

## Module 4.5: Substance Use and Abuse

While we all experience altered states of consciousness in the form of sleep on a regular basis, some people use drugs and other substances that result in altered states of consciousness as well. This section will present information relating to the use of various psychoactive drugs and problems associated with such use. This will be followed by brief descriptions of the effects of some of the more well-known drugs commonly used today.

### Substance Use Disorders

The fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) is used by clinicians to diagnose individuals suffering from various psychological disorders. Drug use disorders are addictive disorders, and the criteria for specific substance (drug) use disorders are described in DSM-5. A person who has a substance use disorder often uses more of the substance than they originally intended to and continues to use that substance despite experiencing significant adverse consequences. In individuals diagnosed with a substance use disorder, there is a compulsive pattern of drug use that is often associated with both physical and psychological dependence.

**Physical dependence** involves changes in normal bodily functions that cause users to experience withdrawal from the drug if they stop using it. In contrast, a person who has **psychological dependence** has an emotional, rather than physical, need for the drug and may use the drug to relieve psychological distress. **Tolerance** is linked to physiological dependence, and it occurs when a person requires more and more drug to achieve effects previously experienced at lower doses. Tolerance can cause the user to increase the amount of drug used to a dangerous level—even to the point of overdose and death.

Drug **withdrawal** includes a variety of negative symptoms experienced when drug use is discontinued. These symptoms usually are opposite of the effects of the drug. In addition to withdrawal, many individuals who are diagnosed with substance use disorders will also develop tolerance to these substances. Psychological dependence, or drug craving, is a recent addition to the diagnostic criteria for substance use disorder in DSM-5. This is an important factor because we can develop tolerance and experience withdrawal from any number of drugs that we do not abuse. In other words, physical dependence in and of itself is of limited utility in determining whether or not someone has a substance use disorder.

### Dig Deeper

### Crack Cocaine

Crack (**Figure 4.7**) is often considered to be more addictive than cocaine itself because it is smokable and reaches the brain very quickly. Crack is often less expensive than other forms of cocaine; therefore, it tends to be a more accessible drug for individuals from impoverished segments of society. During the 1980s, many drug laws were rewritten to punish crack users more severely than cocaine users. This led to discriminatory sentencing with low-income, inner-city minority populations receiving the harshest punishments. The wisdom of these laws has recently been called into question, especially given research that suggests crack may not be more addictive than other forms of cocaine, as previously thought.

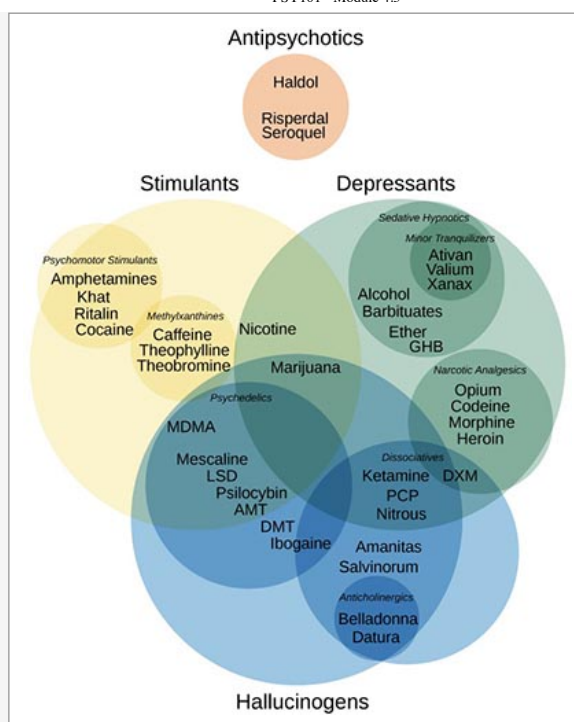
Read this [interesting newspaper article](#) describing myths about crack cocaine.



**Figure 4.7** (credit: modification of work by U.S. Department of Justice)

### Drug Categories

The effects of all psychoactive drugs occur through their interactions with our bodies' neurotransmitter systems. Many of these drugs, and their relationships, are shown in **Figure 4.8**. As you learned in Lesson 3, drugs can act as agonists or antagonists of a given neurotransmitter system. An agonist facilitates the activity of a neurotransmitter system, and antagonists impede neurotransmitter activity.



**Figure 4.8** This figure illustrates various drug categories and overlap among them. (credit: modification of work by Derrick Snider)

Use the slideshow below to learn more about several categories of drugs. Click the arrows to move from one category to the next.

[Access a printable copy of this slideshow](#)

## Alcohol and Other Depressants

A **depressant** is a psychoactive drug that tends to suppress central nervous system activity. Ethanol, which we commonly refer to as **alcohol**, is a depressant. Other depressants include barbiturates and benzodiazepines, which are often prescribed to treat anxiety and insomnia.

At low doses, alcohol use is associated with feelings of euphoria. As the dose increases, people report feeling sedated. Generally, alcohol is associated with decreases in reaction time and visual acuity, lowered levels of alertness, and reduction in behavioral control. With excessive alcohol use, a person might experience a complete loss of consciousness and/or difficulty remembering events that occurred during a period of intoxication. In addition, if a pregnant woman consumes alcohol, her infant may be born with a cluster of birth defects and symptoms collectively called fetal alcohol spectrum disorder (FASD) or fetal alcohol syndrome (FAS).

With repeated use of many central nervous system depressants, a person becomes physically dependent on the substance and will experience both tolerance and withdrawal. Psychological dependence on these drugs is also possible. Therefore, the abuse potential of central nervous system depressants is relatively high.

Drug withdrawal is usually an aversive experience, and it can be a life-threatening process in individuals who have a long history of very high doses of alcohol and/or barbiturates. This is of such concern that people who are trying to overcome addiction to these substances should only do so under medical supervision.



## Dig Deeper

### Medical Marijuana



**Figure 4.9** Medical marijuana shops are becoming more and more common in the United States. (credit: Laurie Avocado)

conducting research on the potentially beneficial medicinal uses of marijuana problematic. There is quite a bit of controversy within the scientific community as to the extent to which marijuana might have medicinal benefits due to a lack of large-scale, controlled research. As a result, many scientists have urged the federal government to allow for relaxation of current marijuana laws and classifications in order to facilitate a more widespread study of the drug's effects.

Until recently, the United States Department of Justice routinely arrested people involved and seized marijuana used in medicinal settings. In the latter part of 2013, however, the United States Department of Justice issued statements indicating that they would not continue to challenge state medical marijuana laws. This shift in policy may be in response to the scientific community's recommendations and/or reflect changing public opinion regarding marijuana.

While the possession and use of marijuana is illegal in most states, it is now legal in Washington and Colorado to possess limited quantities of marijuana for recreational use (**Figure 4.9**). In contrast, medical marijuana use is now legal in nearly half of the United States and in the District of Columbia. Medical marijuana is marijuana that is prescribed by a doctor for the treatment of a health condition. For example, people who undergo chemotherapy will often be prescribed marijuana to stimulate their appetites and prevent excessive weight loss resulting from the side effects of chemotherapy treatment. Marijuana may also have some promise in the treatment of a variety of medical conditions.

While medical marijuana laws have been passed on a state-by-state basis, federal laws still classify this as an illicit substance, making

To learn more about some of the most commonly abused prescription and street drugs, check out the [Commonly Abused Drugs Charts](#) from the National Institute on Drug Abuse.

## Check Your Knowledge

As you read your assignment for this lesson, pay close attention to the [key terms and phrases](#) listed throughout the chapter. These terms and concepts are important to your understanding of the information provided in the lesson.

## Module 4.5 Flashcards

Click on the notecard to reveal the definition.

RESET

**Physical/physiological  
dependence**

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Term 1 of 7

Next Card ▶

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