

1 **Chapter 5: Consciousness**

2 **Truth or Fiction?**

- We act out our forbidden fantasies in our dreams.
- Many people have insomnia because they try too hard to fall asleep at night.
- It is dangerous to awaken a sleepwalker.

3 **Truth or Fiction?**

- You can be hypnotized against your will.
- You can teach a rat to raise or lower its heart rate.
- Some people visit cyberspace with virtual bodies.

4 **Truth or Fiction?**

- A drink a day is good for you.
- Heroin was once used as a cure for addiction to morphine.
- Many health professionals calm down hyperactive children by giving them a stimulant.

5 **Truth or Fiction?**

- Coca-Cola once “added life” to its signature drink through the use of a powerful – but now illegal – stimulant.
- The number of people who die from smoking-related causes is greater than the number lost to motor vehicle accidents, abuse of alcohol and all other drugs, suicide, homicide, and AIDS *combined*.

6 **Preview of Chapter Five**

- What is Consciousness?
- Sleep and Dreams
- Altering Consciousness Through Hypnosis, Meditation, and Biofeedback
- Altering Consciousness by Connecting with the Internet
- Altering Consciousness Through Drugs

7 **What is Consciousness?**

8 **Consciousness**

- Sensory Awareness
- Selective Attention
- Direct Inner Awareness
- Sense of Self
- Waking State

9 **Preconscious, Unconscious, Nonconscious**

- Preconscious
 - Not currently in awareness, but readily available
- Unconscious
 - Unavailable to awareness under most circumstances
- Nonconscious
 - Bodily processes that can not be experienced through sensory awareness

10 **Sleep and Dreams**

11 **Biological and Circadian Rhythms**

- Circadian rhythm is a cycle that is connected with the 24-hour period of the earth's rotation
 - Cycle of wakefulness and sleep

- 12 **The Stages of Sleep**
- Using EEG records, sleep stages are recorded by different brain waves
 - Non-rapid-eye-movement (NREM) sleep
 - First four stages of sleep
 - Stage 1 is lightest; Stage 4 is deepest
 - Rapid-eye-movement sleep
- 13 **The Stages of Sleep**
- 14 **The Stages of Sleep**
- Stage 1
 - Slow down from alpha waves into theta waves
 - Lightest sleep
 - Stage 2
 - Appearance of sleep spindles
 - Stages 3 and 4
 - Delta waves
 - Stage 4 is deepest stage of sleep
- 15 **The Stages of Sleep**
- Move from stage 4 back through stages 3 and 2
 - REM sleep
 - Rapid eye movements
 - Paradoxical sleep
 - When awakened in REM sleep, 80% report dreams
- 16 **Sleep Cycles**
- 17 **Typical Night of Sleep**
- Tend to undergo 5 cycles through the stages of sleep
 - First stage 4 sleep is usually the longest
 - Sleep becomes lighter as the night wears on
 - REM sleep becomes longer as night wears on
 - Last REM period may be about 30 minutes
- 18 **Functions of Sleep**
- Rejuvenates the body
 - Helps us recover from stress
 - Helps us consolidate learning and memories
 - May promote development of infants' brains
- 19 **Amount of Sleep**
- Amount of sleep needed may be partly genetically determined
 - Additional sleep is needed when you are under stress
 - As you age, you require less sleep
- 20 **Sleep, Learning and Memory**
- Individuals deprived of REM sleep
 - Learn more slowly
 - Forget what they have learned sooner
 - Show REM rebound
- 21 **Dreams**
- Cognitive activity that occurs while you are sleeping
 - Most vivid during REM sleep
 - May dream in color or black and white
 - Pleasant dream or nightmare
- 22 **What Do We Dream?**
- Memories of the day
 - Traumatic events

- Expressions of unconscious desires

23 **Activation-Synthesis Model of Dreaming**

- Acetylcholine and the pons stimulate responses that lead to dreaming
 - Reticular activation system stimulates parts of the cortex involved in memory
 - Cortex then synthesizes sources of stimulation into dreams
- Most likely dream of recent events

24 **Sleep Disorders**

- Insomnia
- Narcolepsy
 - Sleep paralysis
- Apnea

25 **Deep Sleep Disorders**

- Occur in stage 3 and 4 sleep
- More common in children
 - Sleep Terrors
 - Bed-Wetting
 - Sleepwalking

26 **Altering Consciousness Through Hypnosis, Meditation, and Biofeedback**

27 **Hypnosis**

- Altered state of consciousness in which people are suggestible and behave as though in a trance
- Hypnotic suggestibility
 - People who are easily hypnotized

28 **Explaining the Effects of Hypnosis**

- Role Theory
- Response Set Theory
- Suggestible people

29 **Meditation**

- Activity that alters the normal relationship between the self and the environment
- Transcendental Meditation (TM)
 - Concentrate on a mantra
 - Reduces anxiety and blood pressure
- Mindfulness Meditation (MM)
 - Mantra-like techniques

30 **Biofeedback**

- A system that provides information about a bodily function in order to gain some control over it
- Biofeedback training (BFT)
 - helps combat stress, tension and anxiety
- Electromyograph (EMG)
 - Monitors muscle tension

31 **Altering Consciousness by Connecting with the Internet**

32 **Cyberspace**

- Allows an individual to
 - alter one's sensory experience, and
 - go beyond one's spatial boundaries.
- Becomes an extension of one's consciousness
 - Allows one to experience reality from a different perspective

33 **“Flow”**

- Riveting of attention to the exclusion of others
- Altered state of consciousness
 - Pleasant activity
 - Challenging activities

34 **Internet Addiction**

- Refers to self-defeating behavior pattern
 - Preoccupation with online activity
 - Disrupts functioning in the real world
- May perceive online activity as extremely important to their lives
 - Use it excessively
 - Experience lack of control over going online
 - Neglect studies, work, social lives

35 **Altering Consciousness Through Drugs**

36 **Substance Abuse and Dependence**

- Substance abuse is repeated use of a substance despite the fact that it impairs functioning
- Substance dependence is characterized by loss of control over use of the substance
 - Organize life around getting and using a substance
 - Tolerance
 - Withdrawal symptoms

37 **Causes of Substance Abuse and Dependence**

- Experimentation
- Recommendation or observation of others
- Reinforcement of positive effects
- Avoidance of withdrawal effects
- Genetic predisposition toward physiological dependence

38 **Alcohol**

- Depressant
 - Slows activity of central nervous system
- Intoxicates
 - Impairs cognitive functioning and coordination
- Men more likely to become alcoholic than women
 - Alcohol has stronger effect on women
- Can lead to physiological dependence

39 **Opiates**

- Group of narcotics derived from the opium poppy
 - Morphine, heroin, codeine, Demerol
- Major application is pain relief
- Provides a strong euphoric “rush”
- Can lead to dependence

40 **Barbiturates**

- Depressants with medical uses
 - Relaxation, pain management, treatment of epilepsy, high blood pressure and insomnia
- Rapidly lead to dependence

41 **Amphetamines**

- Increase the activity of the nervous system
- Taken in high doses produces euphoric feeling
 - May cause insomnia, restlessness, psychotic symptoms and a “crash” upon withdrawal
- Tolerance develops quickly and users may become dependent
- Ritalin
 - Common treatment for hyperactive children

42 **Cocaine**

- Stimulant that produces euphoric feelings
- Physical dangers
 - Sudden rises in blood pressure, decreased oxygen supply to the heart, quickened heart rate
- Overdose
 - Can cause restlessness and insomnia, tremors, headaches, nausea, convulsions, hallucinations, delusions, cardiorespiratory collapse

43 **How Cocaine Produces Euphoria
and Why People “Crash”**

44 **Nicotine**

- Addictive stimulant in tobacco smoke
- Appears to reduce stress
 - Depresses appetite and raises metabolic rate
- Cigarette smoke also contains
 - Hydrocarbons (tars)
 - Carbon monoxide

45 **Video Connections:**

Why is Nicotine So Addictive?

- How reinforcing is nicotine compared to other drugs?
- If people are partly attracted to smoking cigarettes at social gatherings because it gives them something to do with their hands, what kinds of other things might they do instead?

46 **Marijuana**

- Hallucinogen, active ingredient THC
- May produce relaxation, heightened and distorted perceptions, feelings of empathy and reports of new insights
- Impairs perceptual-motor coordination and impairs short-term memory and slows learning
- Elevates heart rate

47 **LSD**

- Synthetic hallucinogen
- Produces vivid, colorful hallucinations
- Flashbacks
 - Occur days, weeks, or longer after usage; distorted perceptions that mimic LSD trip”
- Other hallucinogens
 - Mescaline
 - PCP