

# Chapter 4

## Consciousness

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### Lecture Outline

#### I. What Is Consciousness?

Mental concepts such as consciousness acquire scientific status by being tied to observable behavior whenever possible.

##### A. Consciousness as Awareness

**Consciousness** is *sensory awareness* of the environment. Another aspect of consciousness is the **selective attention**. Selective attention means focusing one's consciousness on a particular stimulus. Adaptation to one's environment involves learning which stimuli must be attended to and which can be safely ignored. Selective attention makes people's senses keener (Kerlin et al., 2010; McLachlan & Wilson, 2010). This is why one can pick out the speech of a single person across a room at a cocktail party, a phenomenon aptly termed the *cocktail party effect* (L. Miller, 2013). Yet another meaning of consciousness is that of **direct inner awareness**—knowledge of one's own thoughts, feelings, and memories without the use of sensory organs.

##### B. Conscious, Preconscious, Unconscious, and Nonconscious

Sigmund Freud, the founder of psychoanalysis, differentiated between thoughts and feelings of which people are conscious and those that are preconscious and unconscious.

**Preconscious** material is not currently in awareness but is readily available. Freud believed that some painful memories and sexual and aggressive impulses are unacceptable to people, so they *automatically* (unconsciously) eject them from awareness. That is, people *repress* them. **Repression** of these memories and impulses allows people to avoid feelings of anxiety, guilt, or shame.

Related, non-Freudian concepts include *suppression* and *nonconscious processes*. When people choose to stop thinking about unacceptable ideas or distractions, they are using **suppression**. When people consciously eject unwanted mental events from awareness, they are using suppression.

Some bodily processes, such as the firing of neurons, are **nonconscious**. They cannot be experienced through sensory awareness or direct inner awareness.

### **C. Consciousness as Personal Unity**

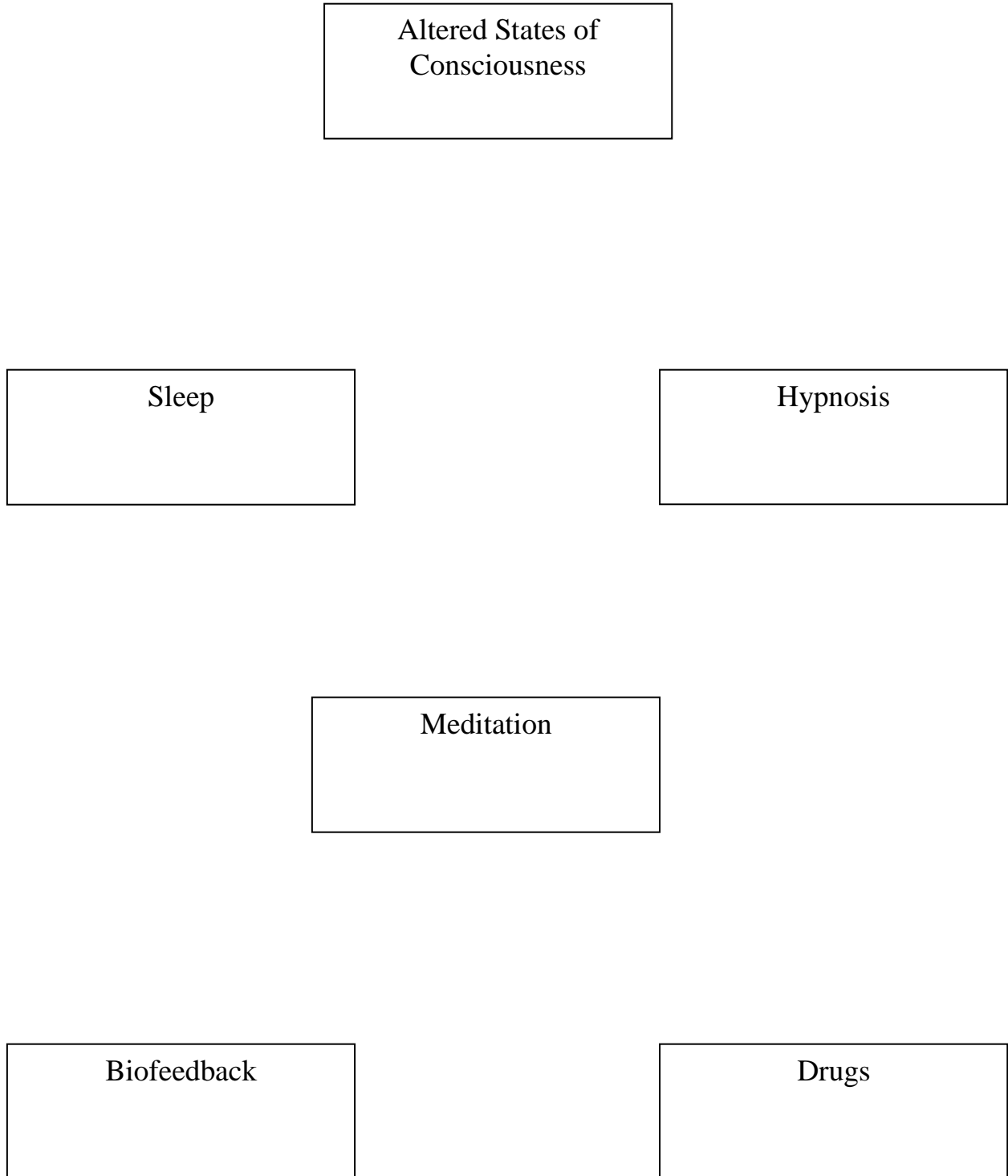
As people develop, they differentiate themselves from that which is not their own self. There is a totality to people's impressions, thoughts, and feelings that makes up their consciousness—their continuing sense of self in the world. That self forms intentions and guides behavior. In this usage of the word, consciousness *is* self.

### **D. Consciousness as the Waking State**

The word *conscious* also refers to the waking state as opposed to sleep. From this perspective sleep, meditation, the hypnotic “trance,” and the distorted perceptions that can accompany use of consciousness-altering drugs are considered *altered states of consciousness*.

***Handout***

***Concept Chart: Altered States of Consciousness***



## II. Sleep and Dreams

People spend about one-third of their adult lives asleep. Sleep experts recommend that adults get seven to nine hours of sleep a night, but according to the National Sleep Foundation (2013), adults in the United States typically get about 6.8 hours of sleep.

### A. Biological and Circadian Rhythms

Alternating periods of wakefulness and sleep reflect an internally generated *circadian rhythm*. A **circadian rhythm** is a cycle that is connected with the 24-hour period of the earth's rotation. When people are removed from cues that signal day or night, however, a cycle tends to become extended to about 25 hours, and people sleep nearly 10 of those hours (National Sleep Foundation, 2009).

### B. The Stages of Sleep

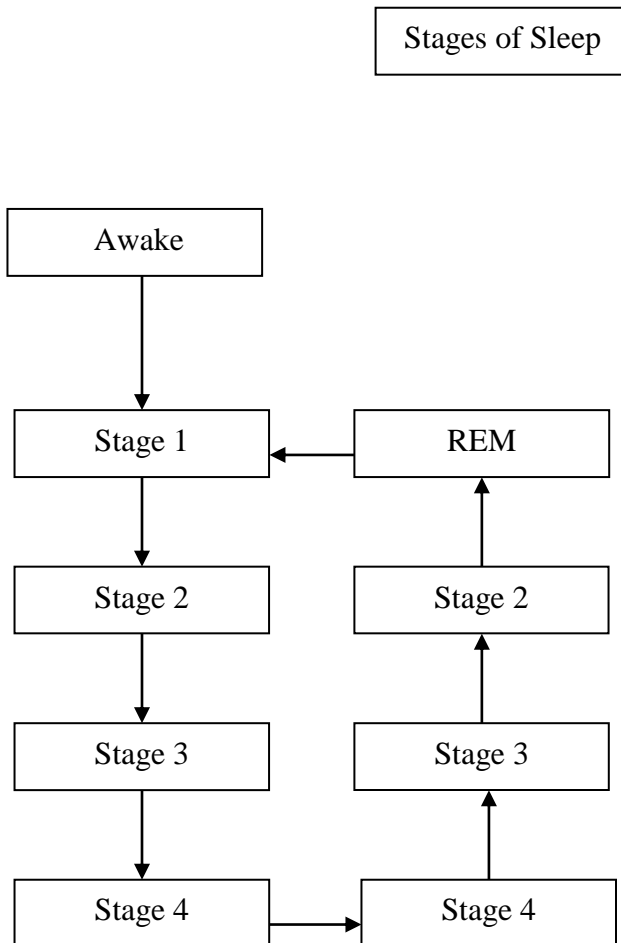
When one sleeps, one slips from consciousness to unconsciousness. When people are conscious, their brains emit waves characterized by certain *frequencies* (numbers of waves per second) and *amplitudes* (heights, an index of strength). Brain waves are rough indicators of the activity of large numbers of neurons. When one sleeps, one's brain waves differ from those emitted when one is conscious.

High-frequency brain waves are associated with wakefulness. When people close their eyes and begin to relax before going to sleep, their brains emit **alpha waves**—low-amplitude brain waves of about 8 to 13 cycles per second.

People go through five stages of sleep. The first four stages of sleep are considered **non-rapid eye movement (NREM) sleep**. These contrast with the fifth stage, **rapid eye movement (REM) sleep**, so called because people's eyes dart back and forth beneath their eyelids.

- Stage 1 sleep: During this stage, brain waves slowdown from the alpha rhythm and enter a pattern of **theta waves**. Theta waves, with a frequency of about 6 to 8 cycles per second, are accompanied by slow, rolling eye movements.
  - The transition from alpha waves to theta waves may be accompanied by a *hypnagogic state* during which people may experience brief but vivid dreamlike images.
  - After 30 to 40 minutes of stage 1 sleep, people undergo a steep descent into stages 2, 3, and 4.
- Stage 2: During this stage, brain waves are medium in amplitude with a frequency of about 4 to 7 cycles per second, but these are punctuated by *sleep spindles*, brief bursts of brain activity that have a frequency of 12 to 16 cycles per second.

- Stages 3 and 4: During these stages, the brain produces slower **delta waves**, which reach relatively great amplitude. During stage 3, the delta waves have a frequency of 1 to 3 cycles per second.
  - Stage 4 is the deepest stage of sleep, from which it is the most difficult to be awakened.
  - During stage 4 sleep, the delta waves slow to about 0.5 to 2 cycles per second, and their amplitude is greatest.
- After perhaps half an hour of deep stage 4 sleep, one begins a relatively rapid journey begins back upward through the stages until one enters REM sleep.
  - During REM sleep, relatively rapid, low-amplitude brain waves are produced that resemble those of light stage 1 sleep. REM sleep is also called *paradoxical sleep* because the EEG patterns observed suggest a level of arousal similar to that of the waking state.
  - It is difficult to awaken a person during REM sleep.
  - When people are awakened during REM sleep, as is the practice in sleep research, about 80% of the time they report that they have been dreaming.
- Each night people tend to undergo five cycles through the stages of sleep.
  - Five cycles include five periods of REM sleep.

**Handout****Concept Chart: Stages of Sleep**

### C. The Functions of Sleep

Researchers do not have all of the answers as to why people sleep, but sleep seems to serve several purposes:

- It rejuvenates the body.
- It helps people recover from stress.
- It helps people consolidate learning.
- It may promote development of infants' brains.

Sleepless people's abilities to concentrate and perform may be seriously impaired, but they may not recognize their limitations. Many students can pull "all-nighters" in which they cram for a test through the night and perform reasonably well the following day. But they begin to show deficits in psychological functions such as attention, learning, and memory, especially if they go sleepless for more than one night (Dubiela et al., 2010; Ward et al., 2009). Sleep deprivation also makes for dangerous driving (M. Howard et al., 2013). It is estimated to be connected with 100,000 vehicular crashes and 1,500 deaths each year (S. Clark, 2009).

#### Why Do You Need The Amount of Sleep You Need?

The amount of sleep people need seems to be in part genetically determined (Shaw et al., 2013). Sleep seems to help people recover from stress, and lack of sleep can lead to depression (de Wild-Hartmann et al. 2013). Newborn babies may sleep 16 hours a day, and teenagers may sleep 12 hours or more (National Sleep Association, 2013).

#### Sleep, Learning and Memory

REM sleep and deep sleep are both connected with the consolidation of learning and memory (Dubiela et al., 2010; Ward et al., 2009). Fetuses have periods of waking and sleeping, and REM sleep may foster the development of the brain before birth (Rurak et al., 2011; Uhlhaas et al., 2010). REM-sleep-deprived people and animals tend to show REM *rebound*, meaning that they spend more time in REM sleep during subsequent sleep periods.

### D. Dreams

Dreams produce imagery in the absence of external stimulation and can seem real. In any event, dreams are most likely to be vivid during REM sleep, whereas images are vaguer and more fleeting during NREM sleep (Steck & Steck, 2016). If one sleeps for eight hours and undergo five sleep cycles, one may have five dreams. Nightmares, like most pleasant dreams, are products of REM sleep.

### **Dreams as “The Residue of the Day”**

Most dreams involve memories of the activities and problems of the day (Hobson, 2013). According to the **continuity hypothesis**, if people are preoccupied with illness or death, sexual or aggressive urges, or moral dilemmas, they are likely to dream about them (Schredl, 2015). The characters in people’s dreams are more likely to be friends and neighbors than spies, monsters, and princes. Traumatic events, however, can spawn nightmares. People with frequent nightmares are also more likely than others to have anxiety, depression, and other psychological problems (Roberts et al., 2009).

### **Dreams as the Expression of Unconscious Desires**

Freud theorized that dreams reflect unconscious wishes and urges. He argued that dreams express impulses people would censor during the day, although researchers find no evidence for this assertion. Moreover, he said that the content of dreams is symbolic of unconscious fantasized objects. In his method of psychoanalysis, Freud would interpret his clients’ dreams.

### **The Activation-Synthesis Model of Dreams**

According to the **activation-synthesis model**, acetylcholine (a neurotransmitter) and the pons stimulate responses that lead to dreaming (Hobson, 2003, 2009; Stuart & Conduit, 2009). One is *activation* of the reticular formation which, arouses people, but not to waking. The reticular formation also stimulates parts of the cortex involved in memory. The cortex then *synthesizes*, or puts together, these sources of stimulation to yield the stuff of dreams. Yet research with the PET scan shows that the frontal lobes of the brain, which seem to be where people make sense of experience, are relatively inactive during sleep (Steck & Steck, 2016). Dreams are therefore more likely to be emotionally gripping than coherent in plot. With the brain cut off from the world outside, learning experiences and memories are replayed and consolidated during sleep (Siegel, 2009).

## **E. Sleep Disorders**

Although nightmares are unpleasant they do not qualify as sleep disorders. The term *sleep disorder* is reserved for other problems that can seriously interfere with our functioning.

### **Insomnia**

It appears that about 40% American adults are affected by insomnia in a given year



(National Sleep Foundation, 2014). Older adults are more likely than younger adults to have insomnia because of a greater incidence of poor health and pain. Trying to get to sleep can compound sleep problems by creating autonomic activity and muscle tension.

### **Narcolepsy**

A person with **narcolepsy** falls asleep suddenly. Narcolepsy afflicts as many as 100,000 people in the United States and seems to run in families. The “sleep attack” may last 15 minutes or so, after which the person feels refreshed. They may be accompanied by the sudden collapse of muscle groups or the entire body—a condition called *sleep paralysis*. In sleep paralysis, the person cannot move during the transition from consciousness to sleep, and hallucinations occur. Narcolepsy is thought to be a disorder of REM-sleep functioning. Stimulants and antidepressant drugs have helped many people with the problem (Mignot, 2012).

### **Sleep Apnea**

**Sleep apnea** is a dangerous sleep disorder in which air passages are obstructed. People with apnea stop breathing periodically, up to several hundred times per night. Obstruction may cause the sleeper to sit up and gasp for air before falling back asleep. Sleep apnea is associated with obesity and chronic snoring. It can lead to high blood pressure, heart attacks, and strokes (Bauters et al., 2016). Causes of sleep apnea include anatomical deformities that clog the air passageways and problems in the breathing centers in the brain. Sleep apnea is treated by such measures as weight loss, surgery, and continuous positive airway pressure (CPAP), which is supplied by a mask that provides air pressure that keeps the airway open during sleep.

### **Deep Sleep Disorders: Sleep Terrors, Bedwetting, and Sleepwalking**

Sleep terrors, bedwetting, and sleepwalking all occur during deep (stage 3 or 4) sleep. They are more common among children and may reflect immaturity of the nervous system (Haupt et al., 2013; Nir & Tononi, 2010). **Sleep terrors** are similar to, but more severe than, nightmares, which occur during REM sleep. Sleep terrors are often decreased by a minor tranquilizer at bedtime, which reduces the amount of time spent in stage 4 sleep.

Bedwetting probably reflects immaturity of the nervous system. In most cases, it resolves itself before adolescence, often by age eight. The drug imipramine often helps. Sometimes all that is needed is reassurance that no one is to blame for bedwetting and that most children outgrow it.

Perhaps half of children talk in their sleep now and then. Adults occasionally do so too. Surveys suggest that some 7% to 15% of children walk in their sleep—a behavior pattern that is technically termed *somnambulism* (Arya & Jain, 2013; Cotton & Richdale, 2010). Only 2% of a random sample of nearly 5,000 people aged 15 to 100 did so (Ohayon et al., 1999). Sleepwalkers typically do not remember their excursions, although they may respond to questions while they are up and about. Mild tranquilizers and maturity typically put an end to it.

### III. Altering Consciousness: Hypnosis, Meditation, and Biofeedback

#### A. Hypnosis

The word **hypnosis** is derived from the Greek word for *sleep*. It is an altered state of consciousness in which people are suggestible and behave as though they are in a trance. Modern hypnosis evolves from the ideas of Franz Mesmer in the 18<sup>th</sup> century. Mesmer asserted that everything in the universe was connected by forms of magnetism.

Today, hypnotism is more than a nightclub act. It is also used as an anesthetic in dentistry, childbirth, and medical procedures (Kendrick et al., 2016). Some psychologists use hypnosis to help clients reduce anxiety, overcome fears, or lessen the perception of chronic pain. Hypnosis as an aid in relaxation training also helps cope with stress and enhance the functioning of their immune systems (Accardi et al., 2014; Kiecolt-Glaser et al., 2001). Hypnosis can be a useful supplement to other forms of therapy, especially in helping people control their weight and stop smoking (Tahiri et al., 2013; Tonnesen, 2009). Police may use hypnosis to prompt memories of witnesses. The state of consciousness called the *hypnotic trance* has traditionally been induced by asking people to narrow their attention to a small light, a spot on the wall, etc. Hypnosis is *not* sleep. People who are easily hypnotized are said to have *hypnotic suggestibility*. Suggestible people are prone to fantasy and want to cooperate with the hypnotist (Accardi et al., 2014; Dienes & Hutton, 2013).

#### Explaining Hypnosis

According to Freud, hypnotized adults permit themselves to return to childish modes of responding that emphasize fantasy and impulse rather than fact and logic. Theodore Sarbin offers a **role theory** view of hypnosis (Accardi et al., 2014; Sarbin & Coe, 1972). He points out that the changes in behavior attributed to the hypnotic trance can be successfully imitated when people are instructed to behave *as though* they were hypnotized. Sarbin suggests that people *allow* themselves to enact this role under the hypnotist's directions. The **response set theory** of hypnosis is related to the role theory. It suggests that expectations play a role in the production of experiences suggested by the hypnotist

(Accardi et al., 2014). A positive response to each suggestion of the hypnotist sets the stage—creates a *response set*—in which the subject is more likely to follow further suggestions.

## B. Meditation

Meditation refers to the various ways of focusing one's consciousness to alter one's relationship to the world. Ironically, *meditation* can also refer to a process by which people seem to suspend thinking and allow the world to fade away. One common form of meditation, **transcendental meditation (TM)**, was brought to the United States by Maharishi Mahesh Yogi in 1959. People practice TM by concentrating on *mantras*—words or sounds that are claimed to help the person achieve an altered state of consciousness. TM has some goals that cannot be assessed scientifically such as expanding consciousness to encompass spiritual experiences, but there are also measurable goals, such as reducing anxiety and lowering blood pressure. Meditators produced more frequent alpha waves—brain waves associated with feelings of relaxation. Meditation has also been shown to increase nighttime concentrations of the hormone melatonin, which helps people get to sleep (Nagendra et al., 2012).

**Mindfulness meditation (MM)** in cognitive and behavior therapy makes no pretense of achieving spiritual goals. Instead, MM provides clients with mantra-like techniques they can use to focus on the present moment rather than ruminate about problems. MM holds promise for helping clients cope with problems such as anxiety as well as reducing stress (Hoge et al., 2013).

## C. Biofeedback

**Biofeedback training (BFT)** is a system that provides, or “feeds back,” information about a bodily function. BFT is used in many ways, including helping people combat stress, tension, and anxiety. An **electromyograph (EMG)** monitors muscle tension. The EMG can be used to help people become more aware of muscle tension in the forehead, fingers, and elsewhere and to learn to lower tension, thus decreasing the discomfort and incidence of muscle-tension headaches (Sun-Edelstein & Mauskop, 2012). Biofeedback is widely used by sports psychologists to teach athletes how to relax muscle groups that are unessential to the task at hand so that the athletes can control anxiety and tension.

## IV. Altering Consciousness through Drugs

**Psychoactive substances**—drugs that have psychological effects such as stimulation or distortion of perceptions. Many Americans take **depressants**—drugs that lower the rate of

activity of the nervous system—to get to sleep at night and **stimulants**—drugs that increase activity of the nervous system—to get going in the morning.

### A. Substance Use and Substance Use Disorders

The DSM-5 defines a **substance use disorder** in terms of behavioral, cognitive, and biological symptoms or factors. With repeated use of many substances, the DSM-5 notes that there are changes in “brain circuitry” that are connected with impaired control over use of the substance, social problems, risky behavior, and biological factors suggestive of addiction. A substance use disorder is characterized by loss of control over one’s use of the substance. Biological symptoms suggestive of physical addiction include tolerance, withdrawal symptoms, or both. **Tolerance** is the body’s habituation to a substance so that, with regular usage, higher doses are required to achieve similar effects. There is also an **abstinence syndrome**—that is, a characteristic group of withdrawal symptoms—when the level of usage of a substance suddenly drops off. Withdrawal symptoms for alcohol include anxiety, tremors, restlessness, rapid pulse, and high blood pressure.

When going without a substance, people with substance use disorders experience *cravings*—intense urges to use the drug, typically accompanied by signs of anxiety, shakiness, rapid pulse, and sweating. People withdrawing from chronic alcohol use may experience *delirium tremens* (“the DTs”), with heavy sweating, restlessness, disorientation, and frightening hallucinations—often of crawling animals.

### B. Causal Factors in Substance Use Disorders

Substance use usually begins with experimental use in adolescence (Marlatt, 2010; Schulte et al., 2009). People experiment with drugs for various reasons, including curiosity, conformity to peer pressure, parental use, rebelliousness, escape from boredom or pressure, or to attain excitement and pleasure (T. T. Clark, 2010; Lindgren et al., 2010). Many people use drugs as self-medication for anxiety, depression, and even low self-esteem. People may have a genetic predisposition toward physiological dependence on various substances, including alcohol, opioids, cocaine, and nicotine (Agrawal et al., 2010; Clarke et al., 2013; Kuo et al., 2010).

## V. Depressants

Depressant drugs generally act by slowing the activity of the central nervous system. There are also effects specific to each depressant drug.

### A. Alcohol

People use alcohol to celebrate holy days, applaud accomplishments, and express joyous wishes. People use alcohol like a Swiss Army knife. It does it all. It is the all-purpose medicine people can buy without a prescription. It is the relief from anxiety, depression, or loneliness. No drug has been so abused as alcohol. Ten million to 20 million Americans are alcoholics. *Binge drinking*—defined as having five or more drinks in a row for a male, or four or more for a female—is connected with aggressive behavior, poor grades, sexual promiscuity, and accidents (McCauley et al., 2010; Randolph et al., 2009; Swartout & White, 2010).

The effects of alcohol vary with the dose and duration of use. Low doses may be stimulating. Higher doses have a sedative effect. Alcohol impairs cognitive functioning, slurs the speech, and impairs coordination. It lowers inhibitions. It induces feelings of elation and euphoria that may wash away doubts. Men are more likely than women to become alcoholics. A cultural explanation is that tighter social constraints are usually placed on women. A biological explanation is that alcohol hits women harder, discouraging them from overindulging. Regular drinking can lead to physiological dependence.

## B. Opiates

**Opiates** are a group of **narcotics** derived from the opium poppy. **Opioids** are similar in chemical structure but made in the laboratory. Opiates include morphine, heroin, codeine, Demerol, and similar drugs. The major medical application of opiates is relief from pain.

Heroin can provide a strong euphoric “rush”. High doses can cause drowsiness and stupor, alter time perception, and impair judgment. Withdrawal syndromes may begin with flu-like symptoms and progress through tremors, cramps, chills alternating with sweating, rapid pulse, high blood pressure, insomnia, vomiting, and diarrhea. Heroin was once used as a cure for addiction to morphine. Now there is methadone, a synthetic opioid that is used to treat physiological dependence on heroin. Methadone is slower acting than heroin.

## C. Barbiturates

**Barbiturates** are depressants with several medical uses, including relief from anxiety, tension, and pain, and treatment of epilepsy, high blood pressure, and insomnia. With regular use, barbiturates lead rapidly to both physiological and psychological dependence. Barbiturates are popular as street drugs because they are relaxing and produce mild euphoria. High doses result in drowsiness, motor impairment, slurred speech, irritability, and poor judgment. A highly physiologically dependent person who is withdrawn abruptly from barbiturates may experience convulsions and die.

## VI. Stimulants

Stimulants increase the activity of the central nervous system.

### A. Amphetamines and Related Stimulants

**Amphetamines** are a group of stimulants that were first used by soldiers during World War II to help them stay alert at night. Amphetamines are often abused for the euphoric rush that high doses can produce. Stimulants such as Ritalin and Adderall are widely used to treat attention-deficit/hyperactivity disorder (ADHD) in children. They have been shown to increase the attention span, decrease aggressive and disruptive behavior, and lead to academic gains (May & Kratochvil, 2010; Wanchoo et al., 2010). Hyperactivity may be connected with immaturity of the cerebral cortex, and these drugs may stimulate the cortex to exercise control over more primitive parts of the brain. Tolerance for amphetamines develops quickly, and users can become dependent on them. High doses of amphetamines can cause restlessness, insomnia, loss of appetite, hallucinations, paranoid delusions, and irritability.

### Cocaine

Cocaine is derived from coca leaves. It is a stimulant that produces euphoria, reduces hunger, deadens pain, and boosts self-confidence. Coca-Cola stopped putting cocaine in its formula in 1906. Cocaine apparently works by binding to sites on sending neurons that normally reuptake molecules of the neurotransmitters norepinephrine, dopamine, and serotonin. The potent cocaine derivatives known as “crack” and “bazooka” are inexpensive because they are unrefined. Physical dangers include sudden rises in blood pressure. Overdoses can cause restlessness and insomnia, tremors, headaches, convulsions, nausea, hallucinations, and delusions. Use of crack has been connected with strokes. Only about 4% of adolescents aged 15 to 19 use cocaine regularly. Cocaine causes physiological as well as psychological dependence. Cocaine—also called *snow* and *coke*—has been used as a local anesthetic since the early 1800s. Freud used it to fight his own depression and published an article about it titled “Song of Praise.”

### B. Nicotine

Nicotine stimulates discharge of the hormone adrenaline and the release of the neurotransmitters, including dopamine, acetylcholine, GABA, and endorphins (Herman et al., 2014). It appears to enhance memory and attention; improve performance on simple, repetitive tasks; and enhance the mood (Levin, 2013). Although it is a stimulant, because of GABA and endorphins, nicotine has a relaxing effect (Bricker et al., 2012). It depresses the appetite and raises the metabolic rate. Some people smoke cigarettes to control their weight.

Nicotine is the agent that creates physiological dependence on tobacco products (Small et al., 2010). Symptoms of withdrawal include nervousness, drowsiness, loss of energy, headaches, irregular bowel movements, lightheadedness, insomnia, dizziness, cramps, palpitations, tremors, and sweating.

Nearly 440,000 Americans die from smoking-related illnesses each year (American Lung Association, 2013; Centers for Disease Control and Prevention, 2013). The **hydrocarbons** (“tars”) in cigarette and cigar smoke lead to lung cancer (American Lung Association, 2013). Cigarette smoking also stiffens arteries (Campbell et al., 2010) and is linked to death from heart disease, chronic lung and respiratory diseases, and other health problems. Women who smoke show reduced bone density, increasing the risk of fracture of the hip and back. Pregnant women who smoke have a higher risk of miscarriage, preterm births, stillborn babies, and children with learning problems (American Lung Association, 2013). **Secondhand smoke**—smoke inhaled from other people’s tobacco products—is also connected with respiratory illnesses, asthma, and other health problems.

## VII. Hallucinogenics

**Hallucinogenics** are so named because they produce hallucinations. They may have additional effects such as relaxation, euphoria, or in some cases, panic.

### A. Marijuana

**Marijuana** is a substance that is produced from the *Cannabis sativa* plant. It helps some people relax and can elevate their mood. It also sometimes produces mild hallucinations. The major psychedelic substance in marijuana is delta-9-tetrahydrocannabinol, or THC. *Hashish*, or “hash,” is derived from the resin and is more potent than marijuana. Moderate to strong intoxication is linked to reports of sharpened perceptions, increased self-insight, creative thinking, and empathy for others. Marijuana carries a number of health risks. For example, it impairs perceptual–motor coordination, short-term memory, and slows learning (Dougherty et al., 2013). Strong intoxication can produce nausea and vomiting. Regular users may experience tolerance and withdrawal symptoms (Gorelick et al., 2013; Gonzalez & Swanson, 2012).

### B. LSD and other Hallucinogenics

**LSD** is the abbreviation for lysergic acid diethylamide, a synthetic hallucinogen. LSD produces vivid and colorful hallucinations. Some LSD users have **flashbacks**—distorted perceptions or hallucinations that mimic the LSD “trip.” The experiencing of flashbacks is

more technically termed *hallucinogen persisting perception disorder* (HPPD) by the American Psychiatric Association (2013).

Other hallucinogens include **mescaline** (derived from the peyote cactus) and **phencyclidine (PCP)**. PCP was developed as an anesthetic and an animal tranquilizer. Regular use of hallucinogens may lead to tolerance and psychological dependence. High doses may impair coordination, cloud judgment, change mood, and cause frightening hallucinations and paranoid delusions.

## Lecture Topics

### I. What Is Consciousness?

#### Lecture Topic 1: Consciousness Raising

The study of consciousness seemed to simultaneously fall out of favor along with Freudian theory. Behaviorists were frustrated that time and effort were being focused on an area that could not be formally measured. Recently, however, the field of psychology has seen a rebound in the interest of consciousness. Areas such as neuroscience and biology are attempting to understand consciousness. An article titled “Consciousness Raising” written by Bower (1992) explores the updated approach to studying consciousness. One theorist summarized in the article is Dennett, who offers a multiple drafts model of consciousness. In this approach, the brain creates multiple, ever-changing interpretations of experience. Monin proposes a thinking systems model in which humans employ a step-by-step process or consciousness algorithm. Eccles suggests an evolutionary approach that studies simple consciousness but adds that “the unique experience of human self-consciousness lies beyond scientific understanding.” Another view discussed in the article is that of Velmans, who suggests that the brain takes multiple drafts and constructs a stream of consciousness that is dynamic. This information can be used in a lecture to illustrate the rebound that consciousness is realizing in the field of psychology.

#### Lecture Topic 2: When Perception Becomes Consciousness

To help students better understand the construct of consciousness, access the article titled “When Perception Becomes Conscious” written by Velmans (1999). This article presents a model to represent the psychological transition between perceiving the world and how that analysis becomes consciousness. The author suggests that some of the difficulty in studying consciousness comes in defining the construct. Is something conscious when a person is conscious of the process, or is it consciousness when a third person can distinguish it? The article goes on to suggest ways to determine if something is conscious or not.



### **Lecture Topic 3: The Mental Butler Did It**

When giving consideration to people's conscious and unconscious experiences, there are some who suggest that many of people's experiences are controlled by their unconscious. These behaviors are controlled by "activities triggered outside of awareness by features in the environment." To help students learn more about this intriguing possibility, access the article titled "The Mental Butler Did It" written by Bower (1999). This article presents research that supports this view.

## **II. Sleep and Dreams**

### **Lecture Topic 1: Melatonin and Sleep Disorders in Children**

When children are growing up, they spend a great deal of time sleeping. By the time a child reaches 5 years of age, she or he has spent roughly half of her life asleep. Sleep disorders are experienced by some children. These disorders include such conditions as sleep-onset, colic, and obstructive sleep apnea. To help students understand these disorders and the treatment of melatonin, access the article titled "Use of Melatonin in Young Children for Sleep Disorders" written by Lin-Dyken and Dyken (2002). This article discusses research efforts to treat childhood sleep disorders.

### **Lecture Topic 2: Lucid Dreaming**

For this lecture topic, instructors can help students understand the phenomenon of lucid dreaming, which is when the dreamer becomes aware that he or she is dreaming. Some have proposed that this awareness can lead to a greater understanding of the unconscious. For more information about this topic, access the article titled "Take control of your dreams: The technique of lucid dreaming can help you use your dreams to explore your psyche" written by Gackenback and Bosveld (1989). This article provides a brief historical overview of lucid dreaming, and it discusses what lucid dreams may be telling people, the power of the dream dialogue, and how lucid dreaming can play a role in therapy.

### **Lecture Topic 3: Power Naps**

Students often hear about cultures that practice siestas or naps in the afternoon. In the fast-paced lifestyle of a college student, it would seem that the day isn't long enough to implement such a practice. But could it actually help? To help students understand how this could benefit them, access the article titled "Siesta Time: Power Napping" written for *The Economist* (2002). This article contains a summary of research conducted where subjects took afternoon naps and the influence the naps had on their visual perception. This interesting concept suggests that an

afternoon nap of 60 minutes can be beneficial, which is news that students will love to hear.

### **Lecture Topic 4: Treating Insomnia**

This lecture topic focuses on a research study conducted to determine if relaxation and behavioral approaches could help those with chronic pain and insomnia. A 12-member panel of experts from such areas as medicine, psychiatry, psychology, public health, and nursing examined research to draw the conclusion that these approaches can help those with chronic pain but they may not be as effective with insomnia. To see the full results from this project, access the article titled “Integration of Behavioral and Relaxation Approaches into the Treatment of Chronic Pain and Insomnia” written for *JAMA* (1996). The implications of this finding are that those who suffer with insomnia may need more in-depth help.

## **III. Altering Consciousness through Hypnosis, Meditation, and Biofeedback**

### **Hypnosis:**

#### **Lecture Topic 1: Hypnosis in Medicine**

Hypnosis is a controversial topic in the field of psychology. What, exactly, is hypnosis? Should it be used in psychology? Is it effective? These are just a few of the questions that need to be answered. In an article titled “Hypnosis in Family Medicine,” Mutter and Coates (1990) provide a brief and informative summary of hypnosis. The areas covered include history, definition, misconceptions, characteristics and stages, clinical applications, postoperative healing, and limitations. This article has information that can be included in a lecture on hypnosis with factual information that students can relate to.

#### **Lecture Topic 2: Clinical Applications of Hypnosis**

The controversial subject of hypnosis can often be minimized and even dismissed in a typical Introduction to Psychology lecture. Though some aspects of hypnosis have come into question, there are legitimate uses for hypnotherapy. To understand the potential uses of hypnosis better in a therapeutic situation, access the article titled “Clinical applications of Hypnotherapy” written by Manusov (1990). This article provides information on the common uses of hypnosis, including pain control, habit disorders, and symptom reduction. The article also provides a brief historical perspective and a theoretical overview and then delves into the clinical applications utilizing case studies. The case studies are used to illustrate the effective use of hypnosis in pain control, obstetrics and gynecology, surgery, dermatology, pediatrics, and general medicine. Utilizing this information in a lecture can help students by providing real-life applications of hypnosis.

### **Lecture Topic 3: Theory and Application of Hypnosis**

This lecture topic can introduce to students the phenomenon of hypnosis. An article titled “Hypnosis: Theory and Application Part I” written for *Harvard Mental Health Letter* (2002) explores the theory behind hypnosis. The article discusses the state of the hypnotized individual, the mind control issue, hypnotizability, and theories of what hypnosis is. This information can provide a foundational knowledge of hypnosis. Note: To help students learn more, have them participate in Student Project 3, where they will explore the second part of this article.

### **Meditation:**

#### **Lecture Topic 1: Types of Meditation**

For this lecture topic, discuss the various forms of meditation that may help students. There are various ways of meditating, and each person needs to select the one that works best for them. In an article titled “How to Get Instant Calm: These easy meditations can help you feel peaceful and centered in as little as one minute” written by Vukovic (2003), various types of meditation are discussed. Some of the types include breathing meditation, walking meditation, praying meditation, and sitting meditation. Suggestions are provided for each type.

#### **Lecture Topic 2: Meditation versus Hypnosis**

To help students understand the differences between meditation and hypnosis, access the article titled “Meditation vs. Hypnosis” written by Guadio (2001). This article provides information that differentiates these separate phenomena. Differences include meditation being an absence of thought, whereas hypnosis is directing thought toward a desired outcome.

#### **Lecture Topic 3: The Science of Meditation**

Research continues to be conducted to determine the benefits of meditation. This ancient practice has been shrouded in mystery for many years. To help students understand the scientific approach to meditation, access the article titled “The Science of Meditation” written by Barbor (2001). This article discusses how groups of people have integrated meditation into every aspect of their lives. The article also discusses research conducted at Harvard Medical School using MRI technology to investigate what happens to the brain during meditation. The article suggests that the autonomic nervous system seems to be impacted, which happens to be the area of the brain that reacts to stress.

### **Biofeedback:**

### **Lecture Topic 1: Boosting Brainwave Activity**

People who suffer with chronic fatigue may be helped by neurofeedback. With this type of biofeedback, patients are actually able to increase their brainwaves to a higher frequency. Slower brainwaves are a potential cause of chronic fatigue. To learn more about this type of feedback, access this web page: <http://bebrainfit.com/neurofeedback/>.

### **Lecture Topic 2: Biofeedback and Stuttering**

To help students understand the practical applications of biofeedback training, access the article titled “Biofeedback can help stutterers; neurolysis helps reduce uncontrolled muscle contractions” written by Anstett (1993). The first part of this article discusses the invention of a miniature biofeedback device that fits behind the ear like a hearing aid and gives feedback to the person to help him or her overcome stuttering.

### **Lecture Topic 3: It’s All in the Mind**

To help students better understand a brief history and the contributions that biofeedback has made, access the article titled “Biofeedback: It’s all in the mind” written for *Medical Update* (1990). This article describes how biofeedback emerged in the ’70s only to be somewhat cast off. Individuals have continued to focus on the benefits of biofeedback training and successful attempts to treat muscle spasms, incontinence, Raynaud’s syndrome, and headaches.

## **IV. Altering Consciousness through Drugs**

### **Lecture Topic 1: Drug Tolerance**

In an article titled “Drug Tolerance, Central to Addiction, Responds to Learned Cues - A Finding That May Lead to More Effective Treatment” written for *American Psychological Association* (2002), the argument is made that tolerance to drugs can be learned and thus unlearned. Drug tolerance is often an important aspect of a lecture on being addicted to drugs, as tolerance is a component in the addiction model. In an interesting study conducted with rats, morphine injections are paired with various environmental cues.

### **Lecture Topic 2: Psychopathology and Drug Use**

To help students understand the relationship between psychopathology and drug abuse, access the article titled “General Relations among Drug Use, Alcohol Use, and Major Indexes of Psychopathology” written by Mehrabian (2001). This article describes a study that examined the

relationship between drug use and anxiety, depression, panic, and somatization. The results indicate positive correlations among the variables. These findings can lead to a class discussion on whether the substance use is causing the disorder or if the person has turned to substances to help cope with the disorder.

### **Lecture Topic 3: College Student's Perception of Tobacco, Cocaine, and Homicide Fatalities**

For an interesting discussion, access the article titled "University students' perceptions of tobacco, cocaine, and homicide fatalities" written by Giacomassi and Vandiver (1999). This article presents a research study that focused on college students estimating the number of people who die for various reasons. The reasons included tobacco-, cocaine-, and homicide-related deaths. The authors indicate that students overestimate the number of deaths due to cocaine and homicide and dramatically underestimate the number of deaths due to tobacco. The authors report that tobacco accounts for more deaths in the U.S. than the combined total of alcohol, illicit drugs, firearms, car accidents, microbial agents, toxic agents, and AIDS.

### **Lecture Topic 4: Social Ecology of Addiction**

In an interesting research study that focused on substance abuse among various ethnicities, researchers report that perhaps it isn't ethnicity that is the "cause" but socioeconomic status. To help students better understand the multidimensional problem of addiction, access the article titled "The Social Ecology of Addiction: Race, Risk, and Resilience" written by Wallace, Jr. (1999). The information provided will help students understand the bigger picture.

## **V. Depressants**

### **Lecture Topic 1: International Gender and Alcohol Research**

For this lecture topic, access the article titled "International Gender and Alcohol Research: Recent Findings and Future Directions" written by Wilsnack and Wilsnack (2002). This article summarizes some work conducted by the International Research Group on Gender and Alcohol (IRGGA). This organization has made attempts at better standardizing international research. The article reports some of the findings of this organization and presents some future direction.

## Classroom Demonstrations

### I. What Is Consciousness?

#### Classroom Demonstration 1: Advertising

For this demonstration, instructors could make a videotape of advertisements, or find advertisements online that they can share with the class.

Advertisers use various methods to sell their products. Do some techniques facilitate people in paying attention to their ads? The textbook suggests that sudden changes, novel stimuli, intense stimuli, and repetitive stimuli can all contribute to capturing people's attention. Show students four or five advertisements, and have a brief discussion after each advertisement. Which advertisements did the students enjoy? Why? Did the advertisers use some of the techniques suggested in the textbook? How do advertisements relate to consciousness? Now that people are watching fewer advertisements due to the ubiquity of Netflix, DVRs, and Internet viewing, in what ways have people become consciously less aware of advertisements (e.g., product placement)?

#### Classroom Demonstration 2: Mind Games

To introduce students to some of the controversial areas of consciousness, instructors will need to purchase access to the streaming video entitled "Mind Games" from the Academic Video Store (<https://www.academicvideostore.com/>). This video focuses on such topics as déjà vu, near-death experiences, and hypnosis.

### II. Sleep and Dreams

#### Classroom Demonstration 1: Lullabies

Pull up the Top 100 lullabies according to the National Sleep Foundation on its website: <http://www.sleepfoundation.org/top-100-lullabies>. Download or purchase the CDs of the top three (or however many instructors want). Bring the audio of these songs to class.

Tell students that it's time to have a period for relaxation in class. Instruct them to close their eyes and relax, then begin playing the top three lullabies ranked by the National Sleep Foundation. When instructors are done, they should ask students how many of them fell asleep (or got close to sleeping). Instructors can then discuss what this indicates about whether their sleep needs are being met; falling asleep quickly and at random times is a sure sign that those needs are going unfulfilled. Then have students discuss the songs themselves. Why does music

have the ability to soothe and change people's state of consciousness? Do they agree that these are the "top three" lullabies? Were they familiar with them? Should other particular songs be ranked more highly?

### **Classroom Demonstration 2: Prescribe a Good Night's Sleep**

For this demonstration, instructors should have a discussion with their students to elicit possible suggestions for helping someone have a good night's sleep. Have the students suggest techniques that they use to help them sleep, and list them on the board. Instructors can suggest ideas that have been shown to be effective through research. These techniques can be found in an article titled "How to prescribe a good night's sleep" written by Pagel, Zafralotfi, and Zammit (1997). The techniques these authors suggest include having a good sleep hygiene, using relaxation techniques, keeping a sleep diary, and entering sleep restriction therapy or psychotherapy. Then instructors can compare the student's suggestions with the suggestions from the article.

### **Classroom Demonstration 3: The Professionalization of Sleep Studies**

Since consciousness is such a controversial topic in psychology, it may be surprising and interesting for students to learn how professional sleep studies have become. A great way to expose them to this professional field is to show them the websites of the following organizations: the American Academy of Sleep Medicine (<http://www.aasmnet.org/>) and the Sleep Research Society (<http://www.sleepresearchsociety.org/>). Go to these websites in class using an overhead projector, and explore their offerings. Are they surprised at all by the available classes and credentials? Do they think it is valid to professionalize the study of sleep in this way? Why, or why not?

## **III. Altering Consciousness through Hypnosis, Meditation, and Biofeedback**

### **Classroom Demonstration 1: Hypnotist**

If the instructor knows a hypnotist or hypnotherapist, he or she can be asked to come to class and talk about what he or she does. Have him or her discuss clinical and stage hypnosis and then illustrate stage hypnosis. As students are enjoying the stage hypnosis show, they are also learning various hypnotic concepts. When the show is over, have the hypnotist discuss clinical hypnosis and answer questions. It is a great way to teach the various aspects of hypnosis.

### **Classroom Demonstration 2: Suggestibility**

If the instructor cannot bring a hypnotist to class, students would also enjoy a simple version of a hypnosis susceptibility scale. Ask them to put one of their hands at a given distance above the

desk, with their eyes closed, while the instructor spends 90 seconds speaking to them. A very good measuring device for the height above the desk is one pen length. When they have positioned the hand on top of the pen (elbow off the desk), with their eyes closed, ask them to remove the pen and pay close attention to what is being said. The instructor should tell them their hands are getting heavy. Gravity is pushing them toward the desk in spite of their attempts to maintain the correct distance. Inform them that their fingers are beginning to have a noticeable weight. Rings and jewelry are influencing the position of the hand and so on. It is a good idea for instructors to write what they are prepared to say so that they will have consistency from class to class. After the time period has elapsed, ask students to open their eyes and measure the distance again with their pens. Instructors will find that a number of students will have been influenced by what was said, and their hands will be noticeably lower than they were. The greater the difference between before and after, the greater the susceptibility to hypnotic suggestion.

### **Classroom Demonstration 3: Screening for Hypnosis**

For this demonstration, instructors will need a small flashlight. Inform students that people who are readily hypnotized are said to have hypnotic suggestibility. They tend to have positive attitudes toward hypnosis, are motivated to enact the hypnotic role, are good role-players, and have vivid and absorbing imaginations. Inform students that the instructor wants to test whether they would be susceptible to hypnosis. Ask them to do the following things:

1. Ask the students to imagine looking at a lemon, feeling it, picking it up, and slicing it in half. Ask them to imagine taking a bite out of the lemon.
2. Make the classroom dark. Ask students to stare at a small spot of light that is made with the flashlight being held in a stationary position.
3. Ask the students to put their arms straight out in the air and imagine a string with a balloon attached to their right arm and a pile of heavy books are resting on their left arm.

#### **Conclusion**

1. Those who are aware of salivating after performing the exercise once are more likely to be good candidates than those who do not salivate more than usual.
2. While most people are convinced the light is moving (autokinetic effect), those who see it change directions more frequently are supposedly the best subjects for hypnosis.
3. Those people whose arms are far apart after doing this exercise may be more susceptible to the hypnotic suggestibility.

Inform students that these tests are not absolute predictors of hypnotic suggestibility and that a variety of tests are used to determine it, such as the Stanford Hypnotic Susceptibility Scales. This latter test requires one to complete 12 exercises that range from closing one's eyes and falling forward (or backward) to imagining one's hand being so heavy that one can't hold it up (or lift it). The Barber Suggestibility Scale battery of exercises is similar to the Stanford Scales, but



includes only eight tasks.

## **Meditation:**

### **Classroom Demonstration 1: Real-World Experiences with Meditation**

Determine if there are students in the class who use meditation in their life for religious reasons, stress management, etc. Ask them if they would be willing to share with the class the techniques they use, cultural influences, and the reasons why they use meditation.

### **Classroom Demonstration 2: Mediation Methods**

Instructors will need to bring a candle to class, one in which the students can see flame.

To help students have a better understanding of mediation methods, access the article titled “Meditation Methods” written for *IDEA Personal Trainer* (2001). This article suggests 19 steps on how to start meditation. The following are some of the steps:

- Know what research knows.
- Stop mental chatter.
- Direct your mind inward.
- Find a quiet spot.
- Sit to meditate.
- Know how long to meditate.
- Watch your breathing.
- Concentrate on an object.
- Recite a mantra.
- Know when it is best to meditate.

For the classroom demonstration, present the 10 steps listed above and then allow the students to try numbers 7, 8, and 9. Have students relax and focus on their breathing. Guide them by verbally telling them to focus on each inhale and exhale. Next, have them focus on the candle that was brought. Dim the lights in the room, and have only the candle burning. Tell them to notice how they are able to relax as they watch the candle flame. Finally, have them recite a mantra to themselves. Have them try repeating the three words suggested in the article slowly: “peace, harmony, and joy.”

### **Classroom Demonstration 3: The 15-Minute Meditation**

The purpose of this exercise is to have students try meditation and then write about the experience. In class, ask them to sit as comfortably as they can at their desks, putting down

anything that they might be holding, resting their hands and arms either on their desktops or in their laps, uncrossing their legs, and putting their feet flat on the floor. They should not be chewing gum. Have them take a deep breath, hold it for just a moment, then let it out as a sigh, closing their eyes as they do so. Tell them to try to clear their minds of any thoughts and focus on the word “one.” They should silently repeat the word, thinking it over and over at a pace that is comfortable and relaxing to them. They may draw the word out each time, or they may simply think the word in their “silent voice” as they normally would, pausing a moment before thinking it again. Have them do this for 15 minutes. After that time, tell them to open their eyes and to repeat this activity before going to bed that night. Have them write a one-page essay the next day on what the meditating experience was like; were they more relaxed and calm the rest of the day after meditating, and did they sleep any better that night? Also, ask them to report how likely they are to do more meditation as a result of their experience.

### **Biofeedback:**

#### **Classroom Demonstration 1: Bio Research**

For this demonstration, instructors can show students various types of biofeedback. One of the interesting approaches to biofeedback training is found at the Bio Research Institute’s website: <http://www.7hz.com>. This website contains a gallery of images designed by psychophysicologists to help in the relaxation process. Instructors can show these images to students as they discuss the process of biofeedback training.

#### **Classroom Demonstration 2: Stress Dots**

Instructors will need to purchase stress dots, one for each student in the class. These dots can be purchased via Amazon.com, using the keyword stress dots. The dots cost approximately \$25 for 50 dots (if you cannot afford this for all of students, see Demonstration 3).

For a fun way to illustrate how biofeedback works, provide for each student a stress dot, which is sometimes referred to as a biodot. These dots are applied directly to the skin on a hand or arm, and they change color depending on skin temperature. After students apply them, can they get the color to change using a biofeedback process?

#### **Classroom Demonstration 3: Change Your Temperature**

Purchase an SC911 Digital Thermometer. They cost approximately \$22 online, but instructors can reuse them every semester, unlike the stress dots above.

Have a volunteer come up to the front of the room to demonstrate biofeedback. Tape the

individual's finger to the SC911 Digital Thermometer. Instruct the individual to use the biofeedback to first lower and then raise his or her temperature. Instructors can learn more about this demonstration by watching the video at <http://www.youtube.com/watch?v=B-84kQXfs3c>.

#### **IV. Altering Consciousness through Drugs**

##### **Classroom Demonstration 1: How Drugs Work**

To understand how the sales of prescription drugs are monitored, access an article titled "Regulation of Prescription Drugs Could Spell Trouble for Patients" written for *MetroFocus* (2012). This article discusses the close monitoring of the sales of prescription drugs to keep them from falling into the hands of addicts and drug dealers.

Ask students to read the article and provide a strongly-opinionated paper on it.

#### **VII. Hallucinogenics**

##### **Classroom Demonstration 1: Inside LSD**

This National Geographic documentary on LSD could be shown in class: [https://www.youtube.com/watch?v=W\\_fqquz0Ug8](https://www.youtube.com/watch?v=W_fqquz0Ug8). This could be followed by a short class discussion on what they learned.

## Student Projects and Activities

### I. What Is Consciousness?

#### Student Project 1: Measuring Consciousness

The study of consciousness has been controversial in the field of psychology, primarily because it is difficult to measure. To better understand the difficulty in studying this unique area, access the article titled “The possibility of a science of experience: An examination of some conceptual problems facing the study of consciousness” written by Valentine (1999). The following are the three chief conceptual problems.

1. Conceptual confusion
2. Privacy
3. Epiphenomenalism

Read about these problem areas, and summarize each one.

#### Student Project 2: The Science of Consciousness

The topic of consciousness received attention in the early days of psychology, especially with the emphasis that Freud placed on unconsciousness. Because of the difficulties found in studying consciousness, the scientific study of it has been debated. Consciousness is often seen as a mysterious realm not appropriate for scientific study. Some consider its definition to be nothing more than thought. Others focus on self-consciousness and self-awareness. One area that has increased interest in the study of consciousness is that of artificial intelligence. Robots can be programmed to solve problems, but will they ever have a sense of consciousness? An article titled “Consciousness as a valid subject for scientific investigation” written by Ingalls (1995) explores reasons why consciousness should continue to be studied. Access this article, and find three views on consciousness. Summarize each, and then decide whether or not consciousness is an area that psychologists should be studying.

#### Student Project 3: Studying Consciousness

For this project, students will integrate the knowledge that they currently possess about consciousness. They should think about the following questions: How does consciousness relate to psychology as a science? How do alternate states of consciousness relate to psychology as a science? For example, how does one measure hypnosis or daydreaming? An interesting finding is that when a person is in a state of hypnosis, he or she will have REM. If a person does have REM in hypnosis, the number of times the eyes move back and forth can be measured. Does this revelation make hypnosis a scientific method? For this project, students should critically evaluate the area of consciousness and come to class prepared with their answers to the above questions.

### **Student Project 4: Floating Off to Cyberspace**

For two days students should keep an Internet time log—jot down the time when they get online and then when they get off, even if it is just for two minutes before a class starts. They should hand in their log along with a paper of no more than two double-spaced pages that addresses all of the following: Are they surprised by how much time they spend online each day? Are they surprised by how much time they spend online in one sitting? Does it feel like they have spent as much time as they have online? Do they want to decrease their daily time online? Why, or why not? Do they think they are ever going with the flow when they are online? Do they think that Internet use can be considered an altered state of consciousness? Why, or why not?

### **Journal Prompt 1: Unconscious Thought?**

The concept of an unconscious has been debated in psychology for many years. Sigmund Freud proposed that the unconscious is the seat of people's personality and is thus worthy of psychology's attention. Others have argued that since it is relatively difficult to measure something unconscious, the unconscious cannot be studied. In an article by Chapman and Chapman-Santana (1994), the authors discuss the possibility of unconscious thought. The premise of the article is that "while the existence of unconscious thought cannot be proved, it cannot be disproved by scientific means." Read this article titled "Is it possible to have an unconscious thought?" After students have read the article, they should create a journal entry that focuses on their opinion of the unconscious. They may want to answer some questions: Do they believe that the unconscious exists? Do they believe that the unconscious influences their behavior? Should the concept of the unconscious continue to be studied by psychologists?

### **Journal Prompt 2: Subliminal Learning**

Students have often heard about techniques available to learn information through alternate methods. One method that is promoted is that of unconscious learning through subliminal means. For example, people may have heard that they can expand their vocabulary by listening to tapes while they sleep. For this to work, the messages would need to be subliminally perceived and further processed cognitively. To further explore this issue, students should access the article titled "Subliminal (Read This) Learning" written by Guilloud (2002). This brief article describes some information regarding research that has been conducted in this area. After reading the article, they will write a journal entry focusing on what they think about subliminal learning via the unconscious.

### **Journal Prompt 3: Déjà Vu**

A common experience with people is that of déjà vu or the feeling that they have previously experienced something that they are currently going through. Often, people have associated feelings that make the experience even more mysterious. What are the possible explanations for these strange occurrences? To further explore this phenomenon, access the article titled “Ask the Experts” written by Tsuchida (2002). This article describes theoretical explanations for déjà vu (including Freud and global matching). Students should access this article and summarize the various theories discussed. They should relate them to a déjà vu experience that they’ve had.

## II. Sleep and Dreams

### Student Project 1: Remembering Dreams

Research on dreams suggests that each person dreams approximately five times each night. When discussing dreams, some find it frustrating as they report not remembering them. In fact, if one asked someone directly, he or she might even report not dreaming at all. Research has also suggested that there are steps one can take to facilitate remembering one’s dreams. To find these suggested steps, access the article titled “A doctor for your dreams: dreams can be your body’s way of sending you a wake-up call about your health, says this Harvard psychologist” written by Redmond (2002). Besides providing information on how to better remember one’s dreams, there is also information proposing that dreams may be providing information about one’s own physical health. After accessing this article, students should list the steps that are suggested for remembering one’s dreams. Students should practice what the article suggests for one week, document the dreams that they remember, and observe if the steps work for them.

### Student Project 2: Steps to Better Sleep

At times, people suffer with the inability to fall asleep. The formal name for this is insomnia. As people age, insomnia can become even worse. For those who suffer with this sleep disorder, it can be quite disconcerting, and they may need to seek professional help. For those who suffer with occasional insomnia, there are suggested activities that can alleviate it. To find these suggestions, students should access the article titled “Health habits. Sleep well to age well” written for *Harvard Health Letter* (2002). For this project, students should list the seven suggestions provided and briefly summarize each.

### Student Project 3: Teaching Children about Sleep

Sleep is a fact of life. It has been estimated that a person will spend about one-third of his or her life sleeping. Because this experience is so common, people don’t think a lot about it. This is also true of children. Yet some of the common sleep disturbances happen during childhood. If one were to prepare a lesson plan to teach children about sleep, a great resource could be an article

titled “Sleep and Dreams” written for *Science Weekly* (2002). This article provides information about sleep in a simplistic manner, though one may find some things that will be new. One’s task for this assignment is to develop a lesson plan to educate children about sleep and dreams. One may want to include information such as different types of sleep, nightmares, dreams, circadian rhythms, sleep walking, and the amount of sleep necessary for children.

#### **Student Project 4: Cognitive Behavioral Therapy and Insomnia**

For this project, students will explore options for people suffering with insomnia that do not include medications. Students should access the article titled “Cognitive Behavioral Therapy for Insomnia” available at <https://sleepfoundation.org/sleep-news/cognitive-behavioral-therapy-insomnia>. This article describes the use of cognitive behavioral therapy with those who are suffering with insomnia. After accessing this article, students should write a one-page report on what they learned.

#### **Journal Prompt 1: Nicole Jeray: Narcoleptic**

Understanding the life of someone who is suffering with narcolepsy can be difficult. The symptoms that one reads about in a textbook can be difficult to relate to. To better understand this sleep disorder, students should access the article titled “A Dream and a Nightmare” written by Diaz (2001). This article discusses the life of Nicole Jeray, a professional golfer, who suffers from narcolepsy. After reading this article, they should create a journal entry focusing on this disorder, their understanding of it, and the difficulties one faces if suffering from this disorder.

#### **Journal Prompt 2: Naptime for Adults**

Students should ponder whether they have ever felt exhausted in the middle of a day, knowing that they have a lot of things still left to finish. One may wish that one lived in a country where they practice taking a siesta. An interesting correlate with siestas is that they may actually have more of a benefit than just a little extra sleep. To find out other benefits a person can get from taking naps, students should access the article titled “Power naps, late-stage sleep linked to improved rate of learning” written for *American Medical News* (2002). After reading the article, have students take a nap and then write a journal entry focusing on this topic. One suggestion is to schedule themselves time each day for a power nap. Students should do this for one week and document the differences that they experience.

#### **Journal Prompt 3: Dream Interpretation**

Students should think back to the dreams that they’ve experienced this past week. Some may seem very vivid and real and others may be vaguer. Some seem to be directly related to life, and

others may be confusing. At times, it would be nice to have someone who could interpret the meaning of the dreams that people have. Do they really have meaning for each person? There are several ways to interpret dreams, books, etc. One way is an article titled “Interpreting Dreams” written by Hawes D.R. (2009), which provides information on how to interpret people’s dreams. Students should keep track of their dreams for one week and interpret those dreams based on this article.

#### **Journal Prompt 4: Sleep Walking**

Sleep walking affects as many as 15 to 30% of children. People who sleep walk (or have a family member who did) usually have some interesting stories to tell. This interesting phenomenon (formally called somnambulism) can be caused by a number of factors. To further students’ understanding of sleep walking, they should access the article titled “A Walk on the Wild Side” written by Pear (1993). They should read this article and, if possible, relate it to any experience they or their family may have had. They should write a journal entry about this. They may also want to include interesting information from the article such as the percent of children versus adults who sleep walk and the various explanations as to why people sleep walk.

#### **Journal Prompt 5: The Evolution of Sleep**

The textbook suggests that the amount of sleep that an animal engages in may partially be due to evolutionary factors. For example, animals that are at a high risk of being hunted by predators tend to sleep less, an adaptive response to the realities of life and death. For this journal entry, students should discuss why they think humans sleep as much as they do. Do they believe that the amount they sleep has evolved over time, or is there another explanation?

#### **Journal Prompt 6: All-Nighter**

For this journal prompt, students should keep a diary of their thoughts and feelings the day after they pull an all-nighter. As they look over the entries, do they see a difference? Were they as pleasant, did their thoughts flow like they normally do? How was their mood?

#### **Journal Prompt 7: Can’t Sleep?**

Many people experience temporary periods of insomnia. Try as they might, they just can’t seem to go to sleep. Many turn to medications to help them through this difficulty, but are there other ways? To see one possible alternative, students should access the article titled “Self-Hypnosis to Promote Quality Sleep” written by Stephenson. K (2012). This article suggests that one should avoid carrying out mentally stimulating activities an hour before going to sleep. One should also have positive sleep associations such as while brushing teeth, imagining oneself of cleaning their



mind of worries and while taking off clothes, imagining lifting off any anxious thoughts that may have been bothering one. Students should try this out by following the method mentioned in the article and write a journal entry about their experience (or any other self-hypnotic methods they may use).

### **III. Altering Consciousness through Hypnosis, Meditation, and Biofeedback**

#### **Hypnosis:**

#### **Student Project 1: Can Hypnosis Work for You?**

For this project, students will explore hypnosis and determine if it could be something they might benefit from. Students should access the article titled “You’re Getting Sleepy” written by Grillo (2003). This article discusses hypnosis and suggests conditions that could be helped by the procedure. This article also presents information on what happens during a session, how to find a qualified hypnotist, and issues with insurance. For this project, students should read the article, write a one-page summary of what they learned, and take the hypnotizability quiz at the end of the article. Students should report their results and discuss whether or not they think they could be hypnotized.

#### **Student Project 2: American Society of Clinical Hypnosis**

For this project, students will visit the homepage for the Society for Clinical and Experimental Hypnosis. This website presents information on hypnosis, including defining hypnosis, myths, and benefits of hypnosis. They can access the homepage at <http://www.sceh.us/>. Students should explore the website and write a one-page summary of what they learned.

#### **Student Project 3: Exploring Hypnosis**

For this student project, students will explore the area of hypnosis, focusing on theory and application. An article titled “Hypnosis: Theory and Application Part II” written for the *Harvard Mental Health Letter* (2002) discusses such topics as hypnotic therapy, hypnosis and memory, research conducted in pain control, and hypnosis used in conjunction with various psychological therapies. After accessing the article, students should write a one-page summary of what they learned.

#### **Journal Prompt 1: Hypnobirthing**

Hypnosis is a controversial topic. One of the most controversial aspects is in what areas it can be effectively used. Students have probably heard of hypnosis programs to aid people to quit

smoking or manage pain. One area they probably have not heard about is what this journal prompt is all about. Students should access the article titled “Total relaxation aids natural childbirth: hypnobirthing prepares mentally and physically” written for *Patient Education Management* (2002). This article discusses the benefits of using hypnosis during the birthing process. Students should read the article and then create a journal entry describing their reaction to this proposed method.

### **Journal Prompt 2: The Practice of Hypnosis**

The state of Florida has strict laws regarding who can diagnose and treat individuals with either mental or physical problems. This law has implications for those who practice hypnosis as part of therapy or as their main theoretical approach. Students should access the article titled “Florida Hypnosis Law” written by LaVelle (2002). After reading this article, they should write a journal entry regarding their view on the subject. Should the states regulate these types of activities?

### **Journal Prompt 3: Hypnosis, Relaxation, Prayer, and Faith**

For this journal entry, students will write about the possibility of hypnosis, relaxation, prayer, and faith as possible tools used in the healing process. An article titled “Hypnosis, Relaxation, Imagery, Prayer, and Faith in Healing” written by Durbin (2002) explores these topics. Durbin, who is a United Methodist Minister, practices all of these techniques with patients he works with at the Pendleton Memorial Hospital. After reading his views, students should write a journal entry discussing their thoughts on these techniques.

### **Meditation:**

#### **Student Project 1: Meditation and Stress**

Most students can relate to the experience of stress. Contributors to stress include upcoming exams, papers, and the pressure of doing well, while balancing all other aspects of life. There are many opinions about how to deal with stress. Many people like to use physical activity; exercise can be a great stress reducer. Another suggested method for dealing with stress is meditation. To complete this assignment, access the article written by Broussard (1994) and titled “Meditation Is a Useful Tool in Reducing Stress.” Students should read the article and answer the following questions:

1. What are the three common types of meditation (relaxation methods) discussed in the article?
2. In progressive muscle relaxation, for how many seconds do they tense the muscle? For how many seconds do they relax it?
3. According to the article, what is a mantra?

4. How many scientific studies have documented the benefits of meditation?

### **Student Project 2: The Stress Reduction Program**

The textbook mentions Dr. Jon Kabat-Zinn, a proponent of mindfulness meditation. He founded the Stress Reduction Program at the University of Massachusetts Medical School, which has since grown into the Center for Mindfulness in Medicine, Health Care, and Society. Students can explore its website at <http://www.umassmed.edu/content.aspx?id=41252>, particularly focusing on the Stress Reduction Program. Students should write a two-page paper discussing what the Center offers and what they think about these offerings. Do they think they would benefit from the Stress Reduction Program? What are the limitations that make this program infeasible for people (perhaps like themselves) to take part in? How might these barriers be overcome to improve access to the program? Do they think books, CDs, and other products help to address the issue of access?

### **Student Project 3: TM**

For this student project, students will explore the homepage for the transcendental meditation program: <http://tm.org/>. After accessing this website, students should explore it and write a one-page response paper describing what they learned about this form of meditation.

### **Student Project 4: Meditation and Hypertension**

When individuals suffer from hypertension, they are often encouraged to change their diet and begin exercising. In some cases, medications are also used to help people with this serious situation. A research study was conducted to determine if meditation could also contribute to lowering blood pressure. Three groups were formed, and they were provided with transcendental meditation training, muscle relaxation training, or lifestyle modification training. To see which group had the best results, students should access the article titled “Study says patients can meditate hypertension away” written by Clements (1996). After reading the article, students should write a one-page summary of what they found. Which group actually did better? Can they see how this could be applied to people who are not suffering with hypertension?

### **Journal Prompt 1: What Do You Think of Meditation?**

The use of meditation has been shown to have numerous benefits. The most common benefit is that of lowered stress. Interestingly enough, other benefits are also being found as research continues in this area. To learn about interesting benefits derived from transcendental meditation, students should access a brief article titled “What is Transcendental Meditation” available here at <http://tmhome.com/transcendental-meditation/>. Students should read this article and then write a

journal entry describing their opinion about meditation, utilizing information found in the article.

### **Journal Prompt 2: Meditation and Sports**

The benefits of meditation have been well documented through scientific research. Primarily used to reduce stress and focus the mind, meditation has provided a way for many people to enjoy life. In an interesting aside to the traditional uses of meditation, Ed Hipp, a high school golf coach, teaches his players yoga and transcendental meditation. To see if his novel approach has helped his players, students should access the article titled “Different Strokes” by Lidz (1996). After reading the article, they should write a journal entry describing the methods that the coach uses and describe the results. Students should explain why they think players are seeing the results they do.

### **Journal Prompt 3: Meditation and Surgery**

Many people utilize various forms of meditation to help them relax. Dr. Oz, a cardiovascular surgeon, utilizes meditation in his practice. Though trained in “Western” medicine, Dr. Oz believes in the benefits of “Eastern” meditation. Access his report in an article titled “Say ‘Om’ Before Surgery” written by Oz (2003). After reading the article, students should discuss their opinion about meditation’s place in surgery. Should the practice be integrated into the broad field of medicine?

### **Biofeedback:**

#### **Student Project 1: What Does Biofeedback Entail?**

Many students are not familiar with the procedures used in biofeedback training. Unless a student has personally experienced a condition where biofeedback training can help, they may not even have heard of the techniques used. To further students’ understanding of biofeedback, they should access the article titled “Biofeedback: Listen to the body” written by Alexander and Steefel (1995). After reading this informative article, they should answer the following questions:

1. What are the seven uses of biofeedback training discussed in the article?
2. What is an EMG, and what is it used for?
3. What is the key to success in biofeedback training?
4. Is it possible to control the blood flow in one’s finger?

#### **Student Project 2: When Mind Meets Body**

For this project, you will explore the area of biofeedback procedures. To do this, access the

article titled “When mind meets body” written by Beiler (1999). This article provides basic information about biofeedback procedures. After reading the article, students should answer the following questions: (1) What are five suggested conditions that biofeedback can help people with? (2) According to the article, what is biofeedback? (3) How many practitioners of biofeedback are there in the United States? (4) How much money does it cost for a biofeedback session? (5) What is the student’s reaction to this form of therapy?

### **Student Project 3: The Association for Applied Psychophysiology**

This project will allow students to focus on an organization called the Association for Applied Psychophysiology and Biofeedback. This organization has a website:

<http://www.aapb.org>. After accessing the website, students should explore it and identify information that they find particularly interesting. They should write a one-page summary of what they find.

### **Journal Prompt 1: Migraines**

If students have ever experienced a migraine headache, then they know how debilitating they can be. In extreme cases, people suffering with migraines seek medical treatment including medications. Usually when people think of migraines, they think of adults who suffer with these extreme headaches, but children also experience them. In a research study conducted by Dr. Scott Powers and associates, biofeedback training was used with 20 children who suffer with migraines. To further explore what Powers did and the results he obtained, students should access the article titled “Biofeedback for Migraines” written for *Family Practice News* (2001). After reading the article, they should write a journal entry describing what they learned.

### **Journal Prompt 2: Biofeedback Helps Hearts**

Biofeedback training has been used in several areas to help patients. Chronic heart failure is a condition in which the heart cannot pump all of the blood it needs to. In a study conducted at UCLA, patients with chronic heart failure were given biofeedback training and compared with a group who quietly rested. The results of this study can be found in an article titled “Biofeedback Helps Hearts: A Successful Treatment for Chronic Heart Failure” written by Marcus and Smith (1998). After reading the brief summary of the study, students should write a journal entry focusing on what they learned.

### **Journal Prompt 3: Chronic Pain**

For this journal entry, students should access the article titled “Want to cure your chronic pain?” written for *USA Today Magazine* (1997). This article describes biofeedback as simply being

more aware of one's body and taking some small corrective actions. Suggestions for improving headaches, body aches, lower back pain, and neck pain are suggested in the article. For this journal entry, students should describe any chronic pain that they have experienced and the steps that they took to correct the problem. Do they think that biofeedback training could have helped?

#### **IV. Altering Consciousness through Drugs**

##### **Student Project 1: Drug Programs that Work**

Many public education entities are attempting to find drug prevention programs that work. With controversy surrounding the D.A.R.E. program, this continues to be an issue. Recently, the D.A.R.E. program was discontinued in Salt Lake City, Utah. For this project, students should access the article titled "D.A.R.E. Aware" written by Sullum (2001), which discusses the controversy in Salt Lake City. Then, students should go to the D.A.R.E. website: <http://www.dare.com>.

After gathering information from these sources, students should critically evaluate the information and write a one-page response discussing this issue and providing their suggestion as to what direction prevention programs should follow.

##### **Student Project 2: National Criminal Justice Reference Service**

For this project, students will explore the website of the National Criminal Justice Reference Service that provides information on the various components of drug use, including such topics as drug testing and prevalence rates. Once students find the website, they should explore it until they find some information that they find interesting. They should write a one-page summary of the information that they learned.

##### **Student Project 3: How to Raise Drug-Free Children**

For this project, students will design a parenting plan on how to raise drug-free children. An excellent resource available to students is an article titled "How to raise drug-free children" written for *Ebony* (2001). They can utilize this source or others that they may have access to. Students should come to class prepared to share their plan on how to raise drug-free kids. This project should be approximately two pages long.

##### **Student Project 4: Question and Answer**

You probably have a number of candid questions about drug and alcohol use. For instance, can alcohol affect the pill's effectiveness? How can students help a drunk friend? Columbia Health

has created a user-friendly, reliable question and answer website at <https://goaskalice.columbia.edu/category/alcohol-other-drugs>. Students should spend some time browsing this website and then write a two-page paper on it. What were their favorite things about this website? What needs to be improved? Do they think a website like this could help college students to deal with difficult issues? Why, or why not?

### **Journal Prompt 1: Two Drinks a Day?**

Researchers have discovered that if postmenopausal women consume two drinks of alcohol per day, it will improve their insulin level. Other researchers are skeptical that the medical field would actually recommend this. What do students think? The research results can be found in an article titled “Two Drinks a Day Improve Women’s Insulin Level” written by Jancin (2001). After reading the article, students should write a journal entry with their thoughts on such a treatment.

### **Journal Prompt 2: Mini-Experiment**

For this experiment, students should find a person who just needs to have a coffee to get going in the morning (or a large cup of soda). This person might even be oneself. Then students should ask that person to go one day without this beverage. Have the person report to any changes or problems noticed in his or her daily activities. For the journal entry, students should discuss the results that they find.

## **VI. Stimulants**

### **Student Project 1: Stimulant Use and Abuse**

Students should access this website: <https://www.drugabuse.gov/publications/research-reports/prescription-drugs/stimulants>. They could also read information given in other websites on stimulants. After reading the content on stimulants, have them submit a one-page report on the use and abuse of stimulants.

## Videos and Websites

### Sleep:

1. <http://www.sleepfoundation.org/>  
This is the homepage of the National Sleep Foundation.
2. <http://www.aasmnet.org/>  
This is the homepage of the American Academy of Sleep Medicine.
3. <http://www.sleepresearchsociety.org/>  
This is the homepage of the Sleep Research Society.

### Hypnosis:

4. <http://www.sceh.us/>  
This is the homepage of the Society for Clinical and Experimental Hypnosis.
5. <http://www.asch.net>  
This is the homepage of the American Society of Clinical Hypnosis.

### Meditation:

6. <http://tm.org/>  
This is the homepage of the Transcendental Meditation Program.
7. <http://www.umassmed.edu/content.aspx?id=41252>  
This is the homepage of the Center for Mindfulness in Medicine, Health Care, and Society at the University of Massachusetts Medical School, which was founded by Dr. Jon Kabat-Zinn.

### Biofeedback:

8. <http://www.7hz.com>  
This is the homepage of the Bio Research Institute, which provides biofeedback training for clients and clinicians.
9. <http://www.aapb.org>  
This is the homepage of the Association for Applied Psychophysiology and Biofeedback.

### Drugs:

10. <http://www.dare.com>  
This is the homepage of the D.A.R.E. drug prevention program.
11. <http://www.ncjrs.gov/>



This is the website of the National Criminal Justice Reference Service, which has a section about drugs available on the left-hand side of the page.

12. <http://www.goaskalice.columbia.edu/category/alcohol-other-drugs>  
“Go Ask Alice!” (a production of Columbia University’s Health Promotion program) provides candid, accurate, accessible answers to a wealth of questions, including questions about drug and alcohol use.
13. <https://www.drugabuse.gov/drugs-abuse>  
This is the website of the National Institute on Drug Abuse.

**Consciousness:**

14. <http://www.collective-evolution.com/category/consciousness/>  
This is the homepage of the collective evolution website, which has a section on consciousness.

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This article discusses the uses of biofeedback training.

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The first part of this article discusses a biofeedback device to help individuals overcome stuttering.

Barbor, C. (2001). The Science of meditation. *Psychology Today*, 34, 54.

This article discusses research efforts at Harvard Medical School using MRI to investigate brain-processing changes that occur while meditating.

Beiler, P. (1999). When mind meets body. *Sarasota Magazine*, 22, 137.

This article discusses biofeedback procedures, including conditions for which biofeedback is used.

Biofeedback for migraines. (2001). *Family Practice News*, 31, 39.

This brief article describes a study in which biofeedback was used to treat children with migraines.

Biofeedback: It's all in the mind. (1990). *Medical Update*, 14, 3–4.

This article provides a brief historical perspective of biofeedback training and suggests areas in which biofeedback is effective.

Bower, B. (1999). The Mental butler did it. *Science News*, 156, 280.

This article suggests that many of people's behaviors may be under the control of their unconscious, which are processed without their conscious awareness.

Bower, B. (1992). Consciousness raising. *Science News*, 142, 232–236.

This article focuses on contemporary approaches to the study of consciousness.

Broussard, L.A. (1994, May 6). Meditation is a useful tool in reducing stress. *Knight Ridder/Tribune News Service*.

This article describes meditation and how it can help reduce stress.

Chapman, A.H., & Chapman-Santana, M. (1994). Is it possible to have an unconscious thought? *The Lancet*, 344, 1752–1754.

This article discusses the concept of unconscious thought.

Clements, W. (1996). Study says patients can meditate hypertension away. *American Medical News*, 39, 33–35.

This article reports the results of a study with subjects experiencing hypertension. The benefits of meditation are discussed.

Diaz, J. (2001). A Dream and a nightmare. *Golf Digest*, 52, 90–95.

This article discusses the life of Jaime Diaz, a professional golfer who suffers from narcolepsy.

Drug tolerance, central to addiction, responds to learned cues - a finding that may lead to more effective treatment. (2002, July 7). *American Psychological Association*.

This article suggests that if drug addiction is a learned behavior, it can be unlearned.

Durbin, P.G. (2002). Hypnosis, relaxation, imagery, prayer, and faith in healing. *Subconsciously Speaking*, 17, 3–4.

This article discusses one person's approach to combining hypnosis, relaxation, imagery, prayer, and faith in the healing process.

Friedman, R.A. (2003, June 3). Bored with sex, drugs and rock (Climbing)? Try "Flow". *The New York Times*, p F5 col 02.

This article discusses how the opposite of boredom is not stimulation but rather being entranced in an activity that produces a sense of flow.

Gackenbach, J., & Bosveld, J. (1989). Take control of your dreams: The technique of lucid dreaming can help you use your dreams to explore your psyche. *Psychology Today*, 23, 27–32.

This article discusses lucid dreaming, providing a brief history and discussing how it can help people understand the unconscious.

Giacopassi, D., & Vandiver, M. (1999). University student's perceptions of tobacco, cocaine, and homicide fatalities. *American Journal of Drug and Alcohol Abuse*, 25, 163.

This article presents a research study in which students were asked to estimate the number of deaths that resulted from tobacco, cocaine, and homicide. The errors in estimation are discussed.

Griffiths, M. (2001, Nov.). Sex on the Internet: Observations and implications for Internet sex addiction. *The Journal of Sex Research*, 38, 333–342.

This article presents basic information on technological addictions including information on sex-related uses of the Internet.

Grillo, C. (2003). You're getting sleepy. *Good Housekeeping*, 236, 81–84.

This article provides information on hypnosis and suggests situations in which it could be

helpful.

Guadio, B.P. (2001). Meditation vs. Hypnosis. *Subconsciously Speaking*, 16, 1.

This article attempts to differentiate hypnosis and meditation by presenting the different goals of each.

Guernsey, L. (2001, July 26). Cyberspace isn't so lonely after all. *New York Times*, p D1(N); p G1(L) col 3.

This article discusses research by Robert Kraut that contradicts his initial findings that Internet use was associated with increased loneliness and depression.

Guilloud, S. (2002). Subliminal (read this) learning. *Psychology Today*, 35, 28.

This article summarizes research conducted in the area of subliminal learning and the unconscious.

Hagevik, S. (1999, Sept.). Finding flow. *Journal of Environmental Health*, 62, 43.

This article focusing on the concept of flow includes an eight-item quiz and suggestions on how to increase flow.

Hawes, D.R. (2009, Dec. 29). Interpreting dreams. *Psychology Today*.

This article discusses the several aspects involved in dream interpretation.

Health habits. Sleep well to age well. (2002). *Harvard Health Letter*, 27.

This article discusses behavior that a person can engage in to alleviate insomnia.

Hicks, T.V., & Leitenberg, H. (2001). Sexual fantasies about one's partner versus someone else: gender differences in incidence and frequency. *The Journal of Sex Research*, 38, 43.

This article discusses the phenomenon of sexual fantasy.

How to raise drug-free children. (2001). *Ebony*, 57, 138.

This article provides suggestions to parents on how to raise drug-free children.

Hypnosis: Theory and application part I. (2002, May). *Harvard Mental Health Letter*, 18, NA.

This article discusses the theoretical component to hypnosis, including subject experience and hypnotizability.

Hypnosis: Theory and application part II. (2002, June). *Harvard Mental Health Letter*, 18, NA.

This article continues the series on hypnosis and discusses hypnotherapy, which is hypnosis used to control pain, and hypnosis and memory.

Ingalls, H. (1995). Consciousness as a valid subject for scientific investigation. *Skeptical Inquirer*, 19, 22–28.

This article presents issues in support of the continued study of consciousness.

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This article discusses the impact of Internet addiction on college students.

Jancin, B. (2001). Two drinks a day improve women's insulin level. *Internal Medicine News*, 34, 4.

This article reports findings from a research study that suggests that postmenopausal women's insulin levels might improve with two glasses of alcohol each day.

Kreuter, E.A. (2003, May–June). The impact of identity theft through cyberspace. *The Forensic Examiner*, 30–35.

This article describes a case of identity theft that happened via the Internet; a forensic psychologist was involved.

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Lidz, F. (1996). Different strokes. *Sports Illustrated*, 85, 124–126.

This article describes a unique approach a golf coach uses with his players, teaching them yoga and meditation.

Lin-Dyken, D.C., & Dyken, M.E. (2002). Use of melatonin in young children for sleep disorders. *Infants and Young Children*, 15, 20–37.

This article describes research efforts to find treatments to help childhood sleep disorders.

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This article focuses on hypnosis used in clinical settings.

Marcus, A., & Smith, S.C. (1998). Biofeedback helps hearts: A successful treatment for chronic heart failure. *Prevention*, 50, 149.

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patients receiving biofeedback therapy.

May, D.E., Kratochvil, C.J. (2010). Attention-deficit/hyperactivity disorder: Recent advances in pediatric pharmacotherapy. *Drugs, 70(1)*, 15–40.

This article discusses research indicating that stimulants can increase attention span and lead to academic gains for children with ADHD.

Meditation Methods. (2001). *IDEA Personal Trainer, 12*, 48.

This article discusses things a person should know to get started in meditation.

Mehrabian, A. (2001). General relations among drug use, alcohol use, and major indexes of psychopathology. *The Journal of Psychology, 135*, 71–86.

This article describes a study that focused on the relationship between various psychopathologies and substance abuse. The results indicate that there is a relationship.

Moschella, D. (1997, Feb. 17). Dangerous expectations. *Computerworld, 31*, 34.

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Mutter, C.B., & Coates, M.L. (1990). Hypnosis in family medicine. *American Family Physician, 42*, 70–74.

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This article suggests techniques that people can use to get a good night’s sleep.

Pear, M.J. (1993). A walk on the wild side. *Nation’s Business, 81*, 73.

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This article discusses how sleep may not be as necessary as it is useful to fill periods of time when being active isn't worth the energy.

Siesta time; power napping. (2002, June 1). *The Economist*.

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Total relaxation aids natural childbirth: hypnobirthing prepares mentally and physically. (2002). *Patient Education Management*, 9, 22–24.

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This article describes theoretical explanations for the experience of déjà vu.

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This article presents various forms of meditation, including such techniques as breathing meditation, walking meditation, and sitting meditation.

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Want to cure your chronic pain? (1997). *USA Today Magazine*, *125*, 12.

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Yang, D.J. (2000, Jan. 17). Craving your next web fix. *U.S. News and World Report*, *128*, 41.

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This article discusses the health benefits, side effects, and availability of marijuana by state.