tremors; lightheadedness and dizziness; hallucinations and delusions	hypoxia; hearing loss; damage to the brain, central nervous system, liver, and kidneys; death

Commonly abused inhalants include substances often found in the home, such as

- *liquids* (paint thinners, gasoline, felt-tip markers, and glue);
- *aerosols* (spray paints, hair or deodorant sprays, sprays used to protect fabrics, and vegetable oil sprays);
- *gases* (butane lighters and whipped cream canisters); and
- *nitrites* (products used for medical purposes, such as butyl and amyl nitrites).

**hypoxia**  
a condition in which cells and tissue are deprived of oxygen; often results in severe cell damage

When these chemicals are inhaled they enter the lungs and can cause hypoxia. *Hypoxia* is a condition that occurs when the supply of oxygen needed by the body is depleted. This results in widespread cell damage.

## CASE STUDY Why Huffing Even One Time Doesn't Make Sense

Luke is 16 years old and a junior in high school. He enjoys hanging out with friends and going to parties on the weekends. Most of Luke's friends share his view that using drugs is a bad idea. A couple of his friends, however, started huffing.

Luke did not think huffing was a big deal because it involved products he could easily buy. He would try it the next time his friends invited him to join them. Then Luke heard about a teenage girl in a nearby town who died from *Sudden Sniffing Death Syndrome (SSDS)*. She died after she tried huffing for the first time and her heart stopped beating. Luke agonized for some time but finally decided he would not try huffing—even one time. He also urged his friends to stop.



### Thinking Critically

1. What are some factors that might have led Luke's friends to try inhalants?
2. What are some strategies Luke can use to avoid the temptation or pressure to use inhalants?

Brain cells are particularly affected by a lack of oxygen. Over time, inhalants reduce the ability of nerve fibers to carry messages throughout the body.

Other side effects of using inhalants include slurred speech, memory problems, lack of coordination, muscle spasms and tremors, lightheadedness and dizziness, and hallucinations and delusions.

Inhalant use can also cause serious, permanent side effects. These include hearing loss and damage to the brain, central nervous system, liver, and kidneys. Using inhalants—even once—can cause death due to heart failure or suffocation.

## The Impact of Drugs on the Brain

The brain naturally produces the chemicals dopamine and endorphins. *Dopamine* influences the parts of the brain that control movement, emotion, motivation, and feelings of pleasure. *Endorphins* increase feelings of happiness. When you do something you enjoy, your brain releases these chemicals, giving you a pleasurable sensation. This is why people feel good after being physically active, eating chocolate, or listening to music. All of these activities are natural ways of increasing the level of endorphins in your body, which lifts your mood.

Drugs contain chemicals that change the way nerve cells in the brain send, receive, and process information. Many drugs cause cells in the brain to release abnormally large amounts of dopamine. The brain then reduces its production of the natural chemicals. The person then becomes dependent on drug use for positive feelings. Moreover, the body develops a *tolerance* to a given level of the drug. Larger and larger amounts of the drug are required to achieve the same good feelings. This contributes to drug abuse.

## Drug Abuse

*drug abuse*  
the act of using drugs  
excessively or without  
medical reason

*Drug abuse* occurs when a person uses a drug excessively or without medical justification. The term *substance abuse* is sometimes used interchangeably with *drug abuse*. Substance abuse, however, is a broader term that includes the abuse of other substances—such as tobacco and alcohol—in addition to drugs.

People who abuse drugs often experience many negative health consequences. They also experience other types of negative consequences. These are likely to include the following:

- *Engaging in unsafe behaviors*—Because drug use impairs the ability to think clearly and carefully, people under the influence of drugs are at increased risk of engaging in risky, unsafe behaviors such as unsafe sexual behavior.
- *Contracting an infectious disease*—People who use drugs that are injected with a needle are at increased risk of contracting serious infectious diseases, such as hepatitis or HIV.
- *Being involved in an accident*—Drugs change brain functions and can impair a person's ability to drive safely.
- *Overdosing*—A *drug overdose* is caused by ingesting more of a drug than the body can properly process, or break down, at one time. A person who overdoses on a drug may do so intentionally or accidentally.

In addition to these negative consequences, people who abuse drugs also experience other problems. For example, these people may also have

- legal problems, such as getting arrested;
- academic problems, such as being suspended or expelled from school;
- work problems, such as absenteeism and getting fired;
- financial problems; and
- social problems, such as losing friends.

*drug overdose*  
the ingestion of more of  
a drug than the body can  
successfully process at one  
time

### Lesson 11.2 Review

#### Know and Understand



1. What are *drugs*?
2. Which illegal drug is a manufactured form of methamphetamine?
3. List two commonly known hallucinogens.
4. Which drug is an opiate derived from morphine?
5. What is *hypoxia*?
6. List three negative consequences experienced by people who abuse drugs.

#### Analyze and Apply

7. Explain why marijuana is commonly called a *gateway drug*.

8. Why might bath salts be marketed as different products, such as incense, plant feeder, or insect repellent?

### Real World Health

Imagine that while driving under the influence of marijuana, you caused a severe, life-altering injury to a close friend who was a passenger in your car. Your counselor suggests that you write a letter to your friend expressing your feelings about what happened. Think about your reasons for using marijuana and why you chose to drive with impaired judgment and reflexes. Also think about how the accident has affected your friend's hopes, dreams, and goals for the future, as well as your own. Then write your letter.

# Lesson 11.3

## Drug Abuse and Addiction

### Lesson Objectives

After studying this lesson, you will be able to

- distinguish between physical and psychological addiction;
- describe risk factors for drug abuse and addiction;
- identify strategies for refusing drugs;
- summarize how drug abuse impacts families, friends, and society;
- describe ways to prevent and treat drug abuse and addiction; and
- determine how to help someone who is addicted to drugs.

### Key Terms E-Flash Cards


In this lesson, you will learn the meanings of the following key terms.

- drug addiction*
- self-medication*

### Warm-Up Activity

#### Motivation and Drugs

What behaviors do you associate with drug addiction? On a separate piece of paper, list these behaviors and then find a partner and combine your lists. As you read this lesson, categorize each behavior as a result of either psychological addiction, physical addiction, or both in a chart like the one shown below. Then, compare answers with your partner and discuss areas where you disagree.



Psychological addiction	Physical addiction	Both

### Before You Read

**Abuse and Addiction**  
Create a Venn diagram and use it to compare and contrast drug abuse and drug addiction. What do they share? What is unique to each condition?



**I**n the first lesson of this chapter you learned about misuse and abuse of over-the-counter and prescription medications. (These medications are also commonly referred to as *OTC* and *prescription drugs*.) In the second lesson you learned about the abuse of other drugs, such as cocaine and heroin. People who abuse OTC drugs, prescription drugs, and other drugs are at risk of becoming addicted. Therefore, the use of the terms *drug abuse* and *drug addiction* in this lesson will include OTC and prescription drugs as well as other drugs.

No one who starts using drugs plans to become an addict. Unfortunately, many people who use drugs become addicted and spend years trying to break their habit. In this lesson you'll learn what people can do to avoid becoming addicted to drugs. You'll also learn how people can get help to treat a drug addiction.

## What Is Drug Addiction?

*Drug addiction* is a chronic disease that involves the continued use of a drug regardless of any harmful or negative consequences that may result. People with a drug addiction may experience a physical or psychological addiction to the drug.

*drug addiction*  
a chronic disease  
characterized by the  
continued use of a drug  
regardless of its harmful  
consequences

### Physical Addiction

People often think it is harmless to experiment with drugs, but this is very untrue. Experimentation can lead to regular use, which often results in developing a tolerance for a drug. After people develop a tolerance to a drug, they often become physically addicted.

When people are physically addicted to a drug, their bodies require that drug to function normally. People become used to, or dependent on, having the sensations caused by that drug. If they reduce the amount they take, they experience a strong craving for the drug. They also experience *withdrawal*, or unpleasant physical side effects, when they try to stop taking the drug. These negative feelings make it particularly hard to stop using a drug.

The symptoms of withdrawal vary depending on the specific drug used. They can include vision problems, digestion problems, irritability, difficulty concentrating, sleeplessness, seizures, fatigue, hallucinations, aches and pains, muscle tremors, decreased appetite, and anxiety and depression.

### Psychological Addiction

People who are psychologically addicted to a particular drug feel an intense need or desire for that drug. They feel they need that drug to function normally, and can become distressed if they are unable to use it. For example, someone who is used to taking caffeine pills to stay up writing a paper will feel anxious if the pills are not available the next time an assignment is due.

# Risk Factors for Drug Abuse and Addiction

Although anyone can abuse and become addicted to a drug, experts point to certain risk factors that could increase a person's chances of becoming addicted.

## Biological Makeup

A person's genetic makeup influences whether he or she will become addicted to drugs. People whose parents have addiction problems are at greater risk of becoming addicts themselves. Experts believe that people's genes account for about half of their risk of becoming addicted to drugs.

A person's biological makeup can also influence his or her personality. Some people have a cautious personality and are averse to risk taking. These people may be reluctant to use drugs due to their concerns about the consequences. Other people are more curious and likely to take risks. Unfortunately, a willingness to take risks and use drugs can lead to addiction.

## Mental Health Problems

People who have mental health problems, such as depression or anxiety, may use drugs to cope with their symptoms. The use of drugs by an individual to treat problems and symptoms not diagnosed by a medical doctor is called *self-medication*. People who self-medicate do not get the professional help they need to successfully diagnose and treat their condition. Self-medicating also puts people at risk of developing addictions and more severe mental health problems.

## Stage of Development

The earlier a person begins using a drug, the more likely he or she is to abuse and become addicted to that drug (Figure 11.17). Teenagers are at particular risk of becoming addicted to drugs. This is partly because the

*self-medication*  
the use of drugs to treat symptoms that have not been diagnosed by a medical professional

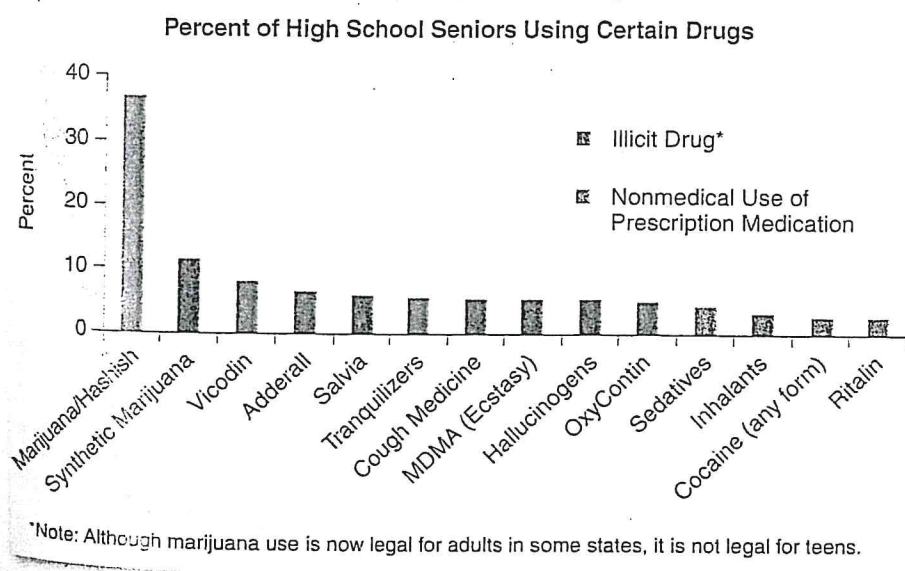


Figure 11.17

What information in this chart most surprises you? Which piece of information most concerns you?



brains of teenagers are still developing in the areas that govern decision-making, judgment, and self-control.

## Environment

The environment in which people live has an impact on their potential exposure to drugs and whether they feel pressured to use drugs. Environment includes a person's neighborhood, school, family, and peers. For example, teens may feel pressured to try drugs if they attend parties where drugs are present.

A person's environment also includes social institutions, such as the media, that reflect and reinforce social values. Some research suggests that teenagers who see drug use in movies are more likely to experiment with drugs themselves. Another study found that half of high school students surveyed believed that seeing professional athletes use steroids influenced their friends' decisions to use steroids.

Choosing to live a drug-free lifestyle can be challenging for teens, especially when their environment exposes them to drugs and the pressures of trying them. There are strategies, however, that teens can use to refuse drugs.

## Research in Action

### *Can Listening to Music Be Bad for Your Health?*

Research shows the typical teenager hears 84 references to alcohol and drug use in music every day—over 30,000 references each year. Researchers in one study looked for references to alcohol and drug use in the lyrics of 279 of the most current popular songs. They found that

- marijuana use is mentioned in about 14% of the songs;
- alcohol use is described in 24% of the songs; and
- other substances are mentioned in another 12% of the songs.

Even more alarming, many of the lyrics linked drug use with positive outcomes. The lyrics described people using drugs as being glamorous and wealthy with increased creativity and social status.

#### Thinking Critically

1. Does listening to suggestive lyrics have an impact on how you and other teenagers behave? Why or why not?
2. Do artists have a responsibility to create products that promote positive instead of negative behaviors? Please explain your answer.



## Strategies for Refusing Drugs

Knowing how to respond and what to say if someone offers you drugs can help you avoid them. For example, one good strategy for refusing drugs is to be direct and say in a firm, but polite way, "No thanks, I don't use drugs." Another strategy is to provide an excuse, such as "I don't want to try drugs because my parents will kill me if I do."

If you continue to be pressured to use drugs, you might ask the person pressuring you why it is so important to him or her that you use drugs. After all, you have already expressed your lack of interest. Remember that people respect each others' choices in healthy relationships. Let the person know that you need him or her to respect your decision to not try drugs. If the person refuses to accept this, you may need to stop spending time with that person.

You may feel pressured to use drugs because it seems like everyone is doing it, but this is not true. Many teens have never tried drugs and have committed to living a drug-free lifestyle. A good rule is to make friends with people who share your values. You may want to make new friends by getting involved in activities that promote health and wellness.

## The Broader Impact of Drugs

People who abuse drugs or are addicted to drugs obviously hurt themselves. The problems of drug abuse and addiction, however, also negatively impact their friends, family, and society.

People who are addicted to drugs often put their own need to use drugs above the needs of their families and friends. Drug abuse and addiction are costly for society—approximately \$215 billion each year in the United States (Figure 11.18). These costs include the expense of healthcare services that treat drug abusers, as well as the victims of their accidents and criminal activities. The criminal justice system is burdened with tracking down, prosecuting, and jailing people involved in drug-related crimes. Businesses also suffer as a result of productivity loss, absenteeism, and theft. Unemployment and homelessness are other potential issues that stem from drug abuse and addiction.

## Prevention of Drug Abuse and Addiction

Drug addiction is a preventable disease. People who never try drugs cannot abuse them and become addicted to them. Unfortunately, many people do not understand how quickly drug abuse can lead to addiction. Learning about and identifying risk factors for drug abuse and addiction, and educating people about the hazards of drug use can help prevent drug abuse and addiction.

Many schools have established substance abuse prevention programs to help educate students about the dangers of using tobacco, alcohol, and drugs. School policies and regulations exist to eliminate drug use on school property.



Figure 11.18

Drug abuse can lead to soaring healthcare costs. What other costs result from drug abuse?

### Avoiding the Abuse of Medications and Other Drugs

The strategies listed below can help you avoid misusing and abusing medications and other drugs.

- Before you use a medication, make sure to carefully read all of the instructions.
- Understand the side effects of all medications before you take them.
- Understand the short- and long-term consequences of abusing different types of drugs.
- Develop strategies for handling offers or pressure from other people to try drugs.
- Avoid going to places where other people may be using drugs.

Community outreach programs are also available to help prevent substance abuse among teens and others. Reliable online sources provide information specifically for teens about drug abuse and prevention.

### Treatment for Drug Abuse and Addiction

Drug addiction is a disease just like any other. People with a drug addiction cannot just fix themselves—they need the help of family, friends, and professionals, such as counselors, to end their dependence on drugs and return to their normal lives. Even after breaking the addiction to drugs, many people struggle with managing their addiction throughout their lives. The following programs are available to help treat drug abuse and addiction:

- *Residential treatment programs.* The goal of residential treatment programs is to help people get through the early stages of breaking an addiction in an inpatient environment with lots of support and relatively few distractions. Treatment programs often begin with a process called *detoxification*, which clears all drugs from a person's body. Medications may be needed to help suppress the withdrawal symptoms that occur. These programs may last for weeks or for months.
- *Outpatient treatment programs.* These programs vary in the types of services they provide. Some may only provide drug education. Others provide services similar to those offered in residential treatment programs. Many outpatient treatment programs provide group counseling.
- *Skills-training programs.* These programs help people recognize and avoid situations that lead them to use drugs. People are able to learn alternative ways of dealing with peer pressure and how to handle stressful life events without relying on drugs.
- *Support groups.* People who are trying to overcome a drug addiction come together and discuss the challenges they face. Narcotics Anonymous is an example of a support group for drug abuse.

- *Sober living communities.* Sober living houses or communities are alcohol- and drug-free living environments for people who are trying to abstain from substance use. These environments reduce some of the temptation and pressure to use alcohol and drugs and provide social support for abstaining.

## Helping Someone Who Is Addicted to Drugs

If you know someone who is addicted to drugs, here are some ways you can help that person.

- Express your concern about the person's health. Knowing that you care and are concerned about him or her can help the person understand the seriousness of the problem (Figure 11.19).
- People with an addiction can feel alone and isolated. Assure this person that you care about him or her and will be available when help is needed.
- Offer to help the person find someone to talk with about the addiction.
- Offer to go with the person to a meeting with a counselor.
- Attend a meeting of a group that provides support to relatives and friends of someone with a drug addiction.
- Give your friend the number of a hotline he or she can call.

Remember that it is not your responsibility to help other people stop abusing drugs. They must want to break their addiction, and have to be willing to make an effort to do so. You may need to wait for them to admit they have a problem and want help in treating their addiction.

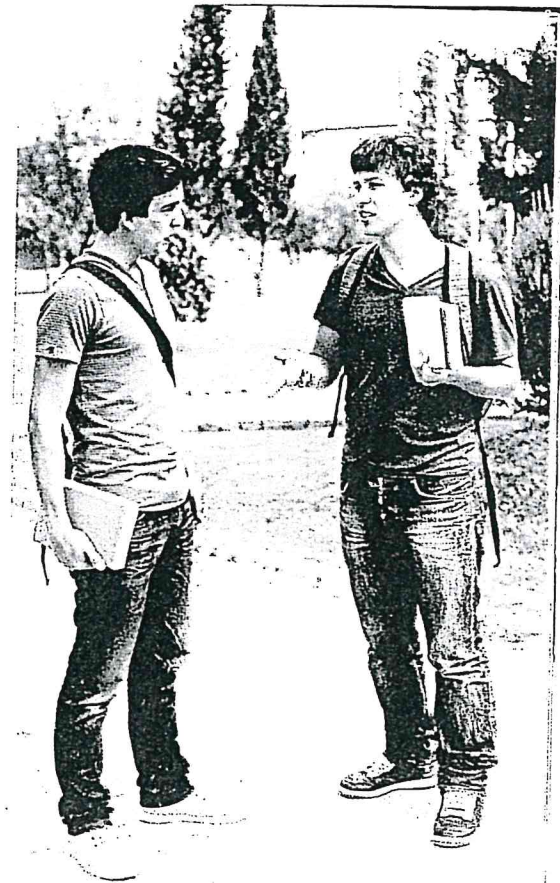


Figure 11.19

It is not easy to confront a friend about what you believe is your friend's serious, even dangerous, problem with drugs. Sometimes, however, the more difficult option is the best option.

### Lesson 11.3 Review

#### Know and Understand



1. What is *drug addiction*?
2. List five symptoms of withdrawal.
3. List four risk factors that could increase the chances of a person becoming addicted to drugs.
4. Identify three ways in which drug abuse and addiction are costly for society.
5. How can people help prevent drug abuse and addiction?

#### Analyze and Apply

6. Explain how building up a tolerance for a drug can lead to addiction.
7. Analyze strategies for refusing drugs and identify which strategy would be most effective for you.

### Real World Health

Suppose you walked into your younger sister's room and saw a joint. What would you say to convince her to stop smoking marijuana? Write an imaginary dialogue convincing her.

# Chapter 11

# Review and Assessment

## Lesson 11.1



### Medications

#### Key Terms

analgesics  
euphoria  
medication  
medication abuse  
medication misuse

opiates  
opioids  
over-the-counter (OTC)  
medications  
prescription medications

#### Key Points

- A medication is a substance used to treat disease or relieve pain.
- The FDA is responsible for making sure medications are safe to use, effective, and secure from tampering.
- Over-the-counter medications are generally safe to use without specific instructions from a doctor or pharmacist.
- Using over-the-counter and prescription medications carries some risks.
- Following safe strategies for using medications can help you avoid medication misuse and abuse.

#### Check Your Understanding

1. The most commonly used OTC medications are \_\_\_\_\_.  
A. sleeping pills  
B. analgesics  
C. anti-diarrheal medications  
D. anti-fungal creams
2. \_\_\_\_\_ kill or slow the growth of bacteria.  
A. Analgesics  
B. Anesthetics  
C. Antibiotics  
D. Vaccinations
3. *True or false?* A transdermal patch is a type of medication that is rubbed on a particular part of the body.
4. Mistakenly taking two pills instead of one is an example of \_\_\_\_\_.
5. *True or false?* Medication misuse includes instances in which people stop taking a medication before they should.
6. The intentional use of medications for purposes other than those intended by the prescribing doctor is called \_\_\_\_\_.

7. Prescription medications typically prescribed to relieve pain are called \_\_\_\_\_.  
A. sedatives  
B. depressants  
C. opioids  
D. stimulants
8. What does *euphoria* mean?
9. *True or false?* Prescriptions given specifically for one person can also be used safely by other people.
10. **Critical Thinking.** Describe the functions of the three different types of prescription medications.

## Lesson 11.2



### Drugs

#### Key Terms

bath salts  
club drugs  
cocaine  
crystal meth  
drug abuse  
drug overdose

drugs  
hallucinogens  
heroin  
hypoxia  
inhalants  
marijuana

#### Key Points

- Drugs are substances that cause a physical or psychological change in the body.
- Most drugs are illegal and can be very dangerous.
- Drugs cause many harmful side effects, including death.
- Drugs contain chemicals that change the way nerve cells in the brain send, receive, and process information.
- People who abuse drugs often experience many negative health consequences.

#### Check Your Understanding

11. \_\_\_\_\_ is a drug made up of dried parts of the Cannabis plant.  
A. Cocaine  
B. Crystal meth  
C. Marijuana  
D. Mescaline
12. Cocaine stimulates the central nervous system by raising levels of the neurotransmitter \_\_\_\_\_ in the brain.

13. *True or false?* Tooth decay and cracked teeth are examples of common side effects from taking bath salts.
14. LSD is a drug created from \_\_\_\_\_.
  - A. the coca plant
  - B. the cannabis plant
  - C. a fungus
  - D. the peyote cactus
15. Flashbacks may occur with the long-term abuse of \_\_\_\_\_.
  - A. cocaine
  - B. bath salts
  - C. marijuana
  - D. hallucinogens
16. The drug known as \_\_\_\_\_ is an opiate derived from morphine—a naturally occurring substance found in poppy plants.
  - A. cocaine
  - B. GHB
  - C. heroin
  - D. MDMA
17. Chemicals that people breathe in to experience some type of high are called \_\_\_\_\_.
  - A. hallucinogens
  - B. anabolic steroids
  - C. inhalants
  - D. bath salts
18. Being physically active is a natural way of increasing the level of \_\_\_\_\_ in the body, which lifts a person's mood.
19. A drug \_\_\_\_\_ is caused by ingesting more of a drug than the body can properly process at one time.
20. **Critical Thinking.** In addition to negative health consequences, what other problems may occur as a result of abusing drugs?

Key Points

- People may experience a physical or psychological addiction to a drug.
- Certain risk factors, such as biological makeup and environment, can increase the chances of a person becoming addicted to drugs.
- Developing strategies for refusing drugs can help people know how to respond if pressured to use drugs.
- People who abuse or are addicted to drugs hurt themselves and negatively impact their families, friends, and society.
- Drug addiction can be prevented by encouraging people to never try drugs.
- Treatment programs are available to help treat drug abuse and addiction.

Check Your Understanding

21. People who have a(n) \_\_\_\_\_ addiction to a drug feel that they need a drug to function normally.
22. The use of drugs by an individual to treat problems and symptoms *not* diagnosed by a medical doctor is called \_\_\_\_\_.
23. *True or false?* People who are addicted to drugs often put the needs of their families and friends above their own need to use drugs.
24. Treatment programs for drug addiction often begin with a process called \_\_\_\_\_, which clears all drugs from a person's body.
25. Narcotics Anonymous is an example of a(n) \_\_\_\_\_ for drug abuse.
26. Long- or short-term programs that treat people with a drug addiction in an inpatient setting for weeks or months are called \_\_\_\_\_.
  - A. outpatient treatment programs
  - B. skills-training programs
  - C. residential treatment programs
  - D. support groups
27. *True or false?* To stop abusing drugs, a person must first admit that he or she has a problem and wants help in treating the addiction.
28. **Critical Thinking.** Compare physical and psychological addiction.



Drug Abuse and Addiction

Key Terms

drug addiction                      self-medication

# Chapter 11

# Skill Development

## Health and Wellness Skills

29. **Make Decisions.** Suppose you get invited to a party. When you show up, you see a bowl of pills on the table and are asked to take a handful. Having just learned about the dangers of participating in these types of activities, you must make a choice: join the crowd or refuse the risk. Use the steps in the "DECIDE" model below to determine what you will do, then explain and compare your reasoning with your classmates' ideas.

- Define the problem
- Explore the alternatives
- Consider the consequences
- Identify your values
- Decide and act
- Evaluate the result

30. **Access Information.** Search your school's website for your school's drug and alcohol policy. What are the penalties for students having illegal substances in their possession or being under the influence of an illegal substance on school grounds? What are the penalties for a second violation? Write a reflection on what you think a

student's attitude toward drugs might be if he or she resorts to using or selling drugs at school.

31. **Reduce Health Risks.** Take the survey below for yourself and a friend to see if you or your friend has a problem with drugs. Do you think you or your friend should discuss your responses with a teacher, a counselor, or your parents?

- Have we missed school due to drinking alcohol or using drugs?
- Do we use drugs to feel more comfortable, forget about worries, or build self-confidence?
- Do we use substances alone?
- Do we ever feel guilty because of substance use?
- Have we ever been in trouble at home or school for substance use?
- Have we ever borrowed money to get the substance?
- Do we feel a sense of power when using substances?
- Have we lost friends due to substance use?
- Are we hanging out with a substance-abusing crowd?

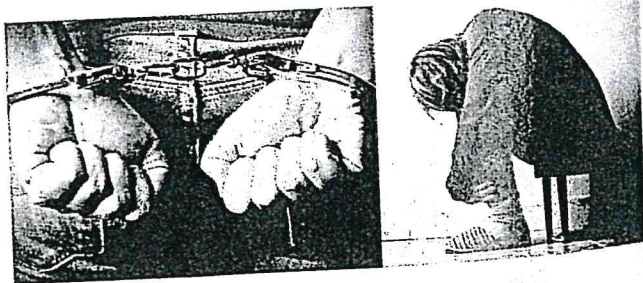
### Hands-On Activity

## Consequences of Addiction

Drug addiction can have many negative consequences beyond health problems, including trouble with the law, loss of a job, or strained relationships with loved ones. Follow the steps listed below to create a scenario in which an addicted individual deals with these consequences.

#### Steps for this Activity.

1. Create a story about a fictional teenager who is negatively affected by drugs or addiction. Use six storyboard-style comic strip boxes to create a Public Service Announcement (PSA) warning about the dangers of drug use. Perhaps your strip would include your renderings of images such as the ones shown below. Using information in your textbook, from the Internet, and in class notes, gather information on marijuana, inhalants, heroin,



cocaine, and prescription pill abuse. In your PSA, address one of the following topics: strained relationships with boyfriend, girlfriend, friends, or parents; trouble with the law; overdose or death; or inability to pursue goals and dreams.

2. In 1 or 2 paragraphs, briefly explain what is happening in your comic strip. How does it warn teens about the dangers of drug use?

