

Drug Use and Addiction

Chapter 9

Addiction

- Drugs most often associated with addiction and impairment are psychoactive drugs
- Addictive behaviors are habits that are out of control, with resulting negative effects on health

What Is Addiction?

- American Psychiatric Association (APA) defines addiction as compulsive, drug-seeking behavior
- Changes in brain chemistry underlie addiction
 - Certain activities, such as eating or gambling, may trigger the release of brain chemicals that produce pleasure in the same way as psychoactive drugs
- Individuals still bear responsibility for their addictive behaviors
 - Lifestyle and personality traits play key roles

**Table 9.1 Nonmedical Drug Use among Americans, 2015
(Percent Using in Past Month)**

DRUG TYPE	AGE 18–25	AGE 12–17	AGE 12 AND OVER
ILLICIT DRUGS	22.3	8.8	10.1
Marijuana and hashish	19.8	7.0	8.4
Cocaine	1.7	0.2	0.7
Heroin	0.3	0.0	0.1
Hallucinogens	1.8	0.5	0.5
Ecstasy	0.9	0.1	0.2
Inhalants	0.4	0.7	0.2
Methamphetamine	0.4	0.1	0.3
NONMEDICAL USE OF PSYCHOTHERAPEUTICS	5.1	2.0	2.4
Pain relievers	2.4	1.1	1.4
Tranquilizers	1.7	0.7	0.7
Stimulants	2.2	0.5	0.6
Sedatives	0.2	0.1	0.2
TOBACCO (ALL FORMS)	33.0	6.0	23.9
Cigarettes	26.7	4.2	19.4
Smokeless tobacco	5.4	1.5	3.4
Cigars	8.9	2.1	4.7
ALCOHOL	58.3	9.6	51.7
Binge alcohol use	39.0	5.8	24.9
Heavy alcohol use	10.9	0.9	6.5

SOURCE: SAMHSA Center for Behavioral Health Statistics and Quality 2016: Results from the 2015 National Survey on Drug Use and Health. Retrieved from <http://www.samhsa.gov/data/sites/default/files/NSDUH-DeTTab-2015/NSDUH-DeTTab-2015.htm>

Diagnosing Substance Misuse and Addiction

- Substance misuse is use of a substance that is not consistent with medical or legal guidelines
- APA's *DSM-5* criteria for substance use disorders
 - Severity determined by the number of criteria a person meets
 - 2–3 criteria—mild disorder
 - 4–5 criteria—moderate disorder
 - 6 or more criteria—severe disorder

DSM-5 Criteria for a Substance Use Disorder

Impaired control

1. Taking the substance in larger amounts or over a longer period than was originally intended
2. Expressing a persistent desire to cut down on or regulate substance use, but being unable to do so
3. Spending a great deal of time getting the substance, using the substance, or recovering from its effects
4. Craving or experiencing an intense desire or urge to use the substance

Social problems

5. Failing to fulfill major obligations at work, school, or home
6. Continuing to use the substance despite having persistent or recurrent social or interpersonal problems caused or worsened by the effects of its use

7. Giving up or reducing important social, school, work, or recreational activities because of substance use

Risky Use

8. Using the substance in situations in which it is physically hazardous to do so
9. Continuing to use the substance despite the knowledge of having persistent or recurrent physical or psychological problems caused or worsened by substance use

Drug Effects

10. Developing tolerance to the substance
11. Experiencing withdrawal

The Development of Addiction

- Many behaviors might be harmless or even beneficial if done in moderation
- Addiction often starts when a person does something to bring pleasure or avoid pain
 - Reinforcement; tolerance; withdrawal
- Combination of factors is involved in the development of addiction, including personality, lifestyle, heredity, the social and physical environment, and the nature of the substance or behavior in question

Examples of Addictive Behaviors

Compulsive gambling

Internet gaming disorder

Compulsive exercising

Work addiction

Sex addiction

Compulsive buying or shopping

Internet addiction

Why People Use and Misuse Drugs

- Drugs have been used to alter consciousness since prehistory
- Drug misuse and addiction among Americans became more common by 1900
 - Led to legislation
 - Addiction became associated with criminal subcultures
- Nonmedical drug use expanded in the U.S. in the 1960s–1970s, peaking in 1979
- Drug rates declined until the mid-1990s, when they began to rise in certain age groups

The Allure of Drugs

- Young people may be drawn by the allure of the exciting and illegal
 - Curious, rebellious, or vulnerable to peer pressure
 - Imitate adult models
- Most people who experiment with drugs do not continue use
- Many users are motivated by a desire to escape boredom, anxiety, depression, feelings of worthlessness, or other symptoms of psychological problems

Table 9.2 Psychoactive Drugs and Their Potential for Substance Disorder and Addiction

POTENTIAL FOR SUBSTANCE USE DISORDER AND ADDICTION	PSYCHOACTIVE DRUG
Very high	Heroin
High	Nicotine, morphine
Moderate/high	Cocaine, pentobarbital
Moderate	Alcohol, ephedra, Rohypnol
Moderate/low	MDMA (methylenedioxymethamphetamine), caffeine, marijuana, nitrous oxide
Low/very low	Ketamine, LSD (lysergic acid diethylamide), mescaline, psilocybin

SOURCE: Adapted from Gable, R. S. 2006. Acute toxicity of drugs versus regulatory status. In J. M. Fish (Ed.), *Drugs and Society: U.S. Public Policy*, pp. 149-162. Lanham, MD: Rowman & Littlefield.

Risk Factors for Misuse and Addiction

- Drug users come from all income and educational levels, all races and ethnic groups, and all age groups
- Factors associated with trying drugs:
 - Male (twice as likely as females)
 - Troubled childhood
 - Thrill-seeking
 - Dysfunctional family background
 - Peer group that accepts drug use
 - Being poor
 - Girl dating an older boy

Risk Factors for Misuse and Addiction (2)

- Factors associated with *not* using drugs:
 - Positive self-esteem
 - Assertive, independent thinkers who are uninfluenced by peer pressure
 - Self-control
 - Social competence
 - Optimism
 - Academic achievement
 - Religiosity
 - Strong family with a clear policy on drug use
 - Open communication with parents

Risks Associated with Drug Misuse

- Each year, nearly 2.5 million emergency room visits are related to drug misuse or abuse

Intoxication

Unexpected side effects

Unknown drug constituents

Infection associated with injection drug use

– HIV and hepatitis C

Legal consequences

Table 9.3 Emergency Department (ED) Visits Involving Drug Misuse or Abuse, by Drug Combination: 2011

REASON FOR ED VISIT	NUMBER OF ED VISITS	PERCENTAGE OF ED VISITS
Pharmaceuticals only	835,275	33.9
Illicit drugs only	656,025	25.4
Illicit drugs with alcohol	261,125	10.6
Alcohol with pharmaceutical(s)	257,520	10.4
Illicit drugs with pharmaceutical(s)	247,342	10.0
Alcohol only in patients younger than 21	117,653	4.8
Illicit drugs with alcohol and pharmaceuticals	88,008	3.6
Total ED visits, drug misuse or abuse	2,462,948	100.0

SOURCE: Substance Abuse and Mental Health Services Administration. 2013. Drug Abuse Warning Network, 2011: National Estimates of Drug-Related Emergency Department Visits (HHS Publication No. SMA 13-4760, DAWN Series D-39). Rockville, MD: Substance Abuse and Mental Health Services Administration.

How Drugs Affect the Body

- Changes in brain chemistry
 - Effect on neurotransmitters
- Drug-related factors
 - Pharmacological properties
 - Dose-response function
 - Time-action function
 - Person's drug-use history
 - Method of drug use

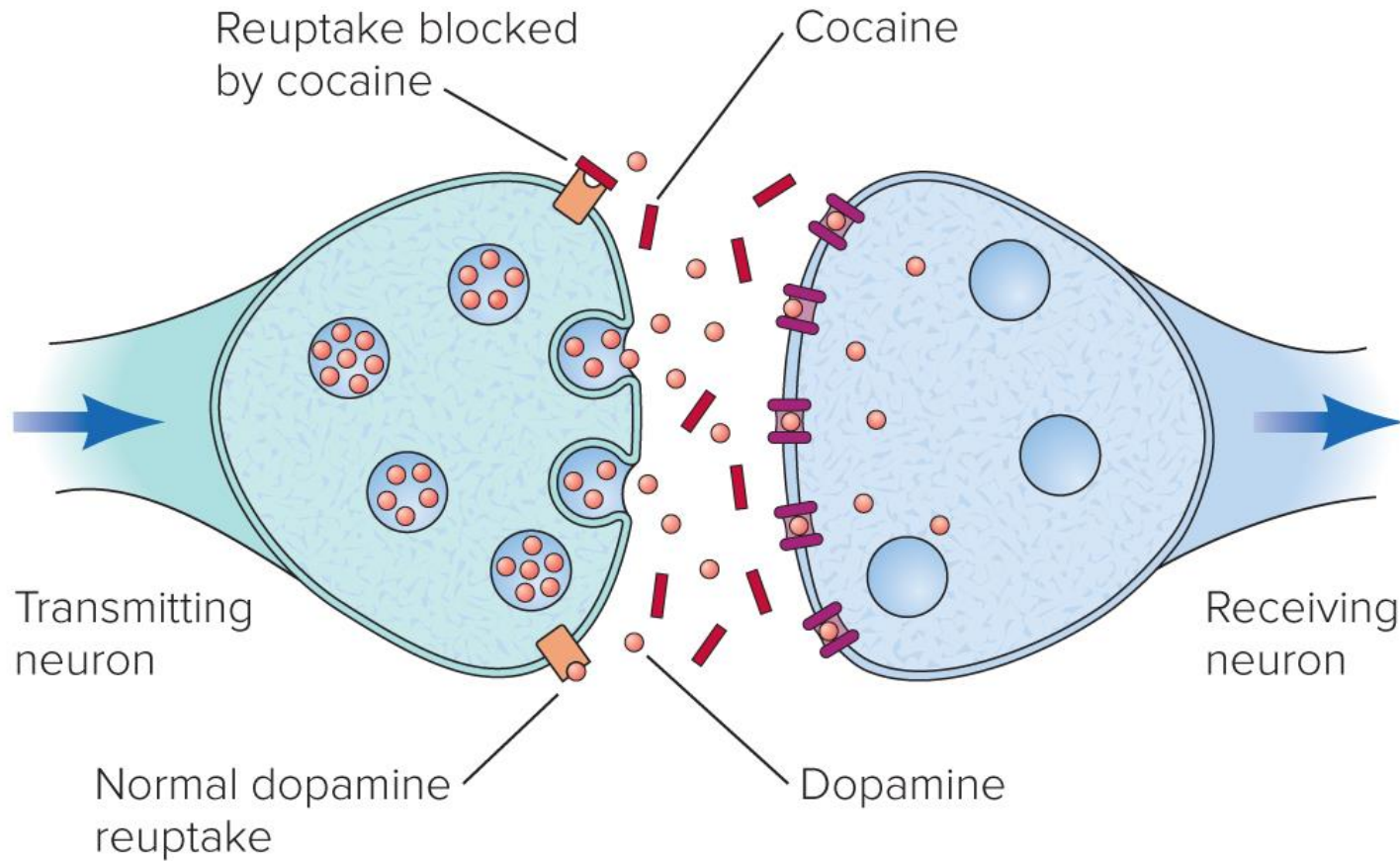


Figure 9.1 Effect of Cocaine on Brain Chemistry

Under normal circumstances, the transmitting neuron controls the reuptake of dopamine at a synapse. Cocaine blocks the removal of dopamine from a synapse; the resulting buildup of dopamine causes continuous stimulation of the receiving neurons.

How Drugs Affect the Body (2)

- Physical factors

 - Body mass

 - General health and genetics

 - Concurrent use of other chemicals

 - Pregnancy

- Psychological factors

 - User expectations

 - Placebo effect

- Social factors

 - Setting

Groups of Psychoactive Drugs

Opioids

Central nervous system depressants

Central nervous system stimulants

Marijuana and other cannabis products

Hallucinogens

Inhalants

Prescription drugs

Synthetic recreational drugs

Opioids

- Natural or synthetic drugs that relieve pain, cause drowsiness, and induce euphoria
- At prescribed doses, have beneficial medical uses
 - Can still lead to misuse and addiction
- Tolerance can develop rapidly
- Withdrawal symptoms include cramps, sweating, nausea, tremors, irritability, and feelings of panic

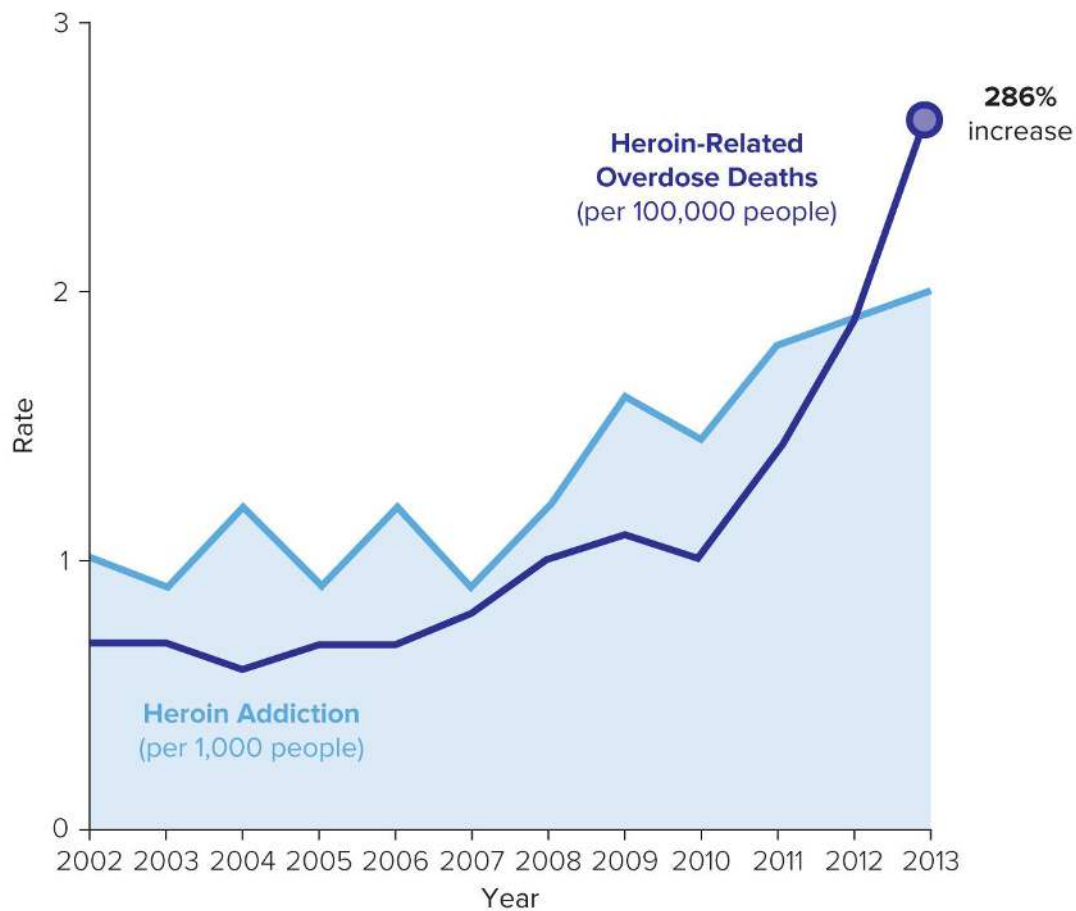


Figure 9.3 Heroin Addictions and Deaths, 2002–2013

Heroin use has been rising since 2007, increasing from 373,000 yearly users to 828,000 users in 2015. Heroin overdose deaths have also spiked alarmingly, increasing from 3,036 deaths in 2010 to 10,574 deaths.

in 2014

Central Nervous System Depressants

- Types: barbiturates, sedatives, tranquilizers
- Effects: reduced anxiety, change in mood, impaired muscular coordination, slurring of speech, drowsiness, sleep, impaired mental functioning
- Medical uses: to treat insomnia and anxiety disorders, and to control seizures
- From use to misuse
 - Tolerance and withdrawal
- Overdose: slowing and stopping of respiration
- Club drugs: Rohypnol, GHB

Central Nervous System Stimulants

- Speed up activity of nervous or muscular system
- Cocaine

Produces feelings of euphoria

Snorted or used intravenously; crack

Intense but short-lived effects

- Euphoria replaced by irritability, anxiety, slight depression

Other effects

- Sudden death from excessive CNS stimulation
- Persistent nose bleeds
- Paranoia and aggression
- Serious effects on developing fetus

Central Nervous System Stimulants (2)

- Amphetamines

Potent, synthetic CNS stimulants

Small doses make people feel more alert

- Sometimes used to curb appetite

Misuse and addiction

- Often starts as an attempt to cope with a temporary situation
- State dependence
- Tolerance leads to increased doses and psychosis

Methamphetamine is more addictive than others

Severe risks to fetus

Central Nervous System Stimulants (3)

- Ritalin
- Ephedrine
- Caffeine

Very popular psychoactive drug, and one of the most ancient

Rarely harmful, but withdrawal symptoms can develop

Energy “shots” are not regulated by the FDA

Table 9.4 Caffeine Content of Popular Beverages

BEVERAGE	SERVING SIZE (OZ.)	TYPICAL CAFFEINE LEVEL (MG)	BEVERAGE (continued)	SERVING SIZE (OZ.)	TYPICAL CAFFEINE LEVEL (MG)
Regular coffee, brewed	8	95	Sunkist Orange Soda	12	41
Regular coffee, instant	8	93	Pepsi	12	38
Espresso	1	64	Coca-Cola Classic, Diet Pepsi	12	35
Decaffeinated coffee, brewed	8	5	No Name Energy Drink	8.4	280
Decaffeinated coffee, instant	8	2	SoBe No Fear	16	174
Regular tea, brewed	8	47	Monster Energy, Rockstar	16	160
Decaffeinated tea, brewed	8	2	SoBe Adrenaline Rush	16	152
Green tea, brewed	8	Varies	Full Throttle, Full Throttle Fury	16	144
Code Red Mountain Dew	12	54	AMP Energy Drink	16	143
Mello Yello	12	53	Red Bull	8.3	76
Diet Coke	12	47	Vault	8	47
Dr. Pepper, Diet Dr. Pepper	12	41			

SOURCES: Center for Science in the Public Interest. 2007. Caffeine Content of Food & Drugs (<http://www.cspinet.org/new/cafchart.htm>); Mayo Clinic. 2008. Caffeine Content in Tea, Soda, and More (<http://www.mayoclinic.com/health/caffeine/AN01211>); U.S. Department of Agriculture, Agricultural Research Service. 2009. USDA National Nutrient Database for Standard Reference, Release 22 (<http://www.ars.usda.gov/ba/bhnrc/ndl>).

Marijuana and Other Cannabis Products

- Marijuana is the most widely used illegal drug
 - Legal status is changing
 - THC (tetrahydrocannabinol) is the active ingredient
 - Potency has increased
- Short-term effects and uses are influenced by the user's expectations and experiences and the dose
- Long-term effects
 - Respiratory damage
 - Learning, attention, memory problems
 - Decreased testosterone levels
 - Impaired fetal growth and development

Hallucinogens

- Drugs that alter the user's perceptions, feelings, and thoughts
- LSD
 - Synesthesia
 - Induce tolerance quickly
 - Altered state of consciousness
 - Flashbacks
- MDMA
 - Variants: ecstasy, molly

Hallucinogens (2)

- Other hallucinogens:

PCP

Ketamine

Mescaline

Certain mushroom, seeds, and other botanical products

Inhalants

- Slow down body functions
- Types:
 - Volatile solvents
 - Aerosols
 - Nitrites
 - Anesthetics
- Use is high among youth and declines with age
- Difficult to control because they are easy to obtain
- Suffocation is among the many risks

Prescription Drug Misuse

- Use of medication without a prescription in a way other than as prescribed, or for the experience or feelings elicited
- Misuse has increased
- Abused at a rate behind only marijuana and alcohol
- Adderall

Synthetic Recreational Drugs

- “Designer drugs”

Chemically distinct—so either legal or impossible to detect on drug screenings

- Two main groups

Synthetic marijuana (“herbal incense”)

- Produces effects similar to THC

Bath salts

- Produces severe effects, from violent behavior to chest pain

Preventing Drug-Related Problems

- Drugs, society, and families
 - Economic cost of illicit drug abuse in the U.S.:
\$193 billion annually
 - Relationship between drugs and crime
 - Health care issue
 - Toll on the individual and on families
- Legalizing drugs
- Drug testing

Treating Drug Addiction

- Medication-assisted treatment
- Treatment centers
- Groups and peer counseling
 - Alcoholics Anonymous (AA); Narcotics Anonymous (NA)
- Harm-reduction strategies
 - Minimize the effects of drug use and misuse
 - Using a designated driver
 - Methadone
 - Syringe exchanges
- Codependency
 - Enabling behaviors

Preventing Drug Misuse

- Governmental attempts
- Antidrug education programs
- Indirect approaches
 - Increasing self-esteem
 - Improving academic skills
 - Increasing recreational opportunities
- Direct approaches
 - Information about the adverse effects
 - Peer pressure resistance

Review

- Define and discuss addiction
- Explain factors that contribute to drug use and misuse and addiction
- List risks associated with drug misuse
- Understand how drugs affect the body
- List and describe the effects of the six major groups of psychoactive drugs
- Outline ways to prevent drug-related problems