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# Drugs

issues for today



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## issues for today

THIRD EDITION

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# PREFACE

What a difference a few years can make. In the second edition of *Drugs: Issues for Today*, we indicated that overall drug use in America was declining. Now that trend has reversed and drug use has actually increased, particularly in America's cities. The nation's public health focus has broadened to encompass other concerns, such as gun violence and the reemergence of infectious diseases. However, polls still confirm what news magazines and television reports announce—that the abuse of alcohol, tobacco, and other drugs is still the nation's number one problem.

The daily headlines tell the story: “Drug abuse among American teens continues to rise,” “Assaults linked to date-rape drug,” and “Methamphetamine abuse spreads to the Midwest.” In addition, binge drinking among high school and college students is a widespread and serious problem. The proportion of youth smoking cigarettes has risen in recent years. Over-the-counter medications and prescription drugs are too often misused and abused. Trafficking and abuse of illegal drugs, such as cocaine, heroin, and methamphetamine, continue to be significant problems in our society so that everyone, from the unborn child to the elderly adult, is affected by the drug problem.

Understanding the nature of drugs and the issues surrounding drug abuse is the first step toward finding solutions to the problems. It is important for students to have accurate, up-to-date, clearly presented information so that they can make informed and wise decisions about drugs. The third edition of *Drugs: Issues for Today* provides this information for today's college and university students.

## AUDIENCE

*Drugs: Issues for Today* has been written for use in introductory drugs courses aimed at students who have a limited background in the life sciences. The vocabulary and level of reading difficulty have been carefully monitored

to ensure that the content will be understandable to all readers.

## NEW ORGANIZATION

We have reorganized the chapters in this new edition of *Drugs: Issues for Today* to emphasize important issues and topics and to make the book more useful for students and instructors. These organizational changes are summarized in the following list:

- The book begins with a new introduction that precedes the first chapter. This introduction is intended to pique students' interest about drug abuse and help them understand how the drug problem affects each of us.
- Nicotine and caffeine are now covered in separate chapters. Increasing rates of smoking among children and teenagers and growing interest in the health effects of caffeine warranted more comprehensive chapters on each of these drugs.
- Inhalants, which were previously presented in the hallucinogens chapter, are now discussed separately. This allows us to provide more complete coverage of these two dangerous drugs.
- Prevention, education, and treatment are introduced early in the book (chapter 2) and given comprehensive coverage in a separate chapter near the end of the text.
- The critical topic of drugs and public policy is now presented in a separate chapter that encourages students to stay informed about legislative issues and become involved in local prevention and education programs.
- Limiting the availability of drugs on the street and punishing drug-related offenses has been an important aspect of our national drug policy. Accordingly, law enforcement is covered in a separate chapter to highlight its integral role in a comprehensive drug policy.

- Some scientific and technical material, such as a more detailed explanation of nervous system function and chemical formulas, has been moved to the appendices. This information is thus available if you wish to cover it, but it is no longer prominently featured.

## NEW OR EXPANDED TOPICS

We are committed to making *Drugs: Issues for Today* the most up-to-date drugs textbook available. The following is a sampling of topics that are either completely new to this edition or covered in greater depth than in the previous edition:

### Chapter 1 Drugs and Drug Use in America

Classification of controlled substances  
Workplace drug abuse and testing

### Chapter 2 Determinants of Drug Abuse and Elements of Prevention

Reward deficiency syndrome  
Addictive behaviors and addictive disorders  
Disease model vs. adaptive model of drug dependence  
Gateway drugs  
Advertising and promotion of social drugs  
Primary, secondary, and tertiary prevention  
Four major concepts of prevention: education, treatment, public policy, and law enforcement  
Self-assessment activity to determine risk for drug abuse

### Chapter 3 Neurophysiology: How Drugs Affect the Nervous System

Simplified discussion of the brain and nervous system  
Clarified discussion of nerve impulse transmission and synaptic function  
New figures to illustrate anatomy and function of the nervous system

### Chapter 4 Pharmacology: How the Body Processes Drugs

Expanded discussion of psychological and physical dependence  
Drug testing technology

### Chapter 5 The Stimulants: Cocaine, the Amphetamines, and the Cathinoids

Signs and symptoms of cocaine abuse  
Treatment for cocaine abuse  
Treatment for pregnant substance-abusing women  
Ritalin for treatment of ADHD  
Amphetamines and violence

### Chapter 6 Depressants

Triazolam (Halcion) for treatment of insomnia  
Stress, stressors, eustress, and distress  
Flunitrazepam (Rohypnol), the “date-rape drug”  
New uses for thalidomide

### Chapter 7 Narcotics

Heroin snorting  
Self-assessment activity to identify drug addiction  
Syringe sale and exchange programs

### Chapter 8 Marijuana

Legalization of marijuana for medical purposes in Arizona and California  
Medical uses of marijuana  
Controversy about marijuana laws

### Chapter 9 Hallucinogens

Brief discussion of neurotransmitters affected by each group of hallucinogens  
Rights of Native Americans to use peyote in religious ceremonies

### Chapter 10 Over-the-Counter Drugs (Nonprescription Drugs)

OTC labeling  
Homeopathic and herbal medicines  
Use of botanicals in the development of new pharmaceutical medications  
Rational herbalism and paraherbalism  
Dietary supplements  
Self-assessment activity on proper use of OTC medications  
The hormone DHEA and the aging process

### Chapter 11 Prescription Drugs

Historically important regulations for prescription medications  
Patient compliance  
Role of children in drug testing  
Prescription drugs for the treatment of depression and psychosis  
Clinical trials  
HIV/AIDS medications

### Chapter 12 Nicotine

Marketing of tobacco products, including international sales  
Restrictions on cigarette advertising  
Theories of nicotine addiction  
Current trends in cigarette smoking  
Smoking cessation  
Tobacco industry liability

### Chapter 13 The Methylxanthines and Related Compounds

Caffeine intoxication  
Safe caffeine dosage for adults

Health consequences of caffeine use, including effects on women, adolescents, and children  
 Caffeine and athletic performance  
 Caffeine and suicidal behavior  
 Tips for breaking the caffeine habit

#### **Chapter 14 Anabolic Drugs**

Anabolic drugs and fair competition  
 Prevention and control of anabolic drug use  
 Treatment of anabolic drug use  
 Professional organizations that prohibit steroid use

#### **Chapter 15 Inhalants**

School-based inhalant abuse prevention  
 Prevention of inhalant abuse  
 Updated statistics on inhalant abuse

#### **Chapter 16 Alcohol: History, Physiology, Pharmacology**

Dangers of nonalcoholic beer for people in recovery  
 Heavy drinkers' ability to mask symptoms of alcohol intake  
 Tougher drunk driving laws, including lower legal BAC limits  
 Fetal alcohol syndrome

#### **Chapter 17 Alcohol: Social, Economic and Legal Issues**

Liquor advertising on television  
 New drug (naltrexone) for treating alcoholism  
 Social consequences of alcoholism  
 Intensive outpatient treatment services

#### **Chapter 18 Drug Abuse Prevention: Education and Treatment**

Chapter devoted solely to education and treatment; public policy covered in a new, separate chapter  
 Community-based education and treatment programs  
 Treatment settings and approaches for alcohol and other drug dependence  
 Unique treatment issues for women  
 Expanded *Sources for Help* box

#### **Chapter 19 Drugs and Public Policy**

How public policy affects drug use  
 Healthy People 2000 objectives related to drug use  
 Counteradvertising  
 Controversial public policies, including harm reduction  
 How drug testing programs work  
 Grassroots and grassstops community coalitions

#### **Chapter 20 Law Enforcement**

Table of federal drug trafficking penalties

Table of federal agencies that enforce drug control laws  
 Current national drug control strategy  
 Role of gangs in drug distribution  
 Expanded discussion of alcohol, tobacco, and illegal drug laws, with special emphasis on tobacco laws

### **PEDAGOGY**

Each chapter of *Drugs: Issues for Today* highlights elements designed to enhance students' understanding of the content. The following pedagogical features are included:

- *Chapter Objectives* appear at the beginning of each chapter and give the student stated learning objectives.
- *Boxed Definitions* of key terms appear near the terms themselves to facilitate learning and retention.
- *Review Questions* give students an opportunity to test their understanding of chapter content and its application to their lives.
- Each chapter includes complete documentation of *References* cited in the body of the chapter.
- A *Summary* concludes each chapter by recapping the main points.

### **ISSUES BOXES**

To present the most current issues related to drug use and abuse, we've often supplemented the chapter content with boxed material:

- *Alternative Choices* boxes suggest useful alternatives to drug use in various situations. The goal of this feature is to encourage students to consider healthier alternatives to drug use.
- *Drugs in Your World* boxes describe the impact, both negative and positive, drugs have on society.
- *Self-Assessment* boxes encourage students to reflect on their own values and lifestyle and make health-enhancing behavior changes when necessary.
- *What Do You Think?* boxes ask students to consider contrasting viewpoints about drug-related issues.
- *Profile* and *Solutions* boxes are a new feature in this edition. A Profile box at the beginning of each relevant chapter presents a sketch of a person who uses the drug covered in the chapter. A corresponding Solutions box at the end of the chapter shows how secondary or tertiary prevention strategies or treatment programs were effective in helping the user recover from his or her addiction. The goal of these boxes is to send a positive message about the power of intervention in overcoming drug abuse.



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***Annual Editions: Drugs, Society, and Behavior\****

This book contains a broad selection of current articles that address the widespread use and abuse of drugs in society. The physical, social, and psychological effects of drug abuse are highlighted in this new edition.

***Health Exchange Online Newsletter***

This online newsletter provides instructors with the latest information about “hot” health topics to supplement WCB/McGraw-Hill health, fitness, drugs, and wellness textbooks. The newsletter is a useful resource for instructors.

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\* These supplementary materials can be packaged with the text at a discount to your students. Contact your WCB/McGraw-Hill sales representative for details or call 1-800-338-3987.

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# DRUGS AND DRUG USE IN AMERICA

## CHAPTER OBJECTIVES

After studying this chapter, you will be able to:

1. Explain why drug misuse and abuse are significant social and health problems in the United States.
2. Define the terms *drug*, *drug use*, *drug misuse*, and *drug abuse*, and give examples of each.
3. Develop and defend a system for the classification of drugs based upon their legality, safety of use, potential for abuse, and ability to produce dependence.
4. Describe recent and current trends in drug abuse in the United States by age group and type of drug.



Crank, crack, ecstasy, and ice are just some of the drug-related words that appear daily in newspapers and magazines. They are heard on news broadcasts and special reports, in school yards, and in the workplace. Abuse of legal and illegal drugs has become a national problem that costs this country thousands of lives and billions of dollars each year. Alcohol and other drugs are often associated with unintentional injuries, domestic violence, and violent crimes (fig. 1.1).

Billions of dollars are also spent for both nonprescription and prescription drugs that, although legal, are subject to considerable misuse and abuse. We cannot watch television or pick up a newspaper or magazine without seeing advertisements for these products, some of which we know to be of little or no value to our health. Clearly, Americans in the 1990s belong to a society in which drugs and drug-taking behavior have become major concerns. *Drugs: Issues for Today* presents accurate and up-to-date information about drugs and



Many people are able to meet the demands of everyday life without the use of drugs.

drug-related issues in a clear and straightforward way, so you can make informed decisions about drug-related matters in your life.

## DEFINITION OF DRUGS

The term **drug** refers to any substance, used as a medicine or as an ingredient in a medicine, that kills or inactivates germs or affects any body function or structure. Penicillin is an example of a drug that kills germs. Aspirin is an example of a drug that alters body function. A drug that alters sensory perceptions, mood, thought processes, or behavior is known as a **psychoactive drug**. Nicotine, alcohol, and marijuana are psychoactive drugs.

Drugs may be **legal (licit)** or **illegal (illicit)**. Prescription and nonprescription medications are examples of legal drugs, as are alcohol and tobacco when purchased and used within the bounds of the law. Drugs which, in the government's view, are without medical value and dangerous can be declared illegal. Examples are heroin, cocaine, marijuana, and LSD (lysergic acid diethylamide). Whether a drug is legal or illegal may depend upon historical events or the physical properties of the drug itself. For example, tobacco cultivation is historically linked to the birth of our nation. Revenue from tobacco farming helped to pay for our war supplies to fight the British. Thus, in spite of the fact that tobacco is extremely harmful to health, it is legal in the United States. Drugs can be further classified on their potential for abuse, accepted medical use, degree of safety for use, and their **psychological** and **physical dependence** potential.

## DEFINITION OF DRUG USE, MISUSE, AND ABUSE

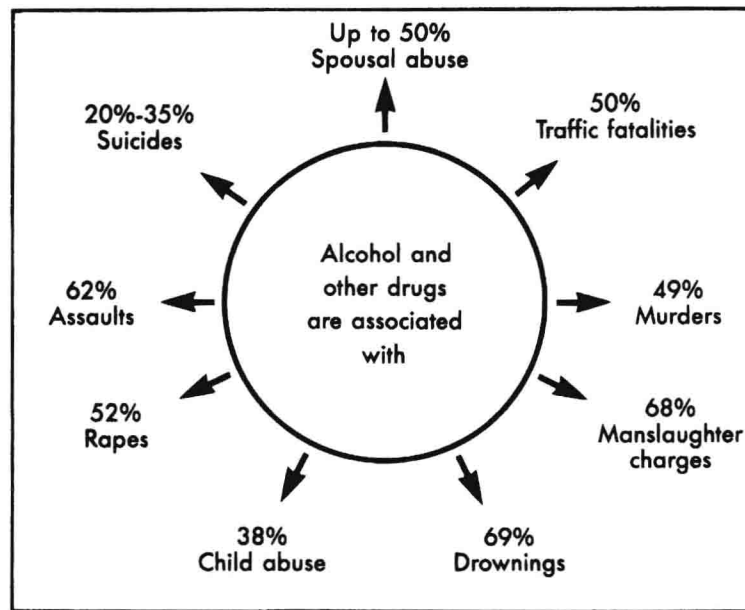
Because *Drugs: Issues for Today* provides information on a wide variety of drugs, including nonprescription and prescription medications, as well as legal and illegal psychoactive drugs, it is important to define terms that accurately describe drug-taking behavior. The terms use, misuse, and abuse are defined differently by different authors. The following definitions are clear and unchanging throughout the entire text.

### Drug Use

**Drug use** is an all-encompassing term to describe drug taking in the most general way. We employ this term when the term drug misuse or drug abuse is incorrect or

**FIGURE 1.1**

Violent events and deaths associated with alcohol and drug abuse.



not applicable. For example, Americans use drugs of many types.

### Drug Misuse

**Drug misuse** is the inappropriate use of legal drugs intended to be medications. Drug misuse occurs when a person fails to use a drug in the approved manner. This could occur, for example, if a patient takes the incorrect dose of a prescription or nonprescription (over-the-counter) drug or when a patient shares a prescription drug with a friend or family member for whom the drug was not prescribed. Misuse also occurs when a patient takes a prescription or over-the-counter (OTC) drug for a purpose or condition other than that for which it was intended or discontinues use of a drug before the completion of the prescribed treatment.

### Drug Abuse

The spectrum of drug use ranges from abstinence (no drug use) to dependence (fig. 1.2). It is not always easy to determine precisely when drug use or misuse becomes abuse. In this text, we use the term **drug abuse** for any use of an illegal drug, or any use of a legal drug when it is detrimental to one's physical, emotional, social, intellectual, spiritual, or occupational health. Thus, drinking alcohol in excessive quantities ("getting drunk") is an

example of drug abuse because it places one's health in jeopardy.

**drug** any substance that kills germs in the body or affects body function or structure

**psychoactive drug** a drug that alters sensory perceptions, mood, thought processes, or behavior

**legal (licit) drugs** drugs that can be manufactured, distributed, and sold legally

**illegal (illicit) drugs** drugs that cannot be manufactured, distributed, or sold legally and that usually lack recognized medical value

**psychological dependence** a psychological state of mind characterized by an overwhelming desire to continue taking a drug even though clinical signs of physical illness may not be apparent

**physical dependence** a physiological state in which clinical signs of illness appear when one abstains from a drug

**drug use** a general term to describe drug-taking behavior

**drug misuse** inappropriate use of a prescription or nonprescription drug

**drug abuse** any use of an illegal drug or the use of a legal drug when it is detrimental to one's health or the health of others

## SELF-ASSESSMENT

### Personal Consequences of Drug Abuse

The misuse and abuse of drugs can exert negative influences on many aspects of young adulthood. Assess the extent to which your drug misuse and abuse put you at risk for adverse personal consequences. Select the number that best describes the consequences you have experienced as a result of drug use.

- 1 = never  
2 = once or twice  
3 = three or more times

Because of alcohol or other drug use, have you ever:

missed work or class?	1	2	3
been late for work or scored lower on an exam?	1	2	3
lost a job, or dropped or failed a course?	1	2	3
lost a girl- or boyfriend, or angered a relative?	1	2	3
risked getting an infection or become infected (hepatitis, STD, HIV)?	1	2	3

damaged a car or other property?	1	2	3
been in a fight?	1	2	3
injured another person?	1	2	3
suffered financial problems?	1	2	3
stolen something?	1	2	3
been fined, arrested, or incarcerated?	1	2	3
become ill?	1	2	3
put a fetus at risk?	1	2	3
experienced depression or low self-esteem?	1	2	3
thought about suicide?	1	2	3

Your score on this self-assessment should help you determine whether your drug-taking behavior is putting your chances for a healthy and productive life at risk.

Score	Risk
15–18	low
19–22	moderate
23+	high

The costs of drug abuse extend beyond the failure to achieve optimal health. Potential consequences of drug abuse include underachievement in school or at work, failed personal relationships, financial and legal problems, and harm to others in the community. To assess the extent to which your drug use behavior may be putting you at risk for adverse consequences, take the self-assessment survey on this page.

### HISTORY OF DRUG USE

The history of drug use, and of efforts to prevent drug misuse and abuse, is not only interesting, it is also impor-

tant, because a knowledge of past use is helpful as we make personal and community decisions about drug use issues today. For example, our nation's experience with prohibition during the 1920s taught us much about ourselves and about that particular approach to controlling alcohol use and abuse.

Drug use undoubtedly began before recorded history, perhaps with the consumption of fermented fruit by our distant ancestors. It can probably be said that as *Homo sapiens* evolved, their drug behaviors evolved with them. Archeological evidence of drug use dates back nearly 5,000 years. Therefore, with the possible exception of isolated populations, humans have never known the absence of drugs and drug use.

**FIGURE 1.2**

The spectrum of drug abuse.

