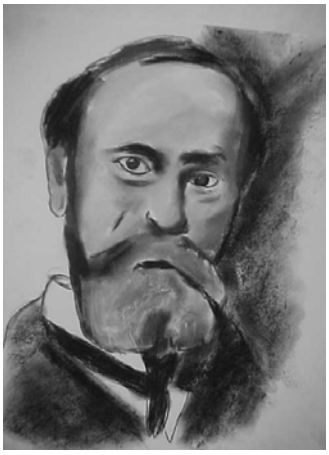
States of Consciousness

Slide # 1

Psychologists have been interested in studying consciousness since the times of William James. Humanist and cognitive theorists helped the concept of consciousness become a focal point in psychology.

An Early Pioneer: William James



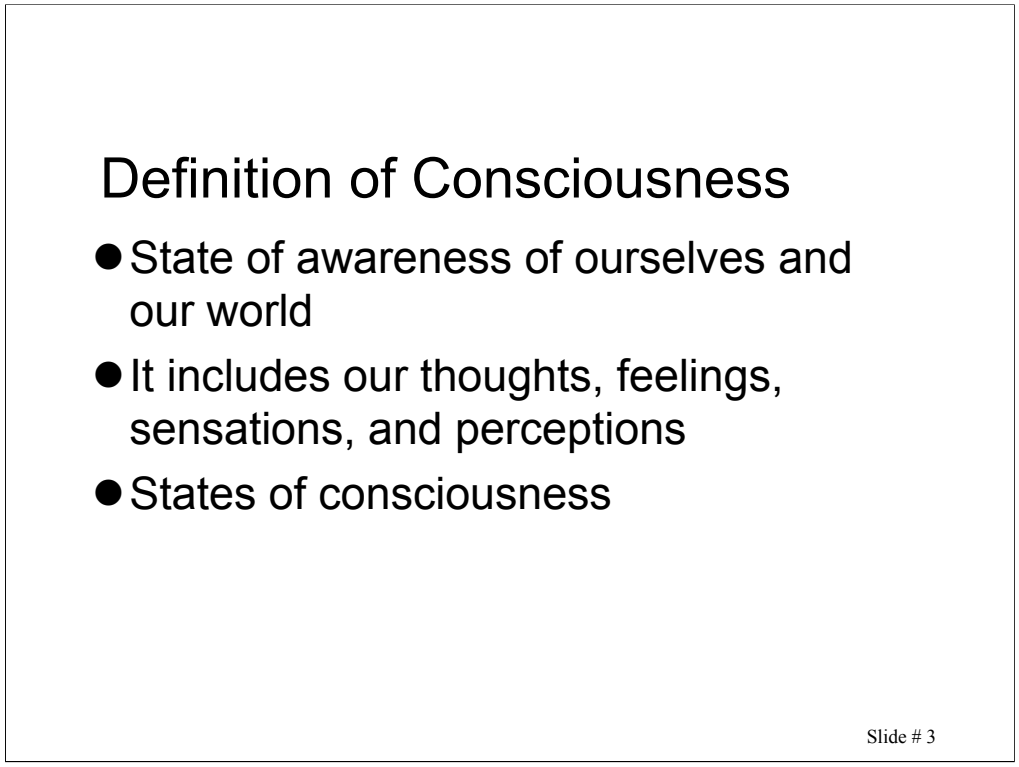
- Medical training
- Teacher of psychology
- He was interested in the nature of consciousness

Slide # 2

Bullet # 1 William James was the brother of novelist Henry James. He had trained to be a doctor but had never practiced medicine. As a professor at Harvard, he taught biology, physiology, and eventually offered his first college psychology course in 1875.

Bullet # 2 He had never taken a course in psychology before he taught a course in psychology, because no such course existed at the time. There was not even a textbook available for him to use, so he wrote his own called, *Principles of Psychology.*

Bullet # 3 James believed that consciousness was a continuous process in which one thought flowed into another.



Bullet # 1 James's ideas about consciousness strongly influenced modern thinkers. He characterized consciousness as a "state of awareness" which encompassed many things.

Bullet # 2 James believed that a part of this awareness includes our thoughts, feelings, sensations, and perceptions.

Bullet # 3 When psychologists use the phrase "states of consciousness," they are referring to a spectrum of different conditions. Imagine a straight line with two endpoints: at one endpoint is full waking consciousness; at the other is complete unconsciousness. "States of consciousness" refers not only two the two endpoints, but to everything in between as well.

Levels of awareness

- Focused awareness

Slide # 4

Most psychologists believe that consciousness is selective. In other words, we have the ability to focus our consciousness. Athletes often experience a focused state of awareness in which they concentrate only on the immediate task at hand. They have learned to block out all external stimuli. They often refer to this state of mind as "being in the zone." When we are focused, we are wide awake, fully alert, and fully engrossed. Former St. Louis Cardinal Mark McGwire (depicted on the slide) used this type of focus when he hit 70 home runs in his record-breaking 1998 season.

Drifting Awareness

- Daydreaming

Slide # 5

It's pretty hard to always stay focused. After a while your mind begins to drift; this may lead to daydreaming, which is a form of consciousness during a waking state. People are more prone to drifting awareness when they are bored or not engaged in some activity.

Divided Consciousness

- The ability to divide consciousness allows us to perform more than one task at a time
- Dangers

Slide # 6

Bullet # 1 When we first learn a new skill, we need to be focused; after we sharpen that skill, not as much focus is required. For example, when a person first learns how to drive a car he or she is entirely focused. People who have been driving for some time don't need to exercise the same degree of focus, and are capable of "dividing" their consciousness. For them, driving has become an over-learned skill: it is so ingrained that they can perform another task at the same time, like talking on a cell phone. Just because an experienced driver has the ability to drive and talk on a cell phone at the same time, however, it doesn't mean it's a good idea.

Bullet # 2 According to one 2001 study, drivers are four times more likely to have an automobile accident when they are using a cell phone in the car. It is almost as dangerous as driving under the influence of alcohol or drugs.

Unconsciousness

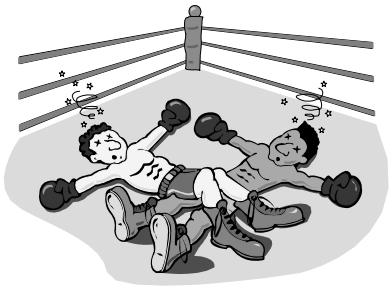
- Both sleep and dreaming are examples of unconsciousness
- Definition: lack of awareness of one's surroundings or loss of consciousness

Slide # 7

The best examples of unconsciousness are sleep and dreaming. When a person lacks awareness of his/her surroundings, it is called a "loss of consciousness."

Loss of Consciousness

- Head trauma
- Surgical anesthesia
- Coma



Slide # 8

Bullet # 1 Head trauma can commonly cause of a loss of consciousness. For example, a boxer who is knocked out may be unresponsive for some time. The boxer usually awakens later with a headache but no real memory of the event.

Bullet # 2 Patients who have received a surgical anesthetic also can be defined as experiencing a loss of consciousness, since they are generally unresponsive to anything in their environment.

Bullet # 3 Someone who is in a coma also experiences a loss of consciousness and may be unresponsive for months or even years.

States of Consciousness

State of Consciousness	Level of Alertness/ Attention	Examples of Features
Focused awareness	High; fully awake and alert	Learning a new skill; watching an engrossing movie
Drifting consciousness	Variable or shifting	Daydreaming, or letting one's thoughts wander
Divided consciousness	Medium; attention split between two activities	Thinking of other things while exercising or driving a car
Sleeping or Dreaming	Low	States of unconsciousness in which the person is generally unaware of external surroundings but may respond to certain stimuli
Deep unconsciousness	Nil	Complete loss of consciousness with little or no awareness of the outside world; may be caused by blow to the head, surgical anesthesia, or coma
Altered states of consciousness	Variable	Changes in consciousness associated with hypnosis, meditation, and drug use

Slide # 9

This chart provides an overview of the different states of consciousness.

Altered States of Consciousness

- Daydreaming
- Meditation
- Hypnosis
- Drug use

Slide # 10

Altered states of consciousness occur when we daydream, meditate, undergo hypnosis, or use mind-altering drugs. Our most common form of consciousness (besides complete wakefulness) is sleep, which we will address next, followed by drug use, hypnosis, and meditation.

Sleeping and Dreaming

- One-third of our lives we are asleep; hypothalamus
- Circadian rhythms; melatonin
- Jet lag

Slide # 11

Bullet # 1 We spend about one third of our lives sleeping. There is a major lack of consensus as to why we need to sleep but it is generally believed that it is necessary for both body and mind. The hypothalamus in the brain evidently contains a clock-like mechanism that is responsible for controlling the sleep-wake cycle.

Bullet # 2 Most of our bodily processes (including sleep, body temperature, hormone levels, blood pressure, and heart rate) follow a daily cycle. For humans, these cycles are known as "circadian rhythms," which are close to 24 hours in length. Melatonin is a hormone that is produced by the pineal gland and helps control the sleep cycle. Exposure to darkness inhibits the production of melatonin, so people who live in the far northern regions of the world (which experience long periods with no daylight during the winter) sometimes suffer from Seasonal Affective Disorder (SAD), in which a lack of light can cause depression.

Bullet # 3 Any type of frequent time shift that disrupts the circadian rhythms is often referred to as jet lag. Also, any changes in the local time (such as switching to or from Daylight Savings Time) can cause a conflict with a person's internal body clock. Jet lag can make it very difficult either to stay awake or to go to sleep, depending on whether you've lost or gained a day when traveling.

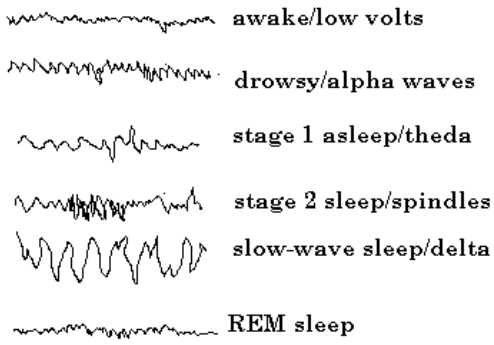
Wakefulness and Sleep

Stage of Wakefulness/ Stage of Sleep	Characteristic Brain Wave Pattern	Key Features
Alert Wakefulness	Fast, low-amplitude beta waves	State of focused attention or active thought
Relaxed Wakefulness	Slower, rhythmic alpha waves	State of resting quietly with eyes closed
Stage 1 sleep	Small, irregular brain waves with varying frequencies	Light sleep from which the person can be easily awakened
Stage 2 sleep	Sleep Spindles	Deeper sleep, but the sleeper is still readily awakened.
Stage 3 sleep	Large, slow delta waves	Deep sleep (delta sleep or slow-wave sleep); difficult to arouse the sleeper
Stage 4 sleep	Dominance of delta waves	Deepest level of sleep
REM sleep	Rapid, active pattern, similar to that in alert wakefulness	Sleep where the brain is more active but muscle activity is blocked; dreams

Slide # 12

This chart gives an overview of the stages of sleep, what brain wave patterns look like during that stage, and a key feature associated with the stage.

Brainwave Patterns
During Wakefulness and Sleep

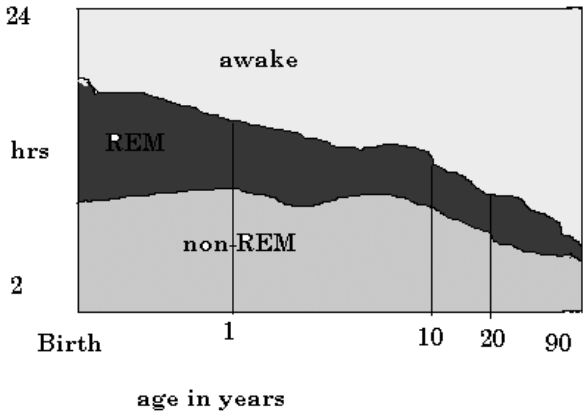


Slide # 13

This chart shows the brainwave patterns associated with each stage of sleep or wakefulness. The EEG (electroencephalograph) is a reliable way to track the amount of electrical energy being emitted by the brain. A series of painless electrodes are attached to various sections of the scalp to receive input. At the top of the chart is a characteristic pattern from an EEG. It shows the amount of electrical energy associated with being awake. As a person begins to get drowsy, alpha waves are emitted. By stage 1 of sleep, theta waves are emitted. By stage 2, sleep spindles begin to form and by the last stage of sleep you can see the emission of slow delta-like waves. At the bottom of the chart are the brain waves of a person who is dreaming. You can see that REM sleep brainwaves actually resemble the brainwaves of a person who is completely awake. Because of this, REM sleep is sometimes called paradoxical sleep.

REM stands for rapid eye movement. Researchers discovered in the 1950s that when a person dreams, his/her eyeballs move. Tiny electrodes are attached to the eyelids to record REM sleep.

Changes in Sleep Patterns



Slide # 14

You can see from this chart that babies sleep quite a bit; consequently, they have a significant amount of REM time. As a person gets older, the amount of sleep that her or she needs decreases, along with the amount of REM time they need.

Freud and Dreams

- Dreams = wish fulfillment
- The royal road to the unconscious
- Manifest versus latent
- Symbols

Slide # 15

Bullet # 1 Sigmund Freud theorized that dreams represent a form of wish fulfillment. He also believed that dreams contain symbols that underlie wishes that are usually sexual and/or aggressive.

Bullet # 2 Freud called dreams the "royal road to the unconscious." He believed that dreams need to be interpreted.

Bullet # 3 Freud felt that dreams had two levels: the manifest level (the dream at face value) and the latent meaning (the hidden or disguised form). Freud felt that the latent part of the dream used symbols to prevent any emotionally threatening material from waking the dreamer.

Bullet # 4 Freud believed that things like trees, skyscrapers, snakes, and guns were symbols of male genitalia because they were phallic-shaped, while enclosed objects like closets and purses symbolize the female genitalia.

Note: Other dream interpreters have very different views. Psychologist R.D. Cartwright has suggested that we use dreams to solve personal problems. Researcher Alan Hobson proposed a different model in which dreams are merely the by-products of neural activity and have no deeper meaning.

Sleep Deprivation

- Need for sleep varies
- The life cycle
- Accidents

Slide # 16

Bullet # 1 One man reportedly stayed awake for 231 hours and was still lucid and capable of serious intellectual work. He wrote a beautiful poem after ten days with no sleep. He was an exception—most people need between seven and eight hours a night to feel completely rested and functional.

Special note: People using the drug Ecstasy often stay awake for hours on end. Users of speed (amphetamines) show similar patterns.

Bullet # 2 As people get older, they require less and less sleep.

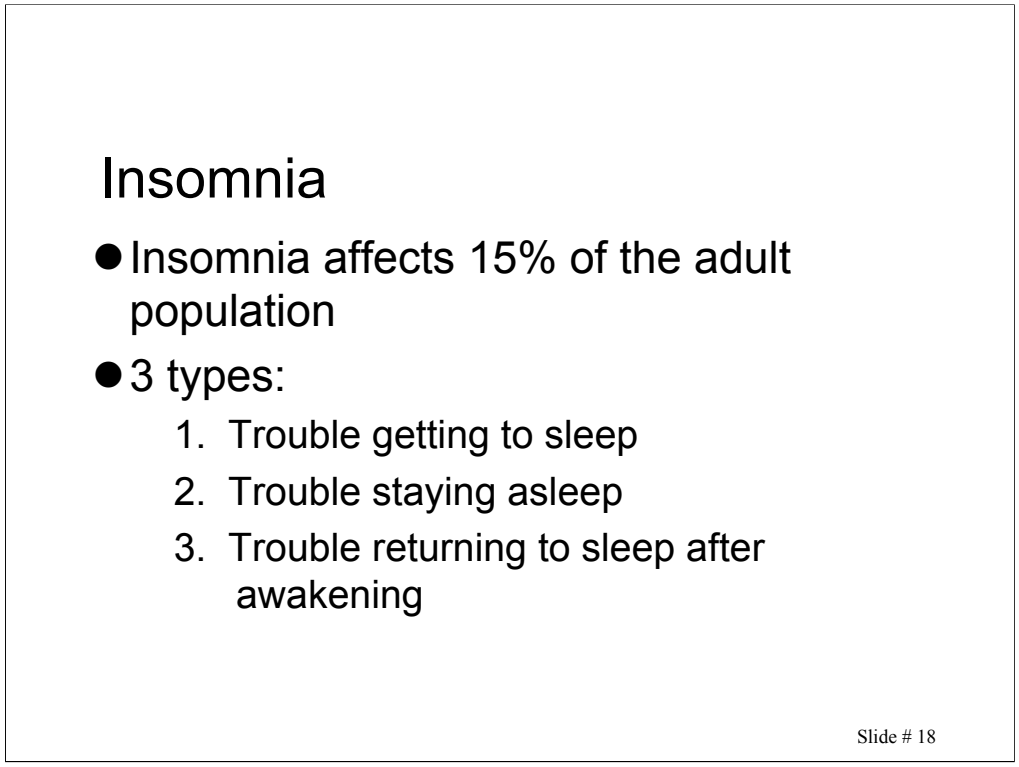
Bullet # 3 Sleep deprivation causes or contributes to a significant amount of automobile accidents. Most of these accidents occur in the early morning hours when drivers are typically sleepy.

Sleep Disorders

- Insomnia
- Narcolepsy
- Apnea
- Sudden infant death syndrome
- Sleepwalking
- Night terrors

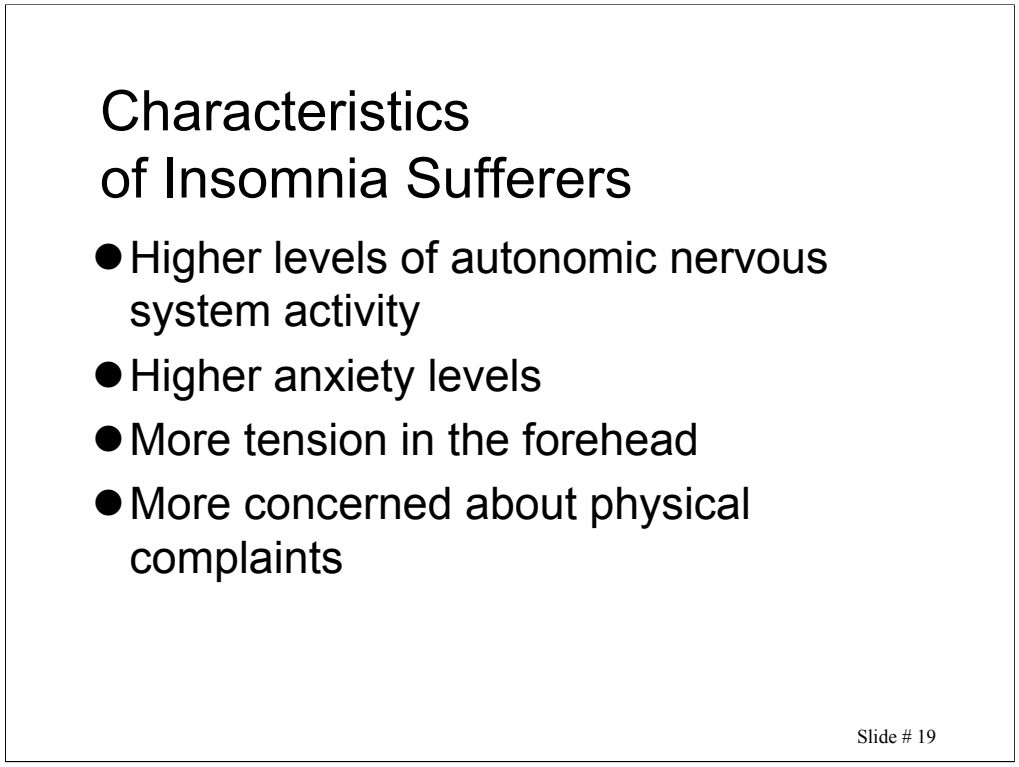
Slide # 17

No special notes. These disorders will be discussed in the slides that follow.



Bullet # 1 Insomnia is the most common sleep disorder, affecting nearly 15 percent of the adult population.

Bullet # 2 Type 1 insomnia affects people in three different ways: some people have trouble falling asleep, others have trouble staying asleep, and a third group wakes early and cannot fall asleep again. Insomnia seems to affect women more than men. Insomnia also commonly occurs for people under stress.



Bullet # 1 Insomnia sufferers seem to have higher levels of autonomic nervous system activity. The autonomic nervous system controls most of our involuntary actions like heart rate and respiration.

Bullet # 2 Most sufferers of insomnia seem to possess higher anxiety and worry levels. It stands to reason that when you are nervous and tense it is harder to get to sleep.

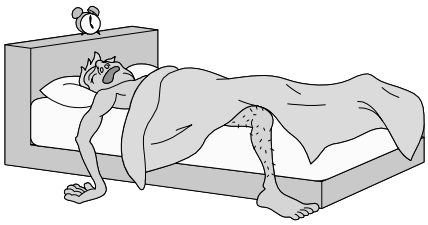
Bullet # 3 Worry and anxiety in general can cause tension in the forehead muscles, a factor that then contributes to insomnia.

Bullet # 4 People who focus too much on minor aches and pains also can have trouble falling asleep.

Note: You cannot force yourself to go to sleep. Many Americans use drugs to help them get to sleep.

Using Drugs to Induce Sleep

- Sleeping pills and arousal
- Habituation and tolerance

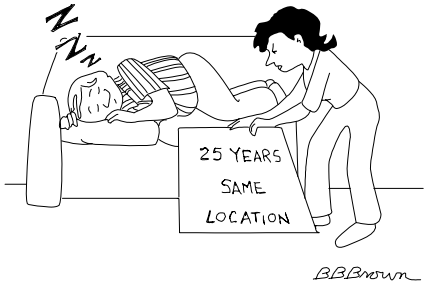


Slide # 20

Bullet # 1 Sleeping pills reduce arousal levels in the brain and work for only a short amount of time. Stronger types of sleeping medications use barbiturates, which can be quite dangerous if abused or taken improperly (i.e. with alcohol).

Bullet # 2 People who frequently use sleeping pills eventually develop a tolerance to the medication. As tolerance increases, a person needs to take more of the same drug for it to produce similar effects. This is a dangerous practice—one's tolerance might build to the point that the person might take lethally high doses of medication.

Things You Can Do to Sleep Better



- Practice relaxation techniques
- Avoid ruminating
- Establish a regular routine

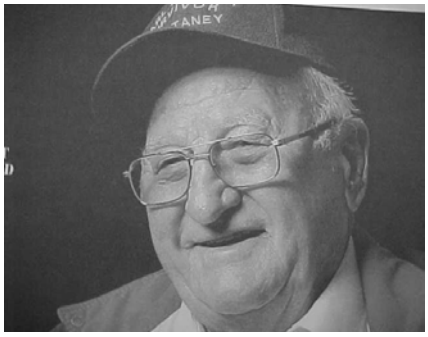
Slide # 21

Bullet # 1 Insomnia sufferers can practice relaxation techniques, many of which are available on CDs or audiocassettes. These audio sessions usually have soothing noises (such as the sound of the ocean) in the background along with repeated directions about which muscle groups to relax.

Bullet # 2 Avoid ruminating or worrying about the day's problems. It's not conducive to sleep for your brain to be trying to come up with solutions to things.

Bullet # 3 Establish a regular bedtime. Stick to the schedule whenever possible. Your body's clock is not used to constant changes. Workers who change to a swing shift (usually 4 p.m. to midnight) or a night shift often have a terrible time adjusting to their new schedules.

Narcolepsy



- A mirror image of insomnia
- Rapid onset of REM sleep
- May last up to 15 minutes
- Dangers

Slide # 22

Bullet # 1 Narcolepsy afflicts more than 150,000 Americans. It is characterized by a sudden sleep attack during the daytime hours. A narcoleptic may be involved in a conversation and then almost instantly be sound asleep or even fall to the floor.

Bullet # 2 Narcolepsy is related to an REM (rapid eye movement) disorder. Normal REM sleep takes place after a person descends through the stages of sleep. With narcoleptic, REM sleep begins immediately.

Bullet # 3 The duration of a narcoleptic episode is hard to gauge. It may last as long as 15 minutes or more. In some instances, attacks are preceded by vivid hallucinations.

Bullet # 4 Narcolepsy has many obvious dangers, such as if an attack occurs while a person is driving or even doing simple household chores. Narcolepsy tends to run in families. This photograph in the slide is of a man who suffers from narcolepsy; his father also suffered from this sleep disturbance.

Sleep Apnea

- Stop breathing as many as 500 times a night
- An anatomical deformity
- Risks: hypertension, high blood pressure

Slide # 23

Bullet # 1 Sleep apnea is extremely dangerous. It affects more than 18 million American men, many of whom are usually overweight. The word “apnea” means “without breath.” A person who has sleep apnea may stop breathing as many as 500 times in one night.

Bullet # 2 Often apnea is caused by a structural abnormality such as an overly thick palate or enlarged tonsils that block a person’s airways. Apnea sufferers usually have no memory of when they stop breathing. These episodes can last for as long as 90 seconds. Surgery of the palate is sometimes helpful; so is elevating the head of one’s bed. In more extreme cases of apnea, a sufferer is hooked up to oxygen at night.

Bullet # 3 A common risk of apnea is hypertension and high blood pressure. Sufferers also usually snore very loudly because of restricted airways.

Nightmare Disorder

- Disturbing nightmares that are very vivid and intense
- Common themes: falling, fleeing
- REM sleep

Slide # 24

Bullet # 1 Nightmare disorders often afflict children. People who suffer from nightmare disorders have elaborate, story-like dreams that feel extremely threatening.

Bullet # 2 Themes in nightmares often include falling or being pursued by an unknown attacker.

Bullet # 3 Most nightmares take place during REM sleep and usually occur late at night or early in the morning, when periods of REM sleep are longer in duration. Stress seems to be a contributing factor.

Night Terrors

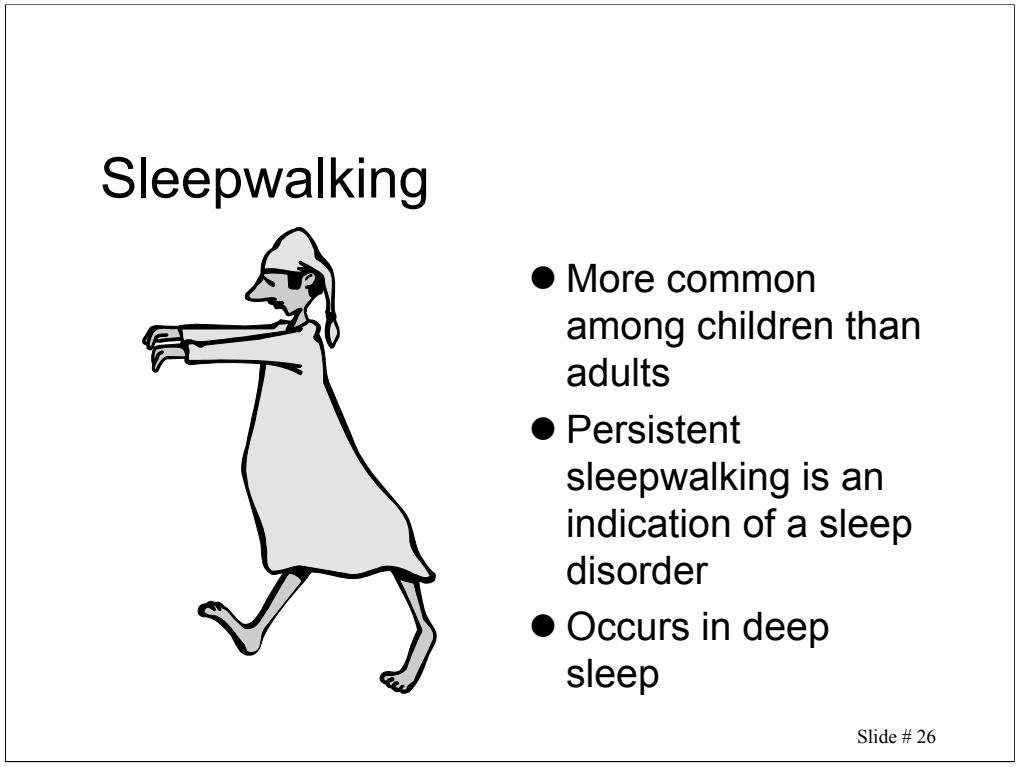
- More intense than nightmares
- They occur in deep sleep, not REM sleep
- Affects boys and men more
- Delayed stress connection

Slide # 25

Bullet # 1 Night terrors are much more intense than nightmares.

Bullets # 2–3 Night terrors occur in deep sleep, not REM sleep. The disorder affects males more than females, and children more than men. Night terrors often begin with loud, panicky screams.

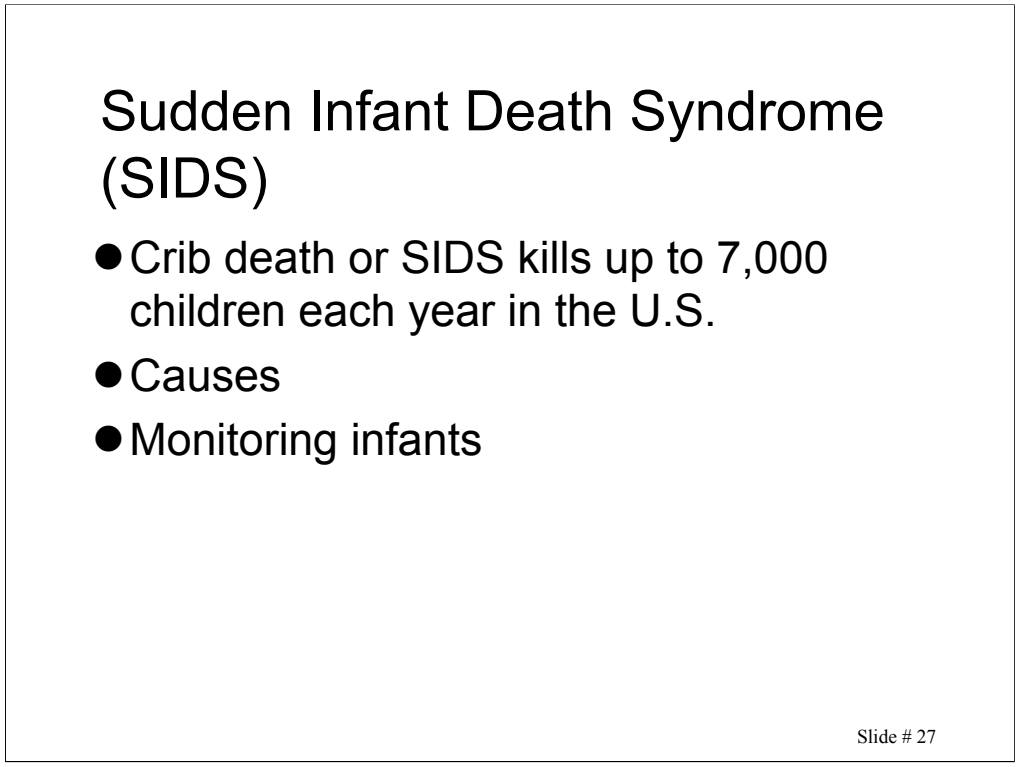
Bullet # 4 There seems to be an association between night terrors and victims of delayed stress, such as combat veterans. People who suffer from night terrors may sit up in bed with their hearts pounding, breathing rapidly. They may also talk incoherently and move wildly. Many attacks can occur over the course of a night. Tranquilizers can sometimes help.



Bullet # 1 Sleepwalking occurs most commonly among children—about 5 percent of all children have a sleepwalking disorder. The sleepwalker remains sound asleep while moving about with their eyes open and an expressionless look on his/her face. Usually the sleepwalker has no memory of the episode. It is not harmful to awaken a sleepwalker.

Bullet # 2 Many children grow out of the disorder. If it persists, however, the child may have a serious sleep disorder.

Bullet # 3 Sleepwalking occurs in deep sleep, with episodes occurring typically during the dreamless, non-REM stage.



Bullet # 1 Sudden Infant Death Syndrome (SIDS) claims the lives of nearly 7,000 children in the U.S. each year. The number of children who die each year from SIDS (also known as crib death) seems to be growing.

Bullet # 2 The main cause of SIDS seems to be an immaturity of the central nervous system. Children born prematurely may also be more vulnerable. In addition, SIDS often occurs when a child already has an upper respiratory infection. There also exists a connection between a drugs and SIDS. Mothers who use drugs while pregnant often give birth to babies that are often much smaller and more susceptible to disease than normal children. Drug babies are also more likely to be born prematurely.

Bullet # 3 Today, there are a number of devices that hospitals and parents can use to monitor babies at risk for SIDS. Though such devices prevent many deaths, no real "cure" exists.

Altering Consciousness through Drugs

Slide # 28

Most people who want to experience altered consciousness turn to drugs. They are more likely to pop a pill, smoke a joint, or down a six-pack than to practice meditation or undergo hypnosis. Psychoactive drugs like depressants, stimulants, and hallucinogens chemically alter a user's mental state. In this section, we will explore some of these psychoactive drugs, focusing in particular on drug abuse and recreational drug use.

What is Considered Abuse?

- 3 criteria listed by the American Psychiatric Association
    1. Pathological use
    2. Impairment of occupational or social functioning
    3. Lasts one month or more

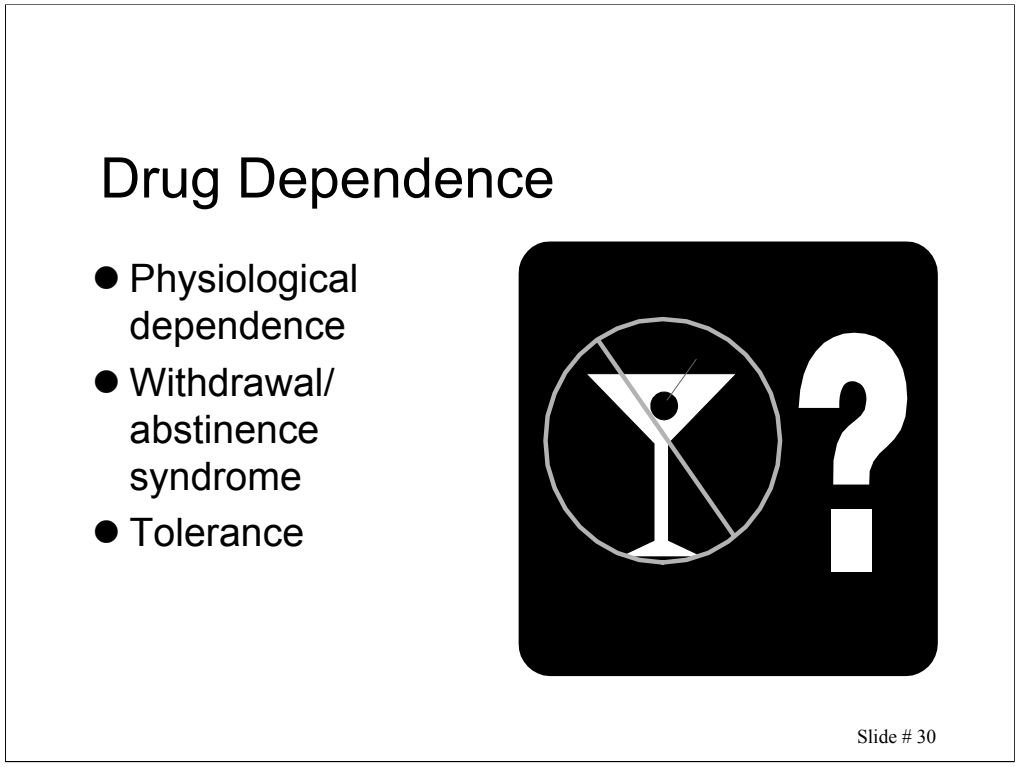
Slide # 29

Bullet # 1 There is a fine line between use and abuse. The American Psychiatric Association issued 3 guidelines designed to illustrate the differences between use and abuse.

Bullet # 2 Drug abuse is usually defined as the pathological use of a substance. Using a drug for the wrong reason is considered abuse. For example, if you are using a depressant because you are in intense pain it is not considered abuse, as long as it has been prescribed by a physician. If you use it to achieve a state of altered consciousness, however, it is considered abuse.

Bullet # 3 Drug use is considered abuse if it affects a person's ability to perform their job or deal with other people in normal, everyday situations. Also, if you are drunk and sleeping off a hangover on a regular basis you are considered to be abusing drugs. Some people abuse more than one drug at a time. These offenders are called polyabusers.

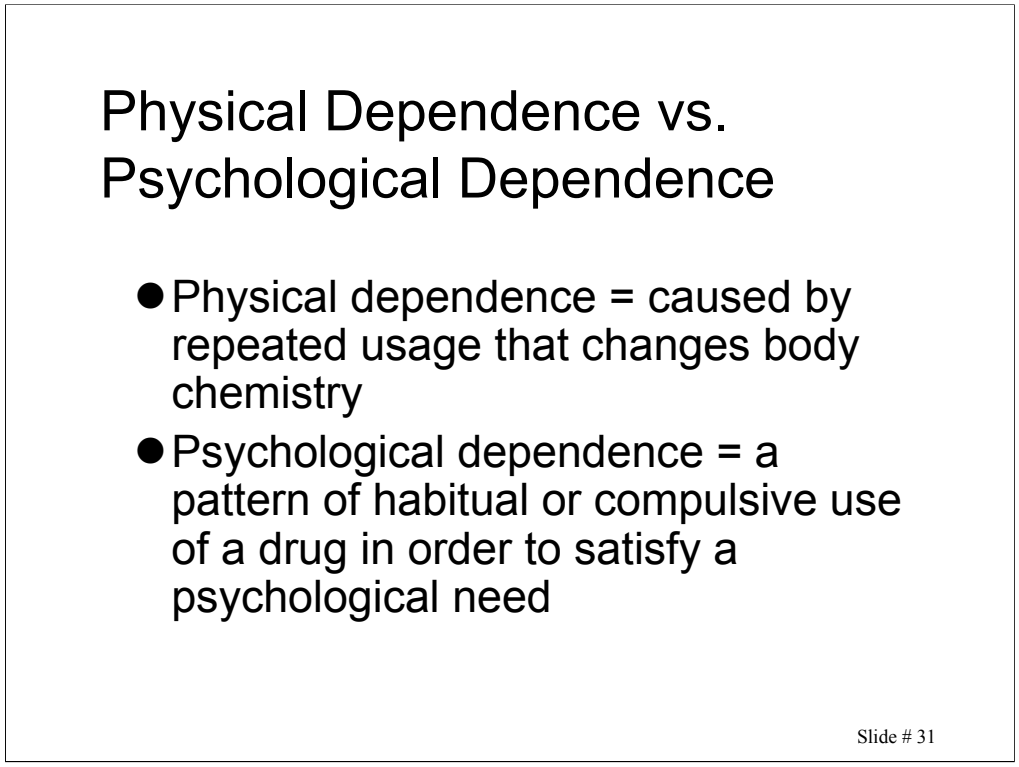
Bullet # 4 Abuse must last for at least one month before it is medically considered to be problematic.



Bullet # 1 A person's body chemistry changes when they use a drug repeatedly. The body comes to depend on having a steady supply of the drug. This condition is known as physiological dependence.

Bullet # 2 When people who are physiologically dependent abruptly stop using the drug, they go through withdrawal (also known as abstinence syndrome).

Bullet # 3 A common sign of physiological dependence is increased tolerance, which indicates that a person has become physically habituated to the drug and needs to take larger and larger amounts of the drug for it to achieve the same level of effectiveness.



Bullet # 1 When a person who is physiologically addicted to a drug suddenly lowers their level of usage, withdrawal sets in. Withdrawal is often characterized by tremors (including DTs, which stands for *delirium tremens*), rapid pulse rate, sweating, nausea, and elevated blood pressure.

Bullet # 2 If a person's dependence is strictly psychological, when they lower their usage level they don't suffer from physical withdrawal. People who are psychologically addicted to a drug come to rely or depend upon it to reduce anxiety. Some drugs, however, can be both physiologically and psychologically addicting. Drugs like nicotine, alcohol, and heroin are psychologically and physiologically addicting. Drugs like marijuana are psychologically addicting.

Depressants

- Alcohol
- Opiates/opioids
- Barbiturates
- Slow the activity or the central nervous system

Slide # 32

Bullets # 1–2 Depressants are drugs that slow the activity of the central nervous system (which includes your brain and spinal cord). Alcohol is the most common CNS depressant. More powerful CNS depressants include all of the derivatives of the opium poppy as well as opiods, which are synthetic forms of opiates. Barbiturates and sleeping pills are also CNS depressants.

Alcohol

- Alcohol is associated with lower productivity, loss of employment, and downward social mobility

Slide # 33

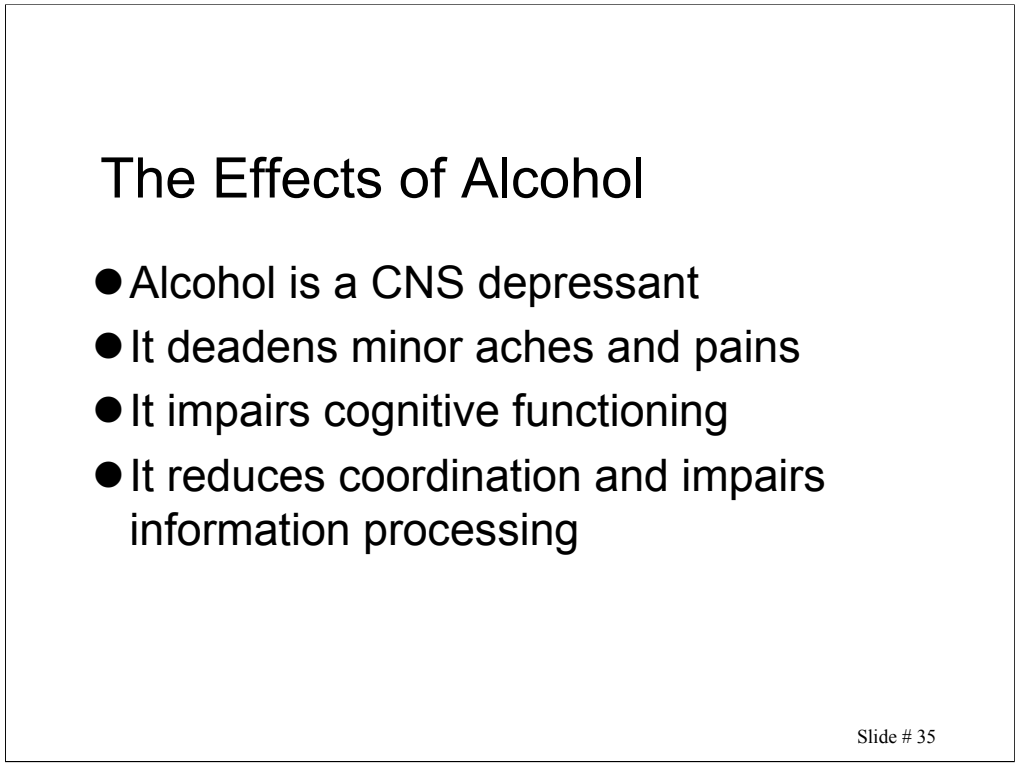
About one half of all Americans use alcohol. It has become a bedtime sedative, a cocktail party facilitator, and a tranquilizer any adult can get without a prescription. It has nearly always been America's drug of choice. People under the influence of alcohol have a reduced ability to foresee the negative consequences of misbehavior and may be less likely to follow social and personal standards of behavior. People who have a drinking problem usually have a difficult time maintaining their jobs and keeping their family life intact.

Mixing Alcohol with Barbiturates

Slide # 34

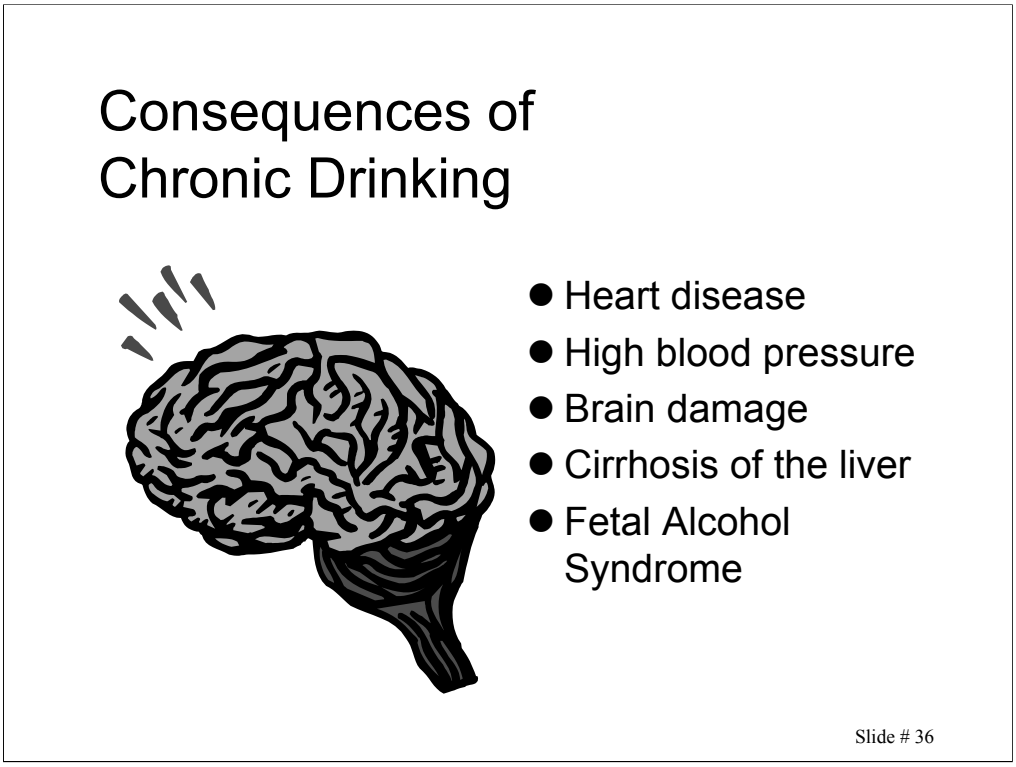
Since both alcohol and barbiturates are CNS depressants, they should never be used together. Movie star Marilyn Monroe died at the age of 36, apparently as a result of mixing barbiturates and alcohol. Today, all medications that have CNS implications are clearly labeled “DO NOT drink alcoholic beverages when taking this medication.”

Special note: Women absorb more pure alcohol into their bloodstreams than men do. They become about as intoxicated from one drink as men become from two. Alcohol accounts for more premature deaths in the U.S. than any other substance except tobacco.



Bullets # 1–2 Before the advent of anesthetics, alcohol was used as a painkiller because it slows the activity of the central nervous system. Alcohol deadens minor aches and pains and also has some analgesic properties.

Bullet # 2 When consumed in sufficient amounts, alcohol interferes with normal cognitive functioning. People under the influence of alcohol often behave in irrational and unpredictable ways. Their thinking is not clear and they often make very poor choices. Alcohol also reduces coordination and affects motor skills. About one half of all automobile accidents are alcohol-related. Alcohol also impairs information processing, which makes it hard for a drunk person to remember things that happened while they were drinking.



Bullets # 1–2 In the long term, excessive drinking can damage the heart and blood vessels. Sustained abuse can even lead to cardiac arrest. High blood pressure is also associated with heavy drinking.

Bullet # 3 Excessive amounts of alcohol destroy the brain cells. Every time a person drinks, they damage brain cells. Since the brain has millions of cells, the damage from alcohol abuse may not be visible for many years. Chronic alcoholics eventually lose much of their cognitive functioning.

Bullet # 4 Chronic drinking also damages the liver, causing cirrhosis. Cirrhosis is actually caused by a lack of protein in a person's diet. Alcoholics typically have lousy diets. If they have a few dollars in their pockets, they most likely will buy booze instead of food. Musician David Crosby had to have a transplant at UCLA a number of years ago because his excessive drinking and drug use during the 1960s and 1970s had destroyed his liver. Famous baseball player Mickey Mantle chronically abused alcohol; he eventually died from complications caused by liver disease.

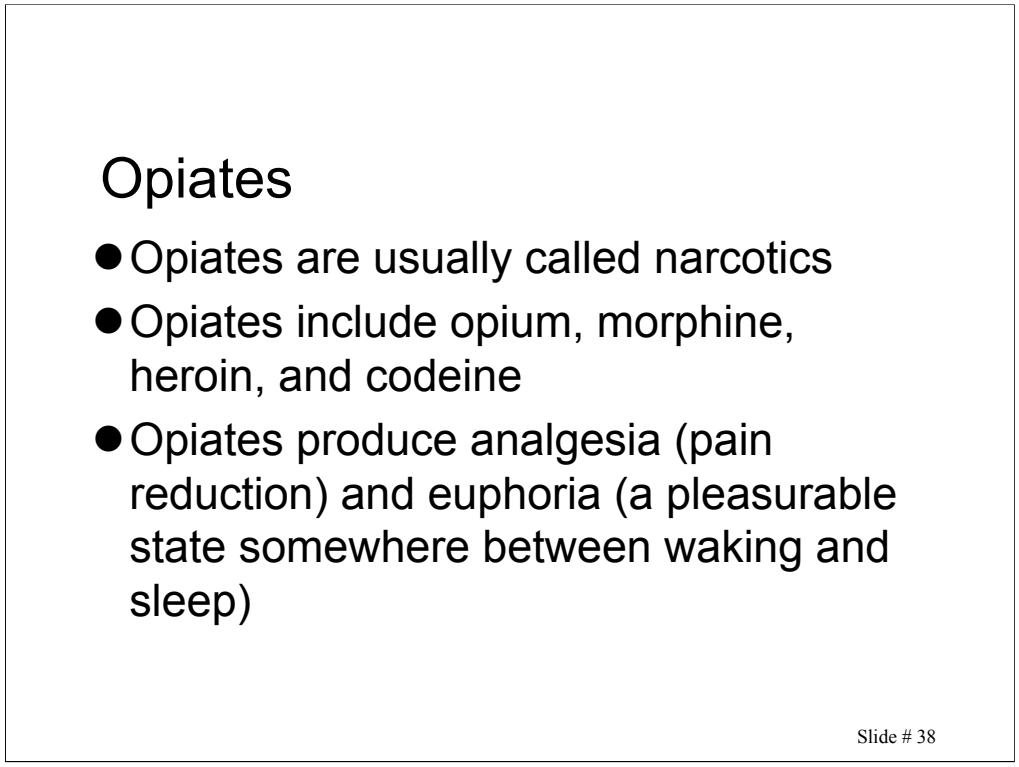
Bullet # 5 Women who drink excessively while pregnant expose their baby to a variety of birth defects such as Fetal Alcohol Syndrome. Babies born with this syndrome often have facial deformities, heart problems, mental impairments, and stunted growth.

Bullet # 1 There are a number of ways to treat alcoholism, but first the alcoholic must undergo detoxification (detox), which takes about ten days. During this time, the alcoholic will suffer all of the physical symptoms associated with withdrawal, including involuntary muscle spasms, elevated blood pressure, nausea, and vomiting. Detox from alcohol can be quite brutal.

Bullet # 2 Sometimes the drug Disulfuram (also known as Anabuse) is used in detox. When this drug is mixed with alcohol, it causes severe nausea and vomiting. It thus gives alcoholics a strong incentive to complete the detox process. However, some have questioned the reliability and effectiveness of the drug.

Bullet # 3 Alcoholics Anonymous (AA) has been perhaps the most reliable method of treatment over the years. It has about a 75 percent effectiveness rate as long as the person stays with the program. A key part of the program involves making a public confession about the fact that you are an alcoholic.

Bullet # 4 Other techniques for treating alcoholism include everything from relaxation therapy to the use of electric shocks as aversion therapy. There are even classes which show alcoholics how to relate to one another without having to use alcohol.

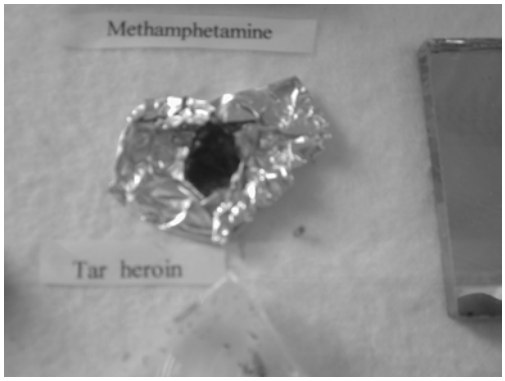


Bullet # 1 Opiates are the most powerful of the CNS depressants. Usually they are called narcotics.

Bullet # 2 Opiates are derived from the poppy, which the Sumerians called "plant of joy." Opiates include opium itself, morphine, heroin, and the prescription drug codeine.

Bullet # 3 Opiates are powerful painkillers. They have important medical uses, especially in surgery and post-surgical recovery. They are powerful analgesics that can greatly reduce pain. They also produce a kind of euphoria which has been described as a mixture of sleep and wakefulness.

Heroin



Slide # 39

The photograph in this slide shows black tar heroin. It looks just like tar and has a vinegary odor. Heroin can be injected, ingested, or smoked. Heroin use causes drowsiness, euphoria, impaired and divided attention, nausea, and poor motor coordination.

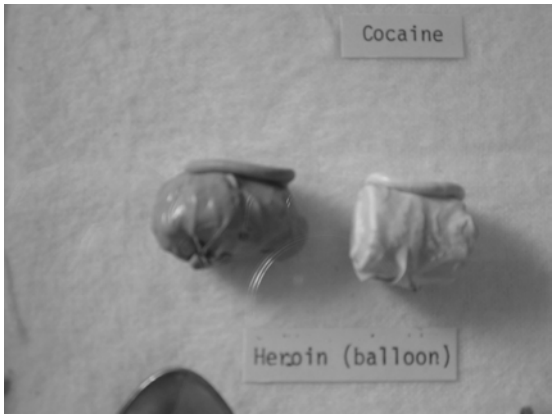
Heroin was initially hailed as a “hero drug” (some even called it “God’s own medicine”) because it supposedly cured people of morphine addiction. However, this “cure” simply involved switching one’s addiction from morphine to heroin.

China White/Asian Heroin

Slide # 40

This photo shows Asian heroin, also known as “China white.” Users often add water to it and heat it by holding the heroin in a spoon over a flame. A piece of cotton is then added to act as a filter and the solution is drawn up into a needle. Users tie their arms off with a cord or a belt to cause their veins to bulge, making them an easy target for injection. Heroin can also be ingested or snorted; however, injection (also known as “mainlining”) is the most common method, primarily because it allows the user to feel the effects of the drug more quickly. Heroin causes the same euphoric rush. It also causes severe withdrawal symptoms, including flu-like chills, cramps, sweating, high blood pressure, rapid pulse, and vomiting.

A Balloon of Heroin



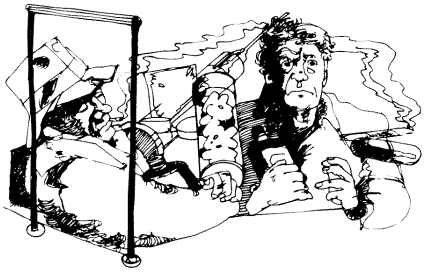
Slide # 41

Frequently, drug dealers package powdered Mexican heroin in a toy balloon. The balloons enable the user or dealer to easily swallow the heroin if approached by authorities. They later retrieve the balloon by vomiting or defecation. Sometimes condoms are used as well since they are more durable. Sometimes balloons break while in the stomach, causing an instant overdose and nearly certain death.

Special note: Each balloon is about as large as a dime.

Other Narcotics

- Codeine
- Demerol (opioid)
- Percodan/Darvon/ Oxycontin
- Methadone



Slide # 42

Bullet # 1 Doctors often prescribe codeine mixed with cough syrup or Tylenol. Codeine abusers usually ingest the drug, although it can also be injected or even snorted. It causes depressed reflexes, drowsiness, and profuse itching and scratching.

Bullet # 2 Demerol usually appears in either tablet or liquid form. It can be ingested, snorted, or injected. It can cause depressed reflexes, euphoria, poor motor skills, and impaired/divided attention.

Bullet # 3 Other opioids include the painkillers Percodan, Darvon, and Oxycontin. Oxycontin is one of the newer opioids. It is an incredibility strong painkiller used for recovery from surgical operations such as total knee replacement. All of these drugs have legitimate medical purposes but have surfaced as street drugs.

Bullet # 4 Methadone is a synthetic form of heroin. It is used to treat heroin addiction. It is a little slower-acting than heroin but easier to control. Addicts can use methadone to slowly wean them from their dependence on heroin.

Special note: Opioids are manufactured in the lab and not found in nature.

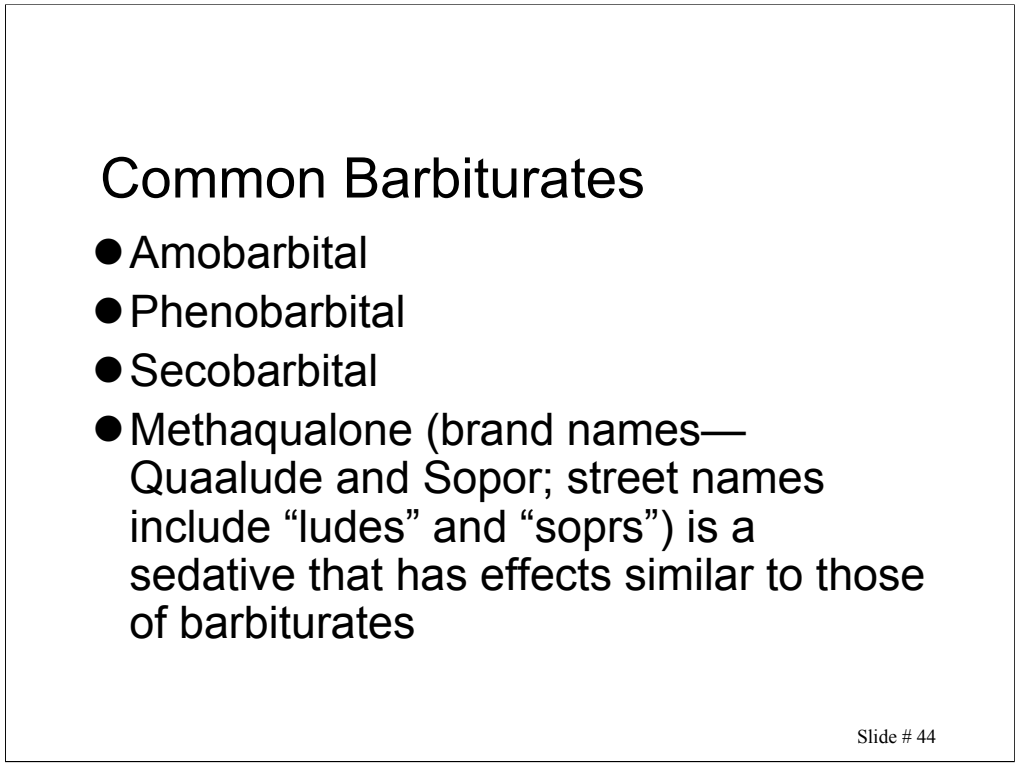
Barbiturates

- Calming or sedating drugs used to regulate high blood pressure, block pain during surgery, and control epileptic seizures
- They are highly addictive and used on the street to produce euphoria

Slide # 43

Bullet # 1 Like all drugs, barbiturates have important medical value. Doctors prescribe the drugs for a variety of reasons, including treatment of high blood pressure and controlling seizures caused by epilepsy. Barbiturates also have a sedative value and are sometimes prescribed for sleep disorders such as insomnia.

Bullet # 2 Barbiturates are highly addictive and cause physiological dependence. Many doctors oppose using barbiturates for insomnia because of their potential for causing addiction.



Bullets # 1–3 Amobarbital, Phenobarbital, and Secobarbital are all commonly prescribed barbiturates. Barbiturates and tranquilizers are depressants that help calm the central nervous system. They are extremely dangerous when mixed with alcohol.

Bullet #4 Methqualone is another barbiturate-like drug that has similar physical effects. Its street names include “ludes” and “soprs.”

Rohypnol

- Produces amnesia in the occasional drug user
- Also known as the "date rape drug"
- It is considered a depressant

Slide # 45

Bullet # 1 Rohypnol usually appears as a white tablet with the manufactures name on it (Roche) or just an RH, and is either one or two milligrams. It is usually mixed with a drink. It takes effect about 10 to 15 minutes after ingestion.

Bullet # 2 Rohypnol can cause amnesia in occasional drug users. It is also colorless, tasteless, and dissolves very quickly. Consequently, it has often been used to facilitate date rape.

Special note: Tell your female students that if they are going to drink, they should never leave their drinks unattended.

Bullet # 3 Rohypnol is considered a depressant and can cause a user to lose consciousness.

Tranquilizers

- Depressants used to treat disorders such as anxiety and insomnia
- The benzodiazepine family of drugs includes: Valium, Xanax, Halcion

Slide # 46

Bullet # 1 Tranquilizers are a class of depressants that have been widely used to treat disorders such as anxiety and insomnia. They are not as dangerous or as toxic as barbiturates, but they can be very dangerous if mixed with alcohol.

Bullet # 2 Valium, Xanax, and Halcion are drugs that are part of the benzodiazepine family.These drugs act by boosting the availability of the neurotransmitter GABA, which reduces excess nervous system activity.

Stimulants

- Stimulants are drugs which heighten the activity of the central nervous system
- They include amphetamines, cocaine, MDMA (ecstasy), nicotine, and caffeine
- Stimulants can cause psychological and physically dependence

Slide # 47

Bullet # 1 Stimulants are the opposite of depressants—they energize the activity of the central nervous system. They were first developed during World War II to help pilots and soldiers stay alert and awake during missions and guard duty. Today, the most common abusers of stimulants include long-haul truck drivers and students cramming for exams. Amphetamines have also been prescribed for dieters because they suppress the appetite.

Bullet # 2 Commonly used stimulants include amphetamines, cocaine, MDMA (ecstasy), nicotine, and caffeine.

Bullet # 3 These drugs are both physiologically and psychologically addictive.

Methamphetamine

Slide # 48

Methamphetamine is a powerful stimulant known on the street as “crank” or “speed.” It can appear as a white crystalline powder, as a “rock” (this form is also known as “ice”), or a beige powder (shown in the slide). It can be injected, smoked, or snorted. It elevates pulse, blood pressure, and body temperature. Although it can produce euphoria, it can also cause anxiety, body tremors, decreased appetite, hallucinations, insomnia, and restlessness.

How Do Amphetamines Work?

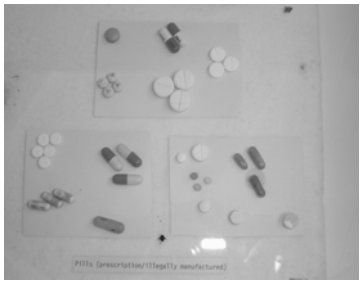
- Not found in nature
- They activate the sympathetic branch of the autonomic nervous system
- They boost the levels of the neurotransmitters norepinephrine and dopamine

Slide # 49

Bullets # 1–2 Amphetamines are manufactured in the lab. Unlike many other drugs, they don't occur naturally. The autonomic part of the nervous system controls most of our involuntary responses like heart rate and respiration. The sympathetic branch of the autonomic nervous system manages our "fight or flight" responses to stressful situations. Amphetamines in low doses boost mental alertness and concentration and reduce fatigue. They also lessen our need for sleep. In high doses, amphetamines can cause a massive rush of euphoria.

Bullet # 3 Amphetamines act on our CNS by boosting the levels of two brain neurotransmitters: norepinephrine and dopamine. The increased supply of these chemicals induces neurons to keep firing. This helps maintain high levels of arousal. Amphetamines produce pleasurable feelings by directly stimulating brain pathways.

Types of Amphetamines



- Benzedrine (“bennies”)
- Methamphetamine (“methedrine” or “speed”)
- Dextroamphetamine (“dexedrine” or “dexies”)

Slide # 50

The photo in this slide shows both prescription drugs illegally manufactured drugs.

Bullets # 1–3 All of these drugs can be used in pill form, smoked in a pure form of methamphetamine called “ice” or “crystal meth,” or even injected. Smoking or injecting methamphetamine gives the strongest rush. More than one million Americans use amphetamines in one way or another. High doses can cause amphetamine psychosis, which has symptoms much like those of schizophrenia (including hallucinations and delusions).

Cocaine

- Stimulant derived from the leaves of the coca plant
- Snorted, injected, ingested
- "Ideal brain tonic": 1886

Slide # 51

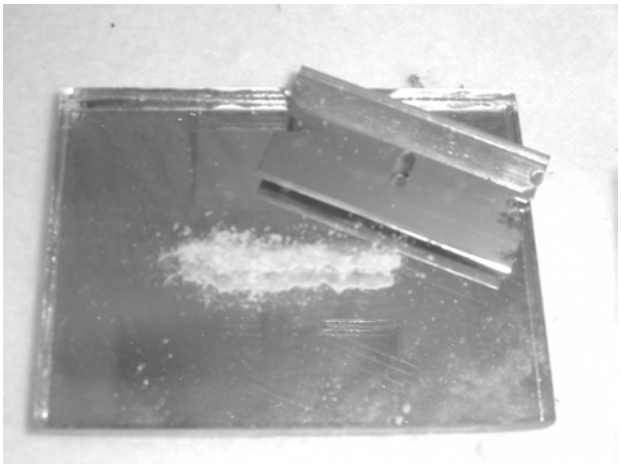
Bullet # 1 The leaves of the coca plant contain cocaine, which is a stimulant. It produces a state of euphoria, reduces hunger, deadens pain, and seems to bolster confidence.

Bullet # 2 It can be snorted, smoked in a hardened form called "crack," injected, or even mixed with water and brewed as tea.

Bullet # 3 Coca Cola got its name because it initially had cocaine in it; however, Coke has been drug-free since 1906. Initially, Coca Cola was marketed as "the ideal brain tonic." Though Coke no longer contains cocaine, it is still flavored with a non-psychoactive extract from the coca plant.

Special note: Cocaine can be light brown, beige, or white, and can appear in powder form or as crystalline rocks. In its powder form, cocaine is often diluted with other ingredients to extend the seller's profit. A snorting vial is also shown in the photo in the slide.

Cocaine

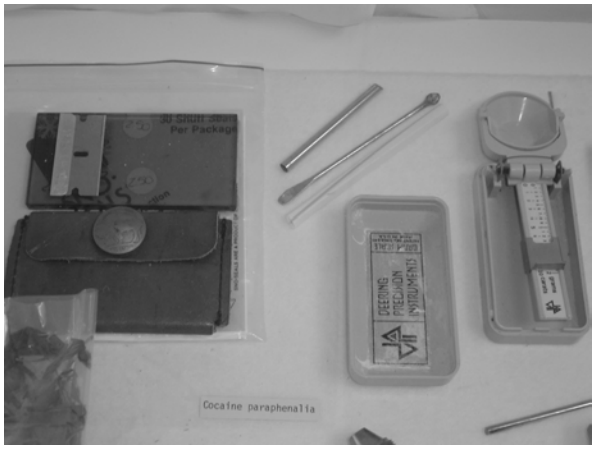


Slide # 52

The most common way to use powdered cocaine is to place it on a mirror, a piece of glass. or a flat, nonporous surface. It is then chopped into a fine powder with a razor blade or credit card. The cocaine is then spread into thin lines, which users snort through a tube or straw.

Special note: Freud had once called cocaine “The Song of Praise” and he even used the drug himself. He told his fiancée that the next time they met he would be a “big strongman,” since he planned to do cocaine just beforehand. Freud even prescribed cocaine for one of his friends who had a morphine addiction. The friend later died from a cocaine overdose.

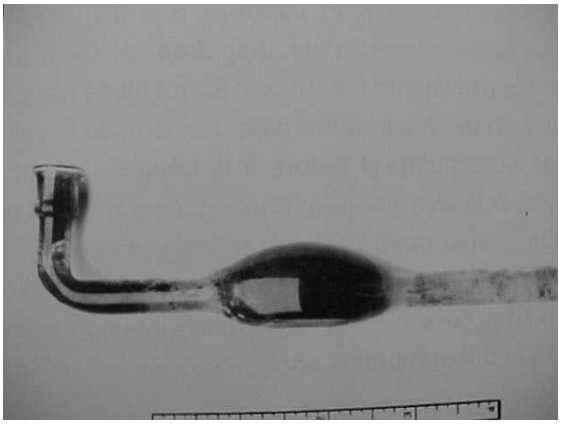
Cocaine Paraphernalia



Slide # 53

Depicted on the far right is a pocket drug-weighing scale. These scales are often used by so-called “Pocket Dealers,” who sell drugs in quantities as small as a gram. The dealer assembles the scale and sets the amount desired on the slide arm. The drug is added to the bowl of the device until the arm is level. Just above the scale is a snorting spoon.

Freebase Smoking Pipe



Slide # 54

A mixture of cocaine and baking soda is put into the cooker, mixed with water, and heated. The solution will go from a solid to a liquid to a transparent oil that collects at the bottom of the cooker. For a heat source, users often employ a cotton ball soaked in rum. When cocaine is cooked in water, the oil forms into a rock. Users then place the rock in a pipe, often on top of a piece of copper scouring pad, steel wool, or Brillo pad. The rock does not burn—it vaporizes. The user then inhales the vapors. Some pipes (like the one shown in this slide) have a bulge or chamber in the neck of the pipe where the vapor can accumulate, allowing the user to take a bigger "hit." The chamber also cools the vapor.

Special note: Cocaine is powerfully addictive. If snorted regularly, long-term cocaine usage can result in exposed cartilage in the nose and/or a deviated septum (the bone between the nostrils).

Bindle

Slide # 55

A bindle is a small piece of paper folded like an envelope to form a pocket which is used to hold a single dose of a drug.

Marijuana/Hallucinogens

- Derived from the cannabis plant
- Contains the psychoactive chemical THC
- Leaves ground up and smoked
- Hashish

Slide # 56

Bullet # 1 Marijuana has been around for a very long time. It is derived from the cannabis plant. Nicknames for it include “pot,” “weed,” “grass,” “reefer,” “dope,” and “Mary Jane.”

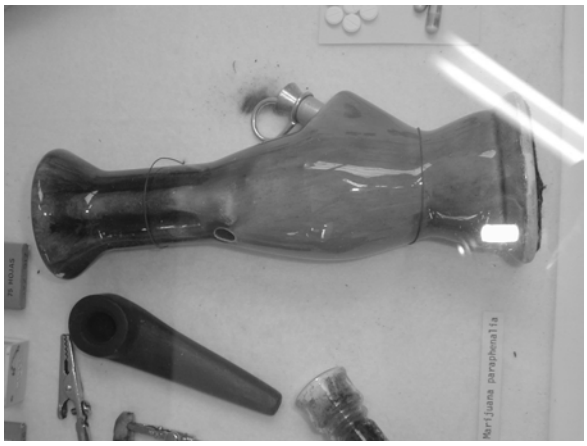
Bullet # 2 The psychoactive chemical in marijuana is THC (delta-9-tetrahydrocannabinol).

Bullet # 3 Users grind up the marijuana leaves and then smoke them in a pipe or roll them in cigarette paper to create what’s known as a “joint.”

Bullet # 4 The most potent form of the drug is called hashish (or “hash”), and is derived from the resin of the plant (which contains a higher amount of THC).

Since marijuana alters perception (especially in high doses), it is classified as an hallucinogen. Advances in agricultural technology allow today’s growers to cultivate marijuana that is much stronger than the marijuana that was grown in the 1960s.

Marijuana Paraphernalia



Slide # 57

No special notes. The picture in the slide shows a pipe and “roach clips” (used to hold on to the very end of the joint to smoke it in its entirety).

Risks of Marijuana

- Most widely used illicit drug
- Heart rate/blood pressure
- Motor performance
- Learning/memory

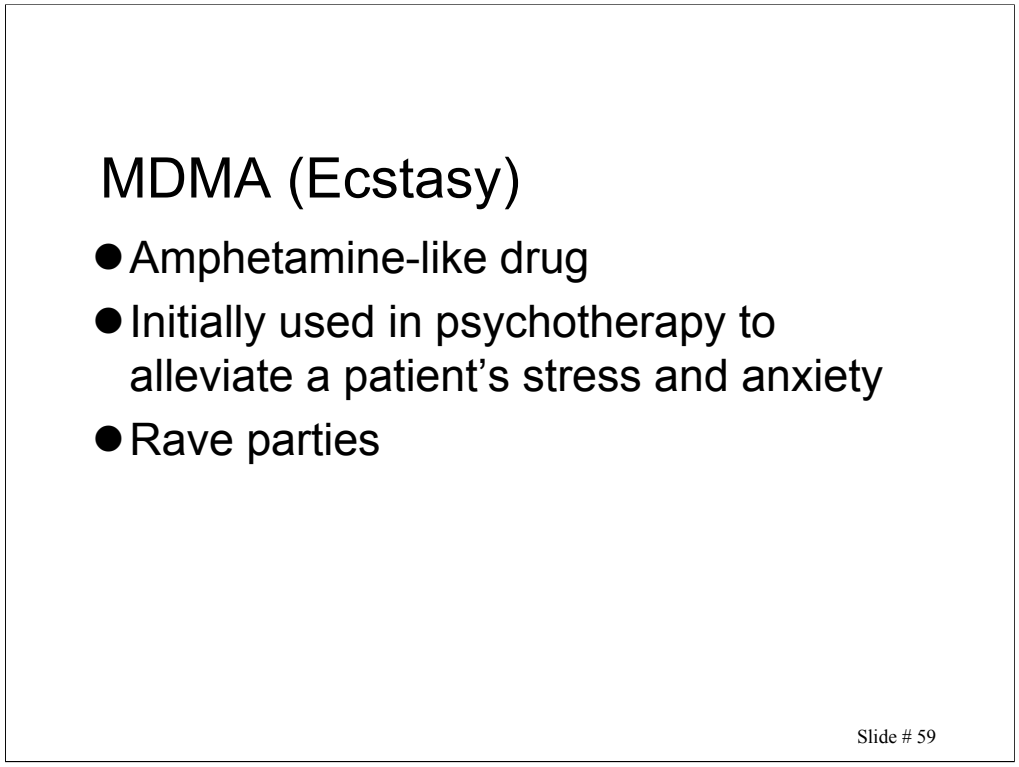
Slide # 58

Bullet # 1 Marijuana is the most widely used illicit drug in the U.S. About 33 percent of people aged 12-50 admit to having used the drug at least once. About 5 percent of this group remain active users. Marijuana does have some limited medical value: in some states, physicians can write a prescription for glaucoma sufferers, those undergoing chemotherapy, those with asthma, and diseases that cause a loss of appetite and/or weight loss.

Bullet # 2 People with cardiovascular problems put themselves at greater risk when using marijuana because it increases heart rate and blood pressure.

Bullet # 3 Marijuana affects a user's motor skills and coordination. It makes driving particularly dangerous.

Bullet # 4 Marijuana is an amotivational drug that affects short-term memory. THC also affects parts of the brain associated with learning. Finally, marijuana users have a greater risk of getting lung cancer.



Bullet #1 MDMA (3,4-methylenedioxymethamphetamine), better known as Ecstasy, has amphetamine-like properties and is similar to speed. A manmade drug, MDMA produces mild hallucinations and gives the user a general sense of well being.

Bullet # 2 The drug was originally intended to help people in therapy talk more freely about painful experiences such as rape or anxiety about being diagnosed with cancer.

Bullet # 3 The biggest abusers of ecstasy are high school and college students, who usually ingest the drug at dance clubs or "rave" parties. The drug may interfere with a user's learning ability and attention span. It also has some serious side effects which include increased heart rate and blood pressure, elevated body temperature, and dehydration. High doses can be fatal.

LSD ("acid")

- Lysergic acid diethylamide
- Timothy Leary: Harvard psychology professor who experimented with LSD
- Ken Kesey: noted author who also took LSD

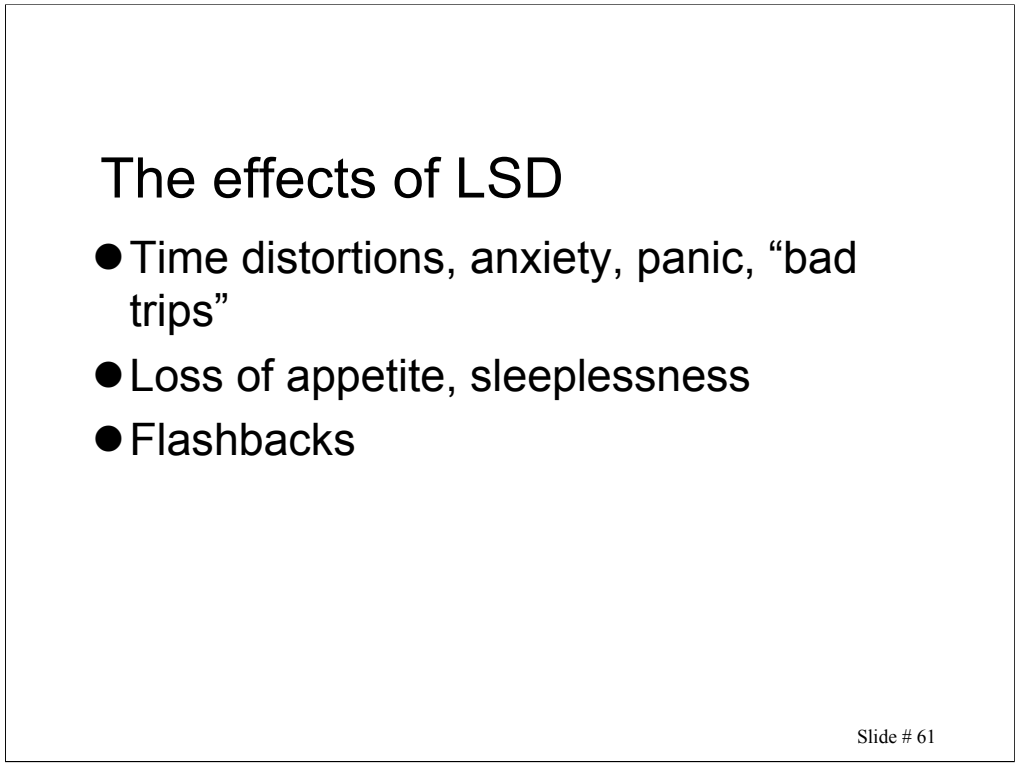
Slide # 60

Users often put LSD on perforated, impregnating blotter paper, which they often decorate with cartoon characters (as shown in the picture in the slide)

Bullet # 1 LSD became very popular in the 1960s. The drug was initially created to help schizophrenics, but this application failed. Others began to experiment with LSD and found that it caused vivid and colorful hallucinations that made users feel as if they were "expanding their consciousness." Proponents of LSD also claimed that the drug helped them to make wondrous discoveries; when it wore off, however, users could not clearly recall what these wonderful discoveries were.

Bullet # 2 Harvard psychology professor Timothy Leary first took LSD in 1962 and had what he later called "the most shattering experience of my life." He became a powerful supporter and advocate for LSD, using it to explore the boundaries of psychology and psychotherapy. Most other psychologists thought he had lost his mind, and Harvard fired him in 1963. Still, Leary's fame continued to grow. Coining the catch phrase "Tune in, turn on, and drop out," he became an icon of the hippie movement in the late 1960s.

Bullet # 3 Ken Kesey, the author of *One Flew Over the Cuckoo's Nest,* was another advocate for LSD. He once obtained an old school bus, decorated it with psychedelic colors, and traveled through the Haight-Ashbury section of San Francisco staging what he called the "Kool-Aid Acid Test." For one dollar, a person could purchase a cup of Kool-Aid laced with LSD. Kesey acted as a kind of ringmaster for the whole scene, which did seem like a very odd sort of circus. Eventually, LSD was declared illegal and Kesey spent some time in jail for possession.



Bullet # 1 LSD produces vivid hallucinations. The experience of taking LSD is called a “trip,” and it can last as long as 12 hours. Though proponents of LSD claim the experience is usually peaceful and relaxing, some users suffer through “bad trips” in which they experienced severe anxiety, delusions of persecution, and even psychotic episodes.

Bullets # 2–3 Physical symptoms associated with LSD include increased heart rate, blood pressure, and body temperature. Loss of appetite and sleeplessness also often occur.

Bullet # 4 LSD users sometimes have “flashbacks,” which are recurrences of an earlier trip. Flashbacks may come on without any real warning and can occur weeks, months, or even years after the initial trip.

Other Hallucinogens

- Mescaline
- Psilocybin
- PCP (phencyclidine, "angel dust")

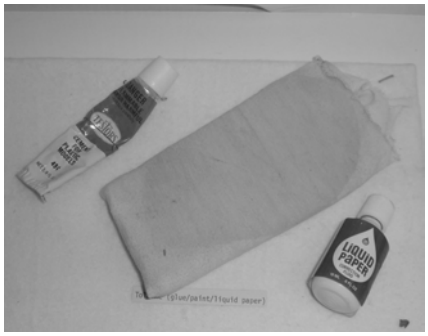
Slide # 62

This slide shows a portrait of Semu Huaute, the last full-blooded Chumash Indian in California.

Bullets # 1–2 For centuries, many Native Americans have used mescaline (a hallucinogen derived from the cactus plant) and psilocybin (found in certain mushrooms) for religious purposes.

Bullet # 3 PCP (phencyclidine, also known as "Angel Dust") is an animal tranquilizer that, when ingested by humans, can cause distortions in time and space accompanied by very frightening hallucinations. It may lead to feelings of rage or paranoia. PCP users also seem to experience a dramatic increase in strength. There are documented episodes of people high on PCP being arrested and handcuffed, only to break the cuffs soon afterward—a feat which requires 550 pounds of pressure.

Inhalants



- Amyl & butyl nitrite/nitrate
- Correction fluid
- Hydrocarbons/ gasoline, glue, paint thinner, rubber cement

Slide # 63

Bullet # 1 Amyl and butyl nitrites (also sometimes called nitrates) belong to a family of drugs known as vasodilators, which widen blood vessels. Initially used to treat patients with heart problems, amyl and butyl nitrites appear most commonly today in the form of "poppers." Packaged in small bottles or glass capsules and sold under brand names like "Locker Room," "Rush," and "Come," poppers are used by breaking the container that holds them in their liquid form and inhaling the resulting vapors.

Bullet # 2 People who want to get high sometimes inhale vapors from aerosol cans. Long-term usage can cause weight loss, and muscle fatigue. It eventually causes permanent damage to the nervous system.

Bullet # 3 Other inhalants include aerosols, brush cleaners, chloroform, CO^2 cartridges, computer keyboard dusters, cooking sprays, ether, and petroleum-based products.

What Is Hypnosis?

- A form of altered consciousness in which a person becomes highly suggestible
- A subject does not exercise critical-thinking skills

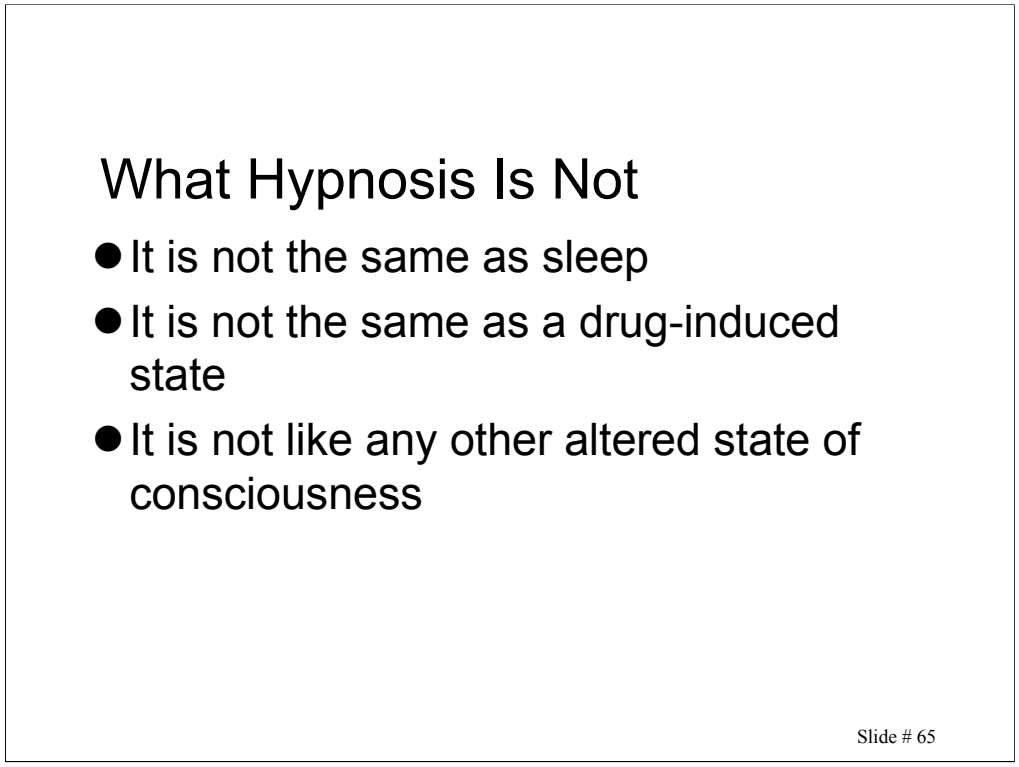
Slide # 64

Bullet # 1 Hypnosis is a trance-like state in which subjects become highly suggestible and even open to commands.

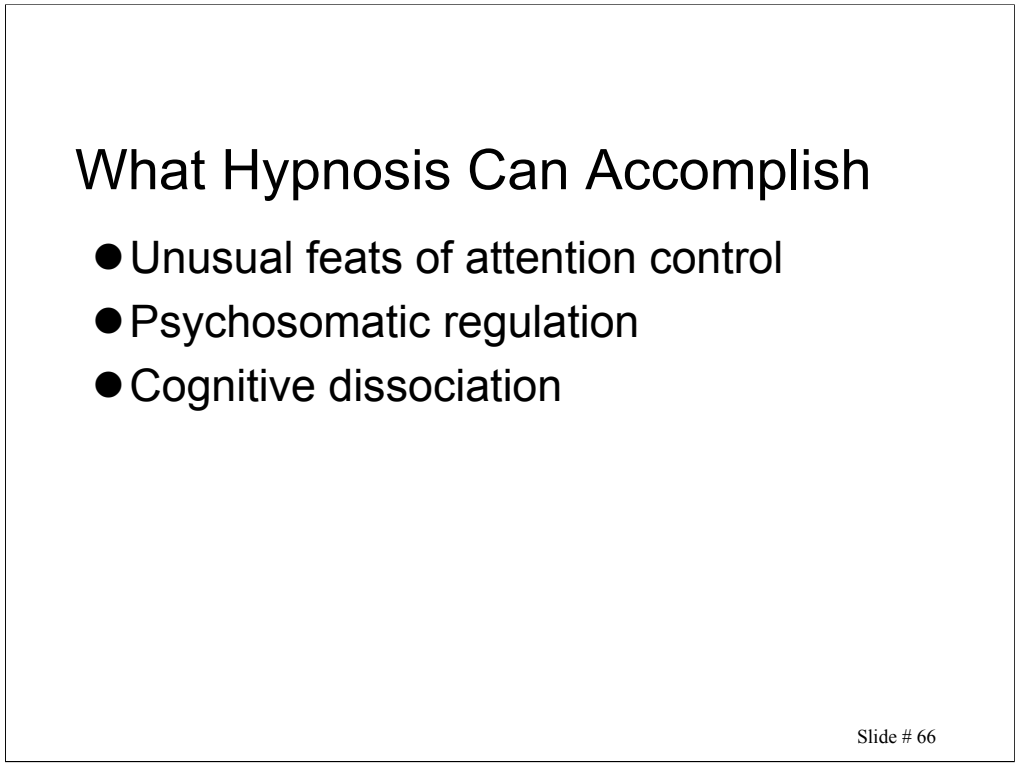
Bullet # 2 Since hypnosis causes such a narrow focus, hypnotized subjects rarely use their critical-thinking skills. Suggestions made by a hypnotist may seem silly or inappropriate to others, but not to the hypnotized subject

Not everyone agrees that hypnosis is an altered state. Some researchers believe that if people are simply given instructions and told to try their hardest they can do anything hypnotized people can do.

Note: Hypnosis is the most difficult state of altered consciousness to understand, even though scientists have studied it for over 200 years. Researchers have examined hypnosis in order to shed light on the relationship between health and disease, including possible links between the nervous system and the immune system.



Hypnosis is not like any other altered state of consciousness. Though it shares some similarities with sleep and drug-induced states, it is not equivalent to either. Hypnotized subjects are able to focus their attention on one tiny aspect of reality and ignore all other input. EEGs of people under hypnosis show large irregular delta waves that don't occur in any other altered state of consciousness.



Bullets #1–3 Under proper circumstances, hypnosis allows unusual feats of focused attention by narrowing a subject's perceptual field. Hypnosis has also been used to help people suffering from psychosomatic illnesses, which are physical problems caused by stressors in the environment. Hypnosis carries the risk of causing what is known as cognitive dissociation, or a "splitting" of one's consciousness in which a person's thoughts seem separated from their feelings. Dissociative disorders usually are accompanied by memory loss.

According to Freud, immoral urges, shameful experiences, selfishness, fears, and unacceptable desires all reside in the unconscious mind. He felt that bringing these feelings to the surface (i.e. into the conscious mind) would help to improve the quality of life for his patients. Freud used hypnosis in much of his early therapy; however, he wasn't much of a hypnotist. He later abandoned the technique for another that he called "free association."

How Does It Work ?

- Subject allows the hypnotist to guide and direct
- A person may be made aware or unaware of certain things
- A subject becomes highly receptive and responsive to suggestions

Slide # 68

Hypnosis is a trusting relationship. The subject must be willing to allow the hypnotist to temporarily guide and direct their thoughts. A hypnotist may make a subject either aware of things they wouldn't usually notice, or unaware of things they usually would notice. Unfortunately, hypnosis has all too often been used for entertainment value—for example, a hypnotist may tell a subject that an onion he/she is eating is a succulent apple. However, hypnosis has important medical and psychological applications.

Inducing a Trance

- Braid method
- Eye method
- Machine method

Slide # 69

A hypnotist induces a trance by slowly persuading the subject to lose interest in external distractions. The relationship between the hypnotist and the subject involves cooperation, not domination.

Bullet # 1 The most common technique for inducing hypnosis is the Braid method, named after the hypnotist who invented it. In this method, the hypnotist usually uses some sparkling object or ornament, such as a pocket watch suspended by a cord or chain. The subject then narrows their focus so that all they are concentrating on is the object.

Bullet # 2 The eye method requires the subject to be eyeball to eyeball with the hypnotist (about eight inches apart).

Bullet # 3 There is also a machine that spins a disk with spiraling concentric circles that seems to work quite well for hypnosis.

Can You Be Made to Do Something Against Your Will?

Slide # 70

Most psychologists believe that hypnotized subjects cannot be made to do something which goes against their basic character or morals. Any such suggestion would cause them to awaken immediately. Other psychologists have their doubts. For example, if you told a normally modest person to disrobe, they would automatically awaken. If you told the same person that their clothes were on fire, however, they might start to tear off their clothes in public—even though they would never do so under normal circumstances. Many psychologists believe clever persuasion can get people to do something against their will. This slide shows a portrait of Vernon Howell, aka David Koresh, leader of the Branch Davidian cult. He exercised tremendous power over his followers, and nearly 100 of them perished with him at their compound in Waco, Texas after a standoff with ATF agents. Cult leader Jim Jones convinced hundreds of his followers to commit suicide by ingesting cyanide-laced Kool-Aid. Charles Manson also wielded a similar power over his followers, convincing them to murder several people—including a pregnant woman.

Hypnosis, Part 2

Posthypnotic suggestions

Slide # 71

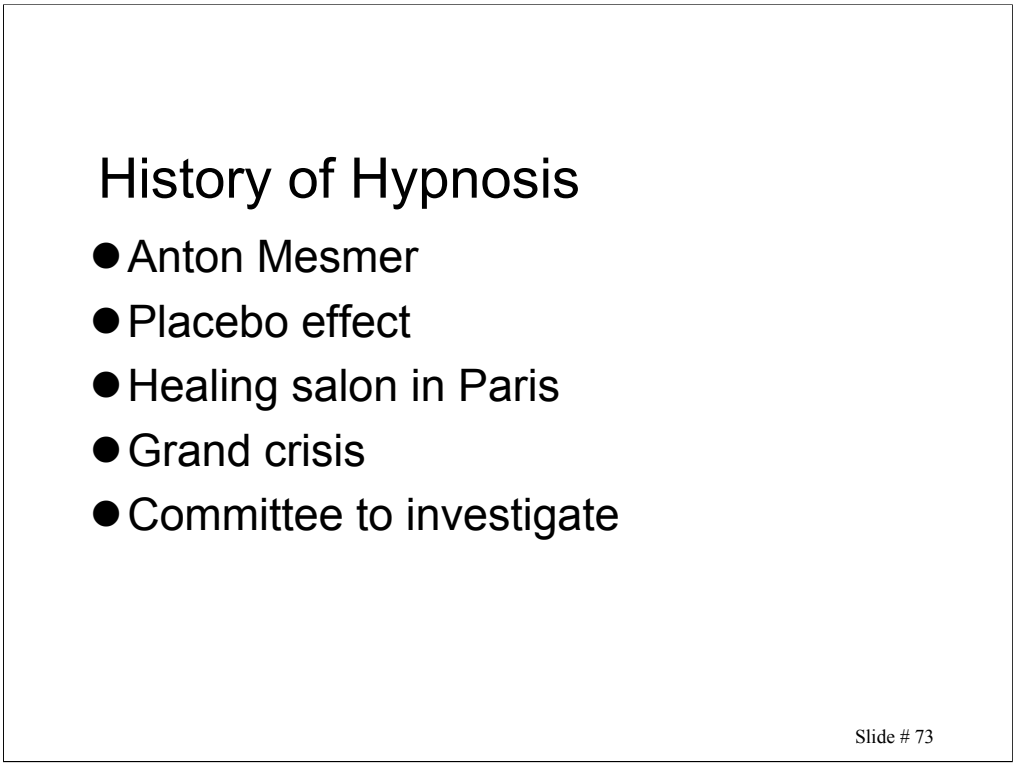
Hypnosis has tremendous value and potential, especially in the area of posthypnotic suggestions.

How Do Posthypnotic Suggestions Work?

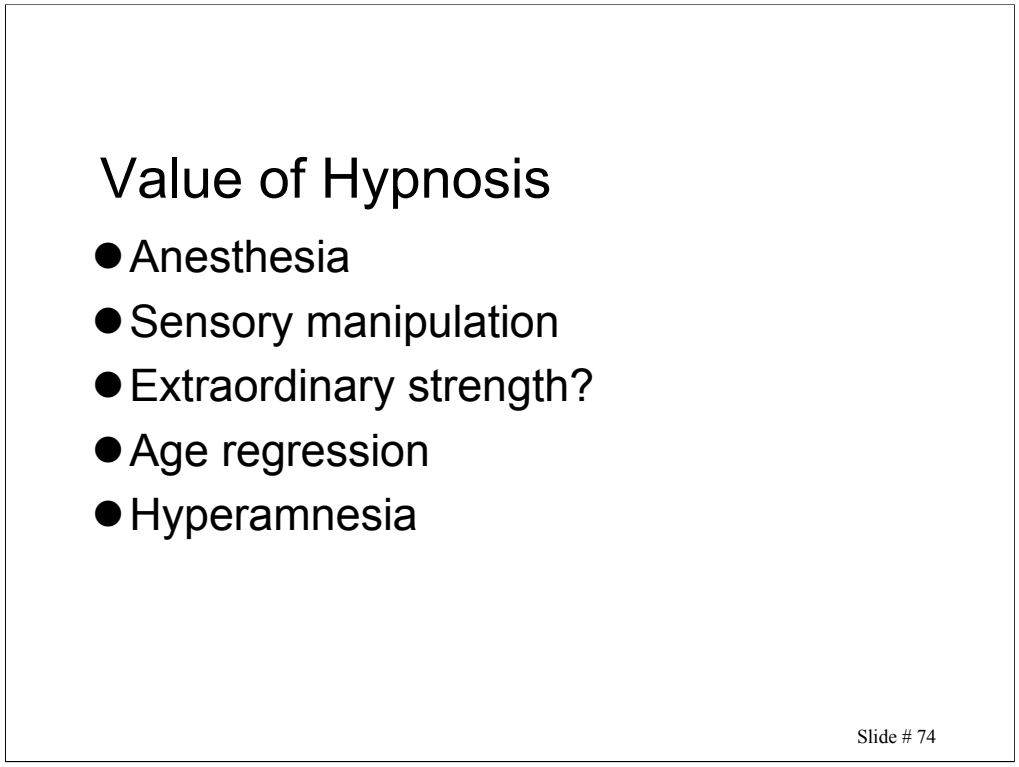
- Suggestions to remember when the trance has ended
- Helps change unwanted behaviors (smoking, overeating)

Slide # 72

Bullets # 1– 2 Posthypnotic suggestions need to be repeated several times in order for them to work. While under hypnosis, the hypnotist continually makes suggestions about a subject's specific unwanted behavior, such as smoking or overeating. It may take a number of sessions for the suggestions to become effective, and not everyone is a good candidate.



Franz Anton Mesmer was perhaps the most famous quack in the history of psychology. The term “mesmerize” comes from his name. He set up healing salons in Paris and became an instant rage. Psychological wisdom at the time held that certain illnesses were caused by disruptions of body fluids. One common cure of the time involved using magnets, which somehow would cause beneficial changes in body fluids. Mesmer had initially used magnets in his treatments. At first he felt that the magnets, when attached to certain body parts, were the reason for success; later he “discovered” that he himself had caused the cure. This is an example of what has been called the “placebo effect.” Mesmer’s “treatment” convinced most of his subjects that they were actually being healed; subsequently, their brains released endorphins which lessened their pain. Mesmer used magic wands, dressed in flowing robes, and lined his healing salons with orange blossoms. Even George Washington used a Mesmer magnet. Mesmer became the rage of Paris. Someone once offered him 20,000 francs to reveal his secrets, but he refused. In reality, Mesmer’s sessions put his patients into a hypnotic trance, which made them more suggestible and helped cure many psychosomatic illnesses. The French government finally set up a committee to investigate Mesmer. The committee consisted of three men: Benjamin Franklin (he was in Paris at the time), a chemist named Lavoisier, and a man by the name of Guillotine, who later invented that lovely haircut machine used so effectively by the Jacobins in the French Revolution. Rather than face the committee, Mesmer decided to leave town. He moved to Vienna and died a penniless beggar. His last known living friend was his magnetized pet canary.



Bullet # 1 Hypnosis has been used as an anesthetic for many procedures, even ones as serious as abdominal surgery and childbirth. Dr. Ernest Werbel, a San Luis Obispo surgeon, used hypnosis in his practice. He wrote a book about the value of hypnosis not just as an anesthetic but as a tool for post-surgical recovery. His patients did seem to recover faster than those who had received general anesthetics. However, not many doctors are trained to use hypnosis.

Bullet # 2 Hypnosis can also be used to manipulate sensory information. A subject in a deep hypnotic trance can be made to act as if any or all of his/her sensory input have been cut off completely, or be made to respond to sights, smells, sounds, or tastes that aren't really there.

Bullet # 3 Under hypnosis, a young woman can be made to lift an object weighing 300 pounds. Hypnosis does not make a person any stronger than normal, but it can motivate someone to perform as if their life depended upon it.

Bullet# 4 In theory, a person under hypnosis could be taken back or "regressed" to a past event, such as their sixth birthday party. The subject would be able to remember the guests, the presents, and even the taste of the cake. If the subject was asked to write their name, they would write it the way they did in the first grade. The extent of the regression is limited; for example, a regressed patient who was reliving his sixth birthday party was asked by the hypnotist, "What time is it?" Thr patient looked at his watch and replied "4 p.m."—an action few first graders would take, since not many children that age wear watches or even know how to tell time.

Bullet # 5 Hyperamnesia involves retrieving lost memories. In theory, hyperamnesia could have great value for a psychotherapist trying to examine a subject's repressed memories that have caused current forms of maladaptive behavior.

Though some hypnotized patients seem to be able to recall repressed memories, in actuality, we tend to confuse memories of things that happened to us with things we read or saw, imagined, or that never really happened. An unwary hypnotist can even cause harm by leading a subject to believe that an imagined past is actually a repressed memory. Such situations have occurred in accusations of child abuse; people who want to prove the abuse really happened ask leading questions that eventually convince the highly suggestible, hypnotized subject that lead him or her to create false memories of abuse.

Dangers of Hypnosis

- Dissociation
- Conversion symptoms and psychosomatic illnesses

Slide # 75

Bullet # 1 Dissociation refers to an unusual change in one's self-identity. It involves a process whereby specific mental information (e.g. memories, ideas, feelings, perceptions) are lost to conscious awareness and become unavailable to voluntary recall.

Bullet # 2 Therapists commonly use hypnosis to treat conversion disorders, in which a subject has ailments (such as allergic reactions, hysterical blindness and deafness, and visual or auditory hallucinations) that have no physical cause. Although these conversion symptoms are psychosomatic in nature, they cause real physical suffering. Though hypnosis frequently helps alleviate conversion symptoms, it sometimes results in symptom substitution—for example, psychological problems don't disappear but simply manifest themselves in a different way.

Stages of Suggestibility

- Insusceptible
- Hypnoidal
- Light trance
- Medium trance
- Somnambulistic

Slide # 76

About 5 percent of the population is completely insusceptible to hypnosis. About 25 percent are what psychologists call hypnoidal—they show some symptoms but do not go into a complete trance. About 10 percent can reach a light trance, and about 25 percent can achieve a medium trance. Only 25 percent can reach a deep trance similar to that experienced by sleepwalkers (a somnambulistic state).

Best Subjects

- Teens or those in their early 20s
- Above average IQ
- 85% of this group can be hypnotized
- Introverted
- Hysterical

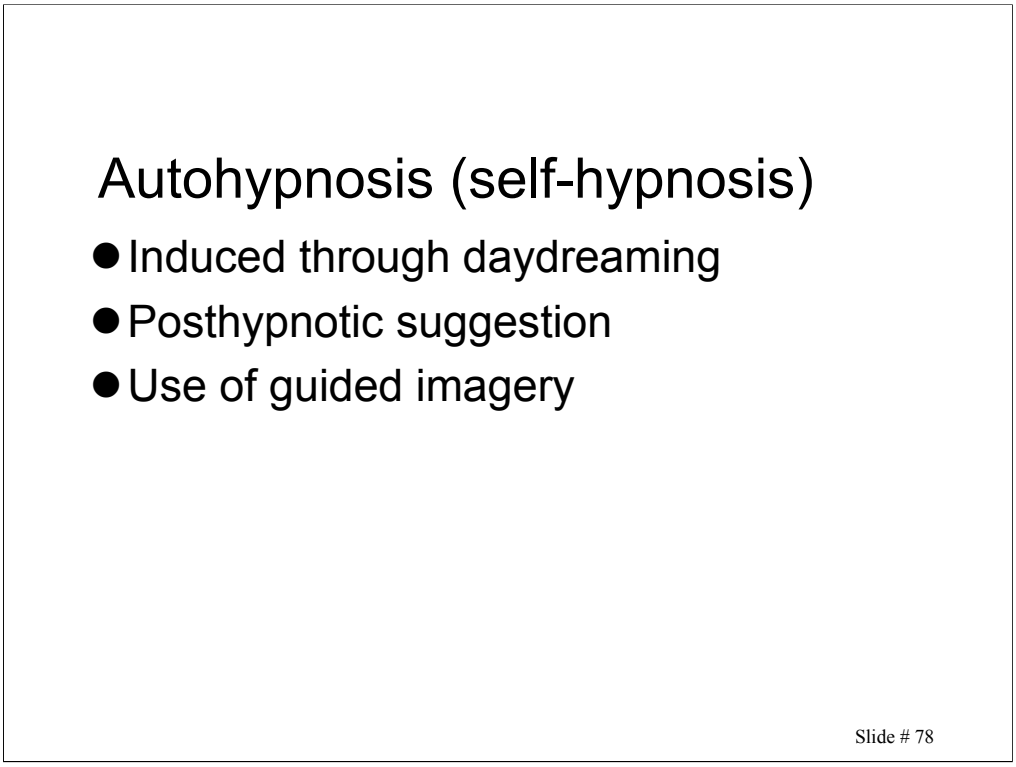
Slide # 77

To get the greatest depth of a trance it will require between 8 and 12 sittings.

Bullet # 1 Teens and young adults make the best subjects for hypnosis because they have been conditioned to be obedient to authority.

Bullet # 2 It is almost impossible to hypnotize someone who is retarded or has subnormal intelligence.

Bullets # 3– 5 About 85 percent of these prime subjects can be hypnotized. The difficult subjects that make up the other 15 percent include students of hypnosis (who are far too aware of the process to achieve a trance), bullheaded stubborn people, the insane, highly introverted people, or people prone to hysteria.



Very little research exists about self-hypnosis, and the phenomenon is not clearly understood. Many people use audio programs to achieve autohypnosis. These programs supposedly help the listener induce a trance through daydreaming, then offer specific posthypnotic suggestions using guided imagery. The effectiveness of these programs is questionable—their greatest value may simply lie in their ability to create a relaxed mood.

Slide # 79

Pioneered by Neal Miller in 1978, biofeedback uses a special apparatus that monitors a person's physiological activities such as heart rate, blood pressure, muscle contractions, brainwaves, and body temperature. The information comes back to the person through a changing tone or a visual display on a monitor. With practice, some people can develop strategies for controlling these physiological processes and in turn reduce stress.

Use of Instruments

- Regulation of psycho-physiological responses
- Instruments measure subtle signs from our bodies of which we are usually not aware

Slide # 80

Biofeedback allows subjects to cope in more productive ways with the inevitable ups and downs of life. Subjects usually attend sessions on a weekly basis and continue them over a period of time. It usually requires a minimum of eight sessions to produce noticeable results. It is also important for the subject to keep a daily record of the events of their day.

Learning How to Relax

- Many problems result from tension
- Tension can be reduced using biofeedback

Slide # 81

No special notes.

Examples of Stress-Related Disorders

- Ulcers
- Neck/shoulder tension and migraine headaches
- Hypertension
- Anxieties
- Phobias

Slide # 82

Biofeedback can alleviate many stress-related disorders. Ulcers are lesions in the stomach that sometimes result from or are made worse by stress. Many of us suffer from neck and shoulder tension, and some people experience tension headaches or even migraines. High blood pressure and hypertension can also be helped using biofeedback. There has even been some success in using biofeedback to treat anxiety-related disorders and phobic reactions.

Learning to Control Muscle Tension

- Place sensors over the muscle you are trying to relax
- The sensor picks up the minute signals of muscle activity

Slide # 83

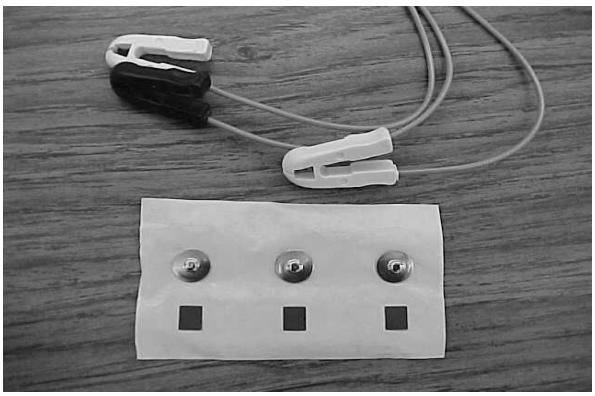
Progressive relaxation training often accompanies biofeedback training. Sensors are placed over the muscle groups where tension occurs. The sensors pick up the minute signals from the muscles and relay them to a mini-computer that records the signal and feeds it back to the subject by using a series of different tones. Subjects then learn how to achieve progressive relaxation by tensing a group of muscles for a few seconds. They then release the tension and focus on the resulting feelings of relaxation. Subjects repeat this process for each of 16 muscle groups throughout the body. Once a subject attains some skill at progressive relaxation, they can use it to calm themselves down in stressful situations.

The AT33 EMG

Slide # 84

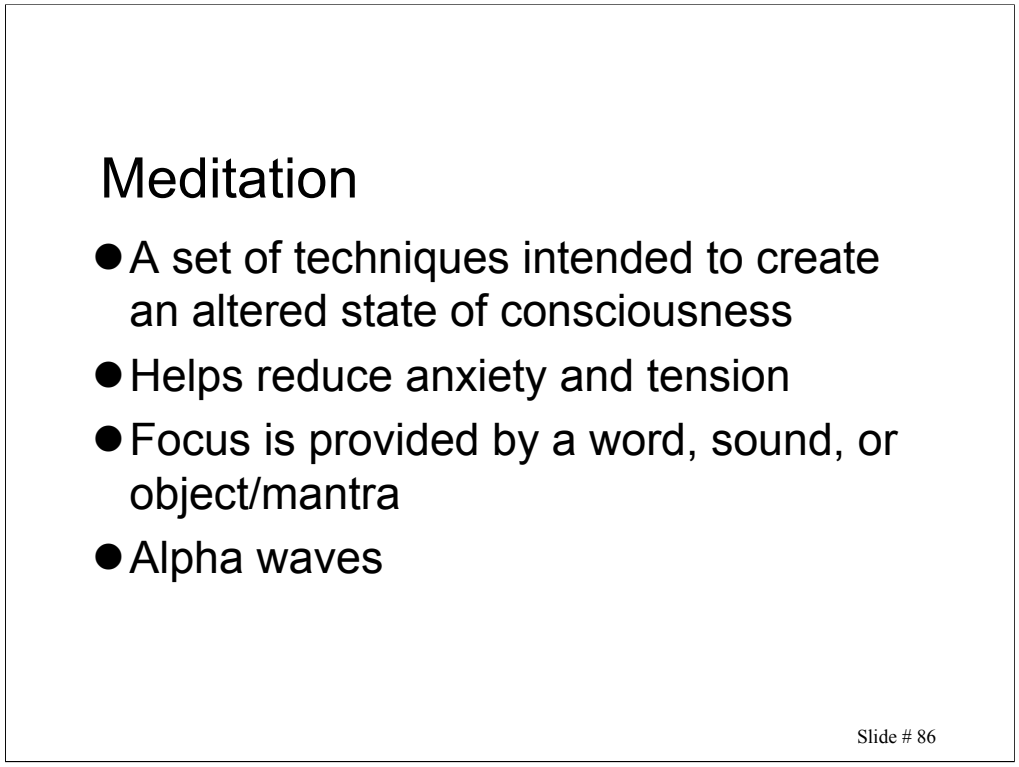
This slide shows a picture of a biofeedback machine. It presents information via an LED light bar and numeric display. This small device is portable and can monitor a patient for many hours. It also has a function that can keep a running record of muscle activity throughout a biofeedback session.

Attaching the Electrode Sensors



Slide # 85

To attach a biofeedback machine's electrode sensors, a subject needs to apply electrode paste to the three metal circles on the back of a "quick stick" disposable electrode patch. Once connected, the machine uses information from the sensors to provide three different types of audio feedback: a piano tone, a continuous tone, and an "integrated click."



Bullet # 1 Meditation is a set of techniques intended to help a person achieve inner peace and tranquility.

Bullet # 2 Supporters of meditation claim that the technique reduces anxiety and tension and improves the quality of life.

Bullet # 3 Common meditation techniques require strict focusing, much like in hypnosis. The focus can be a single word, a sound, or an object. The goal of meditation is to stop thinking about any one specific thing. Some mediators focus on their own breathing or slowly repeat a "mantra," which is a soothing word or phrase. Typically during meditation, muscles relax and breathing and heart rate slow down.

Bullet # 4 Most forms of meditation produce alpha waves that can be measured by an EEG. These waves are similar to those produced in stage 1 of the sleep cycle.