

## B. Drugs: Overview

### Reasons for Use

#### Why do people use drugs?

For the past 6,000 years, humans have used legal and illegal drugs, and current usage continues to increase as do drug-related problems (Glantz & Hartel, 1999). For example, Americans spend over \$150 billion a year on legal and illegal drugs, and the resulting problems—personal, medical, legal, and job related—cost society a whopping \$500 billion a year (Volkow, 2007).

The reasons people use drugs include obtaining pleasure, joy, and euphoria; meeting social expectations; giving in to peer pressure; dealing with or escaping stress, anxiety, and tension; avoiding pain; and achieving altered states of consciousness (R. Goldberg, 2010).

One researcher, reviewing 200 years of drug use in the United States, concluded that we have gone through regular cycles of tolerant and intolerant attitudes toward drug usage. Because history



Americans spend \$150 billion annually on drugs.

tends to repeat itself, the researcher warns that our society will continue to face various physical and psychological problems related to drugs (Musto, 1999).

In the sections that follow, we'll discuss stimulants, opiates, hallucinogens, alcohol, marijuana, and other commonly used psychoactive drugs.

**Psychoactive drugs are chemicals that affect our nervous systems and, as a result, may alter consciousness and awareness, influence how we sense and perceive things, and modify our moods, feelings, emotions, and thoughts. Psychoactive drugs are both licit (legal)—coffee, alcohol, and tobacco—and illicit (illegal)—marijuana, heroin, cocaine, and LSD.**

Although all psychoactive drugs affect our nervous systems, how they affect our behaviors depends on our psychological state and other social factors, such as peer pressure and society's values. To illustrate how drug usage involves both pharmacological and psychological factors, we'll describe a famous person who had a serious drug problem.

### Definition of Terms

#### What famous therapist had a drug problem?

When this famous person was 38, his doctor told him to stop smoking because it was causing irregular heart beats. Although he tried to cut down, he was soon back to smoking his usual 20 cigars a day. When his heart problems grew worse, he stopped again. However, he experienced such terrible depression and mood swings that he started smoking to escape the psychological torture. When he was 67, small sores were discovered in his mouth and diagnosed as cancer. During the next 16 years, he had 33 operations on his mouth and jaw for cancer but continued smoking. By age 79, most of his jaw had been removed and replaced by an artificial one.

He was in continual pain and was barely able to swallow or talk. However, he continued to smoke an endless series of cigars.

In 1939, at age 83, he died of cancer caused by 45 years of heavy smoking (Brecher, 1972; E. Jones, 1953).

Our famous person is none other than Sigmund Freud, the father of psychoanalysis. Freud had a serious drug problem most of his professional life—he was addicted to tobacco (nicotine). In spite of his great insights into the problems of others, he tried but could not treat his own drug addiction. Freud's struggle with smoking illustrates four important terms related to drug use and abuse—addiction, tolerance, dependency, and withdrawal symptoms (American Psychiatric Association, 2000).



Freud died of cancer caused by 45 years of nicotine addiction.

#### Addiction

One reason Freud continued to smoke despite a heart condition was that he had an addiction.

**Addiction refers to a behavioral pattern of drug abuse that is marked by an overwhelming and compulsive desire to obtain and use the drug; even after stopping, the person has a strong tendency to relapse and begin using the drug again.**

The reason Freud relapsed each time he tried to give up smoking was that he was addicted to nicotine.

#### Tolerance

One reason Freud smoked as many as 20 cigars daily was that he had developed a tolerance to nicotine.

**Tolerance means that after a person uses a drug repeatedly over a period of time, the original dose of the drug no longer produces the desired effect, so that a person must take increasingly larger doses of the drug to achieve the same behavioral effect.**

Becoming tolerant was a sign that Freud had become dependent on nicotine.

#### Dependency

Another reason Freud found it difficult to quit smoking was that he had developed a dependency on nicotine.

**Dependency refers to a change in the nervous system so that a person now needs to take the drug to prevent the occurrence of painful withdrawal symptoms.**

Addiction and dependency combine to make stopping doubly difficult.

#### Withdrawal Symptoms

Being dependent on nicotine, Freud had withdrawal symptoms when he stopped smoking.

**Withdrawal symptoms are painful physical and psychological symptoms that occur after a drug-dependent person stops using the drug.**

Freud described his withdrawal symptoms as being depressed, having images of dying, and feeling so tortured that it was beyond his human power to bear (E. Jones, 1953).

Next, we'll examine a number of specific drugs that people use.

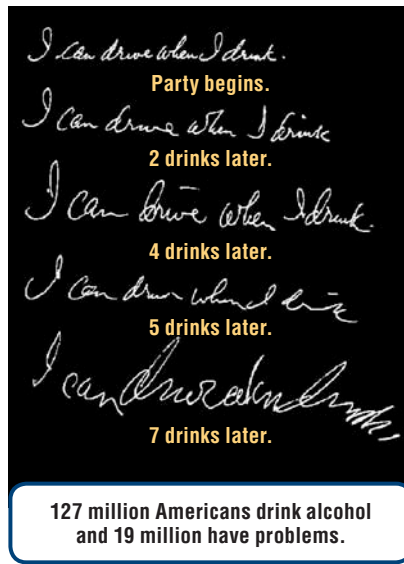
# F. Alcohol

## History and Use

### What if alcohol was banned?

The first brewery appeared in Egypt in about 3700 B.C., making alcohol the oldest drug to be made by humans (Samuel, 1996). Alcohol has grown in popularity, and its usage has been associated with a wide range of problems, such as motor coordination (right figure). If alcohol causes so many problems, why not just ban it?

In 1919, the U.S. Congress passed the Eighteenth Amendment, which prohibited the sale and manufacture of alcohol. However, Americans did not want to give up alcohol, so a lucrative black market developed and supplied illegal alcohol. After 14 years of black-market alcohol and failed prohibition, the U.S. Congress repealed prohibition in 1933. The lesson learned from prohibition was that it is impossible to pass



a law to ban a drug that is so popular and widely used (Musto, 1996).

In 2007, about 127 million Americans age 12 and older drank alcohol. Of these, 23% were binge drinkers (consumed 5 drinks in a row at same occasion), and about 7% were heavy drinkers (5 drinks in a row on 5 different days in the past month). The heavy drinkers are most likely to be alcoholics, who develop a variety of behavioral, neurological, social, legal, and medical problems (SAMHSA, 2008). Alcoholism occurs most frequently in men, Whites, Native Americans, poor people, and young, unmarried adults (Hasin et al., 2007).

We'll discuss alcoholism in the Cultural Diversity section (p. 185), but first we'll explain alcohol's effects on the user's brain, body, and behaviors.

## Definition and Effects

Although we'll use the term *alcohol*, we actually mean *ethyl alcohol*, which is safe to drink. The level of alcohol is measured in percentage in the blood, which is called blood alcohol content, or BAC. For example, after 3 or 4 drinks in an hour, the average person's BAC will range from 0.08 to 0.1. The national legal definition of being drunk is now 0.08. A drink is defined as one cocktail, one 5-ounce glass of wine, or one 12-ounce bottle of beer (Gelles, 2009). It makes no difference whether you drink hard liquor, wine, or beer, since they all contain ethyl alcohol, which affects the nervous system and results in behavioral and emotional changes.



## Drug



Alcohol is not a stimulant but a depressant.

**Alcohol (ethyl alcohol) is a psychoactive drug that is classified as a depressant, which means it depresses activity of the central nervous system.**

**Initially, alcohol seems like a stimulant because it reduces inhibitions, but later it depresses many physiological and psychological responses.**

The effects of alcohol depend on how much a person drinks. After a couple of drinks (0.01–0.05 BAC), alcohol causes friendliness and loss of inhibitions. After four or five drinks (0.06–0.10 BAC), alcohol seriously impairs motor coordination (driving), cognitive abilities, decision making, and speech. After many drinks (0.4 BAC and higher), alcohol may cause coma and death. For example, an 18-year-old California college student died after a hazing ritual required him to binge drink. At the time of death, his BAC was 0.4, nearly five times the legal driving limit (*USA Today*, 2009).

## Nervous System



Alcohol affects many parts of the nervous system. For example, alcohol stimulates the brain's GABA (*GAH-bah*) neural receptors, which leads to feeling less anxious and less inhibited (Schuckit, 2006). Alcohol also impairs the anterior cingulate cortex, which monitors the control of motor actions. When this area is impaired, drinkers will fail to recognize their impaired motor performance (driving a car) and continue to drive (Ridderinkhof et al., 2002). In very high doses (0.5 BAC), alcohol depresses vital breathing reflexes in the brain stem (medulla), and this may totally stop breathing and result in death.

## Dangers



The morning after a bout of heavy drinking (3–7 drinks), a person usually experiences a **hangover**, which may include upset stomach, dizziness, fatigue, headache, and depression. There is presently no cure for hangovers, which are troublesome and painful but not life threatening.

Repeated and heavy drinking can result in tolerance, addiction, and dependency. **Tolerance** means that a person must drink more to experience the same behavioral effects. **Addiction** means an intense craving for alcohol, and **dependency** means if the person stops drinking, he or she will experience serious **withdrawal symptoms**, which may include shaking, nausea, anxiety, diarrhea, hallucinations, and disorientation.

Another serious problem is **blackouts**, which occur after heavy and repeated drinking. During a blackout, a person seems to behave normally but when sober cannot recall what happened. If the blackout lasts for hours or days, it is probable that the person is an alcoholic.

Repeated and heavy drinking can also result in liver damage, alcoholism, and brain damage.