Drug and Alcohol Use, Abuse and Prevention Information

Health Risks

Addiction

Addiction can develop despite a person’s best intentions and in spite of their strength of character.

- Repeated drug use disrupts complex but well balanced systems in the human brain.
- Many people are addicted to more than one substance, complicating their efforts to recover.

Substance dependence

- Developing tolerance to the substance
- Experiencing withdrawal
- Taking in larger amounts
- Expressing a persistent desire to cut down
- Spending great deal of time obtaining
- Giving up or reducing important activities
- Continual usage even with recognition of a problem
- Diagnosed with at least 3 or more symptoms during a 12-month period

Development of an Addictive Behavior

- Often starts when someone does something to bring pleasure or avoid pain
- Harmless or even beneficial if done in moderation
  - Internet
  - Exercise

Physical Dependence

- Physiological state that occurs in response to the frequent presence of the drug/substance

Characteristics of an addiction

- Reinforcement
- Compulsion or Craving
- Loss of Control
- Escalation/tolerance
- Negative Consequences

Characteristics of People with Addictions

- Use substance as a substitute for other healthier coping strategies
- We vary in how we manage our lives. Some have trouble with stress and pain and are more susceptible to addiction.
  - Genetic predisposition
  - Distinct preference for one particular addictive behavior
  - Problem with impulse control and self-regulation
  - Tend to be risk takers.
Substance Dependence Indicators
- Things someone might do demonstrating that they have an attachment to a drug.
- Seven Criteria:
  1. Developing tolerance to the substance
  2. Experiencing withdrawal
  3. Taking in larger amounts or over a longer time
  4. Expressing a persistent desire to cut down
  5. Spending a lot of time obtaining the substance
  6. Giving up or reducing important activities (school, work, social)
  7. Continual usage even with recognition of a problem
- Examples:
  - Carry it 24/7
  - Can’t start in the morning without it
  - Breaking the law
  - Making excuses to use it
  - Agitated if the substance is not in the house
  - Sick without it

Risk Factors for DEPENDENCE
- Combo of physical, psychological, social factors
- May be born with brain chemistry predisposing to drug dependence
- Strong need for excitement/immediate gratification
- Difficulty controlling impulses
- Feelings of rejection, hostility, aggression, anger depression causing one to seek drugs to blot out emotional pain
- Mental illness

Effects

Four Categories of Factors Determine How a Drug Will Affect the Body
1. **Brain chemistry** - drugs produce effects by acting on brain in a characteristic fashion
2. **Drug factors**
   - Pharmacological properties: amount of time of effects, chemical composition, and overall effect on body
   - Dose-response function
   - Time-action function
   - Person’s drug use history
   - Method of use (route) affects strength of drug response
3. **User Factors**
   - Body Mass
   - SET (user expectations)
   - General Health
   - Genetic factors
   - Other drugs already taken? (intensification/interactions)
4. **Social Factors** — the SETTING -- physical and social environment surrounding the drug use.
Drug Routes
- Ingestion (oral): #1 Route
- Inhalation: gases, volatile solvents, poppers, huffing
- Injection
  - Intravenous (IV) (Mainlining)
  - Intramuscular (IM)
  - Subcutaneous (Skin-popping)
- Absorption through skin or tissue linings (Fentanyl, Nicorette, Aspercreme)
- Smoking—Quick route
- Anal

Psychoactive Drugs
- Opioids (Narcotics)
  - Natural or synthetic (laboratory made)
    - Relieve pain
    - Cause drowsiness, lethargy, apathy, inability to concentrate
    - Induce euphoria
  - Methods of administration: injection, snort, sniff, smoke
  - Tolerance can develop quickly
  - Abuse usually results in dependence
  - Symptoms of overdose
    - Respiratory depression
    - Coma
    - Constriction of pupils

Narcotics
- Naturally Occurring Narcotics
  - Opium from the poppy plant
  - Morphine
  - Codeine
- Quasi-Synthetic Narcotics
  - Heroin
  - Dilaudid
  - Percodan
- Synthetic Narcotics
  - Demerol
  - Methadone
  - Darvon

Opioids in the News
- Vicodin
- OxyContin

Central Nervous System Depressants aka: Downers, Downs
- Sedative Hypnotics (Sedation= the induction of a calm, relaxed, often sleepy state)
  - Slow down the overall activity of the CNS (Brain and spinal cord). Decreases nervous or muscular activity, causing drowsiness or sleep
- Includes alcohol, barbiturates, anti-anxiety (tranquilizers), Quaaludes, Chloral Hydrate, GHB (gamma hydroxy buterate)
- Effects on the body: reduce anxiety, cause mood changes, impair muscle coordination, slur speech, induce sleep
- Medical uses: reduce anxiety, sedate patients, induce sleep
- From use to abuse
  - Prescription
  - Rohypnol (raves)
  - GHB (dance club)
  - Peer introduction
- Often severe withdrawal

Central Nervous System Stimulants
- Includes cocaine, amphetamines (uppers), nicotine
- Speeds up activity of the nervous or muscular system
- Cocaine (Charlie, charge, chang, chaz, coke, coca paste, draw, snow, toot)
  - Found in coca plant leaves
  - Methods of use: snort, IV, process with water and baking soda to yield crack.
- Highly addictive in all forms
- Effects:
  - User experiences a short lived (5-20 min) high level of alertness and euphoria
  - HR, BP increases, vessels constrict, pupils dilate, muscle tension, increase in motor activity
- Abuse and Dependence
- Use during pregnancy
  - Miscarriage
  - Premature labor
  - Stillbirth
  - Fetal cocaine exposure

CNS Stimulant Drugs
- Amphetamines: Synthetic stimulant
  - Effects: makes user feel more alert, less fatigued, increases activity, & elevates mood
  - From use to abuse: use begins most often to cope with a temporary situation
    - Abuse causes hallucinations, paranoia, delusions, incoherence, s/s of Parkinson's
      - Methamphetamine: increase in activity and elevation in mood in almost all users
    - Ice
    - Crystal
- Ritalin: (Methylphenidate) is used to treat ADD/ADHD (prescription)
- Ephedrine - found in Chinese herbal tea called Ma Haung
- Caffeine
  - Stimulates CNS resulting in increased mental awareness, alertness, quickening of thought processes, sense of well-being.
  - Withdrawal?
  - **Most Popular Psychoaddictive Drug**
Types of Drugs

Methamphetamine

Descriptive Stages of Methamphetamine Use
- Rush (20 – 40 minutes)
- High (3 days)
- Binge
- Crash

Short-term Effects
- Anxiousness and nervousness
- Incessant talking
- Extreme moodiness and irritability
- Purposeless, repetitive behavior: picking at skin or pulling out hair
- Sleep disturbances
- False sense of confidence and power; aggressive or violent behavior

Longer Term Signs Of Abuse
- Disinterest in previously enjoyed activities
- Severe depression.
- Dry mouth, sores in and around the mouth
- Weight loss
- Irritability, temper outbursts, aggression

Medical Complications
- Rapid/irregular heart rate
- Elevated blood pressure
- Seizures
- Damaged blood vessels
- Skin abscesses
- Acute lead poisoning
- Interference with the neurotransmitter dopamine

Meth Psychosis
- Intense paranoia
- Confusion, anxiety
- Visual and auditory hallucinations
- Out-of-control rages
- Delusions
Marijuana

Marijuana
- THC: active ingredient (tetrahydrocannabinol)
- Varies in potency based upon part of the plant, variety, growing conditions
- Smoked or ingested
- **Most frequently used illegal drug in the U.S.**
- **Acute Physiological Effects:** increased HR, dilation of certain blood vessels in the eyes
- **Acute Psychological Effects:** impaired memory, attention lapses, paranoia, depersonalization
- **Chronic Physiological Effects:** similar to tobacco smoking even though marijuana smokers smoke fewer cigarettes than tobacco smokers. Marijuana smoke contains more carcinogens, and smoke is inhaled more deeply.
- **Chronic Psychological Effects:** Amotivational syndrome

Amotivational Syndrome
- Lack of motivation
- Apathy
- Loss of interest in achievement
- Introversion
- Diminished scholastic or job performance

Hallucinogens

Hallucinogens
- Group of drugs sometimes called “psychedelics”
- Effect is to alter user’s perceptions of reality, feelings and thoughts. Produce hallucinations, both visual and auditory
- Includes:
  - LSD- (lysergic acid diethylamide): powerful, alters time, user has vision, hearing and mood changes, distortions in perceiving the body. Altered state of consciousness. Lasts 6-9 hours. Interferes with normal function of neurotransmitters. Flashbacks.
  - Mescaline: derived from *peyote cactus*. Ceremonial drug of Native Americans. Generates an LSD effect with some amphetamine properties. Can last 12 hrs.
  - Psilocybin/Psilocin: psychoactive ingredient in *Psilocybe mexicana* (magic mushrooms). Acts on the brain for ~2-4 hours.
  - MDMA (ecstasy)—hallucinogenic and amphetamine properties
  - PCP (phencyclidine) AKA Angel Dust. Causes user to feel removed from their body. Classified as a hallucinogenic/analgesic. Lasts about 4-6 hours. Alters proprioception, the sensation of your body’s position and movement.
- **Synesthesia**—feelings of depersonalization and changes in the perceived relationship between the self and external reality
• **Altered state of consciousness** determined by expectations and setting
• Drugs have a certain aura. One class of drugs that people claim they seek in order to search for a religious or mystical experience, to explore new worlds.
• **Flashbacks**- perceptual distortions and bizarre thoughts occurring after the drug has been entirely eliminated from the body

**Designer Drugs**
• Hallucinogenic amphetamines
• Illegally manufactured with effects in the hallucinogenic and amphetamine categories
• Includes:
  - Ketamine
  - GHB
  - Ecstasy

**GHB**
• Originally developed as a sleep-aid
• GHB (Gamma hydroxybutyrate) usually comes as an odorless liquid, slightly salty to the taste, and sold in small bottles or powder or capsule form.
• Street names: Georgia Home Boy, Grievous Bodily Harm, Liquid Ecstasy, Liquid X, Liquid E, Liquid G
• Classified as a sedative-hypnotic (CNS depressant)
• At lower doses GHB has a euphoric effect similar to alcohol, and can make the user feel relaxed, happy and sociable.
• In higher doses, it causes sedation, loss of consciousness, depression in respirations, coma, death. More dangerous if combined with alcohol.
• Wide variety of purity, so increases the risk of poisoning and OD.
• Easy to mix in drugs, so has been used as date rape drug.

**MDMA--Ecstasy**
• MDMA (3-4 methylenedioxymethamphetamine) is a synthetic, psychoactive drug chemically similar to the stimulant methamphetamine and the hallucinogen mescaline.
• Street names for MDMA: Ecstasy, Adam, XTC, hug, beans, and love drug, Lover’s Speed.
• MDMA exerts its primary effects via serotonin—a neurotransmitter in the brain
• Usually taken orally in pill form. Ecstasy tablets may contain other substances in addition to MDMA, such as ephedrine (a stimulant); ketamine; caffeine; cocaine; and methamphetamine.
• MDMA, once used primarily at dance clubs, raves, and college scenes, is being used in a number of other social settings.
• Ecstasy has both mild hallucinogenic and amphetamine-like effects
  - Increased HR, BP, Temp, energy, alertness.
  - Decreases in fear, aggression and defensiveness.
  - Perception and cognitive distortions.
• Stimulant effects and physical activity in a club can combine to cause high body temp and fatal dehydration.
After it wears off, user may feel tired, depressed, moody.
Tolerance develops quickly. OD is possible.
MDMA can permanently damage serotonin-producing neurons in the brain, and may lead to persistent problems with verbal and visual memory.

Ecstasy Effects

Physical Effects
MDMA can interfere with body's ability to regulate temperature
- Can lead to sharp increase in body temperature-- resulting in liver, kidney, and cardiovascular system failure.
Risks: MDMA abusers face many of the same risks as users of other stimulants (cocaine and amphetamines) including:
- Increases in heart rate and blood pressure, muscle tension, involuntary teeth clenching, nausea, blurred vision, fainting, chills or sweating.
Psychological Effects:
- Confusion, depression, sleep problems, drug craving, severe anxiety.
- May occur during and sometimes days or weeks after taking MDMA.

Additional Hidden Risk: Drug Purity

Rohypnol
- Street Names: Roofies, Roche, Forget-me pill, roachies, ruffies, roofenol, La Rocha, rope.
- Route: Usually taken orally in pill form but can be snorted or injected.
- Effects: Low doses can relieve anxiety, cause muscle relaxation, produce general sedative effects. Higher doses can cause loss of muscle control, and esp. if taken with EtOH, can cause death.
- Roofies are 10X more potent than valium, another CNS depressant.
- Tolerance and Physical dependence can occur.
- Can cause anterograde amnesia, the loss of memory of what happened while under the influence of the drug---this has led to the use of roofies as a date rape drug. To reduce this risk, the manufacturer, ROCHE, is reformulating the pills to make them brightly colored and slower to dissolve.

Inhalants
- Sniffing, snorting, huffing, bagging---Inhaling easily obtained chemicals into the lungs with rapid absorption
- Effects are similar to an anesthetic: slows down body functions
  - Volatile solvents: paint thinner, glue, gas
  - Aerosols: sprays containing propellants an solvents
  - Nitrates including butyl nitrite and amyl nitrite
  - Anesthetics: nitrous oxide (laughing gas)
- Big problem with inhalants:
  - Readily available in the home: aerosols, paint thinners, glues, and other household chemical are all substances used to "get high." The user sprays the substance into a paper bag or pours it onto a piece of cloth, then breath in the chemical.
Readily available substances are often the most deadly.

Users can suffocate, have a stroke, choke to death, and damage their lung, livers, kidney, and other organs.

The Damage That Inhalants Can Do

- **Brain**
  - Dissolve Myeline Sheath resulting in brain cell death
- **Blood**
  - Block the oxygen carrying capacity
- **Heart**
  - Sudden Sniffing Death Syndrome
  - Interferes with the hart’s pace making mechanism
- **Kidneys**
  - Lose control of amount of acid in the blood causes kidney arrest
- **Lungs**
  - Causes asphyxiation as it displaces oxygen in the lungs
- **Muscles**
  - Leads to muscle wasting and reduced muscle tone and strength

*Early identification and intervention are the best ways to stop inhalant abuse before it causes serious health consequences. Parents, educators, family physicians, and other health care practitioners should be alert to the following signs of a serious inhalant abuse problem:*

  - Chemical odors on breath or clothing
  - Paint or other stains on face, hands, or clothes
  - Hidden empty spray paint or solvent containers and chemical-soaked rags or clothing
  - Drunk or disoriented appearance
  - Slurred speech
  - Nausea or loss of appetite
  - Inattentiveness, lack of coordination, irritability, and depression

**Ergogenic Drugs**

- Substances enhancing muscular performance
- Steroids: Anabolic or androgenic & Human Growth Hormone
  - User Risks for Men:
    - Severe acne (back acne)
    - Protruding brow
    - Shrunken testicles
    - Squared jaw
  - Risks for women:
    - Decreased sex drive
    - Male traits (deeper voice, facial hair)
    - Smaller breasts
    - Dysmenorrhea
    - Enlarged clitoris
Prevention

Treatment Programs
- Primary Prevention: aimed at avoiding initiation of drug use “JUST SAY NO”
- Secondary Prevention: early detection and treatment (drug testing??)
- Tertiary: Treatment and rehabilitation
- Most of our efforts in the U.S. are tertiary
  - Drug substitution: Methadone for heroin and Nicorette for nicotine addiction
  - Hospitalization
    - Detox—elimination of toxic substances from the body. The length of detox, and severity of withdrawal depends on the strength of the drug, and the individual’s level of addiction
  - Treatment Centers and Recovery Homes
    - Counseling and Mental Health Services
- Self-help groups and peer counseling (12-Step Programs such as AA, NA)

Signs of Drug Dependence
- Withdrawal
- Rebellious
- Loss of interest
- Decline in school performance
- Change in friends
- Change in sleep patterns
- Money issues

Enabling
- Enabling: People close to the dependent person inadvertently support behaviors by denying a problem exists. Enabler makes excuses, tries to hide problem from others. Often results in addict delaying seeking professional treatment.
- Someone close to the addict making it easier for him/her to use
- EXAMPLES of enabling
  - Your examples
- Something to think about: is a designated driver an enabler?

Codependency
- Relationship in which a non-substance abusing partner or family member is controlled by the user’s behavior.
- Codependent people often engage in enabling behaviors.
- Codependent persons may believe that love, approval, and security are based upon their taking care of the abuser. Hope their good intentions will help the user stop.

Things to Consider about Codependency
- Have you ever given one chance, and another, and another and another for someone to stop?
- Made excuses or lied for a user’s behavior/absences?
- Loaned money to someone to continue drug use
- Stayed up late or gone searching for someone using drugs?
• Felt embarrassed for actions of someone using drugs?
• Ignored drug abuse because the individual got defensive when it was brought up?
• Not confronted friend/loved one who was high or intoxicated?

Role of Drugs in Your Life
• Issues to Consider
  o You will encounter drugs at some time
  o Consider this rather than drugs:
    ▪ Make your own decisions
    ▪ Engage in a variety of activities you enjoy doing
    ▪ Realize you are entitled to have your opinion
    ▪ Work on your self-esteem

Think About This Before Taking A Psychoactive Drug
• What are the risks involved? (injury, death, abuse, dependence)
• Is this substance compatible with your life goals? (education, career, family)
• Personal ethics about drugs
• Financial costs
• Are you trying to solve a deeper problem or issue? Think about WHY you need your mood or behavior changed or altered

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