



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

Understanding Addiction

Introduction

So many people entering the field of addiction treatment come with the mindset of “I have personal experience and that is enough to help others” or “I want to help others and I have clinical knowledge of therapy and that is enough”. While these experiences and knowledge will add to your counseling experience it will not be enough to frame your whole scope of practice.

Most of society has some level of knowledge and understanding of drug and alcohol use and abuse. There are articles, books, TV shows, movies etc. Of course, most have some level of personal experience with addiction. Does this mean you have an understanding of addiction, how it happens, how it progresses, how it effects our brains, our bodies, our psyche??? The answer is NO.

This course covers a significant amount of information to help you see the whole picture of addiction, a picture that goes beyond what our client’s use, how much and how long. To be an addiction professional your level of knowledge and understanding of addiction will help you work clients on a different level. You will be able to assist the client in seeing themselves as a whole person, not just an addict. You will have the tools to educate, guide and answer questions posed by your client’s with confidence and clarity.

Let’s start by defining addiction.

Definition of Addiction

American Society of Addiction Medicine (ASAM)

Public Policy Statement: Definition of Addiction

Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behaviors.

Addiction is characterized by inability to consistently abstain, impairment in behavioral control, and craving, diminished recognition of significant problems with one’s behaviors and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

Dictionary.com

The state of being enslaved to a habit or practice or to something that is psychologically or physically habit-forming, as narcotics, to such an extent that its cessation causes severe trauma.

Merriam-Webster Dictionary

1. (Noun) The quality or state of being addicted <*addiction* to reading>. An unusually great interest in something or a need to do or have something.
2. A strong and harmful need to regularly have something (such as a drug) or do something (such as gamble).
3. (Medical Definition) Compulsive need for and use of a habit-forming substance (as heroin, nicotine, or alcohol) characterized by tolerance and by well-defined physiological symptoms upon withdrawal; broadly: persistent compulsive use of a substance known by the user to be harmful.

Wikipedia

Addiction is a state characterized by compulsive engagement in rewarding stimuli, despite adverse consequences. It can be thought of as a disease or biological process leading to such behaviors. The two properties that characterize all addictive stimuli are that they are (positively) reinforcing (i.e., they increase the likelihood that a person will seek repeated exposure to them) and intrinsically rewarding (i.e., they activate the brain's "reward pathways", and are therefore perceived as being something positive or desirable).

Psychology Today

Addiction is a condition that results when a person ingests a substance (e.g., alcohol, cocaine, nicotine) or engages in an activity (e.g., gambling, sex, shopping) that can be pleasurable but the continued use/act of which becomes compulsive and interferes with ordinary life responsibilities, such as work, relationships, or health. Users may not be aware that their behavior is out of control and causing problems for themselves and others.

National Institute on Drug Abuse (NIDA)

Addiction is defined as a chronic, relapsing brain disease that is characterized by compulsive drug seeking and use, despite harmful consequences. It is considered a brain disease because drugs change the brain; they change its structure and how it works. These brain changes can be long lasting and can lead to many harmful, often self-destructive, behaviors.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

What is the Medical Definition of Addiction

- 1. Tolerance.** Do you use more alcohol or drugs over time?
- 2. Withdrawal.** Have you experienced physical or emotional withdrawal when you have stopped using? Have you experienced anxiety, irritability, shakes, sweats, nausea, or vomiting? Emotional withdrawal is just as significant as physical withdrawal.
- 3. Limited control.** Do you sometimes drink or use drugs more than you would like? Do you sometimes drink to get drunk? Does one drink lead to more drinks sometimes? Do you ever regret how much you used the day before?
- 4. Negative consequences.** Have you continued to use even though there have been negative consequences to your mood, self-esteem, health, job, or family?
- 5. Neglected or postponed activities.** Have you ever put off or reduced social, recreational, work, or household activities because of your use?
- 6. Significant time or energy spent.** Have you spent a significant amount of time obtaining, using, concealing, planning, or recovering from your use? Have you spend a lot of time thinking about using? Have you ever concealed or minimized your use? Have you ever thought of schemes to avoid getting caught?
- 7. Desire to cut down.** Have you sometimes thought about cutting down or controlling your use? Have you ever made unsuccessful attempts to cut down or control your use?

Illegal Drugs in America – A Modern History

Since the 19th century when Americans first discovered new wonder drugs like morphine, heroin, and cocaine, our society has confronted the problem of drug abuse and addiction. Drug abuse and addiction has been a social problem in America for nearly a century. What may be surprising is that many of these illegal drugs were first introduced by doctors as legal over-the-counter and prescription medications. Here's more about the history of illegal drugs in America.

When the 20th century began, the United States--grappling with its first drug epidemic--gradually instituted effective restrictions: at home through domestic law enforcement and overseas by spearheading a world movement to limit opium and coca crops. By World War II, American drug use had become so rare, it was seen as a marginal social problem. The first epidemic was forgotten.

During the 1960s, drugs like marijuana, amphetamines, and psychedelics came on the scene, and a new generation embraced drugs. With the drug culture exploding, our government developed new laws and agencies to address the problem. In 1973, the U.S. Drug Enforcement



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

Administration was created to enforce federal drug laws. In the 1970s, cocaine reappeared. Then, a decade later, crack appeared, spreading addiction and violence at epidemic levels.

Today, the DEA's biggest challenge is the dramatic change in organized crime. While American criminals once controlled drug trafficking on U.S. soil, today sophisticated and powerful criminal groups headquartered in foreign countries control the drug trade in the United States.

History of Marijuana in America

Perhaps one of the oldest drugs in American history is marijuana, which was grown by the Jamestown settlers around 1600. Before the Civil War marijuana was a major source of revenue for the U.S., and marijuana plantations flourished during the 19th century. Marijuana was widely used as a medicinal drug from 1850 to 1937 and could even be purchased over the counter in pharmacies and general stores. Marijuana became an attractive alternative to alcohol after the price of alcohol was raised in 1920.

In the 1930s, studies began to emerge that linked marijuana use by lower class communities to crime and violence, leading to the eventual banning of marijuana in 1937. In the 1960s, marijuana use became a popular drug of choice among white Beatniks, and stricter penalties for marijuana offenses were passed under the Comprehensive Drug Abuse Prevention and Control Act of 1970. Since then, citizens and politicians alike have pushed to have marijuana decriminalized, but it remains an illegal drug in the U.S. Marijuana was, however, legalized for medical use in California in 1966 for people with serious illnesses, and medical marijuana still remains legal in some states.

History of Methamphetamine in America

The stimulant amphetamine first became popular in the medical community in the 1920s, where it was used for stimulating the central nervous system, raising blood pressure, and enlarging nasal passages. Amphetamines were widely distributed to soldiers during World War II to combat fatigue and improve endurance and mood, and were prescribed by doctors after the war to help fight depression.

Amphetamine abuse began during the 1930s when it became an over-the-counter inhalant drug marketed under the name Benzedrine. As more and more people legally used amphetamines, an illegal black market began to emerge. Illegal amphetamines were used commonly by truck drivers who wanted to stay alert on long commutes and athletes looking to improve their performance. Students also began taking illicit amphetamines to help them study.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

The practice of injecting amphetamines gained popularity in the 1960s, which led the emergence of underground labs that were mainly controlled by outlaw motorcycle groups. During the 1970s, amphetamine use began to decline due to increased public awareness of its dangers and remained on a decline until the 1990s when crystal methamphetamine, a smokable form of methamphetamine, emerged. Since then, crystal meth has remained a popular drug of choice for three main types of users: high school and college students; blue-collar Caucasians; and unemployed persons in their 20s and 30s.

History of Cocaine in America

Cocaine was a popular medical drug in Europe for decades before it became popular in America. In 1886, “Coca-Cola” was introduced and contained syrup derived from coca leaves. That same year the Surgeon-General of the United States Army endorsed medical use of cocaine. Over the next few decades various unregulated medicinal “tonics” were sold in the U.S. containing cocaine, and hundreds of Hollywood silent movies depicted scenes of cocaine use. By 1902 there were an estimated 200,000 cocaine addicts in the U.S.

Cocaine was finally outlawed in 1914 and declined in usage over the decades until it regained popularity in the 1970s as a recreational, glamorized drug, eventually reaching its peak in 1982 with 10.4 million users. Some U.S. media declared cocaine as non-addictive and it was viewed as a relatively harmless drug until the emergence of crack in 1985.

History of Crack Cocaine in America

Crack, a form of cocaine that is sold as “rocks” and smoked, first appeared in large U.S. cities around 1985. Crack became a popular alternative to cocaine in urban and working-class areas because it was much cheaper than cocaine. This led to a dramatic increase in crack use known as the “Crack Epidemic of the 1980s.” A major crackdown on crack abuse was launched, leading to its eventual decline in usage.

History of LSD in America

LSD first emerged on the American scene during the 1950s, when the U.S. military and CIA researched the use of LSD as a “truth drug” that could be used to make prisoners talk. This led the psychiatric community to become interested in LSD for its possible therapeutic capabilities for depressed, psychotic and epileptic patients.

Illegal use of LSD began to escalate during the late 1950s and 1960s as mental health professionals and research study participants began to distribute the drug among their friends. LSD was only available through connections to the medical field until 1962, when a black market for LSD emerged in America. LSD was made illegal in 1966 and, soon after, an LSD black



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

market emerged. Users began experiencing growing problems with the “new” LSD, which was contaminated and of a poorer quality than the medical-grade LSD they were used to. Despite its poorer quality, LSD was a popular drug of choice for “hippies” during the mid- to late-1960s. LSD use declined in the 1970s and 1980s, but reemerged in the 1990s in the rave subculture along with other hallucinogens.

History of Heroin in America

Opiates were popular in the United States throughout the 19th century, particularly among upper- and middle-class women who were prescribed tonics and elixirs containing opium to cure “female problems.” The practice of smoking opium was introduced in the 1850s and 1860s by Chinese laborers who came to the U.S. to work on railroads.

The opiate-based drug morphine was created in 1803 and widely used during the American Civil War as an injectable pain reliever, leading to the first wave of morphine addiction. Interestingly, the drug heroin was created in 1895 and marketed three years later as a potential solution to the increasing problem of morphine addiction. The charitable St. James Society even mailed free samples of heroin to morphine addicts as part of a campaign against morphine addiction. As a result, heroin addiction began to take root and grow.

The second major wave of opiate addiction in America began in the 1930s and 1940s Harlem jazz scene, and again during the Beatnik subculture of the 1950s. During the Vietnam War, heroin abuse became rampant among U.S. soldiers stationed abroad, with an estimated 10% to 15% of servicemen addicted to heroin. Heroin users began smoking and snorting heroin after improvements were made in the purity of street heroin in the 1980s and 1990s. As a result, heroin usage rose significantly in the 1990s.

Brief Overview of Addiction – The Basics

Why study drug abuse and addiction?

Abuse of and addiction to alcohol, nicotine, and illicit and prescription drugs cost Americans more than \$700 billion a year in increased health care costs, crime, and lost productivity. Every year, illicit and prescription drugs and alcohol contribute to the death of more than 90,000 Americans, while tobacco is linked to an estimated 480,000 deaths per year.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

How are drug disorders categorized?

NIDA continues to use the term “addiction” to describe compulsive drug seeking despite negative consequences. However, “addiction” is not considered a specific diagnosis in the fifth edition of The Diagnostic and Statistical Manual of Mental Disorders (DSM-5)—a diagnostic manual used by clinicians that contains descriptions and symptoms of all mental disorders classified by the American Psychiatric Association (APA).

In 2013, APA updated the DSM, replacing the categories of substance abuse and substance dependence with a single category: substance use disorder. The symptoms associated with a substance use disorder fall into four major groupings: impaired control, social impairment, risky use, and pharmacological criteria (i.e., tolerance and withdrawal).

What is the difference between physical dependence, dependence, and addiction?

Physical dependence is not equivalent to dependence or addiction, and may occur with the regular (daily or almost daily) use of any substance, legal or illegal, even when taken as prescribed. It occurs because the body naturally adapts to regular exposure to a substance (e.g., caffeine or a prescription drug). When that substance is taken away, symptoms can emerge while the body re-adjusts to the loss of the substance. Physical dependence can lead to craving the drug to relieve the withdrawal symptoms. Drug dependence and addiction refer to substance use disorders, which may include physical dependence but must also meet additional criteria.

How do drugs work in the brain to produce pleasure?

Nearly all addictive drugs directly or indirectly target the brain’s reward system by flooding the circuit with dopamine. Dopamine is a neurotransmitter present in regions of the brain that regulate movement, emotion, cognition, motivation, and feelings of pleasure. The overstimulation of this system, which rewards our natural behaviors, produces the euphoric effects sought by people who use drugs and teaches them to repeat the behavior.

Is drug abuse a voluntary behavior?

The initial decision to take drugs is mostly voluntary. However, when addiction takes over, a person’s ability to exert self-control can become seriously impaired. Brain-imaging studies from people addicted to drugs show physical changes in areas of the brain that are critical for judgment, decision-making, learning, memory, and behavior control. Scientists believe that these changes alter the way the brain works and may help explain the compulsive and

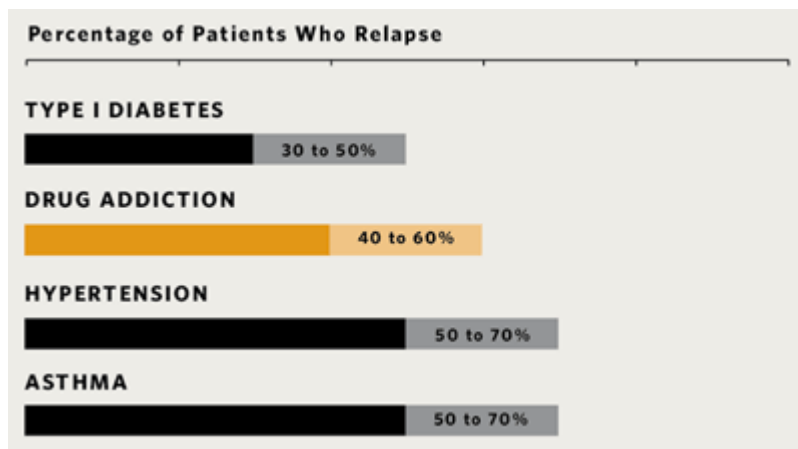
destructive behaviors of an addicted person.

Can addiction be treated successfully?

Yes. Addiction is a treatable, chronic disease that can be managed successfully. Research shows that combining behavioral therapy with medications, where available, is the best way to ensure success for most patients. Treatment approaches must be tailored to address each patient's drug use patterns and drug-related medical, psychiatric, and social problems.

How many people die from drug use?

The Centers for Disease Control and Prevention (CDC) report that there were more than 40,000 unintentional drug overdose deaths in the United States in 2011, a 118-percent increase since 1999. More than 22,000 people die every year from prescription drug abuse, more than heroin and cocaine combined.



Relapse rates for drug-addicted patients are compared with those suffering from diabetes, hypertension, and asthma. Relapse is common and similar across these illnesses (as is adherence to medication). Thus, drug addiction should be treated like any other chronic illness, with relapse serving as a trigger for renewed intervention.

Source: McLellan et al., JAMA, 284:1689-1695, 2000.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

How Common is Drug or Alcohol Addiction

Approximately 10% of any population is addicted to drugs or alcohol. **Addiction is more common than diabetes**, which occurs in approximately 7% of the population.

Addiction crosses all socio-economic boundaries. 10% of teachers, 10% of plumbers, and 10% of CEOs have an addiction.

The terms alcohol addiction, alcoholism, and alcohol dependence are all equivalent. The same is true for the terms drug addiction and drug dependence.

The Cost of Addiction

The dollars and cents cost of addiction is mind boggling. At least twice as many people die from alcoholism in the US every year as die from motor vehicle accidents.

Alcohol intoxication is associated with 40-50% of traffic fatalities, 25-35% of nonfatal motor vehicle injuries, and 64% of fires. Alcohol is present in nearly 50% of homicides, either in the victim or the perpetrator.

Alcohol intoxication is involved in 31% of fatal injuries, and 23% of completed suicides.

One study found that 86 % of homicide offenders, 37 % of assault offenders, and 57 % of men and 27 % of women involved in marital violence were drinking at the time of their offense.

Approximately 10% of any population is addicted to drugs or alcohol. **Addiction is more common than diabetes**, which occurs in approximately 7% of the population.

Addiction crosses all socio-economic boundaries. 10% of teachers, 10% of plumbers, and 10% of CEOs have an addiction.

Five Things to Know about Alcohol

1. Almost one in 10 people in the United States experience alcohol dependence at some time during their lives.

Alcoholism occurs in both sexes, all ethnic and racial groups, and in people from all walks of life. It develops when someone drinks too much too often. Drinking more than three drinks a day if



The Academy for
Addiction Professionals

6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

you are a woman or four drinks if you are a man increases health risks, including risk for alcohol dependence.

2. Alcoholism usually starts in the late teens or early twenties, yet most people don't seek help until 15- 20 years later.

Earlier treatment is more successful and results in far less destruction to individuals and their families.

3. Only about one in 10 people with alcoholism ever receives professional treatment.

Recent research suggests that newer medications are effective treatments for alcohol dependence when combined with brief counseling by a health professional. This means that many more people can receive treatment from their family, or primary care, doctor. Specialized alcohol counseling also works well, and all approaches (12-step, cognitive and motivational) are about equally effective. Some people will need more intensive programs.

4. Whatever treatment a person receives, the most important thing is they stick with it. The longer a person stays in treatment, the more likely they are to succeed.

If a person has a relapse, recognize that this is a chronic disease, and try to help them get back on track as quickly as possible. If they are taking medication for alcohol dependence, be sure to check they are taking it as prescribed. Encourage them not discontinue it even if they don't notice feeling any different. The medicine is working if they are not drinking, or if they are drinking much less.

5. Twelve-step and other support programs really do work! Recovering people who attend groups on a regular basis do better than those who do not.

If the recovering person is taking medication for alcohol dependence, allay worries about whether it is a "crutch." Medication can improve recovery rates by 20-40% in the first three months after stopping. Also, it's fine to take medication and to attend support groups or alcohol counseling.

Instructor Note: There are many, many more statistics and trends now, research has grown by leaps and bounds in the area of addiction and because of that we know so much more than ever before. Which in turn finally arms us, the addiction counselor with the ability to answer some of our clients baffling yet heartfelt questions about why they do what they do.







Let's go to models & theories of addiction!

Theories of Addiction and Models of Recovery

Chapter 1

TAP 21 Competency: Understand a variety of models and theories of addiction and other problems related to substance use.

5 Theories of Addiction

-  MEDICAL MODEL
-  DISEASE MODEL
-  PSYCHODYNAMIC MODEL
-  SOCIAL MODEL
-  MORAL MODEL
-  BIO-PSYCHO-SOCIAL MODEL

Medical Model

Addiction as a “brain disease”

- Neurotransmitter imbalance
- Disease Model:
- Agent: drug
- Vector: dealers
- Host: addict
- Need to “stamp out” the disease by eliminating drugs
- Drug antagonist medications: Welbutrin; naltrexone; antabuse

Disease Model

Classified addiction and alcoholism as a disease

- chemical/biological issue -primary, progressive chronic
- If left untreated, fatal
- Obsession to use drugs or drink
- Has biological, environmental, genetic and neurological sources of origin

- Attributes addiction and alcoholism to a genetic predisposition - influenced and exacerbated by environmental factors.

Psychodynamic Model:

- Drug abusers are “self-medicating”
- Drug abuse is a symptom of underlying psychological problems
- Drug use is a maladaptive psychological coping strategy
- Drug abusers need to resolve internal conflict, and when they do, drug use will be unnecessary

Social Model:

- Drug use is a learned behavior
- People use drugs because drug use is modeled by others
- Peer pressure
- Environmental effects lead to drug use (advertising, etc.)
- Drug use is a maladaptive relationship negotiation strategy

Moral Model (criminal justice model):

- Addicts are “weak” and can overcome a compulsion to use with willpower
- Drug abusers choose to use drugs
- Drug abusers are anti-social and should be punished
- Drugs are evil

Bio-psycho-social Model:

- All the above are true, to greater or lesser degrees
- Each person’s drug use is a result of some aspects of some or all the other models
- Treatment and recovery require addressing the body, mind, social environment, and spiritual needs of an individual (including nutrition, employment, family issues, psychological issues, etc.
- Developmental approach to recovery.
- Maslow’s Hierarchy of Needs

Models of Recovery

- Developmental Model of Recovery
- 12-Step Recovery
- Rational Recovery
- SMART Recovery

The Developmental Model of Recovery

The Stages of the DMR

The DMR consists of six progressive stages of recovery - transition, stabilization, early recovery, middle recovery, late recovery, and maintenance. Each stage has a primary focus. During transition the primary focus is upon recognizing the addiction and developing the motivation to become abstinent. The primary focus of stabilization is recuperation from the physical, psychological, and social damage caused by addiction. Early recovery focuses upon identifying and changing the deeply entrenched patterns of thoughts, feelings, and behaviors that drive people back into the addiction. Middle recovery revolves around issues related to lifestyle repair and the development of a balanced and health promoting lifestyle. Late recovery focuses upon the resolution of family of origin issues that create pain and problems in recovery. Maintenance is the lifelong process of growth and change needed to keep from relapsing back into the addiction.

The Stages of Recovery - Central Themes

1. Transition - Recognition of Addiction
2. Stabilization - Recuperation
3. Early Recovery - Changing Addictive Thoughts, Feelings, and Behaviors
4. Middle Recovery - Lifestyle Balance
5. Late Recovery - Family of Origin Issues
6. Maintenance - Growth and Development

The DMR can be viewed as a system for prioritizing problems. It helps recovering people to answer the questions "Where should I start?" and "What should I do first?" What should I do next?



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

The DMR is flexible. Having a primary focus for each stage of recovery doesn't mean that other issues are ignored. It means that emerging problems are dealt with in the context of the current stage of recovery.

Marital problems, for example, can occur at any stage of recovery, but would be dealt with differently in the context of each stage.

During stabilization the marital problems would be used to mobilize a family intervention designed to motivate the addict into treatment.

In stabilization, a short term "no divorce" contract would be negotiated and the couple would agree to defer in-depth work on the relationship until stabilization is complete.

In early recovery both the addict and their spouse would be focused upon looking at how their marital problems are a reflection of lingering patterns of addictive thoughts, feelings and actions.

In late recovery the marital issues would be explored as a reflection of the family of origin problems of both partners.

During maintenance, the issues would be explored in a developmental life stage context.

The DMR also allows the recognition of complicating factors that prevent people from successfully completing the current recovery tasks. These complicating factors, which range from depression to severe unexpected life problems, must be dealt with in order for people to move ahead in recovery.

Active Addiction

Active addiction is the period of time when most addicted people believe that they are a social drinker or a recreational drug users who are in control. They are getting the effect that they want from the alcohol and drug use, believe they are in control, and don't see any problems that result from their addictive use. By the end of this stage they recognize that they are addicted, not in control, and need to abstain from alcohol and other drugs in order solve the immediate problems created by their drinking and drug use. This leads them into the transition stage of recovery.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

Transition

Transition begins when the addiction starts to cause problems that force the addict to make a new evaluation of the relationship between alcohol and drug use and life problems. At the beginning of this stage most addicted people believe that they are a social drinker or a recreational drug user who is in control. By the end of this stage they recognize that they are addicted and not in control and need to abstain. In between these two points the addict experiences a painful inner conflict between the addictive part of themselves that wants to keep believing they are social drinkers and recreational drug users, and the sober reality-based part of them that believes they are addicted or at least on the road to addiction.

There are four major tasks of transition. The first is to develop motivating problems that force addicts to recognize that something is wrong and motivate them to take action. Since, at this stage of recovery, most addicts don't believe that their problems are related to alcohol or drug use, they attempt normal problem solving designed to solve the life problems caused by their addiction without dealing with the alcohol and drug use that is causing the problems.

As this normal problem solving repeatedly fails, they are forced to see the relationship between alcohol and drug use. They can see that their problems are partially the result of drinking and using drugs. They start to see that they are using too much, of the wrong kind, too frequently. This launches most addicts into serious attempts to control chemical use by regulating how much, how often, and what kinds of chemicals they use. Because addiction is a disease marked by loss of control, these attempts fail. These repeated failures to control their use can cause serious problems that force many addicts to accept the need for abstinence.

Unfortunately, most addicts try to abstain without help and become overwhelmed by symptoms of physical and psychological withdrawal, social pressures, and an avalanche of problems that were created by their addictive use. These problems don't end when they stop drinking and drugging, they follow them into sobriety and make it difficult to stay in recovery. When these solo efforts at recovery fail, they realize that they cannot maintain abstinence alone and accept the need for help. At this point many reluctantly and often resistantly seek help in order to solve the immediate problems.

Tasks of Transition

1. Develop Motivating Problems:
2. Attempt Normal Problem Solving
3. Attempts at Controlled Use



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

4. Accept the need for abstinence
5. Accept the Need for Help

Stabilization

The primary focus of stabilization is recuperation from the physical, psychological, and situational damage caused by the addiction. During this period most recovering people have difficulty thinking clearly, managing their feelings and emotions, controlling their behavior, and coping with crisis that was caused by the addiction.

The treatment during stabilization is problem oriented, directive, and immediate. Abstinence is established and immediate crisis situations are identified. Concrete strategies for crisis stabilization are developed, and the recovering person is closely supervised and supported in executing the strategy.

The five major tasks of stabilization are recovery from withdrawal, interrupting addictive preoccupation, short term social stabilization, learning non-chemical stress management, and developing hope and motivation

The first step in stabilization for many addicts is to recover from withdrawal. There are two types of withdrawal. Acute withdrawal has short term symptoms that clear up in three to five days and include insomnia, agitation, irritability and tremulousness. Post-acute withdrawal (P.A.W.) has long-term symptoms and can require six to eighteen months to clear up. These P.A.W. symptoms include difficulty in thinking clearly, managing feelings and emotions, remembering things, and sleeping restfully. At times of low stress the symptoms improve greatly. During periods of high stress the symptoms return. If chemically dependent people experience extended periods of high stress they may develop accident proneness and severe symptoms that lead to physical or emotional collapse.

To recover from acute and post-acute withdrawal requires abstinence from alcohol and other drugs, knowledge of the withdrawal symptoms and how to manage them in a sober state, proper medical management and a structured recovery program that includes education, Twelve Step Group involvement, and proper diet and exercise to aid recovery of the brain and relieve stress. A medically supervised detoxification program may be needed if the physical symptoms or acute withdrawal become so severe the person cannot function normally.

As the withdrawal clears up, most addicts need to interrupt addictive preoccupation that is composed of euphoric recall, positive expectancy, obsession, compulsion, and craving. Euphoric

recall is a form of irrational thinking that focuses upon the positive memories of alcohol and drug use, while blocking out the negative memories. Euphoric recall leads to the positive expectancy that chemical use may be "good for me" in the future.

This leads to obsession with the memories of "how good it used to be" and fantasies of "how could it be in the future." Thinking about the positive effects of alcohol and drugs can trigger an irrational compulsion to use or reactivate a physical craving.

Chemically dependent people who maintain sobriety learn to interrupt addictive preoccupation. They analyze their past chemical use to stop the euphoric recall. They stop thinking about how wonderful it would be to use chemicals in the future to stop the positive expectancies. They talk openly about their obsessions, compulsions and cravings with other people who are supportive of their recovery.

As addictive preoccupation subsides, short term social stabilization is achieved by putting a bandage on serious problems with marriages, jobs, friends, and the law. This is not a time for permanent long-term solutions. It is a time for emergency action to prevent future losses and buy time for recovery.

For the addict, alcohol and drugs are their only tools of stress management. In order to stabilize they must learn non-chemical stress management.

As chemically dependent people stabilize, they develop hope and motivation and begin to believe that recovery is possible. They can see that there is a way to get well by investing time, energy, and resources in the recovery process.

The Tasks of Stabilization

1. Recovery from Withdrawal
2. Interrupting Addictive Preoccupation
3. Short Term Social Stabilization
4. Learning Non-chemical Stress Management
5. Developing Hope and Motivation

Early Recovery

During early recovery the automatic and habitual thoughts, feelings, and actions related to the addiction are identified and changed. The process begins by understanding that addiction is a chronic, progressive, and eventually fatal disease that has recognizable signs and symptoms.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

This leads to recognizing the personal symptoms of addiction and becoming convinced that "I have it!" Recognition usually activates shame, guilt and nagging pain that must to be resolved on an emotional level by accepting the reality of the disease and coming to believe that it is okay to have it.

With acceptance comes the willingness to identify and interrupt addictive patterns of thinking, feeling, and acting (addictive TFA's). This leads to the need to learning non-addictive ways of thinking feeling and acting, in short, non-addictive ways coping with the problems of life. We must learn to deal in a sober and responsible way with life on life's terms in order to cope with the problems of life without the need for alcohol and drugs. Eventually recovering people begin to challenge their fundamental values and assumptions about the need for and importance of alcohol and drug use in their lives. This results in developing a sobriety centered value system that causes them to lose the desire to ever use alcohol and drugs.

The Tasks of Early Recovery

1. Understanding Addiction
2. Recognizing Addiction
3. Accepting Addiction
4. Identifying & Interrupting Addictive Thoughts, Feelings, and Actions
5. Learning Non-chemical Coping Skills
6. Developing a Sobriety Centered Value System

Middle Recovery

The primary focus of middle recovery is on repairing lifestyle damage caused by the addiction to our work, social, family, and intimate lives. We also develop a balanced and health promoting lifestyle by making long-standing changes in marriages, relationships with children, careers, and social lives. Up until this time the primary focus has been on learning how to stay sober while putting band-aides on other lifestyle problems and leaving them as a second priority.

Middle recovery begins by resolving the demoralization crisis that results from becoming aware of how much work remains to be done in recovery. At the end of early recovery the craving has been broken and a new set of sobriety-centered thoughts, feelings, behaviors, and values have been learned and internalized. The person has a strong foundation in sobriety that will allow them to make deep and long-lasting lifestyle changes.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

It is discouraging to realize that, in spite of all the hard won internal changes, there are many critical changes in relationships and lifestyle that still need to be made. Many recovering people become discouraged and stop their ongoing recovery process by resisting further growth. Others have the courage to move ahead. They are willing to confront the reality of their lives and to pay the price necessary to develop a balanced lifestyle.

The first step is repairing addiction-caused social damage by reviewing the damage their addiction has done to their families, coworkers, and friends. They then approach each person, acknowledge their responsibility in creating these problems and offer to do whatever is necessary to fix the damage.

The next step is to build a balanced lifestyle needed to live a meaningful and fulfilling life. This often involves changing jobs or careers, renegotiating marriages and friendships, and exploring the basic values upon which the previous lifestyle was built.

When this task is complete most recovering people report that they have a meaningful and productive job, a satisfying marriage or love relationship, a productive relationship with a number of family members and relatives, a solid twelve step recovery program with a good sponsor and numerous friends in the program, and a number of friends and associates who are not involved in the Twelve Step Program.

The Tasks of Middle Recovery

1. Resolving the Demoralization Crisis
2. Repairing Addiction Caused Social Damage
3. Building a Balanced Lifestyle

Late Recovery

Late recovery begins when people are unable to build a comfortable and balanced lifestyle because of unfinished business from childhood. It ends when recovering people resolve their family of origin problems and are able to approach adult living without being affected by irrational childhood beliefs. Some people move through late recovery quickly and with little pain. For others the process is longer and more difficult because they were emotionally, physically, or sexually abused as children, or never developed adequate social skills.

Late recovery begins with the recognition that childhood issues are affecting the quality of recovery. They can see that they are blindly repeating self-defeating habits that they learned as

children. They began to see that the only way out is to learn about family of origin issues by getting accurate information about how childhood experiences can affect their quality of adult sobriety.

The next step is the conscious examination of childhood by writing a detailed childhood history and reviewing it with a therapist, sponsor, or recovery group. This history identifies repeating self-destructive patterns of irrational thinking, emotional mismanagement, and self-defeating behaviors that were learned as children. Knowledge of these patterns gives the power to choose to continue in self-destructive patterns or to change.

This knowledge must be applied to adult living in order to consciously connect what they learned as children to how they are mismanaging their lives as sober adults.

This leads to lifestyle change. These deeply ingrained self-defeating habits will not disappear simply because we understand how they were developed. We must decide to change our lifestyles, set goals, develop action plans, and enlist the help of others.

The Tasks of Late Recovery

1. Recognition That Childhood Issues Are Affecting the Quality of Recovery
2. Learning About Family or Origin Issues
3. The Conscious Examination of Childhood
4. Identification of Self-defeating Patterns
5. Application to Adult Living
6. Lifestyle Change

Maintenance

Maintenance is a life-long process designed to prevent the tendency to relapse into old patterns of thinking, feeling, and acting that can set the stage for a relapse to addictive use.

The first task of maintenance is maintaining a recovery program that promotes prompt identification and management of problems. Next is a policy of effective day-to-day coping. People in maintenance are not free from problems, but they have learned how to manage problems efficiently without having to resort to alcohol or drugs. One AA member put it this way. "I measure my recovery not by how many problems I have, but by how well I manage the problems that I do have."



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

The next task is continued growth and development. The human mind, when free from alcohol or drugs, is designed to seek truth. Human beings continue to grow and change from the time we are conceived until the time we die. We are not free to choose whether we grow and change, we are only free to choose the direction of that growth and change.

Addiction creates the innate tendency to grow in negative and self-destructive ways. For most recovering people positive growth and change requires constant attention to the details of life and living. To stay sober for a lifetime requires effective coping with life transitions and complicating factors. All people move through different periods of adult development that present different problems and challenges. In late recovery, people develop a sense of what normal adult development is all about and anticipate the changes they will undergo as they grow older. They learn to accept each progressive stage of maturity with a sense of serenity. They surrender gracefully the ways of youth while embracing the ways of maturity.

The Tasks of Maintenance

1. Maintaining a Recovery Program
2. Effective Day-to-Day Coping
3. Continued Growth and Development
4. Coping With Life Transitions and Complicating Factors

12-STEP Recovery

Alcoholics Anonymous (AA) - Alcoholics Anonymous is an international fellowship of men and women who have had a drinking problem. It is nonprofessional, self-supporting, multiracial, apolitical, and available almost everywhere. There are no age or education requirements. Membership is open to anyone who wants to do something about his or her drinking problem.

AA's Big Book is the basic text for participants. It was first published in 1939. Currently available in the General Service Conference-approved Fourth Edition, the Big Book contains the stories of the co-founders, as well as many members of diverse backgrounds who have found recovery in the worldwide Fellowship.

THE TWELVE STEPS OF ALCOHOLICS ANONYMOUS - A.A.'s Twelve Steps are a group of principles, spiritual in their nature, which, if practiced as a way of life, can expel the obsession to drink and enable the sufferer to become happily and usefully whole.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

THE TWELVE TRADITIONS OF ALCOHOLICS ANONYMOUS - (Short Form) A.A.'s Twelve Traditions apply to the life of the Fellowship itself. They outline the means by which A.A. maintains its unity and relates itself to the world about it, the way it lives and grows.

Narcotics Anonymous (NA)

Narcotics Anonymous is a global, community-based organization with a multi-lingual and multicultural membership. NA was founded in 1953, and our membership growth was minimal during our initial twenty years as an organization. Since the publication of our Basic Text in 1983, the number of members and meetings has increased dramatically. Today, NA members hold more than 61,000 meetings weekly in 129 countries. We offer recovery from the effects of addiction through working a twelve-step program, including regular attendance at group meetings. The group atmosphere provides help from peers and offers an ongoing support network for addicts who wish to pursue and maintain a drug-free lifestyle. Our name, Narcotics Anonymous, is not meant to imply a focus on any particular drug; NA's approach makes no distinction between drugs including alcohol. Membership is free, and we have no affiliation with any organizations outside of NA including governments, religions, law enforcement groups, or medical and psychiatric associations. Through all of our service efforts and our cooperation with others seeking to help addicts, we strive to reach a day when every addict in the world has an opportunity to experience our message of recovery in his or her own language and culture.

Rational Recovery

Rational Recovery Systems, Inc. was founded in 1986 by Jack Trimpey, a California-licensed clinical social worker. Trimpey is a recovered alcoholic who works in the field of treatment of alcoholism and other drug addictions. Rational Recovery is a commercial trademark, along with the Addictive Voice Recognition Technique (AVRT).

The Rational Recovery program is based on the premise that the addict both desires and is capable of permanent, planned abstinence. However, the Rational Recovery program recognizes that, paradoxically, the addict also wants to continue using. This is because of his belief in the power of the substance to quell his anxiety; an anxiety which is itself partially substance-induced, as well as greatly enhanced, by the substance. This ambivalence is the Rational Recovery definition of addiction.

Rational Recovery purposes that the primary force driving an addict's predicament is what Trimpey calls the "addictive voice", which can physiologically be understood as being related to the parts of the human brain that control our core survival functions such as hunger, sex, and bowel control. Consequently, when the desires of this "voice" are not satiated, the addict experiences anxiety, depression, restlessness, irritability, and anhedonia (inability to feel pleasure). In essence, the RR method is to first make a commitment to planned, permanent abstinence from the undesirable substance or behavior, and then equip oneself with the mental tools to stick to that commitment. Most important to recovering addicts is the recognition of this addictive voice, and determination to remain abstinent by constantly reminding themselves of the rational basis of their decision to quit. As time progresses, the recovering addict begins to see the benefits of separating themselves and their rational minds from a bodily impulse that has no regard for responsibility, success, delayed gratification, or moral obligation.

The RR program is based on recognizing and defeating what the program refers to as the "addictive voice" (internal thoughts that support self-intoxication) and dissociation from addictive impulses. The specific technique of Addictive Voice Recognition Technique (AVRT) refers to the practice of objectively recognizing any mental thoughts that support or suggest substance use as AV (addictive voice). This passive recognition allows the practitioner to realize that he/she need not do what the AV says, but can effortlessly abstain. This technique relies heavily on basic semantics, essentially relegating the AV to an objectively recognizable "it" and retaining the control and free will of the "I." Rather than saying to oneself, "I drink", one can use AVRT to understand that "I don't want to drink, it (the AV) wants to drink." Once this "separation" is achieved, and the practitioner has personally experienced that he/she is indeed can observe objectively their own addictive voice, maintaining abstinence is a matter of self-control and becomes a personal choice of free will.

In his book, *Rational Recovery*, Trimpey calls the addict's addictive voice "the Beast". He proposes that this is the sole reason why addicts continue their self-destructive ways. Furthermore, by recognizing any feeling, image, urge, etc. that supports drinking/using as "Beast activity", the compulsions will fall silent, and the person can eventually regain control over their life and never worry about relapses. Rather than making addiction a lifelong battle, it is much easier to say "no" to the addictive voice, than to give in. Moreover, this separation of the rational self from the relentless "Beast" will, Trimpey says, enable addicts to always remain aware of the repercussions associated with a single relapse.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

- Rational Recovery does not regard alcoholism as a disease, but rather a voluntary behavior.
- Rational Recovery discourages adoption of the forever "recovering" drunk persona.
- There are no Rational Recovery groups (although meetings were held throughout the country during the 1990s).
- Great emphasis is placed on self-efficacy (*cf. Albert Bandura*).
- There are no discrete steps and no consideration of religious matters. (Note: belief in religion or "God," per se, aren't mandatory for 12 step programs)

SMART Recovery

SMART Recovery® is an acronym that stands for Self-Management and Recovery Training.

SMART Recovery™ is a nationwide, nonprofit organization which offers free support groups to individuals who desire to gain independence from any type of addictive behavior. SMART Recovery™ also offers a free internet message board discussion group, and sells publications related to recovery from addictive behavior.

The SMART Recovery® approach to recovery is summarized in the Four-Point program. SMART Recovery® teaches how to:

- 1) Enhance and maintain motivation to abstain
- 2) Cope with urges
- 3) Manage thoughts, feelings, and behaviors
- 4) Balance momentary and enduring satisfactions

SMART Recovery® has a scientific foundation, not a spiritual one. SMART Recovery® teaches increasing self-reliance, rather than powerlessness. SMART Recovery® meetings are discussion meetings in which individuals talk with one another, rather than to one another. SMART Recovery® encourages attendance for months to years, but probably not a lifetime. There are no sponsors in SMART Recovery®. SMART Recovery® discourages use of labels such as "alcoholic" or "addict".

Acronyms Used in the SMART Recovery® Program

SMART = Self-Management and Recovery Training



The Academy for Addiction Professionals

6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

REBT = Rational Emotive Behavior Therapy

USA = Unconditional Self-Acceptance

UOA = Unconditional Other Acceptance

ABCs

A = Activating event, something happens

B = Beliefs, thoughts, and attitudes about "A"-These beliefs can be rational (rB), reality-based, logical and self-helping, or irrational (iB), demanding and wishful based thinking, illogical, and self-defeating. C = Consequences-the emotions (mad, sad, scared, glad, etc.) and behaviors that are the result of A

(Activating Event) + B (Beliefs)

D = Disputes-arguments against irrational beliefs

E = Effects of the disputes-new emotions and behaviors that result from replacing irrational beliefs with rational ones

CBA = Cost/Benefit Analysis

DIBS = Disputing Irrational Beliefs

DISARM = Destructive Self-talk Awareness and Refusal Method

LFT = Low Frustration Tolerance

PPP = Practice, Patience, Persistence

REI = Rational Emotive Imagery

VACI = Vital Absorbing Creative Interest

ATW = Absolute Thought Warning !!!!!...Look for the Should...Must...Have to...Cant...Ought...All...Need...Always...Never...Awful...Terrible...Horrible...or CAN'T STAND's!!!!!!

SMART Recovery was originally named the Rational Recovery Self-Help Network, and was affiliated with Rational Recovery Systems, a for-profit corporation owned by Jack Trimpey. In 1994, the non-profit changed its name to SMART Recovery, and ended all affiliation with Trimpey. This change occurred because of disagreements between Trimpey and the non-profit's board of directors about the program of recovery to be offered in the self-help groups



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

Other Non 12-Step Recovery Support Groups

<http://lifering.org/>

<http://www.sossobriety.org/home.html>

<http://www.womenforsobriety.org/beta2/>

<http://www.moderation.org/>

The Role of Addiction Psychiatry

Addiction psychiatry focuses on understanding, preventing and treating individuals with addictions. It is the only medical subspecialty focused on addictions that is recognized by the American Board of Medical Examiners. Board-certified addiction psychiatrists are experts in the treatment of addictions.

Because they are physicians, they have specific expertise in the use of medications in the treatment of addictions. Because they are psychiatrists, they have special expertise in the recognition and treatment of co- occurring psychiatric disorders in individuals with addictions.

Instructor Note: As the field of addiction continues to grow from both a scientific point of view and a psychological point of view there will more theories and models of working with and understanding addiction. This will always true. But, regardless of the theory or the model remember we are working with human beings, not test subjects or statistics. They are individuals that deserve our respect, our empathy as well as their confidence in that the counselors that are there help are knowledgeable and current in their practices.

This Is Your Brain On Drugs:

Understanding Addiction from the Inside out

Chapter 2






TAP 21 Competency: Describe the behavioral, psychological, physical health, and social effects of psychoactive substances on the person using and significant others.

Understanding Drug & Alcohol Use, Abuse & Addiction

People experiment with drugs for many different reasons. Many first try drugs out of curiosity, to have a good time, because friends are doing it, or in an effort to improve athletic performance or ease another problem, such as stress, anxiety, or depression. Use doesn't automatically lead to abuse, and there is no specific level at which drug use moves from casual to problematic. It varies by individual.

Why do some drug users become addicted, while others don't?

As with many other conditions and diseases, vulnerability to addiction differs from person to person. Your genes, mental health, family and social environment all play a role in addiction. Risk factors that increase your vulnerability include:

-  Family history of addiction
-  Abuse, neglect, or other traumatic experiences in childhood
-  Mental disorders such as depression and anxiety
-  Early use of drugs
-  Method of administration—smoking or injecting a drug may increase its addictive potential

Substance Addiction and the Brain

Addiction is a complex disorder characterized by compulsive drug use. While each drug produces different physical effects, all abused substances share one thing in common: repeated use can alter the way the brain looks and functions.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

- Taking a recreational drug causes a surge in levels of dopamine in your brain, which trigger feelings of pleasure. Your brain remembers these feelings and wants them repeated.
- If you become addicted, the substance takes on the same significance as other survival behaviors, such as eating and drinking.
- Changes in your brain interfere with your ability to think clearly, exercise good judgment, control your behavior, and feel normal without drugs.
- Whether you're addicted to inhalants, heroin, Xanax, speed, or Vicodin, the uncontrollable craving to use grows more important than anything else, including family, friends, career, and even your own health and happiness.
- The urge to use is so strong that your mind finds many ways to deny or rationalize the addiction. You may drastically underestimate the quantity of drugs you're taking, how much it impacts your life, and the level of control you have over your drug use.

How Substance Addiction Can Develop

People who experiment with drugs continue to use them because the substance either makes them feel good, or stops them from feeling bad. In many cases, however, there is a fine line between regular use and drug abuse and addiction. Very few addicts are able to recognize when they have crossed that line.

How does Addiction Feel?

An addictive substance feels good because it stimulates the pleasure center of the brain through neurotransmitters such as dopamine and GABA. If you have a genetic predisposition, addictive substances don't just feel good. They feel so good that you will want to chase after them.

This is where addiction comes in. If you have a genetic predisposition, addictive substances feel so good that you are willing to suffer negative consequences in order to get more and to continue to feel the high.

Addictive substances feel different inside an addict's brain than they do to a non-addict. This is why the two sides have difficulty understanding each other. In someone who is not addicted, drugs and alcohol only produce a mild high. Therefore a non-addict cannot understand why the addict would go to such lengths, when it is clearly destroying their life.

The Genetics of Addiction

The Role of Family History

Addiction is due 50 percent to genetic predisposition and 50 percent to poor coping skills. This has been confirmed by numerous studies. One study looked at 861 identical twin pairs and 653 fraternal (non-identical) twin pairs. When one identical twin was addicted to alcohol, the other twin had a high probability of being addicted. But when one non-identical twin was addicted to alcohol, the other twin did not necessarily have an addiction. Based on the differences between the identical and non-identical twins, the study showed 50-60% of addiction is due to genetic factors. Those numbers have been confirmed by other studies.

The children of addicts are 8 times more likely to develop an addiction.

One study looked at 231 people who were diagnosed with drug or alcohol addiction, and compared them to 61 people who did not have an addiction. Then it looked at the first-degree relatives (parents, siblings, or children) of those people. It discovered that if a parent has a drug or alcohol addiction, the child had an 8 times greater chance of developing an addiction.

Why are there genes for addiction?

We all have the genetic predisposition for addiction because there is an evolutionary advantage to that. When an animal eats a certain food that it likes, there is an advantage to associating pleasure with that food so that the animal will look for that food in the future. In other words the potential for addiction is hardwired into our brain. Everyone has eaten too much of their favorite food even though they knew it wasn't good for them.

Although everyone has the potential for addiction, some people are more predisposed to addiction than others. Some people drink alcoholically from the beginning. Other people start out as a moderate drinker and then become alcoholics later on.

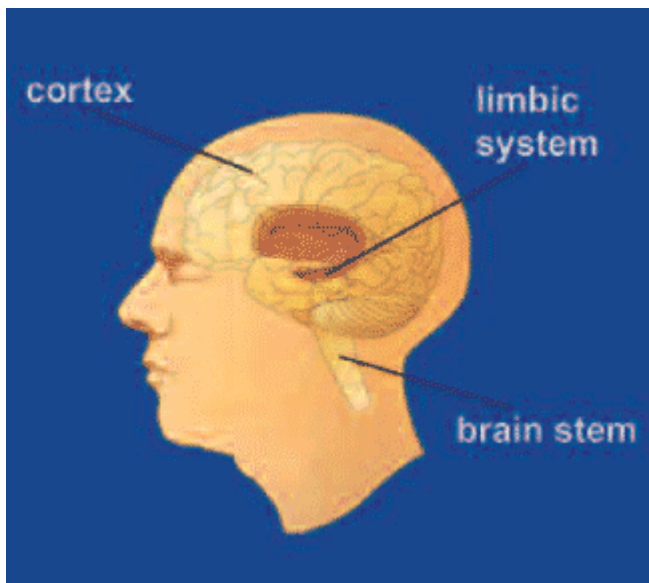
Repeatedly abusing drugs or alcohol permanently rewires your brain.

If you start out with a low genetic predisposition for addiction, you can still end up with an addiction. If you repeatedly abuse drugs or alcohol because of poor coping skills, then you'll permanently rewire your brain. Every time you abuse alcohol, you'll strengthen the wiring associated with drinking, and you'll chase that buzz even more. The more you chase the effect of alcohol, the greater your chance of eventually developing an addiction.

Genes are not your destiny. The 50% of addiction that is caused by poor coping skills is where you can make a difference. Lots of people have come from addicted families but managed to overcome their family history and live happy lives.

Let's Look Inside the Brain😊

The brain is made up of many parts that all work together as a team. Different parts of the brain are responsible for coordinating and performing specific functions. Drugs can alter important brain areas that are necessary for life-sustaining functions and can drive the compulsive drug abuse that marks addiction. Brain areas affected by drug abuse include:



- **The brain stem**, which controls basic functions critical to life, such as heart rate, breathing, and sleeping.
- **The cerebral cortex**, which is divided into areas that control specific functions. Different areas process information from our senses, enabling us to see, feel, hear, and taste. The front part of the cortex, the frontal cortex or forebrain, is the thinking center of the brain; it powers our ability to think, plan, solve problems, and make decisions.
- **The limbic system**, which contains the brain's reward circuit. It links together a number of brain structures that control and regulate our ability to feel pleasure. Feeling pleasure



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

motivates us to repeat behaviors that are critical to our existence. The limbic system is activated by healthy, life-sustaining activities such as eating and socializing—but it is also activated by drugs of abuse. In addition, the limbic system is responsible for our perception of other emotions, both positive and negative, which explains the mood-altering properties of many drugs.

Cocaine, Marijuana and Heroin in your Brain

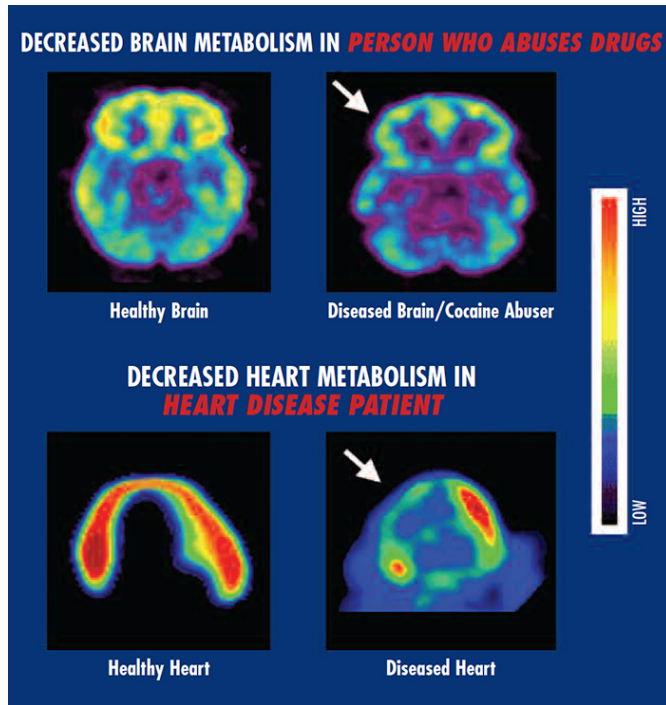
Drugs are chemicals that affect the brain by tapping into its communication system and interfering with the way neurons normally send, receive, and process information. Some drugs, such as marijuana and heroin, can activate neurons because their chemical structure mimics that of a natural neurotransmitter. This similarity in structure “fools” receptors and allows the drugs to attach onto and activate the neurons. Although these drugs mimic the brain’s own chemicals, they don’t activate neurons in the same way as a natural neurotransmitter, and they lead to abnormal messages being transmitted through the network.

Other drugs, such as amphetamine or cocaine, can cause the neurons to release abnormally large amounts of natural neurotransmitters or prevent the normal recycling of these brain chemicals. This disruption produces a greatly amplified message, ultimately disrupting communication channels.

Deeper in the Brain

We know addiction is defined as a chronic, relapsing brain disease that is characterized by compulsive drug seeking and use, despite harmful consequences. It is considered a brain disease because drugs change the brain—they change its structure and how it works.

Check out the pictures of the brain impacted by substances below.



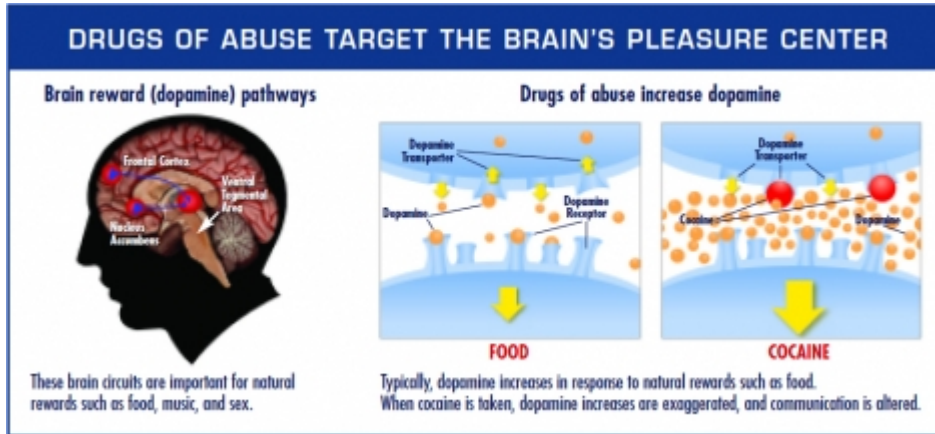
Source: From the laboratories of Drs. N. Volkow and H. Schelbert

Addiction is a lot like other diseases, such as heart disease. Both disrupt the normal, healthy functioning of the underlying organ, have serious harmful consequences, and are preventable and treatable, but if left untreated, can last a lifetime.

How do drugs work in the brain to produce pleasure?

Most drugs of abuse directly or indirectly target the brain's reward system by flooding the circuit with dopamine. Dopamine is a neurotransmitter present in regions of the brain that regulate movement, emotion, motivation, and feelings of pleasure. When activated at normal levels, this system rewards our natural behaviors. Over stimulating the system with drugs, however, produces euphoric effects, which strongly reinforce the behavior of drug use—teaching the user to repeat it.

Most drugs of abuse target the brain's reward system by flooding it with dopamine.



How does stimulation of the brain's pleasure circuit teach us to keep taking drugs?

Our brains are wired to ensure that we will repeat life-sustaining activities by associating those activities with pleasure or reward. Whenever this reward circuit is activated, the brain notes that something important is happening that needs to be remembered, and teaches us to do it again and again without thinking about it. Because drugs of abuse stimulate the same circuit, we learn to abuse drugs in the same way.

Why are drugs more addictive than natural rewards?

When some drugs of abuse are taken, they can release 2 to 10 times the amount of dopamine that natural rewards such as eating and sex do. In some cases, this occurs almost immediately (as when drugs are smoked or injected), and the effects can last much longer than those produced by natural rewards. The resulting effects on the brain's pleasure circuit dwarf those produced by naturally rewarding behaviors. The effect of such a powerful reward strongly motivates people to take drugs again and again. This is why scientists sometimes say that drug abuse is something we learn to do very, very well.

Motivation for Drug Use

The motivation for taking substances is to achieve a desired effect in a reasonably short period of time. This effect or altered mood state is brought about by the effects drugs have on the brain and neurotransmitter systems. The effects on the neurotransmitter systems include

action on the levels of the neurotransmitters (i.e., the chemical messengers) and the receptor sites (i.e., the sites where the specific chemical messengers have their effects). The use of drugs may prevent a neurotransmitter from breaking down, leading to a build-up of the neurotransmitter; it can block the reuptake of the neurotransmitter by the sending cell thus making more of the neurotransmitter available to the receiving cell.

Drugs can prevent a neurotransmitter from being produced at the normal level, or may block the receptor sites preventing the neurotransmitter from having its normal effects. Also, drugs can have an effect on the nerve cells in general as a toxin or just making them function slower than normal (Ray & Ksir, 2004; Carroll, 2000).

Neurotransmitters, the chemical messengers, are: GABA relates to inhibitory factors and slows communication. Norepinephrine usually associated with arousal reactions and moods. Dopamine usually associated with feeling of pleasure, Serotonin, usually associated with feelings of anxiety, depression, and aggressiveness, and Acetylcholine, which may be associated with arousal reactions or inhibitory factors (Ray & Ksir, 2004; Carroll, 2000).

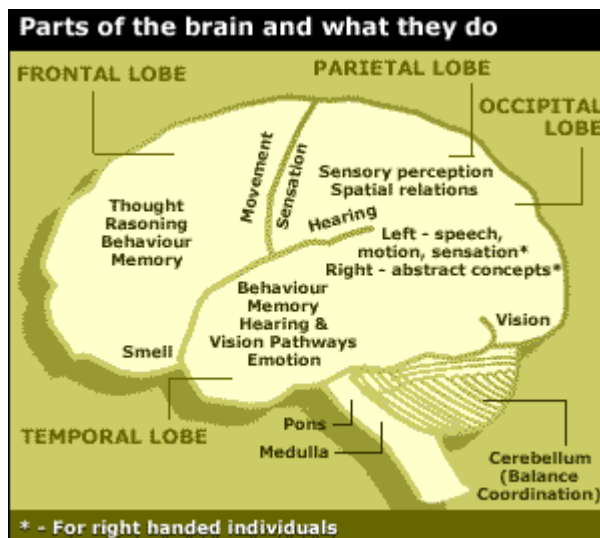
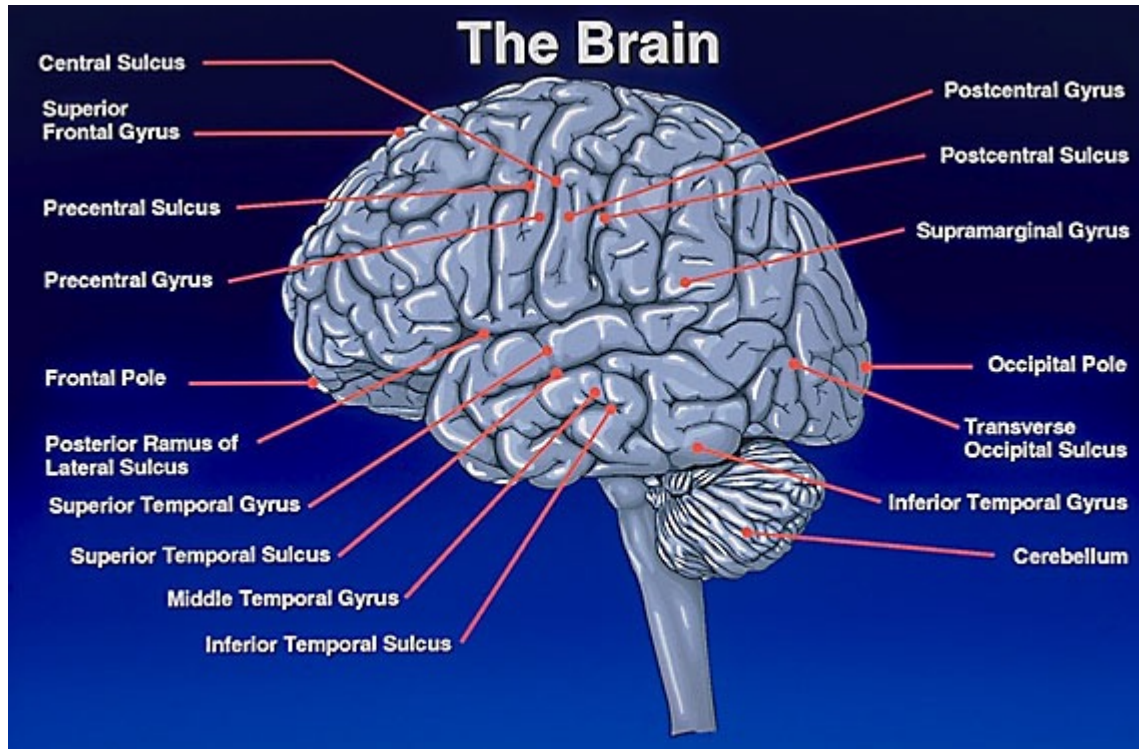
Drugs also activate the pleasure/reward center of the brain, which is made up of the ventral tegmental area (VTA), and the nucleus accumbens and other structures of the brain. These are two structures of the brain that are involved in the reward system for all drugs, although other mechanisms might be involved for specific drugs (Inaba, et al., 1997; Carroll, 2000).

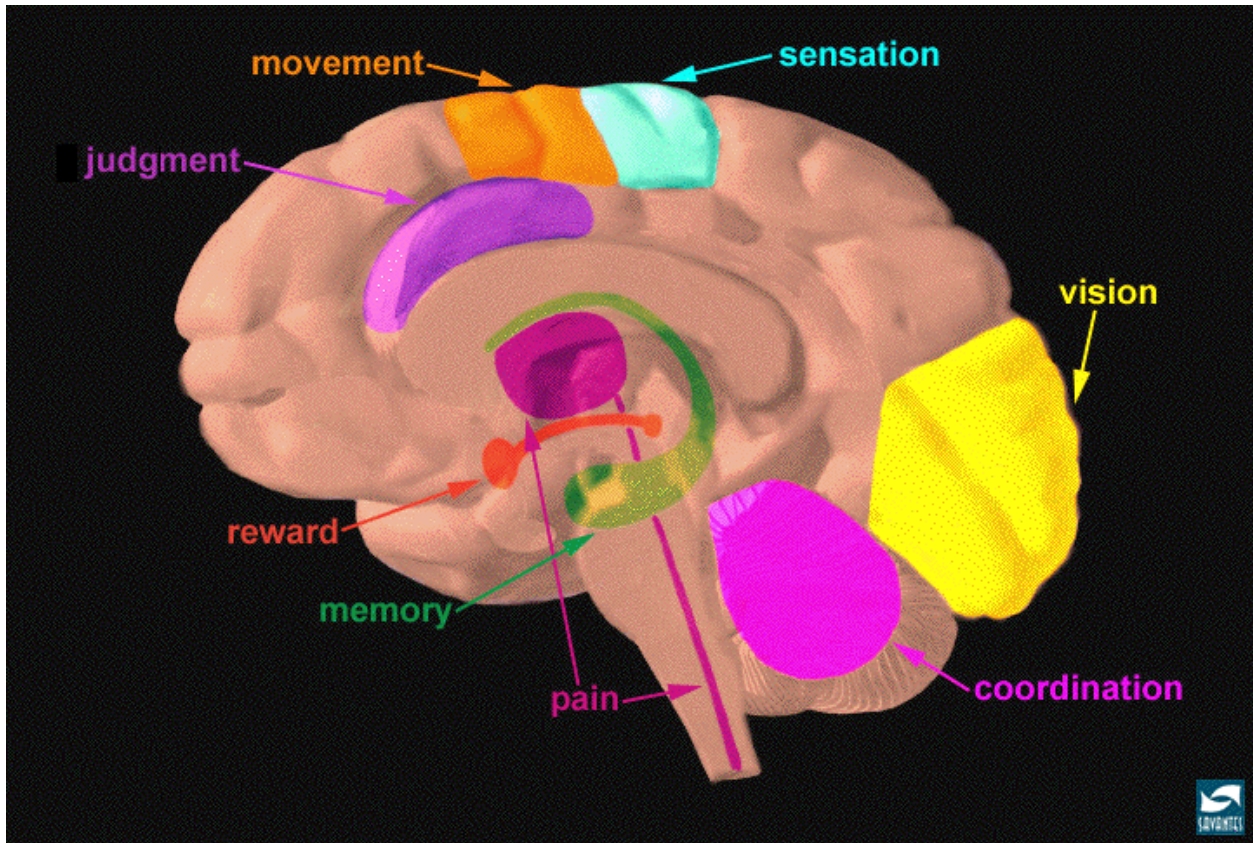
How a drug is distributed throughout the body, where it is stored, and how long it is stored are determined by whether the drug is fat or water-soluble. Fat-soluble drugs store in the fatty areas of the body can have longer lasting traces in the body that water-soluble drugs do not (Ray & Ksir, 2004; Carroll, 2000).

Abuse potential is generally related to the drug's speed of action and how long the effects last. Drugs such as cocaine and nicotine with effects that are felt quickly and also wear off quickly have a high abuse potential. Abuse potential is a pharmacological term based on the effects of a drug; however, there are social factors that may influence it such as social acceptance of use, and opportunity for use (Ray & Ksir, 2004; Carroll, 2000).

Mountain West ATTC. (2005). *The Brain: Understanding Neurobiology Through the Study of Addiction*. Reno, NV: Author.

6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
 (954) 771-2091 – Fax (954) 771-2098





Addictions' Effect on the Cerebral Cortex: Impaired Decision-making, Impulsivity, and Compulsivity

The cerebral cortex is the outer most layer of the brain. The cerebral cortex is further divided into four areas. These four areas are: the frontal lobe (or frontal cortex), parietal lobes (left and right), temporal lobes (left and right), and occipital lobes (left and right). Each area is associated with certain brain functions: One area of the frontal cortex is called the prefrontal cortex. It has a vital role in higher-order functions. These functions include language, spatial learning, conscious thought, judgment, and decision-making. The process of addiction can negatively affect this area and alter its functioning.

The prefrontal cortex enables us to make rational, sound decisions. It also helps us to override impulsive urges. If acted upon, these impulsive urges can cause us to act without thinking. This is usually not in our best interest. For instance, suppose I've had a bad day at work. I may have an



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

impulsive urge to tell my boss exactly what I think of her. To act on this impulse is not in my best interest. Fortunately, my prefrontal cortex is functioning quite well. I still have my job!

Obviously, this ability to inhibit impulses is very helpful. It enables us to function well in society. It protects us from harm by allowing us to consider the consequences of our actions. However, when the pre-frontal cortex is not functioning correctly, the opposite occurs. Addiction causes changes to the prefrontal cortex. These changes account for two characteristics of addiction: impulsivity and compulsivity.

Impulsivity is the inclination to act upon sudden urges or desires without considering potential consequences. Sometimes people describe impulsivity as living in the present moment without regard to the future. Compulsivity is a behavior that an individual feels driven to perform to relieve anxiety. Once a person performs the compulsive behavior, the anxiety goes away and restores comfort. Thus, the presence of these behavioral characteristics in addicted persons indicates that changes to the prefrontal cortex have occurred. Unfortunately, these changes also make the discontinuation of drug use more difficult.

Addiction is a process that coordinates the transition from impulsive to compulsive behavior. Impulsivity occurs during the early stages of addiction. During this phase, people impulsively act on powerful urges to experience the pleasure of their addiction. Anxiety is not associated with the urges during these early stages. Instead, addiction reflects acting on impulsive desire to receive immediate pleasure from the drug or activity. People are not considering the future consequences.

As addiction progresses a shift begins to occur. At this point, the compulsive aspect of addiction takes hold. When this shift occurs, people are no longer pursuing their addiction solely for pleasure. The compulsions compel them to participate in their addiction to relieve anxious, uncomfortable feelings. These may arise at the mere thought of stopping the addiction for any reason (supply shortages, lack of opportunity, etc.). At this later compulsive stage, "pleasure" comes in the form of relief from these anxious, uncomfortable feelings. Thus, despite the negative consequences of addiction, the addictive behavior continues in a compulsive manner.

Another way to describe the pre-frontal cortex is to think of it as a braking system. The pre-frontal cortex acts as the brain's brakes. It sends out signals to inhibit particular behaviors or actions. When addiction damages this brain area, it limits the brain's ability to control other behavioral systems as well. Imagine how difficult it would be to operate a car without brakes. At this point, we might say the brain is "high-jacked" by the addiction. The prefrontal cortex also projects to other brain regions associated with addictive problems. These include the reward system; memory and emotion; and stress regulation centers of the brain. Therefore,

damage to the prefrontal cortex may further interfere with the functioning of these other brain regions as well.

Although addiction damages the brain's brakes (pre-frontal cortex) this is not to say there is a complete loss of control. We are not slaves to our biology. We have a tremendous amount of control over our actions. This is true even when impulsive and compulsive forces are operating. This recognition is vitally important if someone wishes to recover from addiction. When a person consciously decides the costs of addiction outweigh its benefits, they become motivated and able to stop. This allows them to actively counter the effects of addiction on the frontal cortex and other brain regions.

Unfortunately, people's addictions limit their ability to use rational thought. This is due in part to the damage to the prefrontal cortex. They may incorrectly tally the costs and benefits of their addiction; over-estimating the benefits, while minimizing the costs. The addict is often told, "You're in denial." This is incorrect. When people use this phrase, they are applying it improperly. Denial refers to a psychological defense, or justification for a negative behavior. This is quite different than a loss of rational brain functioning that occurs with addiction. This is where addiction treatment professionals can be very helpful. They can guide addicted persons to make an accurate assessment of the costs and benefits. This more accurate assessment often leads to the motivation to change. Once someone decides it is time to change, they have taken the first step toward recovery.

The addiction process relies on learning and memory to drive the addiction cycle forward. Addiction chemically alters the system. However, people can learn how to counteract these changes. There are specific techniques that people can learn to oppose powerful urges. As people become more skillful, the wonderfully adaptive brain makes adjustments and corrections. This in turn leads to lasting recovery from addiction. In some cases, pharmacological intervention may also be beneficial.

Addictions' Effect on the Amygdala: Habit Formation, Craving, Withdrawal, and Relapse Triggers

People often describe addiction as a habit, and one that is difficult to break. This is because when people attempt to discontinue an addictive behavior (drug use or addictive activities) they experience withdrawal. Because withdrawal is such an unpleasant experience, it serves as a powerful motivator to resume the addictive behavior. Eventually, the relief from withdrawal (by resuming use) becomes pleasurable in and of itself. To illustrate how this occurs, go ahead and pinch yourself on the arm for one full minute. Not too hard, just enough to cause some discomfort. Then stop. Notice the sudden absence of pain has become pleasurable. This is the

same way that the removal of withdrawal effects (via return to addiction) becomes pleasurable. Because it is pleasurable, it is rewarding. Because it is rewarding, it will be repeated. Some drugs, such as alcohol and opiates, have withdrawal effects that are both physical and emotional. Other drugs or addictive activities may primarily involve emotional symptoms. This characteristic of addiction occurs because of several changes in the brain.

As drug use or addictive activity escalates, the involvement of various brain regions associated with our emotional state also increases. The brain region most often associated with our emotional state is the extended amygdala. Scientists think this brain region plays an important role in addiction because of its association with emotions and stress.

The amygdala affects emotions and memory. We all have both "good" memories and "bad" memories about various events in our lives. What makes a memory "good" as opposed to "bad" are the emotional states that occurred during those events. When the brain forms these memories, it stores the memory of the event along with the emotions that accompanied it. When I smell the sea air, feel the ocean breeze, and hear the seagulls, I have a pleasant memory and emotional experience. This is because these things have been repeatedly associated with relaxing and enjoyable times. The memory of the sea is stored along with a pleasant emotional state. So I can merely think of the sea, without actually being there, and I will experience a pleasant emotional state. Likewise, an addicted person may only need to think about engaging in their addiction and they will experience pleasure. The memory of engaging in the addiction is stored with a pleasant emotional state. Thus, the pleasing memories of engaging with an addiction can lead to repeating those behaviors and a habit forms.

Emotional memory has another role in the development of addiction, called **cue anticipation**. Cue anticipation refers to environmental cues that can initiate or elevate craving. Cravings often lead to relapse. For this reason, these cues are often called *relapse triggers*. Therefore, a successful recovery plan will include a strategy for coping with cues (relapse triggers).

These environmental cues (relapse triggers) can be anything that is associated with the addiction. It could be a certain time of day, a place, a person, or an activity. For instance, suppose a man is addicted to pornography use. He usually gets online after his wife goes to bed. The mere act of his wife *getting ready* to go to bed serves as a cue that prompts powerful cravings. Later, even his own *anticipation* of his wife going to bed will serve as a powerful cue. The amygdala's role in emotional memory is responsible for these cues taking root. The brain forms an association between pleasant memories of drug use or addictive activities, and the cues. The more a person repeats this cycle, the more it strengthens the emotional memory circuits associated with these cues. Eventually, this leads to a complete pre-occupation with the addiction.

So far, we've been discussing the role of the amygdala and positive emotional memories. The brain may also form an association between unpleasant emotions and a memory (forming a "bad" memory). These negative emotional memories play an important role in withdrawal. The negative emotional memory of anxiety becomes associated with the physical signs of withdrawal. As withdrawal begins, the symptoms trigger an unpleasant emotional memory. This increases the negative experience of withdrawal. Withdrawal avoidance (via returning to the addiction) often becomes the cornerstone of the addiction in the later stages. Thus, in the earlier stages of addiction the pleasurable experience of the drug motivates a repetition of that behavior. In the later stages, relief of withdrawal symptoms (physical and/or emotional discomfort) achieves pleasure. This pleasurable relief from withdrawal symptoms continues to motivate the repetition of that behavior.

Stress Regulation and Withdrawal: Addictions' Effect on the Hypothalamus

Addiction affects another area of the brain called the hypothalamus. The hypothalamus has many duties. It controls body temperature, hunger, thirst, and sleep. The hypothalamus plays a key role in our response to stress. Stress regulation is highly relevant to our understanding of addiction. When an individual experiences stress, the hypothalamus releases chemicals called hormones. These hormones allow the brain and the body to respond to that stress. Unlike neurotransmitters (which are chemicals limited to the brain) hormones travel throughout the body via the blood system. Therefore, hormones can exert an effect on other body systems as well. When these chemical hormones operate in the brain, we refer to them as neuromodulators. These hormones (neuromodulators) can act just like neurotransmitters in the brain. Like neurotransmitters, they have their own receptors associated with them.

Stress is a well-known relapse trigger. It can prompt powerful cravings in addicted persons. Many of us know someone who tried to quit smoking but ultimately relapsed when they became "stressed out." Unfortunately, during the initial period of recovery withdrawal symptoms create stress. This creates an unfortunate cycle. Stress prompts addictive use, while efforts to discontinue use prompt stress. During withdrawal, these stress hormones are elevated. Even though stress levels are high, the brain's anti-stress neuromodulators appear to decrease, as do dopamine and serotonin in the nucleus accumbens. This suggests that withdrawal affected the reward system (evidenced by decreasing dopamine and serotonin). At the same time, withdrawal activates the stress and anxiety systems. This "1-2 punch" heightens the negative experience of withdrawal. This prompts people to seek relief via the addictive substance or activity (i.e., relapse).

In summary, the neurotransmitter pathways associated with the amygdala and the hypothalamus play a crucial role in sustaining the addiction process. This occurs thorough:

- The negative emotional memory that is associated with drug withdrawal.
- The positive emotional memory that is associated with drug cues.
- The disruption that occurs to stress regulation.
- The pleasurable relief from withdrawal symptoms that occurs by resuming drug use or addictive activities.

The High-jacked Brain

We do not yet know all the relevant mechanisms, but the evidence suggests that those long-lasting brain changes are responsible for the distortions of cognitive and emotional functioning that characterize addicts, particularly including the compulsion to use drugs that is the essence of addiction.

This brain-based view of addiction has generated substantial controversy, particularly among people who seem able to think only in polarized ways.

Many people erroneously still believe that biological and behavioral explanations are alternative or competing ways to understand phenomena, when in fact they are complementary and integrative.

Modern science has taught that it is much too simplistic to set biology in opposition to behavior or to pit willpower against brain chemistry.

Addiction involves inseparable biological and behavioral components. It is the **quintessential bio-behavioral disorder**.

Many people also erroneously still believe that drug addiction is simply a failure of will or of strength of character. Research contradicts that position.

The Brain Also Helps to Reverse Addiction

There's no question. Addiction wreaks havoc on the brain. Addiction causes significant chemical, structural, and molecular changes that quite literally hijack the brain. However, treatment can reverse or counteract these effects. Moreover, as the recovery process proceeds, the brain continues to heal.

It is true that many changes occur in the brain after addiction takes hold. But, we must also remember that the brain is a dynamic and ever-changing system. Changes to the brain's neuronal circuits, chemistry, and structures powerfully drive the addiction forward. However, a strong motivation to change, can just as powerfully counter these changes. People

can learn new coping skills. They can practice behavioral modification techniques. These efforts will counter those damaging changes. Professional assistance can be enormously helpful as someone learns to overcome addiction's effect on the brain.

Abstinence from addictive substances or activities can lead to a reversal of many physical changes that occurred during addiction. Combination therapies (medications plus psychotherapy) help the recovery process by managing the physiological effects of addiction and withdrawal. Cognitive-behavioral treatments work to mend and repair the psychological impact of addiction.

Instructor Note: WOW! Our brain is truly amazing. It has the capacity to control its own physiology and is highly adaptive. Each behavioral step we make forward has a beneficial physiological effect on the brain. A sincere effort to change behavior is a powerful tool that mends the damaged brain.

When we change our behavior and find healthy outlets for satisfying cravings, we correct damaged brain function. These positive changes form new memory and behavioral circuits in the brain that strengthen and reinforce recovery efforts. Yes, the brain has changed because of the addictive process. Nevertheless, even people with severe addiction problems succeed in overcoming their addictions. Motivation is the key.

Signs and Symptoms of Addiction

Although different drugs have different physical effects, the symptoms of addiction are similar. See if you recognize yourself in the following signs and symptoms of substance abuse and addiction.

Physical warning signs of drug abuse

- Bloodshot eyes, pupils larger or smaller than usual
- Changes in appetite or sleep patterns. Sudden weight loss or weight gain
- Deterioration of physical appearance, personal grooming habits
- Unusual smells on breath, body, or clothing
- Tremors, slurred speech, or impaired coordination

Behavioral signs of drug abuse

- Drop in attendance and performance at work or school
- Unexplained need for money or financial problems. May borrow or steal to get it.
- Engaging in secretive or suspicious behaviors

- Sudden change in friends, favorite hangouts, and hobbies
- Frequently getting into trouble (fights, accidents, illegal activities)

Psychological warning signs of drug abuse

- Unexplained change in personality or attitude
- Sudden mood swings, irritability, or angry outbursts
- Periods of unusual hyperactivity, agitation, or giddiness
- Lack of motivation; appears lethargic or “spaced out”
- Appears fearful, anxious, or paranoid, with no reason

Key Components of Addiction

- Compulsion
- Continued use despite negative consequences
- Craving
- Denial

Warning Signs of Commonly Abused Drugs

Marijuana: Glassy, red eyes; loud talking, inappropriate laughter followed by sleepiness; loss of interest, motivation; weight gain or loss.

Depressants (including Xanax, Valium, GHB): Contracted pupils; drunk-like; difficulty concentrating; clumsiness; poor judgment; slurred speech; sleepiness.

Stimulants (including amphetamines, cocaine, crystal meth): Dilated pupils; hyperactivity; euphoria; irritability; anxiety; excessive talking followed by depression or excessive sleeping at odd times; may go long periods of time without eating or sleeping; weight loss; dry mouth and nose.

Inhalants (glues, aerosols, vapors): Watery eyes; impaired vision, memory and thought; secretions from the nose or rashes around the nose and mouth; headaches and nausea; appearance of intoxication; drowsiness; poor muscle control; changes in appetite; anxiety; irritability; lots of cans/aerosols in the trash.

Hallucinogens (LSD, PCP): Dilated pupils; bizarre and irrational behavior including paranoia, aggression, hallucinations; mood swings; detachment from people; absorption with self or other objects, slurred speech; confusion.

Heroin: Contracted pupils; no response of pupils to light; needle marks; sleeping at unusual times; sweating; vomiting; coughing, sniffing; twitching; loss of appetite.

Warning signs of teen drug abuse

While experimenting with drugs doesn't automatically lead to drug abuse, early use is a risk factor for developing more serious drug abuse and addiction. Risk of drug abuse also increases greatly during times of transition, such as changing schools, moving, or divorce. The challenge for parents is to distinguish between the normal, often volatile, ups and downs of the teen years and the red flags of substance abuse. These include:

- Having bloodshot eyes or dilated pupils; using eye drops to try to mask these signs
- Skipping class; declining grades; suddenly getting into trouble at school
- Missing money, valuables, or prescriptions
- Acting uncharacteristically isolated, withdrawn, angry, or depressed
- Dropping one group of friends for another; being secretive about the new peer group
- Lying about new interests and activities

Does drug abuse cause mental disorders, or vice versa?

Drug abuse and mental illness often co-exist. In some cases, mental disorders such as anxiety, depression, or schizophrenia may precede addiction; in other cases, drug abuse may trigger or exacerbate those mental disorders, particularly in people with specific vulnerabilities.

Damage due to Addiction

Regardless of the drug abused, addiction leads to

- Physical deterioration
- Psychiatric problems
- Intellectual impairment
- Personality deterioration
- Increased risk of accidents and higher susceptibility to high risk behavior in the form of unprotected sex or use of unsterile needles
- Legal risks

But when a drug is taken for reasons other than medical, in an amount, strength, frequency or manner that causes damage to the physical or mental functioning of an individual, it becomes 'drug abuse'. Any type of drug can be abused; drugs with medical uses can also be abused.

Tolerance refers to a condition where the user needs more and more of the drug to experience the same effect. Smaller quantities, which were sufficient earlier, are no longer effective and the user is forced to increase the amount of drug intake.

Slowly, drug dependence develops. Some drugs produce only psychological dependence while others produce both physical and psychological dependence.

Psychological dependence is a state characterized by emotional and mental preoccupation with the effects of the drug and a persistent craving for it. As psychological dependence develops, the user gets mentally 'hooked' on to the drug.

When physical dependence develops, the user's body becomes totally dependent on the drug. With prolonged use, the body becomes so used to functioning under the influence of the drug that it is able to function normally only if the drug is present.

Alcohol / drug abuse causes general physical deterioration in addition to affecting at least a few organs in particular. Mental health status is also affected. Safety risks are also another issue for concern. Moreover, drug abusers generally eat poorly, have irregular sleep patterns and do not seek timely medical help which only further worsen the situation.

Medical and psychiatric complications can be studied under four major heads.

- a. Problems due to intoxication
- b. Problems due to withdrawal
- c. Psychiatric disorders associated with substance abuse
- d. Systemic disorders associated with substance abuse

Continuum of Alcohol and Drug Use

The continuum of substance abuse is a term that is used to refer to the stages of substance use and abuse. The use of a drug can be only labeled drug abuse when the user becomes dysfunctional as a result of their use. If a person can maintain healthy relationships, does not suffer financial hardships, does not become unwell or is harmed from the use of the substance, then the use is maintained as drug use and not abuse. However, if a person begins to exhibit adverse reactions from a drug, has considerable problems with relationships with others, acts in a harmful, dangerous or reckless manner and begins to use significant amounts of energy acquiring and using a drug, then it can be considered that the individual has a drug abuse problem.

The theory of a continuum of drug use can be used to assess where a person is at in terms of their drug use and evaluate the type of treatment that may be appropriate, if any. Policymakers may also use the continuum to make decisions on education, harm minimization and policing. Some stages in the continuum, such as experimental or occasional use, can be considered as relatively harm free. Others such as regular or dependent use may require some intervention to alleviate or prevent further harm from occurring.

4 Stages of Addiction – In Brief

- 1. Use – Socially accepted/medically approved**
- 2. Misuse – Regular use of illegal drugs/Higher quantities than prescribed**
- 3. Abuse – Continued use of substances despite negative consequence**
- 4. Addiction – Compulsive using, negative consequences, tolerance, withdrawal potential**

Risk and Protective Factors

Why do some people become addicted to drugs, while others do not?

As with any other disease, vulnerability to addiction differs from person to person, and no single factor determines whether a person will become addicted to drugs. In general, the more *risk factors* a person has, the greater the chance that taking drugs will lead to abuse and addiction. *Protective factors*, on the other hand, reduce a person's risk of developing addiction. Risk and protective factors may be either environmental (such as conditions at home, at school,

and in the neighborhood) or biological (for instance, a person's genes, their stage of development, and even their gender or ethnicity).

Risk and Protective Factors for Drug Abuse and Addiction

Risk Factors	Protective Factors
Aggressive behavior in childhood	Good self-control
Lack of parental supervision	Parental monitoring and support
Poor social skills	Positive relationships
Drug experimentation	Academic Competence
Availability of drugs at school	School anti-drug policies
Community poverty	Neighborhood pride

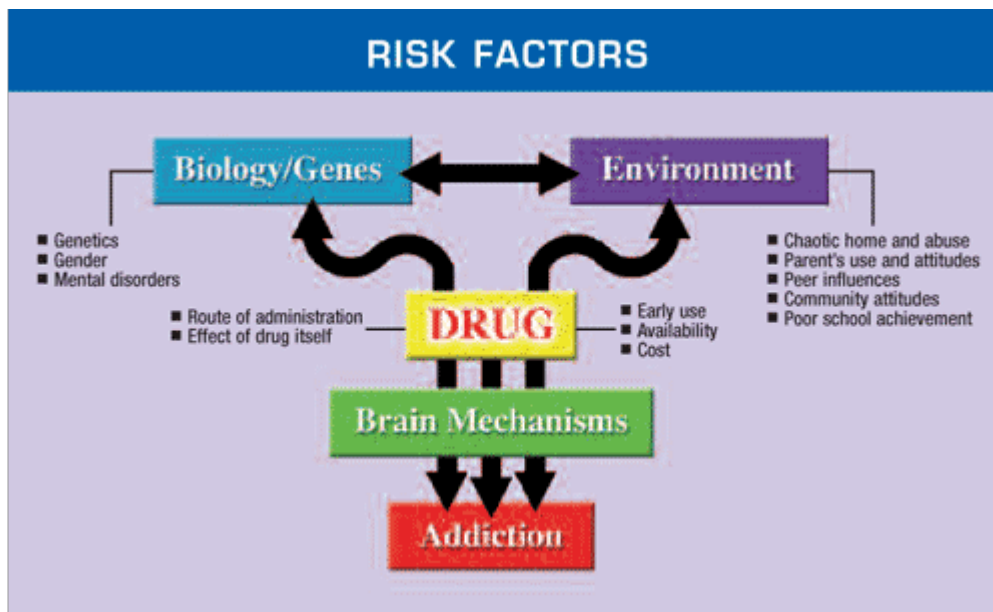
What environmental factors increase the risk of addiction?

- **Home and Family.** The influence of the home environment, especially during childhood, is a very important factor. Parents or older family members who abuse alcohol or drugs, or who engage in criminal behavior, can increase children's risks of developing their own drug problems.
- **Peer and School.** Friends and acquaintances can have an increasingly strong influence during adolescence. Drug-using peers can sway even those without risk factors to try drugs

for the first time. Academic failure or poor social skills can put a child at further risk for using or becoming addicted to drugs.

What biological factors increase risk of addiction?

Scientists estimate that genetic factors account for between 40 and 60 percent of a person's vulnerability to addiction; this includes the effects of environmental factors on the function and expression of a person's genes. A person's stage of development and other medical conditions they may have are also factors. Adolescents and people with mental disorders are at greater risk of drug abuse and addiction than the general population.



Children's earliest interactions within the family are crucial to their healthy development and risk for drug abuse.

What other factors increase the risk of addiction?

- **Early Use.** Although taking drugs at any age can lead to addiction, research shows that the earlier a person begins to use drugs, the more likely he or she is to develop serious problems. This may reflect the harmful effect that drugs can have on the developing brain; it also may result from a mix of early social and biological vulnerability factors, including



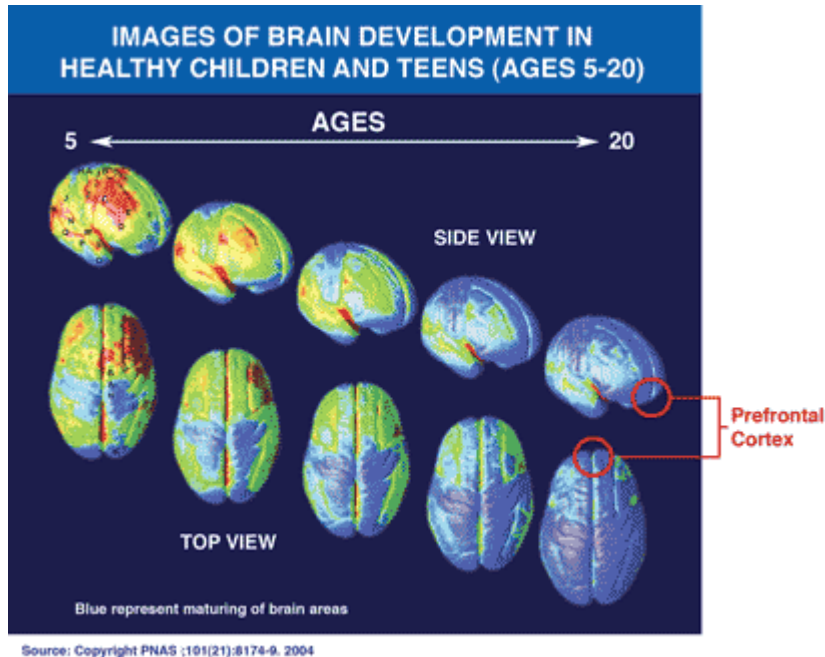
6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

unstable family relationships, exposure to physical or sexual abuse, genetic susceptibility, or mental illness. Still, the fact remains that early use is a strong indicator of problems ahead, including addiction.

- **Method of Administration.** Smoking a drug or injecting it into a vein increases its addictive potential. Both smoked and injected drugs enter the brain within seconds, producing a powerful rush of pleasure. However, this intense “high” can fade within a few minutes, taking the abuser down to lower, more normal levels. Scientists believe this starkly felt contrast drives some people to repeated drug taking in an attempt to recapture the fleeting pleasurable state.

Addiction is a developmental disease—it typically begins in childhood or adolescence. The brain continues to develop into adulthood and undergoes dramatic changes during adolescence

One of the brain areas still maturing during adolescence is the prefrontal cortex—the part of the brain that enables us to assess situations, make sound decisions, and keep our emotions and desires under control. The fact that this critical part of an adolescent’s brain is still a work in progress puts them at increased risk for making poor decisions (such as trying drugs or continuing to take them). Also, introducing drugs during this period of development may cause brain changes that have profound and long-lasting consequences.



Instructor Note: Prevention is the best form of medicine. That old saying is still around because at it's heart is the truth. Recognizing risk factors, warning signs and symptoms of potential for substance use and misuse helps us to intervene BEFORE the person increases their use and with that all the potential health risks that come along with addiction.

Physical Health Risks Associated With Alcohol/Drug Use

Physical health risks from the use of alcohol can be associated with the amount used, duration of use, and the condition of the individual using. Because of the potential for fetal alcohol syndrome and fetal alcohol effect, it is suggested that women who think they might be pregnant should not drink alcohol. Those with other medical conditions such as diabetes, seizure disorders, gastric ulcers, various skin conditions, and osteoporosis should not drink alcohol.

The chronic use of alcohol can affect all systems of the body and can have definite visible signs as well as have physical effects. Physical signs and symptoms of chronic alcohol use can include a weakened overall appearance, hyper-pigmented, jaundiced skin or a yellowish pigment to the whites of the eyes. There may be hoarseness in the voice; ataxia, a wide spaced unsteady gate; the appearance of spider veins; and dilated capillaries and acne-like lesions on the face and body. The nose may be enlarged and bulbous (Kinney, 2003).

The chronic use of alcohol affects the internal systems of the body as well as the outward appearance. The irritation caused by the alcohol may cause inflammation, abdominal pain, and bleeding of the esophagus and stomach (Kinney, 2003). Chronic alcohol use is many times associated with acute pancreatitis

Alcoholic hepatitis often follows a heavy or extended bout of alcohol use and can occur in non-alcohol dependent persons. There is inflammation of the liver, metabolism is disrupted, jaundice, the yellowing of the skin and whites of the eyes, as well as other symptoms present with alcoholic hepatitis. Alcoholic hepatitis may be completely reversible in some people if they stop alcohol consumption and receive proper medical care (Kinney, 2003).

Cirrhosis is caused when there is permanent, widespread destruction of liver cells, which are replaced with nonfunctioning scar tissue. The liver cells are unable to perform their necessary functions and while progression may possibly be slowed down by stopping the consumption of alcohol, it is irreversible and fatal if alcohol is continued to be consumed (Kinney, 2003).

Anemia is the most common red blood cell related problem in chronic alcohol users. Alcohol use can negatively affect one's ability to achieve good, restful sleep (Kinney, 2003).

Heavy alcohol consumption can lead to a blackout which is an amnesia-like state in which the individual may appear to be functioning normally yet later has no memory of what transpired. Blackouts are usually associated with alcohol dependence and are related to the dose taken. However, blackouts can occur in nondependent individuals as a result of a heavier than normal drinking episode in those who drank to the point of intoxication.

Is there a difference between physical dependence and addiction?

Yes. Addiction—or compulsive drug use despite harmful consequences—is characterized by an inability to stop using a drug; failure to meet work, social, or family obligations; and, sometimes (depending on the drug), tolerance and withdrawal. The latter reflect physical dependence in which the body adapts to the drug, requiring more of it to achieve a certain effect (tolerance) and eliciting drug-specific physical or mental symptoms if drug use is abruptly ceased (withdrawal). Physical dependence can happen with the chronic use of many drugs—including many prescription drugs, even if taken as instructed. Thus, physical dependence in and of itself does not constitute addiction, but it often accompanies addiction. This distinction can be difficult to discern, particularly with prescribed pain medications, for which the need for increasing dosages can represent tolerance or a worsening underlying problem, as opposed to the beginning of abuse or addiction.

Does drug abuse cause mental disorders, or vice versa?

Drug abuse and mental illness often co-exist. In some cases, mental disorders such as anxiety, depression, or schizophrenia may precede addiction; in other cases, drug abuse may trigger or exacerbate those mental disorders, particularly in people with specific vulnerabilities.

Five Things to Know about Adolescents' Brain Development and Use

1. The brain's "front end," the part above the eyes, exists to slow us down or stop our impulsive behaviors. It considers the risks and benefits of our actions, and it helps us "hit the brakes" when we consider doing things that are too risky.
2. This front part of the brain is still developing connections to the rest of the brain until adulthood, so adolescents' brains lack some of the "wiring" that carries "brake" or "stop" messages to the rest of the brain.
3. Drugs of abuse are often available to adolescents. These drugs feel good, but they can be very harmful. Lacking some of the wiring for the "stop" message, adolescents' brains may not fully weigh the risks of drug use.
4. The two drugs that cause the most death are also the most available drugs: tobacco and alcohol. Late adolescence, before the brain is fully matured, is the peak time for developing dependence on these (and other) drugs.
5. Heavy drug use during times of critical brain development may cause permanent changes in the way the brain works and responds to rewards and consequences. Therefore, it is important to begin to address a developing substance use problem as early as possible.

Concerning Behaviors to look for in an Adolescent Who Might be Using Drugs

- Changes in school performance (falling grades, skipping school, tardiness)
- Changes in peer group (hanging out with drug-using, antisocial, older friends)
- Breaking rules at home, school, in the community
- Extreme mood swings, depression, irritability, anger, negative attitude
- Sudden increases or decreases in activity level
- Withdrawal from the family; keeping secrets
- Changes in physical appearance (weight loss, lack of cleanliness, strange smells)
- Red, watery, glassy eyes or runny nose not due to allergies or cold
- Changes in eating or sleeping habits
- Lack of motivation or interest in things other teenagers enjoy (hobbies, sports)

- Lying, stealing, hiding things
- Using street or drug language or possession of drug paraphernalia/items
- Cigarette smoking

What Adolescents Are Using

By a wide margin, teenagers abuse alcohol more than any other substance. It is legal and widely available. Nationwide, teens with alcohol dependency are the majority of adolescents admitted for treatment. Each year, the federal government conducts a survey to determine Americans' patterns of using alcohol and other drugs. This survey, the National Survey of Drug Use and Health (NSDUH), provides vital information on a wide array of topics. The survey showed that in 2005, the illicit substances that 12- to-17-year olds reported that they had used the most were, in this order:

- **marijuana**
- **prescription drugs including stimulants, tranquilizers, sedatives, and pain relievers such as OxyContin and Vicodin**
- **inhalants**

Marijuana use among adolescents is second only to alcohol. Many believe marijuana is harmless, the brain shows that is simply not true.

Early Onset Alcoholism

Alcohol dependence, or alcoholism, can begin very early, even as early as 12 or 13 years old. Most teens obtain alcohol first from their parents; alcoholic beverages should be kept locked away. Prevention educates parents and guardians, the first thing parents and guardians need to know is if they believe their teen is beginning to drink, they need to talk about it, and be clear that they do not approve and that they expect different behavior. Parents/guardians need to keep track of where their teen is, and with whom.

FIVE WARNING SIGNS

1. Heavy drinking and alcoholism are more likely to occur when a parent has a similar problem. A family history of alcohol dependence increases risk of alcohol dependence four-fold.
2. Other early risk factors include serious childhood behavior problems requiring treatment, such as attention deficit hyperactivity disorder (ADHD), depression or anxiety, and health problems such as asthma. Parents/guardians need to talk about this with their teens and let

them know how important it is not to drink. Let them know help is available if they need assistance.

3. Often, early onset alcoholism results in serious problems such as emergency room visits, injuries, fights or declining school performance. These serious problems may occur very early, even the first time teens drink on their own. If these occur an evaluation from a professional needs to be obtained.

4. If drinking problems develop early, be sure that any treatment includes a thorough evaluation of other possible disorders such as ADHD, depression or anxiety. Treatment of coexisting disorders helps with recovery from alcoholism. Also, teens that drink heavily often use other drugs, especially marijuana. Be sure to have this evaluated as well.

5. If an older child begins drinking a lot, younger siblings are more likely to do so as well. Be especially vigilant as your younger children grow.

8 Myths about Drug Abuse and Addiction

- MYTH 1: Overcoming addiction is a simply a matter of willpower. You can stop using drugs if you really want to. Prolonged exposure to drugs alters the brain in ways that result in powerful cravings and a compulsion to use. These brain changes make it extremely difficult to quit by sheer force of will.
- MYTH 2: Addiction is a disease; there's nothing you can do about it. Most experts agree that addiction is a brain disease, but that doesn't mean you're a helpless victim. The brain changes associated with addiction can be treated and reversed through therapy, medication, exercise, and other treatments.
- MYTH 3: Addicts have to hit rock bottom before they can get better. Recovery can begin at any point in the addiction process—and the earlier, the better. The longer drug abuse continues, the stronger the addiction becomes and the harder it is to treat. Don't wait to intervene until the addict has lost it all.
- MYTH 4: You can't force someone into treatment; they have to want help. Treatment doesn't have to be voluntary to be successful. People who are pressured into treatment by their family, employer, or the legal system are just as likely to benefit as those who choose to enter treatment on their own. As they sober up and their thinking clears, many formerly resistant addicts decide they want to change.
- MYTH 5: Treatment didn't work before, so there's no point trying again. Recovery from drug addiction is a long process that often involves setbacks. Relapse doesn't mean that

treatment has failed or that you're a lost cause. Rather, it's a signal to get back on track, either by going back to treatment or adjusting the treatment approach.

- MYTH 6: Addicts should be punished, not treated, for using drugs. Science is demonstrating that addicts have a brain disease that causes them to have impaired control over their use of drugs. Addicts need treatment for their neuro-chemically driven brain pathology.
- MYTH 7: Addicts cannot be treated with medications. Actually, addicts are medically detoxified in hospitals, when appropriate, all the time. But can they be treated with medications after detox? New pharmacotherapies (medicines) are being developed to help patients who have already become abstinent to further curb their craving for addicting drugs. These medications reduce the chances of relapse and enhance the effectiveness of existing behavioral (talk) therapies.
- MYTH 8: Addicts are bad, crazy, or stupid. Evolving research is demonstrating that addicts are not bad people who need to get good, crazy people who need to get sane, or stupid people who need education. Addicts have a brain disease that goes beyond their use of drugs.

The Latest View in Understanding Addiction

Instructor Note: We have presented a lot of information in this chapter about the science of addiction, how substances impact various areas of the brain and how, in turn, addiction develops from voluntary, experimental use. The following is a newer, updated viewpoint and explanation of addiction. Not all is new but enough to warrant it's inclusion in this chapter.

The Essence of Addiction

The entire concept of addiction has suffered greatly from imprecision and misconception. In fact, if it were possible, it would be best to start all over with some new, more neutral term.

The confusion comes about in part because of a now **archaic distinction between whether specific drugs are “physically” or “psychologically” “addicting.”**

The distinction historically revolved around whether or not dramatic physical withdrawal symptoms occur when an individual stops taking a drug; what we in the field now call “physical dependence.”

- However, 20 years of scientific research has taught that focusing on this physical versus psychological distinction is off the mark and a distraction from the real issues.

From both clinical and policy perspectives, it actually does not matter very much what physical withdrawal symptoms occur.

- Physical dependence is not that important, because even the dramatic withdrawal symptoms of heroin and alcohol addiction can now be easily managed with appropriate medications.
- Even more important, many of the most dangerous and addicting drugs, including methamphetamine and crack cocaine, do not produce very severe physical dependence symptoms upon withdrawal.

What really matters most is whether or not a drug causes what we now know to be the essence of addiction, namely

- **The uncontrollable, compulsive drug craving, seeking, and use, even in the face of negative health and social consequences.**

This is the crux of how the Institute of Medicine, the American Psychiatric Association, and the American Medical Association define addiction and how we all should use the term.

It is really only this compulsive quality of addiction that matters in the long run to the addict and to his or her family and that should matter to society as a whole.

Thus, the majority of the biomedical community now considers addiction, in its essence, to be a brain disease:

- **A condition caused by persistent changes in brain structure and function.**

This results in compulsive craving that overwhelms all other motivations and is the root cause of the massive health and social problems associated with drug addiction.

Updating the Definition of Addiction

In updating our national discourse on drug abuse, we should keep in mind this simple definition:

Addiction is a brain disease expressed in the form of compulsive behavior.

Both developing and recovering from it depend on biology, behavior, and social context.

It is also important to correct the common misimpression that drug use, abuse and addiction are points on a single continuum along which one slides back and forth over time, moving from user to addict, then back to occasional user, then back to addict.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

Clinical observation and more formal research studies support the view that, once addicted, the individual has moved into a different state of being.

Very few people appear able to successfully return to occasional use after having been truly addicted.

The Altered Brain

Unfortunately, we do not yet have a clear biological or behavioral marker of that transition from voluntary drug use to addiction.

However, a body of scientific evidence is rapidly developing that points to an array of cellular and molecular changes in specific brain circuits. Moreover, many of these brain changes are common to all chemical addictions, and some also are typical of other compulsive behaviors such as pathological overeating.

The complexity of this brain disease is not atypical, because virtually no brain diseases are simply biological in nature and expression. All, including stroke, Alzheimer's disease, schizophrenia, and clinical depression, include some behavioral and social aspects.

What may make addiction seem unique among brain diseases, however, is that it does begin with a clearly voluntary behavior- the initial decision to use drugs. As previously stated, not everyone who ever uses drugs goes on to become addicted.

- **Individuals differ substantially in how easily and quickly they become addicted and in their preferences for particular substances.**

In fact, estimates are that between 50 and 70 percent of the variability in susceptibility to becoming addicted can be accounted for by genetic factors. Although genetic characteristics may predispose individuals to be more or less susceptible to becoming addicted, genes do not doom one to become an addict.

Over time the addict loses substantial control over his or her initially voluntary behavior, and it becomes compulsive. For many people these behaviors are truly uncontrollable, just like the behavioral expression of any other brain disease.

Environmental Cues

Addictive behaviors do have special characteristics related to the social contexts in which they originate.

- All of the environmental cues surrounding initial drug use and development of the addiction actually become “conditioned” to that drug use and are thus critical to the development and expression of addiction.
- Environmental cues are paired in time with an individual’s initial drug use experiences and, through classical conditioning, take on conditioned stimulus properties.
- When those cues are present at a later time, they elicit anticipation of a drug experience and thus generate tremendous drug craving.

Cue-induced craving is one of the most frequent causes of drug use relapses, even after long periods of abstinence, independently of whether drugs are available.

The significance of environmental or contextual cues helps explain why reentry to one’s community can be so difficult for addicts leaving the controlled environments of treatment or correctional settings and why aftercare is so essential to successful recovery.

- The person who became addicted in the home environment is constantly exposed to the cues conditioned to his or her initial drug use, such as the neighborhood where he or she hung out, drug-using buddies, or the lamppost where he or she bought drugs.
- Simple exposure to those cues automatically triggers craving and can lead rapidly to relapses.

This is one reason why someone who apparently overcame drug cravings while in prison or residential treatment could quickly revert to drug use upon returning home.

- One of the major goals of drug addiction treatment is to teach addicts how to deal with the cravings caused by inevitable exposure to these conditioned cues.
- It is no wonder addicts cannot simply quit on their own.
- People often assume that because addiction begins with a voluntary behavior and is expressed in the form of excess behavior, people should just be able to quit by force of will alone.
- However, it is essential to understand when dealing with addicts that we are dealing with individuals whose brains have been altered by drug use.

Instructor Note: Finally, let’s look briefly at relapse. We will discuss relapse both here and in the Treatment and Recovery chapter. Here we look at relapse from the various perspectives presented throughout this chapter. Later, we look at relapse as it pertains to recovery and treatment. Both perspectives are equally important in understanding addiction.

What is Relapse?

Relapse is a cardinal feature of addiction, and one of the most painful.

Most people who struggle with addiction will have one or more relapses - the return to drug use after a drug-free period - during their ongoing attempts to recover. This can be extremely frustrating for patients and for families, as they have already experienced great pain.

What leads to relapse?

Multiple - and often interactive - factors can increase the likelihood of relapse. These are some of the commonly cited precursors:

- drug-related "reminder" cues (sights, sounds, smells, drug thoughts or drug dreams) tightly linked to use of the preferred drug(s) can trigger craving and drug seeking
- negative mood states or stress
- positive mood states or celebrations
- sampling the drug itself, even in very small amounts

The motivation to seek a drug, once triggered, can feel overwhelming and sometimes leads to very poor decision-making: the user will pursue the drug, despite potentially disastrous future negative consequences (and many past negative consequences).

Individuals have different brain circuitry

Brain-imaging is helping us to understand the paradox of the decision to pursue a drug reward despite such consequences. For example, very recent imaging research shows that visual drug cues as short as 33 milliseconds can activate the ancient reward ("go") circuitry, and that this process does not require conscious processing - it can begin outside awareness.

By the time the motivation does reach awareness, and is recognized and labeled, the reward circuit has a strong head start. This head start means the frontal brain regions may be less effective. This area of the brain is responsible for weighing the consequences of a decision and for helping to "stop" or inhibit the impulses toward drug reward.

Imaging research also shows that some individuals have less effective "stop" circuitry. For these people, the job of managing the powerful impulses toward drug reward may be even more difficult.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

When it comes to the vulnerability to relapse, and to addiction itself, we are not all created equal. We differ both in our brain response to drug rewards and in our ability to manage the powerful impulses toward drug reward.

Hope through research

Relapse is a long-term vulnerability, but intensive ongoing research is targeting the problem. The tools of brain imaging and genetics promise to help us understand our vulnerabilities - and our strengths - to help us realize more effective relapse prevention. Many different clinical research trials are underway, and new anti-relapse interventions (behavioral or medication-based) may be available in a location close to you.

Stuck Points in Recovery

Although some patients progress through the stages of recovery without complications, most chemically dependent people do not. They typically get stuck somewhere. A “stuck point” can occur during any period of recovery. Usually it is caused either by lack of skills or lack of confidence in one's ability to complete a recovery task. Other problems occur when the recovering person encounters a problem (physical, psychological, or social) that interferes with his or her ability to use recovery supports.

When recovering people encounter stuck points, they either recognize they have a problem and take action, or they lapse into the familiar coping skill of denial that a problem exists. Without specific relapse prevention skills to identify and interrupt denial, stress begins to build. Eventually, the stress will cause the patient to cope less and less well. This will result in relapse.

Symptoms of Becoming Stuck in Recovery

When people become stuck they may experience symptoms such as:

- An increase in negative thinking. The individual may feel disappointed with life in recovery because it has not lived up to their expectations. They are likely to feel pessimistic about the future.
- Anger outbursts and feelings of resentment
- Problems at work, home, or with friends. When people become stuck in recovery it usually means that relationships will suffer.
- The individual can begin to isolate. They stop talking about their problems and concerns with other people.
- They may begin to romance the drink or drug. This is when they remember the days when substance abuse seemed to help them.

The Dangers of Becoming Stuck in Recovery

Recovery from an addiction is a process and not an event. This means that the individual needs to be progressing all the time or else they begin to backslide. The dangers of becoming stuck in recovery include:

- It causes people to become dissatisfied with life away from addiction. It can take a long time before people manage to build a good life in sobriety. If people become stuck then they may lose hope of ever achieving such happiness.
- If people are stuck they will usually experience a great deal of stress. They may turn to new maladaptive behaviors to deal with this discomfort. This could include becoming a workaholic, a fitness fanatic, or turning to other forms of substance abuse. Addiction substitution is just more avoidance and can ultimately only lead to further pain and suffering.
- Becoming stuck is the first stage of the relapse process
- People become sober because they want to improve their life. When they are stuck in recovery it just delays them reaching that day when they will experience true peace and contentment. Life is short so it is probably best to avoid wasting time.
- Those individuals who become stuck in recovery may develop into dry drunks. Such individuals might manage to remain sober, but life away from their addiction will not be full of happiness. Instead it is more likely to feel like a prison sentence. The dry drunk tends to not only make their own life miserable but also the lives of those close to them. Such an individual may no longer be using alcohol or drugs but in many ways it is still business as usual.

Becoming Stuck and the Relapse Process

Those individuals who return to alcohol or drug abuse will often pass through a number of stages before reaching that point. This is known as the relapse process and involves:

- Becoming stuck in recovery
- The individual tries to ignore the fact that they are stuck
- They turn to negative coping strategies to deal with the discomfort of being stuck. This increases their level of internal suffering.
- A trigger event occurs and this causes the internal suffering to become far more obvious
- The individual experiences a great deal of emotional turmoil
- The inner turmoil is now impossible to ignore
- The individual feels like they are out of control
- They return to alcohol or drug abuse in order to escape the pain

Understanding Addiction: Diagnostically and Types of Drugs Specifically

Chapter 3

TAP 21 Competency: Recognize the potential for substance use disorders to mimic a variety of medical and mental health conditions and the potential for medical and mental health conditions to coexist with addiction and substance abuse.

DSM V

The DSM 5 explains that activation of the brain's reward system is central to problems arising from drug use — the rewarding feeling that people experience as a result of taking drugs may be so profound that they neglect other normal activities in favor of taking the drug. While the pharmacological mechanisms for each class of drug is different, the activation of the reward system is similar across substances in producing feelings of pleasure or euphoria.

The DSM 5 also recognizes that people are not all automatically or equally vulnerable to developing substance related disorders, and that some individuals have lower levels of self-control, which may be brain-based, which predispose them to developing problems if exposed to drugs.

There are two groups of substance-related disorders: substance use disorders and substance-induced disorders. Substance use disorders are patterns of symptoms resulting from use of a substance which the individual continues to take, despite experiencing problems as a result.

Substance-induced disorders include intoxication, withdrawal, substance induced mental disorders, including substance induced psychosis, substance induced bipolar and related disorders, substance induced depressive disorders, substance induced anxiety disorders, substance induced obsessive-compulsive and related disorders, substance induced sleep disorders, substance induced sexual dysfunctions, substance induced delirium and substance induced neurocognitive disorders.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

Substance use disorders span a wide variety of problems arising from substance use, and cover 11 different criteria:

1. Taking the substance in larger amounts or for longer than the you meant to
2. Wanting to cut down or stop using the substance but not managing to
3. Spending a lot of time getting, using, or recovering from use of the substance
4. Cravings and urges to use the substance
5. Not managing to do what you should at work, home or school, because of substance use
6. Continuing to use, even when it causes problems in relationships
7. Giving up important social, occupational or recreational activities because of substance use
8. Using substances again and again, even when it puts the you in danger
9. Continuing to use, even when the you know you have a physical or psychological problem that could have been caused or made worse by the substance
10. Needing more of the substance to get the effect you want (tolerance)
11. Development of withdrawal symptoms, which can be relieved by taking more of the substance.

The DSM 5 allows clinicians to specify how severe the substance use disorder is, depending on how many symptoms are identified. ***Two or three symptoms indicate a mild substance use disorder, four or five symptoms indicate a moderate substance use disorder, and six or more symptoms indicate a severe substance use disorder.*** Clinicians can also add “in early remission,” “in sustained remission,” “on maintenance therapy,” and “in a controlled environment.”

Instructor Note: The DSM is a very interesting book and worth buying. Even if you will not be working directly with primary mental health clients you will be seeing clients that have co-occurring disorders (about 70%). For addiction counselors our main use of the DSM will be substance related, however this book helps tremendously with learning how to conduct a really thorough and clinically focused assessment. Believe me it's worth owning 😊

The Relationships between AOD Use and Psychiatric Symptoms and Disorders

There are several possible relationships between AOD use and psychiatric symptoms and disorders. AODs may induce, worsen, or diminish psychiatric symptoms, complicating the diagnostic process.

- AOD use can cause psychiatric symptoms and mimic psychiatric disorders. Acute and chronic AOD use can cause symptoms associated with almost any psychiatric disorder. The type, duration, and severity of these symptoms are usually related to the type, dose, and chronicity of the AOD use.
- Acute and chronic AOD use can prompt the development, provoke the reemergence, or worsen the severity of psychiatric disorders.
- AOD use can mask psychiatric symptoms and disorders. Individuals may use AODs to purposely dampen unwanted psychiatric symptoms and to ameliorate the unwanted side effects of medications. AOD use may inadvertently hide or change the character of psychiatric symptoms and disorders.
- AOD withdrawal can cause psychiatric symptoms and mimic psychiatric syndromes. Cessation of AOD use following the development of tolerance and physical dependence causes an abstinence phenomenon with clusters of psychiatric symptoms that can also resemble psychiatric disorders.
- Psychiatric and AOD disorders can coexist. One disorder may prompt the emergence of the other, or the two disorders may exist independently. Determining whether the disorders are related may be difficult, and may not be of great significance, when a patient has long-standing, combined disorders. Consider a 32-year-old patient with bipolar disorder whose first symptoms of alcohol abuse and mania started at age 18, who continues to experience alcoholism in addition to manic and depressive episodes. At this point, the patient has two well-developed independent disorders that both require treatment.
- Psychiatric behaviors can mimic behaviors associated with AOD problems. Dysfunctional and maladaptive behaviors that are consistent with AOD abuse and addiction may have other causes, such as psychiatric, emotional, or social problems. Multidisciplinary assessment tools, drug testing, and information from family members are critical to confirm AOD disorders.
- The symptoms of a coexisting psychiatric disorder may be misinterpreted as poor or incomplete “recovery” from AOD addiction. Psychiatric disorders may interfere with

patients' ability and motivation to participate in addiction treatment, as well as their compliance with treatment guidelines.

For example, patients with anxiety and phobias may fear and resist attending Alcoholics Anonymous or group meetings. Depressed people may be too unmotivated and lethargic to participate in treatment. Patients with psychotic or manic symptoms may exhibit bizarre behavior and poor interpersonal relations during treatment, especially during group-oriented activities. Such behaviors may be misinterpreted as signs of treatment resistance or symptoms of addiction relapse.

AOD Use and Psychiatric Symptoms

- AOD use can cause psychiatric symptoms and mimic psychiatric syndromes.
- AOD use can initiate or exacerbate a psychiatric disorder.
- AOD use can mask psychiatric symptoms and syndromes.
- AOD withdrawal can cause psychiatric symptoms and mimic psychiatric syndromes.
- Psychiatric and AOD use disorders can independently coexist.
- Psychiatric behaviors can mimic AOD use problems.

Instructor Note: The following section focuses on specific drugs, their effects on the brain, the mood, emotional state and physical risks. I chose the most commonly used substances here, however, there is an appendix at the end of this document that details street drugs and emerging trends in types of drug being used now.

Specific Drugs and their Effects

Marijuana

The marijuana high is one of the most unpredictable of all drug intoxication effects, despite the fact that it is often considered to be a "soft" drug. When people are stoned on marijuana, the experience is strongly affected by factors that have little to do with the drug, and are actually due to the sensitivity of the person taking the drug to their surroundings and their feelings about the people they are with. The frame of mind of the person using marijuana and the various aspects of the place where they use marijuana that influence the effects are known as set and setting.

Altered Sensory Perceptions

Most people experience changes in their sensory perceptions when they are stoned. While marijuana does not typically produce real hallucinations the way that hallucinogenic drugs like LSD do, people do tend to see the world in a different way when they are high on cannabis than they do normally. For example, familiar faces and objects can seem unfamiliar or strange, often in a way that amuses the person who is high; colors can appear brighter; aesthetic appreciation can be enhanced; and the mood of the individual can be projected onto everything around them. When surroundings are perceived in a positive way, this can be enjoyable -- the world seems more beautiful -- but it can also happen in a negative way, causing the world to seem grim and harsh.

The sensory perceptions of hearing and taste are often the sensory experiences most strongly affected by marijuana. People who have used marijuana will often report a greater appreciation of music, and may spend the entire experience listening to music and doing little else.

Enhancement of the sense of taste can result in a specific type of binge eating called "the munchies," in which larger amounts of food may be consumed than normal, and often in odd combinations, such as chocolate with pickles.

Effects of Marijuana on Mood and Mental State

The effects of marijuana on mood vary greatly from one person to another, but generally, emotions are exaggerated in a similar way to the intoxication effects of alcohol. Situations that normally seem emotionally neutral may appear amusing or ridiculous, or conversely, intimidating and upsetting. Marijuana users will typically attempt to control the emotional stimulation they are exposed to while stoned, but this is not always possible. Situations involving real or imagined confrontation can be particularly upsetting, and can result in intense paranoia in someone under the influence of marijuana.

The effects of marijuana on the ability to relax are rather contradictory -- while many who become dependent on marijuana do so for the drugs initial relaxation effects, the rebound effect typically results in a higher level of anxiety in marijuana users. Some develop long-term anxiety disorders, which they attempt to self-medicate with marijuana. This vicious cycle may continue until the individual ceases to use marijuana.

Rarely does marijuana improve mental functioning. While some people claim that marijuana improves creativity, and there is some evidence that marijuana use is associated with production of a greater number of novel ideas, it is unclear whether people who have novel ideas seek out marijuana, or whether the drug increases the novel ideas. Also, the quality of the creative ideas has been questioned, and some research has shown that higher doses result in less creativity than lower doses, which do not differ significantly from the creativity of individuals not under the effects of marijuana. Typically, people under the influence of marijuana express ideas that are bizarre, muddled, unfeasible, or incomprehensible to others. This is unfortunate for would-be artists who use marijuana in the hope of a shortcut to artistic success -- it is unlikely to help and may hinder progress.

Cocaine

The cocaine high, also known as cocaine intoxication, is one of the most widely recognized cocaine effects among cocaine users. For people who are experimenting with cocaine use, occasional cocaine users, binge cocaine users, and people in the early stages of cocaine addiction, the cocaine high is often the main reason for taking cocaine, although social cocaine use is also quite common.

The cocaine high involves psychological changes -- changes to how the person thinks and feels emotionally -- and physical changes. Some of these changes are caused by the effects of cocaine on the brain and nervous system, and some are due to personal feelings that the cocaine user brings to the experience. This is why, although there are similarities among cocaine users' experiences of the cocaine high, the effect cocaine has on each person is different. So although aspects of cocaine intoxication are common among cocaine users, they may experience some, but not all, of these cocaine effects.

Euphoria

The main cocaine high effect that cocaine users want to experience is a special kind of intense pleasure called euphoria. Cocaine stimulates the brain in the same way that a real accomplishment does, creating a rewarding feeling that is the main reason people who get addicted want to get high on cocaine again and again.

Self Confidence

While high on cocaine, users can have the illusion of feeling better about themselves than they usually do, to the point of feeling superior to other people -- this is sometimes called grandiosity. This effect of the cocaine high can have a particular appeal to people with low self-esteem, or people who are in situations where a greater level of confidence is desirable, such as performers. Unfortunately, this false confidence is an effect of the drug, and not based on any real accomplishment, and grandiosity can be annoying to other people, leading to social problems. Once cocaine users come down from the cocaine high, they may feel even worse about themselves than they did before, setting themselves up for a cycle of using to try and feel better, with each time the effect being increasingly short-lived.

Sociability

Another tempting cocaine effect is that during a cocaine high, users may feel more energetic and sociable, which can make it attractive to people who have social anxieties, shyness, or who lack the energy to go out and do things, particularly if their lethargy stems from depression. When high on cocaine, they may become talkative and gregarious, but on the other hand, getting high on cocaine can sometimes lead to angry outbursts, restlessness, hyperactivity (difficulty with self-calming), anxiety to the point of paranoia, and even seeing, hearing or feeling things that aren't really there -- known as perceptual disturbances or hallucinations.

When Good Turns to Bad

When people take cocaine over a longer period of time, they can experience the opposite effects during the cocaine high -- a kind of blunting of the emotions, sadness, and withdrawing from other people. This can be particularly frustrating for cocaine users who take cocaine to self-medicate in order to give themselves more confidence, to socialize and to feel happier. Being high on cocaine also makes people feel different physically. Physical cocaine effects include a general feeling of stimulation. Cocaine can cause changes to heart rhythm or breathing, sweating, feelings of being very hot or cold, muscle weakness, or nausea. Although some of these physical symptoms of cocaine intoxication can be quite unpleasant, with repeated cocaine use, the brain can start to associate these physical symptoms with the

pleasurable feelings of the cocaine high, so as people become addicted to cocaine, they may be surprisingly tolerant of these unpleasant cocaine effects.

If cocaine intoxication is taken to the extreme, the experience can be dangerous as well as unpleasant. In particular, there is a risk of heart problems, seizures, and even death. Because cocaine is illegal, there is no way to predict how strong it is going to be, which can lead to cocaine users sometimes taking more than they intended, and the cocaine high taking a turn for the worst. A stronger dose can also increase tolerance, so that next time more of the drug is needed, which is the physical side of the addiction.

Heroin

The heroin high, technically termed heroin intoxication, is often the reason given by heroin users for taking such a dangerous drug. However, the pleasant effects of the heroin high are more important to people who do not feel good in the first place, and the brief respite that heroin provides from intense pain, depression and anxiety is often really why they choose to take the drug -- although the rebound effect worsens unpleasant feelings. Compared to other drugs, such as alcohol, marijuana, cocaine, and meth, heroin is taken less for recreational and social reasons and more for self-medication.

The heroin high creates changes to thoughts, feelings and sensations, some of which are caused by the effects of the drug itself on the brain and nervous system, and some of which depend on the personal history and expectations of the person taking the drug. For this reason, one person might find the effects of heroin to be awful, while another might feel relief and pleasure from the same effects.

Euphoria

Often when heroin users seek a high, they want to feel euphoria, a pleasurable sensation caused by changes in the brain. For people who rarely feel pleasure, either because they suffer from depression or anxiety, or because they live in unhappy circumstances, such as poverty, survival sex work, or the aftermath of an abusive childhood, a heroin high may be the only time they recall feeling pleasure. For people with more balanced lives, euphoria can happen in response to pleasurable day-to-day or special events.

Safe and Warm Feelings

People describe sensations of warmth and safety while they are high on heroin, even though in reality, they may be anything but safe and warm. This is why heroin can be so appealing to people living in unsafe surroundings, such as homeless people. On a cold night, sleeping on the streets, a hit of heroin can make it possible to relax and get some rest, yet the risks of developing hypothermia or pneumonia are still there.

On lower doses, people on heroin can feel calmer, less uptight and lonely, and more accepting of those around them. This can be appealing to sex workers, who can find it easier to go through with sexual contact with an unappealing stranger while under the influence of heroin. People living in deprived communities where criminal involvement is the norm can find it easier to get along with their peers when on heroin, which helps reduce the kind of anxiety that is natural to experience in these settings.

On higher doses, people can disconnect from those around them, feeling a kind of floating, dream-like state. Again, for someone with a high level of anxiety, depression, or alienation from the people and the world around them, this can be a great relief.

Pain Relief

The first few times heroin is used, it is very effective in reducing or eliminating physical and emotional pain. This can make it particularly appealing to people who have chronic pain, or those who engage in painful activities, such as sex work -- a woman who has intercourse with twenty different men in a night, some of whom may be physically abusive, will find this experience much less painful on heroin.

Unpleasant Effects of Heroin

Many people find heroin very unpleasant the first time they take it, and never take it again. The effects that heroin has on the nervous system can cause immediate vomiting, which, combined with the suppression of breathing and the cough reflex, increases the risk of choking. It also causes constipation. Heroin tends to reduce sex drive and the ability to have an orgasm, although on a physical level, it can increase sexual arousal, i.e., cause a man to have an erection or a woman to produce vaginal lubrication, again making sex work more manageable.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

Heroin carries a high risk of overdose, and the risk does not decrease with experience, as tolerance develops quickly, and changes in body weight, the route of administration, periods of abstinence or reduced use, and even the familiarity of the place where the drug is taken affect how much the body can cope with. Fillers and even other drugs are mixed with what is sold as heroin. The amount of heroin in the drug purchased illegally is unpredictable, so it is impossible for heroin users to accurately predict whether the dose will be strong or weak. Some heroin users are willing to play Russian Roulette with their heroin, because they feel so powerless and unhappy that the risk of death is not as concerning to them as it is to people who are living in more manageable circumstances.

Heroin Addiction

From a physical perspective, heroin is moderately addictive. But for people with long-standing emotional problems, a history of trauma, chronic pain, and a disadvantaged lifestyle, the risk of addiction is very high.

Methamphetamine

The meth high, also known as methamphetamine intoxication, is one of the most widely recognized effects among meth users. For people who are experimenting with meth use, occasional meth users, binge meth users, and people in the early stages of meth addiction, experiencing the meth high is often the main reason for taking meth, although social meth use is also quite common.

The meth high involves psychological changes (changes to how the person thinks and feels emotionally) and physical changes. Some of these changes are caused by the effects of meth on the brain and nervous system, and some are due to personal feelings that the meth user brings to the experience.

This is why, although there are similarities among meth users' experiences of meth effects, the effect meth has on each person is different. Although aspects of meth intoxication are common among meth users, they may experience some, but not all, of these effects.

Euphoria or Emotional Blunting

The effect that meth users are looking for is a kind of intense pleasure called euphoria. Meth stimulates the brain in the same way that a real accomplishment does, creating a rewarding feeling that motivates people who get addicted to meth want to do it again and again.

In contrast, some meth users find that their emotions are "blunted" -- in other words, they become less aware of their feelings. This can also be motivating for meth users who want to escape from painful memories or difficult current circumstances.

Research shows that many people who become addicted to meth suffered from childhood abuse. One of the ironies of meth addiction is the tendency for meth addicts to seek out more meth to escape the negative emotions about problems resulting from their meth use. The feeling of not caring anymore can provide temporary relief for someone burdened by stress and worries.

Disorganization and even chaos can quickly escalate in the lives of meth users as they are becoming addicted. Over time, meth use can get in the way of proper self-care. Severe tooth decay, commonly called "meth mouth" in such individuals, is a good example of this. It can interfere with caring about and for many things, in fact, including taking care of kids, going to work or school, and paying the bills.

Sense of Empowerment -- Which Can Lead to Aggression

While under the influence of meth, users can have the illusion of being more powerful and productive than usual. Although this can feel good to the meth user, it can cause problems. Meth can make people feel more socially outgoing, talkative and self-confident, but equally, they can behave bizarrely and become distant from positive social relationships. Many meth users become surrounded by other meth users, and lose contact with outside supports.

Meth can have the effect of making people delusional; their grasp on reality becomes eroded. Sometimes they might feel superior to other people (sometimes called grandiosity), but they can also become anxious, paranoid and aggressive.

One of the problems with being high on meth is the lack of awareness of how you actually appear and how you are behaving, something that meth users in recovery are able to reflect on after the fact.

Physical Stimulation -- Tweaking

Being high on meth also makes people feel different physically. Physical meth effects include a general feeling of stimulation. Meth can cause changes to heart rhythm or breathing, sweating, feelings of being very hot or cold, or nausea and vomiting.

Although some of these physical symptoms of meth intoxication can be quite unpleasant, with repeated meth use, the brain can start to associate these physical symptoms with the pleasurable feelings of the meth high. So, as people become addicted to meth, they may be surprisingly tolerant of these unpleasant meth effects.

Meth is an unusual illicit drug in that almost as many women as men use it; most drugs are predominantly taken by men. One of the reasons women are attracted to meth is that it releases extra energy and suppresses appetite. Initially, women can feel more attractive as they lose weight. Although people's physical appearance deteriorates when they become addicted to meth (along with their health), the initial feeling of being in control and losing weight can make people feel good. And because meth users lack awareness of changes to their physical appearance, they may not realize when they start looking worse.

Meth is also sexually stimulating, although it can also lead to sexual dysfunction and a loss of sexual libido. The sexual effects of meth can be attractive to people who have sex addictions, or who are involved in sex work. Considerable attention has been paid to use of meth in the gay community, commonly known as party and play or PnP, particularly in relation to sexual enhancement effects, with particular concern to the implications for HIV and other STD risks. Stimulation comes with a price. It is difficult to sleep on meth, and sleep deprivation can worsen mental health problems such as anxiety, delusions and hallucinations. People on meth can get very fidgeting, known as "tweaking," and have tendency to imagine bugs crawling on their skin, which they repetitively pick at. This leads to open wounds that later scar, known as "meth sores," which are a characteristic of severe meth abusers.

How Long Does Meth Withdrawal Last?

Research shows that meth withdrawal consists of two phases. The first phase is most intense during the first 24 hours after you last use meth, and gradually gets less intense over the course of about two weeks. The second phase is less intense, and lasts for about another two to three



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

weeks. Sometimes meth users experience withdrawal symptoms for months, known as post-acute withdrawal syndrome (PAWS).

Everyone's experience of meth withdrawal is different, but there are certain common features, outlined below. If your symptoms feel severe, see your doctor as soon as possible, and tell him/her that you are withdrawing from meth.

Inactivity and Sleepiness

You may have been hyperactive and felt like you didn't need sleep when you were on meth; during meth withdrawal, you'll probably feel the opposite. Especially during the first week of withdrawal, you're likely to feel very inactive, tired, and sleepy. This usually peaks around the fifth day of withdrawal, when people sleep an average of 11 hours per day; a phenomenon known as hypersomnia. You may also experience vivid dreams, but these will usually subside during the first week or so.

Meth Cravings

Most people who are withdrawing from meth experience a strong desire to actually take more; they are experiencing cravings, which are common among people withdrawing from many addictive substances. Although these cravings start out quite intense, the frequency and intensity of the cravings will subside over the next two to five weeks, and the best thing you can do is ride them out.

Carbohydrate Cravings

When on meth, the user probably didn't have much of an appetite for food. That changes when they experience meth withdrawal, during which they're likely to have strong cravings for carbohydrates—sugary or starchy foods—especially at the beginning of withdrawal, and usually lasting into the second and third weeks

Depressed Mood

Having a low or flat mood is normal while going through meth withdrawal. For about two thirds of meth addicts, this will subside by the end of the second week of abstinence from the drug.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

For most others, it will be gone by the end of the third week, although depression can continue for a small proportion of people coming off meth. If a client's symptoms of depression continue for more than three weeks, they should be evaluated by a doctor. Medications can be effective for treating these symptoms.

A smaller group of people experience symptoms of anxiety, which should also subside. As with depressed mood, seek medical help if this continues.

Psychotic Symptoms

Psychosis can be a symptom of meth withdrawal, and consists primarily of hallucinations: seeing, hearing, and feeling things that aren't there. It may also involve delusions, in which ideas that seem true to you aren't actually true in reality. These symptoms can also occur when you are high on meth.

Although it may seem daunting, the best place to go if you're having symptoms of psychosis is a hospital or medically managed detox center. Although symptoms will usually go away after the first week of withdrawal, people can run into serious difficulties trying to cope with symptoms of psychosis on their own. Medications can be of great help, but you'll need to be carefully monitored by a physician.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

Sources:

- American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders DSM V. Fifth Edition* (Text Revision). American Psychiatric Association. 20013.
- McGregor, C., Srisurapanont, M., Jittiwutikarn, J., Laobhripatr, S., Wongtan, T. & White, J. "The nature, time course and severity of methamphetamine withdrawal." *Addiction*. 100:1320-1329. 2005.
- Mancino, M., Gentry, B., Feldman, Z., Mendelson, J., & Oliveto, A. "Characterizing methamphetamine withdrawal in recently abstinent methamphetamine users: a pilot field study." *The American Journal of Drug and Alcohol Abuse*,37:131–136. 2011.
- Zorick, T., Nestor, L., Miotto, K., Sugar, C., Hellemann, G., Scanlon, G., Rawson, R. & London, E. "Withdrawal symptoms in abstinent methamphetamine-dependent subjects." *Addiction*, 105:1809–1818. 2010.
- Reboussin, B. and Anthony, J. "Is there Epidemiological Evidence to Support the Idea that a Cocaine Dependence Syndrome Emerges Soon after Onset of Cocaine Use?" *Neuropsychopharmacology* 31:2055-2064. 2006.
- Reid, PhD, M., Flammino, PhD, F., Howard, BS, H., Nilsen, MD, D., and Prichep, PhD, L. "Cocaine cue versus cocaine dosing in humans: Evidence for distinct neurophysiological response profiles." *Pharmacol Biochem Behav* 1:155-164. 2008.

Tobacco/Nicotine

Chapter 4

Tobacco use is the leading preventable cause of disease, disability, and death in the United States. According to the Centers for Disease Control and Prevention (CDC), cigarette smoking results in more than 480,000 premature deaths in the United States each year—about 1 in every 5 U.S. deaths—and an additional 16 million people suffer with a serious illness caused by smoking. In fact, for every one person who dies from smoking, about 30 more suffer from at least one serious tobacco-related illness.

The harmful effects of smoking extend far beyond the smoker. Exposure to secondhand smoke can cause serious diseases and death. Each year, an estimated 88 million nonsmoking Americans are regularly exposed to secondhand smoke and almost 41,000 nonsmokers die from diseases caused by secondhand smoke exposure.

How Does Tobacco Affect the Brain?

Cigarettes and other forms of tobacco—including cigars, pipe tobacco, snuff, and chewing tobacco—contain the addictive drug nicotine. Nicotine is readily absorbed into the bloodstream when a tobacco product is chewed, inhaled, or smoked. A typical smoker will take 10 puffs on a cigarette over the period of about 5 minutes that the cigarette is lit. Thus, a person who smokes about 1 pack (25 cigarettes) daily gets 250 “hits” of nicotine each day.

Upon entering the bloodstream, nicotine immediately stimulates the adrenal glands to release the hormone epinephrine (adrenaline). Epinephrine stimulates the central nervous system and increases blood pressure, respiration, and heart rate.

Similar to other addictive drugs like cocaine and heroin, nicotine increases levels of the neurotransmitter dopamine, which affects the brain pathways that control reward and pleasure. For many tobacco users, long-term brain changes induced by continued nicotine exposure result in addiction—a condition of compulsive drug seeking and use, even in the face of negative consequences. Studies suggest that additional compounds in tobacco smoke, such as acetaldehyde, may enhance nicotine’s effects on the brain.

When an addicted user tries to quit, he or she experiences withdrawal symptoms including irritability, attention difficulties, sleep disturbances, increased appetite, and powerful cravings

for tobacco. Treatments can help smokers manage these symptoms and improve the likelihood of successfully quitting.

What Other Adverse Effects Does Tobacco Have on Health?

Cigarette smoking accounts for about one-third of all cancers, including 90 percent of lung cancer cases. Smokeless tobacco (such as chewing tobacco and snuff) also increases the risk of cancer, especially oral cancers. In addition to cancer, smoking causes lung diseases such as chronic bronchitis and emphysema, and increases the risk of heart disease, including stroke, heart attack, vascular disease, and aneurysm. Smoking has also been linked to leukemia, cataracts, and pneumonia. On average, adults who smoke die 10 years earlier than nonsmokers.

Although nicotine is addictive and can be toxic if ingested in high doses, it does not cause cancer—other chemicals are responsible for most of the severe health consequences of tobacco use. Tobacco smoke is a complex mixture of chemicals such as carbon monoxide, tar, formaldehyde, cyanide, and ammonia—many of which are known carcinogens. Carbon monoxide increases the chance of cardiovascular diseases. Tar exposes the user to an increased risk of lung cancer, emphysema, and bronchial disorders.

Pregnant women who smoke cigarettes run an increased risk of miscarriage, stillborn or premature infants, or infants with low birth weight. Maternal smoking may also be associated with learning and behavioral problems in children. Smoking more than one pack of cigarettes per day during pregnancy nearly doubles the risk that the affected child will become addicted to tobacco if that child starts smoking.

While we often think of medical consequences that result from direct use of tobacco products, passive or secondary smoke also increases the risk for many diseases. Secondhand smoke, also known as environmental tobacco smoke, consists of exhaled smoke and smoke given off by the burning end of tobacco products.

Nonsmokers exposed to secondhand smoke at home or work increase their risk of developing heart disease by 25–30 percent and lung cancer by 20–30 percent. In addition; secondhand smoke causes health problems in both adults and children, such as coughing, overproduction of phlegm, reduced lung function and respiratory infections, including pneumonia and bronchitis.. Each year about 150,000 – 300,000 children younger than 18 months old experience respiratory tract infections caused by secondhand smoke. Children exposed to secondhand smoke are at an increased risk of ear infections, severe asthma, respiratory infections and death. In fact, more than 100,000 babies have died in the past 50 years from sudden infant death syndrome (SIDS),



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

and other health complications as a result of parental smoking. Children who grow up with parents who smoke are more likely to become smokers, thus placing themselves (and their future families) at risk for the same health problems as their parents when they become adults.

Although quitting can be difficult, the health benefits of smoking cessation are immediate and substantial—including reduced risk for cancers, heart disease, and stroke. A 35-year-old man who quits smoking will, on average, increase his life expectancy by 5 years.

Are There Effective Treatments for Tobacco Addiction?

Tobacco addiction is a chronic disease that often requires multiple attempts to quit. Although some smokers are able to quit without help, many others need assistance. Both behavioral interventions (counseling) and medication can help smokers quit; but the combination of medication with counseling is more effective than either alone.

The U.S. Department of Health and Human Services' (HHS) has established a national toll-free quitline, 800-QUIT-NOW, to serve as an access point for any smoker seeking information and assistance in quitting. NIDA's scientists are looking at ways to make smoking cessation easier by developing tools to make behavioral support available over the internet or through text-based messaging. In addition, NIDA is developing strategies designed to help vulnerable or hard-to-reach populations quit smoking.

Behavioral Treatments

Behavioral treatments employ a variety of methods to help smokers quit, ranging from self-help materials to counseling. These interventions teach people to recognize high-risk situations and develop coping strategies to deal with them.

Nicotine Replacement Treatments

Nicotine replacement therapies (NRTs) were the first pharmacological treatments approved by the Food and Drug Administration (FDA) for use in smoking cessation therapy. Current FDA-approved NRT products include nicotine chewing gum, the nicotine transdermal patch, nasal sprays, inhalers, and lozenges. NRTs deliver a controlled dose of nicotine to a smoker in order to relieve withdrawal symptoms during the smoking cessation process. They are most successful when used in combination with behavioral treatments.

Other Medications

Bupropion and varenicline are two FDA-approved non-nicotine medications that have helped people quit smoking. Bupropion, a medication that goes by the trade name Zyban, was

approved by the FDA in 1997, and Varenicline tartrate (trade name: Chantix) was approved in 2006. It targets nicotine receptors in the brain, easing withdrawal symptoms and blocking the effects of nicotine if people resume smoking.

Current Treatment Research

Scientists are currently developing new smoking cessation therapies. For example, they are working on a nicotine vaccine, which would block nicotine's reinforcing effects by causing the immune system to bind to nicotine in the bloodstream preventing it from reaching the brain. In addition, some medications already in use might work better if they are used together. Scientists are looking for ways to target several relapse symptoms at the same time—like withdrawal, craving and depression.

How Widespread Is Tobacco Use?

Monitoring the Future Survey*

Current smoking rates among 8th-, 10th-, and 12th-grade students reached an all-time low in 2014. According to the Monitoring the Future survey, 4.0 percent of 8th-graders, 7.2 percent of 10th graders, and 13.6 percent of 12th-graders reported they had used cigarettes in the past month. Although unacceptably high numbers of youth continue to smoke, these numbers represent a significant decrease from peak smoking rates (21 percent in 8th-graders, 30 percent in 10th-graders, and 37 percent in 12th-graders) that were reached in the late 1990s.

The use of hookahs has also remained steady at high levels since its inclusion in the survey in 2010—past year use was reported by 22.9 percent of high school seniors. Meanwhile, past year use of small cigars has declined since 2010 yet remains high with 18.9 percent of 12th graders reporting past year use. Past-month use of smokeless tobacco in 2014 was reported by 3.0 percent of 8th graders, 5.3 percent of 10th graders, and 8.4 percent of 12th graders.

National Survey on Drug Use and Health (NSDUH)**

In 2013, 25.5 percent of the U.S. population age 12 and older used a tobacco product at least once in the month prior to being interviewed. This figure includes 2 million young people aged 12 to 17 (7.8 percent of this age group). In addition, almost 55.8 million Americans (21.3 percent of the population) were current cigarette smokers; 12.4 million smoked cigars; more than 8.8 million used smokeless tobacco; and over 2.3 million smoked tobacco in pipes.

Electronic Cigarettes

What Are They?

E-cigarettes are battery-operated devices that produce a flavored nicotine vapor that look like tobacco smoke.

Are They Safe?

Although e-cigarette vapor does not contain the tar currently responsible for most lung cancer and other lung diseases, it has been shown to contain known carcinogens and toxic chemicals (such as formaldehyde and acetaldehyde), as well as potentially toxic metal nanoparticles from the vaporizing mechanism. E-cigarette products are not regulated by the FDA, so there are currently no accepted measures to confirm their purity or safety, and the long-term health consequence of e-cigarette use remain unknown. NIDA is developing research programs to help answer these questions.

Can They Help People Quit Smoking Traditional Cigarettes?

Because they deliver nicotine without burning tobacco, e-cigarettes are thought by many to be a safer alternative to conventional cigarettes, and some people even think they may help smokers lower nicotine cravings while they are trying to quit smoking. However, studies of the effectiveness of e-cigarettes have not shown they help with smoking cessation. It has also been suggested that they could perpetuate the nicotine addiction and actually interfere with quitting.

Statistics and Trends

Monitoring the Future Study: Trends in Prevalence of Various Drugs for 8th Graders, 10th Graders, and 12th Graders; 2014 (in percent)*

Drug	Time Period	8th Graders	10th Graders	12th Graders
Cigarettes (any use)	Lifetime	13.50	[22.60]	[34.40]
	Past Month	4.00	[7.20]	[13.60]
	Daily	1.40	[3.20]	[6.70]
Smokeless	Lifetime	8.00	13.60	15.10

6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

Drug	Time Period	8th Graders	10th Graders	12th Graders
Tobacco	Past Month	3.00	5.30	8.40
	Daily	0.50	1.80	3.40
E-cigarettes	Past Month	8.70	16.20	17.10

* Data in brackets indicate statistically significant change from the previous year. [Previous MTF Data](#)

National Survey on Drug Use and Health: Trends in Prevalence of Various Drugs for Ages 12 or Older, Ages 12 to 17, Ages 18 to 25, and Ages 26 or Older; 2013 (in percent)*

Drug	Time Period	Ages 12 or Older	Ages 12 to 17	Ages 18 to 25	Ages 26 or Older
Cigarettes (any use)	Lifetime	61.8	[15.7]	[57.9]	68.1
	Past Year	25.3	[10.3]	[39.5]	24.6
	Past Month	[21.3]	[5.6]	30.6	21.6
Smokeless Tobacco	Lifetime	17.6	6.0	20.3	18.5
	Past Year	4.5	4.1	9.3	3.8



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

Drug	Time Period	Ages 12 or Older	Ages 12 to 17	Ages 18 to 25	Ages 26 or Older
	Past Month	3.4	2.0	5.8	3.1

^ indicate low precision; no estimate reported.

Data in brackets indicate statistically significant change from the previous year. [Previous NSDUH Data](#)

Societal and Cultural Relationship to Substance abuse

Chapter 5

TAP 21 Competency: Recognize the social, political, economic, and cultural context within which addiction and substance use exist, including risk and resiliency factors that characterize individuals and groups and their living environment

In this chapter, we discuss the influences of culture and social structures on drug use. While the term “culture” is generally understood to denote norms, beliefs, values and meanings, there are multiple definitions of the term “social structure”. The concepts of culture and social structure are considered by some to be separate, but by others to be interconnected. Based on the various definitions used in the research literature, we have derived the following meanings for social structure:

1. The roles, relationships and domination associated with societal categories such as gender, race and class
2. The social, economic and cultural characteristics of a society
3. Societal systems and institutions such as the education system and welfare policies.

Patterns of drug use are directly influenced by social structural factors, cultural factors, drug availability and drug functions. Each of these factors is interconnected and influences or mediates between other factors. Social structural factors and cultural factors are themselves influenced by cultural identification and social learning (as per social learning theory).

Drug-specific cultural influences

Norms regarding acceptable patterns of drug use vary with factors such as the type of drug (for example, tobacco, alcohol, cannabis or heroin), the historical period, the setting (the location, occasion and the presence of others) and group affiliation (for example, with gender, ethnic, age and social groups).

Attitudes towards drug use vary with the drug type. The attitudes of Americans aged 14 years and over regarding the acceptability of use of specific drugs and drug laws (legalization, penalties for sale and supply) were assessed by the National Drug Strategy household survey in 2001. The acceptability of drug use varied, such that the use of illicit drugs (cannabis and other illicit drugs) was less acceptable than the use of legal drugs (alcohol and tobacco).

Attitudes towards the use of particular drugs vary with factors such as drug laws, prevalence rates of use, and perceptions of harm. The acceptability of use was negatively related to the perceptions of which drugs are causing problems, and these perceptions appeared to be influenced by the drugs illegal status. The drug that most people first thought of as being associated with a drug problem was heroin (50 per cent), followed by cannabis (24 per cent). Alcohol (8 per cent) and tobacco (3 per cent) were least considered to be a problem.

Historical period

Cultural influences on drug use have changed over time. The use of cannabis, which was regarded as deviant 40 years ago, is now so prevalent that its use has become more normalized and socially acceptable, at least among young people. The 1960s began a period of enormous cultural change together with the development of anti-establishment youth cultures which included hippies smoking cannabis and using LSD, a rock-music culture characterized by sex, drugs and rock'n'roll, punk rockers using heroin and so on. The use of ecstasy and related drugs was almost unheard of 20 years ago, but is now increasing and the user group is broadening, as a result of increased availability and the emergence of the dance music and club scene.

Group affiliation

Drug-specific attitudes, norms and values vary with group affiliation, which can be defined by a multitude of factors such as age, religion, gender, sexual affiliation, and subculture. Drug use can be a way to fit in with, or bond with, a social group. Among homosexuals, alcohol and drug use can be a way of fitting into the “gay scene”. This can be a potent motivator for young gay men who have recently come out and want to establish a new social group that is supportive of their sexual identity.

Influences on Drug Norms, Attitudes and Values

Reviewing the factors that influence drug norms, attitudes and values (as described above) enables a study of how harmful cultural influences impact cultural and societal views of drug

use, addiction and substance abuse treatment. Influences on community drug attitudes and norms include the media, legislation, marketing, broader Western culture and fashion trends.

The music industry, Hollywood movies and fashion advertising have influenced perceptions of heroin and heroin use, and how in the late 1990s this portrayal resulted in a trend whereby heroin use was fashionable, named “heroin chic” There have been many portrayals in film that present drug use, abuse and addiction in a romanticized light; which proved to have mass appeal to rebellious youths in search of an identity. Films such as Pulp Fiction, Trainspotting, and The Basketball Diaries have depicted, and in some cases glamorized heroin use. The heroin use of a number of Hollywood actors had been extensively publicized (for example, Robert Downey Jr.). Some companies added to the glamorization of heroin, by featuring models who looked like heroin addicts in their advertising.

Societal Discrimination

The experiences of discrimination and social exclusion can result from ones class, gender, ethnic group or other characteristics used to classify individuals in society, including drug dependence. People experience prejudiced attitudes and negative discrimination for a number of reasons. Specific forms of prejudice include racism and sexism. People also experience prejudice because they are unemployed, homeless, have a mental health problem or a drug-use disorder.

One of the impacts of discrimination can be social exclusion, which is a process by which people are denied the opportunity to participate in society and are unable to contribute to society. Social exclusion is now regarded as an important health risk factor. A substantial body of research literature highlights how drug-dependent people tend to be marginalized, which can contribute to a vicious cycle of disadvantage, discrimination and drug abuse. For example, stigmatization of drug- dependent people, based upon the belief that drug dependence is the fault of the individual, can create a barrier to seeking treatment.

Here are a few ways in which drug-dependent people are marginalized:

- In a 14-country study by the World Health Organization, disapproval was stronger for being a drug addict than for having a criminal record for burglary.
- Studies from the United States of America, Britain and Australia indicated that the general population thought that smokers, “high” alcohol users and illicit drug users should all receive lower priority in health care. Studies of health care provision

demonstrate, in fact, that inferior care is given when the patient is regarded as a “skid-row drinker”.

- People in treatment for drug-dependence problems demonstrate substantial social marginalization: they tend to be unemployed or in marginal jobs, to be divorced or separated, to be homeless.

Kaplan and Johnson found that the strongest predictor of increased drug use among young people was the effects of specific labeling as a “drug user”. That is, drug use increased as a result of getting into trouble because of initial drug use. Kaplan and colleagues explained that negative social sanctions (labeling) led to an escalation of drug use via three paths: (a) by perceiving the label of “drug user” as a positive thing, young people who use drugs can have a more positive self-evaluation and greater self-acceptance; (b) having been alienated by society because of being a drug user, the young person loses motivation to conform to that society; and (c) having been alienated by society because of being a drug user, the drug user has less opportunity to socialize with non-drug-using groups, hence greater opportunity and encouragement to use drugs. Being labeled as a “drug user” is a powerful phenomenon that can give adolescents the identity they have been searching for.

Addiction: Social and Cultural Influences

Many different factors influence addiction and recovery. Let's consider the Native American people. Unfortunately, this group has significant alcohol problems. This high rate of alcoholism could be due to their marginalized social status as citizens of the United States. We would expect higher rates of addiction problems within a group whose native land was invaded and stolen by conquerors. This devastating experience radically altered the stabilizing forces of community and family. People of African and Afro-Caribbean descent can trace similar destructive forces in their cultural history.

An understanding of social and cultural forces does help to answer, “How do people get addicted?” It is true that individuals affected by cultural influences cannot readily change these influences. Nevertheless, we can interpret these cultural forces in helpful or unhelpful ways. Sometimes re-interpretation is our only recourse.

Three primary socio-cultural influences are important to our discussion of “How do people get addicted?” These are culture, families, and social support. Because individuals can do very little to directly change these influences, our focus is how knowledge and awareness of these forces can strengthen recovery efforts.

Recovery from Addiction: Becoming Aware of Cultural Influences

Re-interpretation is a helpful technique but we cannot re-interpret something if we are unaware of it. Most social and cultural forces exert their influence without any conscious awareness of it. Therefore, it can be vitally important to know and appreciate the various cultures that influence us. Consider who "my people(s)" might be:

- Race and ethnicity
- Income
- Social status
- Educational background
- Sexual orientation
- Employment
- Geographic region
- Rural or urban resident
- Gender
- Religion
- Age
- National origin
- Disability status
- Military or veteran status
- Medical status
- Mental health status
- Personality characteristics
- Special interest groups
- Citizenship status (e.g. migrant workers)
- Legal status (Are you a convicted felon?)

When we view culture in this comprehensive manner, it becomes quite clear that knowing and appreciating our various cultures is quite a significant undertaking.

Here are some questions to consider as you think about your cultures:

- Do "my people(s)" view themselves as defeated and deprived?
- Do we live life from a depressed and hopeless perspective?
- Do we view life as one great party where we strive to have as much fun as possible?
- Do we view all substances as sinful so that we need to abstain from them?
- Do we see ourselves as impoverished, oppressed, or at risk of extinction?



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

- Regardless of what culture I identify with, in what ways has my culture shaped my attitude toward addiction?
- What are the norms of my culture toward intoxication?
- What changes are needed to stop promoting addiction and to instead discourage it?
- How can we accomplish these changes? For instance, addiction in impoverished areas declines when residents have better opportunities for advancement. Alcohol consumption goes down with higher taxes (which raise the price).

Culture is a powerful influence but most people are not aware of this influence. A cultural and social assessment is a helpful part of a personal recovery plan. What groups do I belong to? What are the beliefs and attitudes of these groups? Given my exposure to these groups, which beliefs and attitudes did I adopt? Which of these beliefs and attitudes are helpful? Which ones are not?

Do you belong to one of the cultures where families typically model moderate alcohol use? For instance Italian, Spanish, French, Greek, Jewish and Chinese do not usually have significant alcohol problems. In these cultures, drinking does not typically occur for the sake of getting high. Rather, it occurs in the context of a meal, ritual, or celebration. Or, do you belong to one of the heavy-drinking cultures where alcohol abuse, and/or other drug abuse, is more the norm? This includes the cultures and sub-cultures of Russia, Ireland, Scotland, and various US college campuses and fraternities, to name just a few.

Instructor Note: Culture and cultural beliefs and practices play an important role in understanding addiction in terms of how certain groups see drug & alcohol use, how they perceive addicts and addiction, what is ok and what isn't. Culture plays in an extremely important role in treatment of all types for all people. Without this understanding we would be missing a huge piece of what makes people tick, what forms their belief system and values, all of which counselor's need to know in order to provide therapy with best practice standards.

Effective Treatment and Recovery

Chapter 6

Principles of Drug Addiction Treatment

- **Addiction is a complex but treatable disease that affects brain function and behavior.** Drugs of abuse alter the brain's structure and function, resulting in changes that persist long after drug use has ceased. This may explain why drug abusers are at risk for relapse even after long periods of abstinence and despite the potentially devastating consequences.
- **No single treatment is appropriate for everyone.** Treatment varies depending on the type of drug and the characteristics of the patients. Matching treatment settings, interventions, and services to an individual's particular problems and needs is critical to his or her ultimate success in returning to productive functioning in the family, workplace, and society.
- **Many drug-addicted individuals also have other mental disorders.** Because drug abuse and addiction—both of which are mental disorders—often co-occur with other mental illnesses, patients presenting with one condition should be assessed for the other(s). And when these problems co-occur, treatment should address both (or all), including the use of medications as appropriate.
- **Treatment programs should test patients for the presence of HIV/AIDS, hepatitis B and C, tuberculosis, and other infectious diseases as well as provide targeted risk-reduction counseling, linking patients to treatment if necessary.** Typically, drug abuse treatment addresses some of the drug-related behaviors that put people at risk of infectious diseases. Targeted counseling focused on reducing infectious disease risk can help patients further reduce or avoid substance-related and other high-risk behaviors. Counseling can also help those who are already infected to manage their illness. Moreover, engaging in substance abuse treatment can facilitate adherence to other medical treatments. Substance abuse treatment facilities should provide onsite, rapid HIV testing rather than referrals to offsite testing—research shows that doing so increases the likelihood that patients will be tested and receive their test results. Treatment providers should also inform patients that highly active antiretroviral therapy

(HAART) has proven effective in combating HIV, including among drug-abusing populations, and help link them to HIV treatment if they test positive.

What are the principles of effective substance use disorder treatment?

Research shows that combining treatment medications (where available) with behavioral therapy is the best way to ensure success for most patients. Treatment approaches must be tailored to address each patient's drug use patterns and drug-related medical, psychiatric, and social problems.

How can medications help treat drug addiction?

Different types of medications may be useful at different stages of treatment to help a patient stop abusing drugs, stay in treatment, and avoid relapse.

- **Treating Withdrawal.** When patients first stop using drugs, they can experience a variety of physical and emotional symptoms, including depression, anxiety, and other mood disorders, as well as restlessness or sleeplessness. Certain treatment medications are designed to reduce these symptoms, which makes it easier to stop the drug use.
- **Staying in Treatment.** Some treatment medications are used to help the brain adapt gradually to the absence of the abused drug. These medications act slowly to stave off drug cravings and have a calming effect on body systems. They can help patients focus on counseling and other psychotherapies related to their drug treatment.
- **Preventing Relapse.** Science has taught us that stress, cues linked to the drug experience (such as people, places, things, and moods), and exposure to drugs are the most common triggers for relapse. Medications are being developed to interfere with these triggers to help patients sustain recovery.

Medications Used To Treat Drug Addiction

Opioid Addiction

- Methadone
- Buprenorphine
- Naltrexone

Alcohol and Drug Addiction

- Naltrexone

- Disulfiram
- Acamprosate

How do behavioral therapies treat drug addiction?

Behavioral treatments help engage people in substance use disorder treatment, modifying their attitudes and behaviors related to drug use and increasing their life skills to handle stressful circumstances and environmental cues that may trigger intense craving for drugs and prompt another cycle of compulsive use. Behavioral therapies can also enhance the effectiveness of medications and help people remain in treatment longer.

How do other mental disorders coexisting with drug addiction affect drug addiction treatment?

Drug addiction is a disease of the brain that frequently occurs with other mental disorders. In fact, as many as 6 in 10 people with an illicit substance use disorder also suffer from another mental illness; and rates are similar for users of licit drugs—i.e., tobacco and alcohol. For these individuals, one condition becomes more difficult to treat successfully as an additional condition is intertwined. Thus, people entering treatment either for a substance use disorder or for another mental disorder should be assessed for the co-occurrence of the other condition. Research indicates that treating both (or multiple) illnesses simultaneously in an integrated fashion is generally the best treatment approach for these patients.

How does drug addiction treatment help reduce the spread of HIV/AIDS, Hepatitis C (HCV), and other infectious diseases?

Drug-abusing individuals, including injecting and non-injecting drug users, are at increased risk of human immunodeficiency virus (HIV), hepatitis C virus (HCV), and other infectious diseases. These diseases are transmitted by sharing contaminated drug injection equipment and by engaging in risky sexual behavior sometimes associated with drug use. Effective drug abuse treatment is HIV/HCV prevention because it reduces activities that can spread disease, such as sharing injection equipment and engaging in unprotected sexual activity. Counseling that targets a range of HIV/HCV risk behaviors provides an added level of disease prevention.

Drug abuse treatment is HIV and HCV prevention.

Injection drug users who do not enter treatment are up to six times more likely to become infected with HIV than those who enter and remain in treatment. Participation in treatment also presents opportunities for HIV screening and referral to early HIV treatment. In fact, recent

research from NIDA's National Drug Abuse Treatment Clinical Trials Network showed that providing rapid onsite HIV testing in substance abuse treatment facilities increased patients' likelihood of being tested and of receiving their test results. HIV counseling and testing are key aspects of superior drug abuse treatment programs and should be offered to all individuals entering treatment. Greater availability of inexpensive and unobtrusive rapid HIV tests should increase access to these important aspects of HIV prevention and treatment.

The Role of Personal Responsibility

The role of personal responsibility is undiminished but clarified.

Does having a brain disease mean that people who are addicted no longer have any responsibility for their behavior or that they are simply victims of their own genetics and brain chemistry? Of course not.

Addiction begins with the voluntary behavior of drug use, and although genetic characteristics may predispose individuals to be more or less susceptible to becoming addicted, genes do not doom one to become an addict.

This is one major reason why efforts to prevent drug use are so vital to any comprehensive strategy to deal with the nation's drug problems. Initial drug use is a voluntary, and therefore preventable, behavior.

Moreover, as with any illness, behavior becomes a critical part of recovery. At a minimum, one must comply with the treatment regimen, which is harder than it sounds.

- Treatment compliance is the biggest cause of relapses for all chronic illnesses, including asthma, diabetes, hypertension, and addiction.
- Moreover, treatment compliance rates are no worse for addiction than for these other illnesses, ranging from 30 to 50 percent.

So.....for drug addiction as well as for other chronic diseases, the individual's motivation and behavior are clearly important parts of success in treatment and recovery.

All of this does explain why an addict cannot simply stop using drugs by sheer force of will alone.

Alcohol/ Drug Treatment Programs

Maintaining a comprehensive bio-behavioral understanding of addiction also speaks to what needs to be provided in drug treatment programs.

- Again, we must be careful not to pit biology against behavior.

The National Institute on Drug Abuse's recently published Principles of Effective Drug Addiction Treatment (listed at the beginning of this chapter) provides a detailed discussion of how we must treat all aspects of the individual, not just the biological component or the behavioral component.

As with other brain diseases such as schizophrenia and depression, the data show that the best drug addiction treatment approaches attend to the entire individual, combining the use of medications, behavioral therapies, and attention to necessary social services and rehabilitation.

- These might include such services as family therapy to enable the patient to return to successful family life, mental health services, education and vocational training, and housing services.

That does not mean, of course, that all individuals need all components of treatment and all rehabilitation services. Another principle of effective addiction treatment is that the array of services included in an individual's treatment plan must be matched to his or her particular set of needs. Moreover, since those needs will surely change over the course of recovery, the array of services provided will need to be continually reassessed and adjusted.

Co-occurring Addictions: Compounding Complexities

It is not unusual for an addicted person to be addicted to alcohol, nicotine and illicit drugs at the same time. Addiction to multiple substances raises the level of individual suffering and magnifies the associated costs to society. No matter what the addictive substance, they all have at least one thing in common - *they disrupt the brain's reward pathway*, the route to pleasure.

What is the best way to treat people who are addicted to more than one drug?

- *Medications.* In some cases, medications developed for one addiction have proven useful for another. For example, naltrexone, which can help former heroin users remain abstinent by blocking the "high" associated with heroin, has been found to be effective in treating alcoholism.
- *Behavioral therapy or other psychotherapy.* Behavioral therapies do not need to be specific to one drug and can be adapted to address use of multiple or different drugs. It is the disease of addiction that the therapy addresses.
- *Combined medications and behavioral therapy.* Research shows that this combination, when available, works best.

- *Multipronged approach.* Treatment for multiple addictions should be delivered at the same time. This is especially true because there are always triggers, such as trauma, depression, or exposure to one drug or another, that can put the recovering addict at risk for relapse. In addition, treatment must consider all aspects of a person - their age, gender, life experiences - in order to best treat their drug addiction. Although the type of treatment may differ, it should always strive to address the entire person through a multipronged approach that tackles all co-occurring conditions at once.

Relapse: Part of Addiction as a Chronic Disease

Despite the availability of many forms of effective treatment for addiction, the problem of relapse remains the major challenge to achieving sustained recovery. People trying to recover from drug abuse and addiction are often doing so with altered brains, strong drug-related memories and diminished impulse control. Accompanied by intense drug cravings, these brain changes can leave people vulnerable to relapse even after years of being abstinent. Relapse happens at rates similar to the relapse rates for other well-known chronic medical illnesses like diabetes, hypertension and asthma.

How is relapse to drug abuse similar to what happens with other chronic diseases?

- Just as an asthma attack can be triggered by smoke, or a person with diabetes can have a reaction if they eat too much sugar, a drug addict can be triggered to return to drug abuse.
- With other chronic diseases, relapse serves as a signal for returning to treatment. The same response is just as necessary with drug addiction.
- As a chronic, recurring illness, addiction may require repeated treatments until abstinence is achieved. Like other diseases, drug addiction can be effectively treated and managed, leading to a healthy and productive life.

To achieve long-term recovery, treatment must address specific, individual patient needs and must take the whole person into account. For it is not enough simply to get a person off drugs; rather, the many changes that have occurred - physical, social, psychological - must also be addressed to help people stay off drugs, for good.

Recovery

According to the Substance Abuse and Mental Health Services Administration (SAMHSA), “Recovery from Mental Disorders and Substance Use Disorders” is a process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach

their full potential. Furthermore, SAMHSA has delineated four major dimensions that support a life in recovery:

- **Health:** overcoming or managing one's disease(s) as well as living in a physically and emotionally healthy way;
- **Home:** a stable and safe place to live;
- **Purpose:** meaningful daily activities, such as a job, school, volunteerism, family caretaking, or creative endeavors, and the independence, income and resources to participate in society; and
- **Community:** relationships and social networks that provide support, friendship, love, and hope.

Recovery from Addiction: The Psychology of Motivation and Change

Recent research in addictionology has revealed that a primary component of recovery from addiction is motivation. So where does the motivation for change ultimately come from? Perhaps the best answer we have so far comes from a study of individuals who recovered on their own, without any outside help (no rehab, 12-step support groups, etc.). Studies of these folks suggest that self-change occurred when they decided the costs outweighed the benefits. Stated differently, they recognized they would lose something of great value if they continued (Toneatto, Sobell, Sobell & Rubel, 1999). In other words, "Enough was enough!" People also needed a second ingredient: The *belief* that change was possible.

To achieve satisfaction with our lives we must develop a sense of meaning and purpose. We must know what we want, and how to obtain it. Oftentimes there are competing and conflicting priorities. Nonetheless, we must make choices that optimize our life satisfaction. We give up some things in order to gain something else. Addiction recovery appears to be no different. Addiction and recovery are competing priorities. We cannot have both. Many times people feel conflicted about giving up their addiction. This is certainly understandable. People can strengthen their motivation to change. They do this by carefully evaluating the pros and cons of change (recovery) versus no change (addiction). As we will see in the treatment section, this is exactly what people do who recover on their own. They weigh out the costs and benefits of their addiction. They decide they will change because continuing simply isn't worth the price.

Having decided to change, we need to figure out how to make that change happen. Some people have no difficulty figuring out they need to change and how to do it. These people recover without any outside assistance. For others, the decision to change is difficult, while the "how to" part is quite simple. These individuals may benefit from some guidance that helps them to accurately weigh the costs and benefits of their addiction. As we mentioned in



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

the biology section, addiction disrupts rational thought and judgment. Therefore, people sometimes have difficulty making an accurate appraisal. This does not mean they are "in denial." It simply means they might benefit from some outside guidance. Motivational interviewing may be a beneficial tool to help these folks. For other people both tasks are challenging. The decision to change is a hard one. So is the "how to" accomplish change. These individuals will greatly benefit from professional and/or non-professional help.

Instructor Note: The primary message is that no two people are alike. Some people need no help to change. Others need help in making the decision to change; but once decided, they need little further assistance. Still other people have difficulty with both the decision to change, and how to make that change occur. Addictions treatment should be fluid and flexible enough to match the specific needs of each person. The more you, the counselor know, the more you can be available to help clients as an individual, no cookie-cutter treatment, no "take a number" attitude. Be present for your client's, be a good clinical listener and use what you have learned and incorporate it into your daily therapeutic practices. DO NOT fall into the trap of "I already know what to do and how to proceed", meet each client with the outlook of "I don't know anything, this client holds the answers, I must ask the right questions. I am not an expert in anyone else's life".

Other Addictions

Chapter 7

What about Other Types of Addiction??

Compulsive Behaviors

Compulsive behaviors such as gambling, shopping, eating, and computers are emerging as behavioral addictions -- people can depend on them as severely as alcohol or drugs. Some activities are so normal that it's hard to believe people can become addicted to them. Yet the cycle of addiction can still take over, making everyday life a constant struggle. Know the difference between someone having a good time, overindulging and becoming addicted to a behavior.

Gambling

There are three common types of gambler, the professional gambler, the social gambler, and the problem gambler. Be aware that the problem gambler will often believe themselves to be, or pretend to be, a social or professional gambler.

Professional Gambling

Professional gamblers are the rarest form of gambler, and depend on games of skills rather than luck to make money. They have full control over the time, money and energy they spend on gambling.

Social Gambling

Social gamblers consider gambling to be a valid form of recreational activity, and maintain full control over the time, money and energy they expend on gambling. They consider the cost of gambling to be payment for entertainment.

Problem Gambling

Problem gambling involves the continued involvement in gambling activities, despite negative consequences. All gambling addicts are problem gamblers, although not all problem gamblers have a gambling addiction.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

Instructor Note: There is online gambling addiction, casino gambling addiction and sports gambling addiction. As you read above the signs and symptoms of gambling addiction are very similar to that of substance addiction. This will hold true with any type of addiction.

Food Related Addiction

We have all heard, read and probably seen someone with what appears to be an eating disorder. Typically when we talk about eating disorders we are referring to Anorexia Nervosa (withholding food from self) and Bulimia (starving - gorge eating then purging). For the purposes of this course we will not categorize them as addictions as defined throughout this reading. You will be learning more about this life threatening illness in other CAP courses and how they relate to substance addiction.

There are many other food related problems that progress in a way that is very similar to substance addiction. I will list them and give brief descriptions for each.

What is Food Addiction?

In a sense, we are all addicted to food. Think about what it feels like when you aren't able to eat. You start to crave food, and become more physically and emotionally uncomfortable the longer the cravings go on for, until eating becomes the most important thing for you to do. This is the constant experience of people struggling with food addiction, even if they have plenty to eat.

Food is essential to survival, and unlike other addictive behaviors, it is normal to eat repeatedly every day, and to look forward to eating for pleasure. But several characteristics separate normal or occasional binge eating from a food addiction.

Firstly, food addiction is maladaptive, so although people overeat to feel better, it often ends up making them feel worse, and gives more to feel bad about. Food addiction can threaten health, causing obesity, malnutrition, and other problems.

Secondly, the overeating that people with food addiction do is persistent, so a person addicted to food eats too much food -- and often the wrong kinds of food -- too much of the time. We all overeat on from time to time, but people with food addiction often overeat every day, and they eat, not because they are hungry, but as their main way of coping with stress. Then if they are unable to overeat, they experience anxiety.

The Controversy of Food Addiction

As a behavioral addictions, the concept of food addiction is a controversial.

The field is divided between those who think that overeating can be a type of addiction, and those who think that true addictions are limited to psychoactive substances which produces symptoms such as physical tolerance and withdrawal. Although this has been demonstrated in research with sugar and fat (the two most common obesity-causing constituents of food), and other studies show that food produces opiates in the body, many think that this does not necessarily constitute an addiction.

Food addiction is now included in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), named as Binge Eating Disorder, and categorized with the Eating Disorders. Excessive eating is also a characteristic of another eating disorders outlined in the DSM, known as Bulimia Nervosa. Some controversy remains over whether eating disorders are actually addictions, but many experts believe that they are.

How Is Food Addiction Like Other Addictions?

There are several similarities between food addiction and drug addiction, including effects on mood, external cues to eat or use drugs, expectancies, restraint, ambivalence, and attribution.

Neurotransmitters and the brain's reward system have been implicated in food and other addictions. In animal studies, for example, dopamine has been found to play an important role in overall reward systems, and bingeing on sugar has been shown to influence dopamine activity.

Food, drugs and other addictive substances and behaviors are all associated with pleasure, hedonism, and social, cultural or sub-cultural desirability. When advertising or the people around us tell us that a food, drug or activity will feel good, it sets up a self-fulfilling prophecy. We are more likely to seek it out, and we are more likely to experience pleasure when we indulge.

- Binge eating - Binge eating involves consuming a large amount of food in a short space of time. Although binge eating in itself does not necessarily constitute a food addiction or eating disorder, binge eating is a symptom of Binge Eating Disorder, and the eating disorder Bulimia Nervosa.
- Over-eating from supersize portions - Supersize meal portions are heavily marketed, particularly in North American culture. This can easily lead to consuming much larger amounts of food than necessary, and, if eaten on a regular basis, can lead to obesity and poor nutrition.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

- Stress Eating - Stress eating, although closely related to emotional eating, is more heavily driven by anxiety rather than depression, and may be a way of fuelling overwork when time is not taken for adequate breaks or meals.
- Sugar Addiction - Sweet, sugary food is particularly addictive to many people. Some overeaters binge on confectionary or other sweet foods, with chocolate having a particular allure.
- Compulsive Snacking – Constant snacking on unhealthy foods
- Fast Food - People who rely on fast food often overeat. Fast food is designed to stimulate overeating, typically by using a combination of sugar, salt and fat, all shown by research to be addictive
- Comfort Eating/Emotional Eating – Eating to deal with distressing emotions, using food as a coping mechanism.
- Boredom Eating – Mindless eating, eating just feel something

The following is a list of other addictions that we do not have the time to go into detail. However, they are important, prevalent and you, the addiction counselor need to be aware of and familiar with, especially during an assessment.

- Video Game Addiction
- Exercise Addiction
- Sex Addiction
- Shopping Addiction
- Cybersex Addiction

Instructor Note: Remember all professional counselors/therapists are ethically bound to work within their scope of practice. Meaning, it is likely that when working with substance addiction you will also



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

come across a client's that have other addictions as well. If you do not have the specific training and education in these other areas you must refer the client to another counselor who does have that training or to an outside community agency to supplement what the treatment the client is receiving from you.

Conclusion

Some final instructor notes:

Well you have made it through the end of the reading. I know there was tons of information and a lot to learn and absorb. However, this information is definitely necessary and you will need it as you move forward in your career as an addiction professional.








The advancement of scientific research regarding addiction has changed the face and the landscape of treatment. So myths can now be shattered, some of the guilt can be lifted and counselors can answer some questions that used to seem impossible.

Even with these advancements and understanding of addiction, the brain and behavior many people today do not understand why people become addicted to drugs or how drugs change the brain to foster compulsive drug use.

Because of this research will continue and scientists, doctors, therapists, psychiatrist will expand their scope of interest and practice. Drug and alcohol abuse is happening with younger and younger people and with that the consequences are more pervasive and life threatening. Addiction counselors need to be ready to address the fallout from this.

Fore armed is fore-warned!

Here is a quick list of things to remember:

-  **Addiction and HIV/AIDS are intertwined epidemics.**
-  **Treatment must address the whole person.**
-  **People of all ages suffer the harmful consequences of drug abuse and addiction.**
-  **No single factor determines whether a person will become addicted to drugs.**
-  **Children's earliest interactions within the family are crucial to their healthy development and risk for drug abuse.**
-  **Addiction is a developmental disease—it typically begins in childhood or adolescence.**
-  **Most drugs of abuse target the brain's reward system by flooding it with dopamine.**

 Long-term drug abuse impairs brain functioning.

Be passionate about your work, your education and your studies. It will pay off for you and your clients in the end.

Appendix A

Commonly Abused Prescription Drugs Chart

Medications can be effective when they are used properly, but some can be addictive and dangerous when abused. This chart provides a brief look at some prescribed medications that—when used in ways or by people other than prescribed—have the potential for adverse medical consequences, including addiction.

In 2010, approximately 16 million Americans reported using a prescription drug for nonmedical reasons in the past year; 7 million in the past month.

Depressants

Name	Examples of <i>Commercial & Street Names</i>	DEA Schedule	How Administered*
Barbiturates	<i>Amytal, Nembutal, Seconal, Phenobarbital</i> ; barbs, reds, red birds, phennies, tooies, yellows, yellow jackets	II, III, V	injected, swallowed
Benzodiazepines	<i>Ativan, Halcion, Librium, Valium, Xanax</i> ; candy, downers, sleeping pills, tranks	IV	swallowed
Sleep Medications	<i>Ambien (zolpidem), Sonata (zaleplon), Lunesta (eszopiclone)</i> ; forget-me pill, Mexican Valium, R2, Roche, roofies, roofinol, rope, rophies	IV	swallowed, snorted

Intoxication Effects - Sedation/drowsiness, reduced anxiety, feelings of well-being, lowered inhibitions, slurred speech, poor concentration, confusion, dizziness, impaired coordination and memory

Potential Health Consequences - lowered blood pressure, slowed breathing, tolerance, withdrawal, addiction; increased risk of respiratory distress and death when combined with alcohol

Also, for barbiturates - euphoria, unusual excitement, fever, irritability/life-threatening withdrawal in chronic users

Opioids and Morphine Derivatives**

Name	Examples of <i>Commercial & Street Names</i>	DEA Schedule	How Administered*
Codeine	<i>Empirin with Codeine, Fiorinal with Codeine, Robitussin A-C, Tylenol with Codeine; Captain Cody, Cody, schoolboy; (with glutethimide: doors & fours, loads, pancakes and syrup)</i>	II, III, V ?	injected, swallowed
Morphine	<i>Roxanol, Duramorph; M, Miss Emma, monkey, white stuff</i>	II, III	injected, swallowed, smoked
Methadone	<i>Methadose, Dolophine; fizzies, amidone, (with MDMA: chocolate chip cookies)</i>	II	swallowed, injected
Fentanyl & analogs	<i>Actiq, Duragesic, Sublimaze; Apache, China girl, China white, dance fever, friend, goodfella, jackpot, murder 8,</i>	II	injected, smoked, snorted

Name	Examples of Commercial & Street Names	DEA Schedule	How Administered*
Other opioid pain relievers: Oxycodone HCL, Hydrocodone Bitartrate Hydromorphone, Oxymorphone, Meperidine, Propoxyphene	TNT, Tango and Cash <i>Tylox, Oxycontin, Percodan,</i> <i>Percocet: Oxy, O.C., oxycotton,</i> oxycet, hillbilly heroin, percs <i>Vicodin, Lortab, Lorcet; Vike,</i> Watson-387 <i>Dilaudid; juice, smack, D,</i> footballs, dillies <i>Opana, Numporphan,</i> <i>Numorphone; biscuits, blue</i> heaven, blues, Mrs. O, octagons, stop signs, O bomb <i>Demerol, meperidine</i> <i>hydrochloride; demmies, pain</i> killer <i>Darvon, Darvocet</i>	II, III, V	chewed, swallowed, snorted, injected, suppositories

Intoxication Effects - Pain relief, euphoria, drowsiness, sedation, weakness, dizziness, nausea, impaired coordination, confusion, dry mouth, itching, sweating, clammy skin, constipation

Potential Health Consequences - slowed or arrested breathing, lowered pulse and blood pressure, tolerance, addiction, unconsciousness, coma, death; risk of death increased when combined with alcohol or other CNS depressants

Also for fentanyl - 80-100 times more potent analgesic than morphine

Also for oxycodone - muscle relaxation/twice as potent analgesic as morphine; high abuse potential

Also for codeine - less analgesia, sedation, and respiratory depression than morphine

Also for methadone - used to treat opioid addiction and pain; significant overdose risk when used improperly

**** Taking drugs by injection can increase the risk of infection through needle contamination with staphylococci, HIV, hepatitis, and other organisms. Injection is a more common practice for opioids, but risks apply to any medication taken by injection..**

Stimulants

Name	Examples of Commercial & Street Names	DEA Schedule	How Administered*
Amphetamines	<i>Biphedamine, Dexedrine, Adderall;</i> bennies, black beauties, crosses, hearts, LA turnaround, speed, truck drivers, uppers	II ?	injected, swallowed, smoked, snorted
Methylphenidate	<i>Concerta, Ritalin;</i> JIF, MPH, R-ball, Skipppy, the smart drug, vitamin R	II ?	injected, swallowed, snorted

Intoxication Effects - Feelings of exhilaration, increased energy, mental alertness

Potential Health Consequences - increased heart rate, blood pressure, and metabolism,
reduced appetite, weight loss, nervousness, insomnia, seizures, heart attack, stroke

Also, for amphetamines - rapid breathing, tremor, loss of coordination, irritability, anxiousness,
restlessness/delirium, panic, paranoia, hallucinations, impulsive behavior, aggressiveness,
tolerance, addiction

Also, for methylphenidate - increase or decrease in blood pressure, digestive problems, loss of
appetite, weight loss

Other Compounds

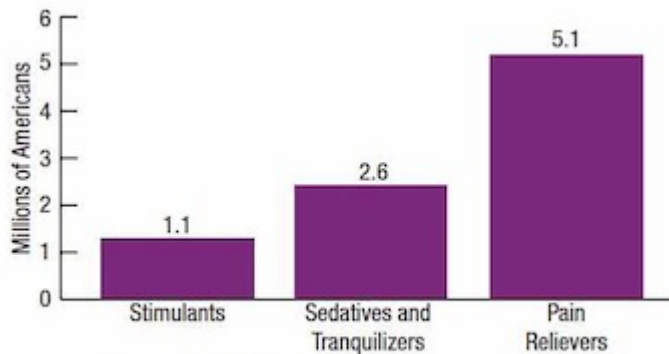
Name	Examples of Commercial & Street Names	DEA Schedule	How Administered*
------	---------------------------------------	--------------	-------------------

Name	Examples of <i>Commercial & Street Names</i>	DEA Schedule	How Administered*
Dextromethorphan (DXM)	<i>Found in some cough and cold medicines; Robotripping, Robo, Triple C</i>	Not scheduled	swallowed

Intoxication Effects - Euphoria, slurred speech

Potential Health Consequences - increased heart rate and blood pressure, dizziness, nausea, vomiting, confusion, paranoia, distorted visual perceptions, impaired motor function

Facts About Prescription Drug Abuse



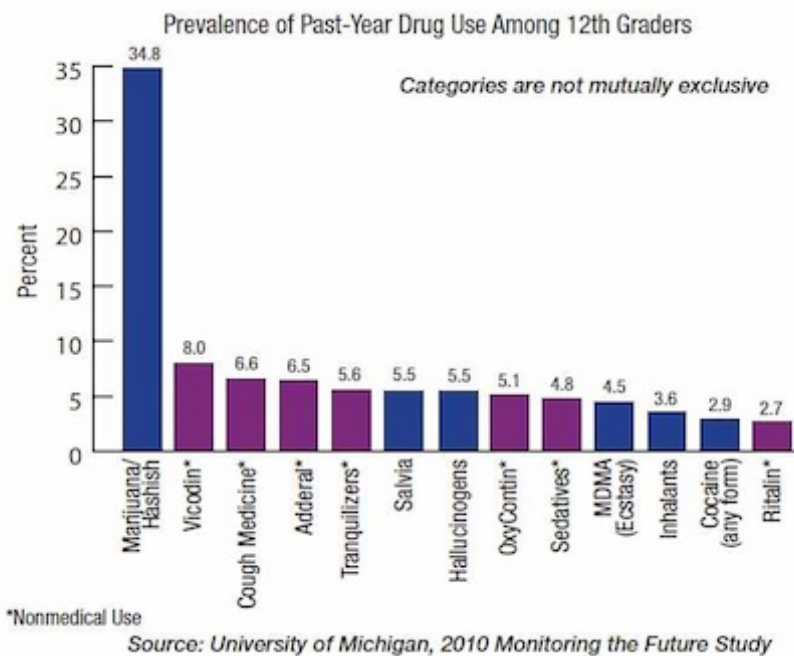
Source: Office of Applied Studies, Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health, 2010

About 7 Million Americans Reported Past-Month Use of Prescription Drugs for Nonmedical Purposes in 2010

What types of prescription drugs are abused?

Three types of drugs are abused most often:

- ✚ Opioids—prescribed for pain relief
- ✚ CNS depressants—barbiturates and benzodiazepines prescribed for anxiety or sleep problems (often referred to as sedatives or tranquilizers)
- ✚ Stimulants—prescribed for attention-deficit hyperactivity disorder (ADHD), the sleep disorder narcolepsy, or obesity.



After Marijuana, Prescription and Nonmedical use of Over-the-Counter Medication Account for Most of the Commonly Abused Drugs

Appendix B - Emerging Trends

New Synthetic Cannabinoids—“Cloud 9,” “Mojo,” etc. - Posted November 13, 2014

Makers of designer drugs that are chemically similar to marijuana’s active ingredient THC—called synthetic cannabinoids or colloquially “synthetic marijuana” or “synthetic pot”—are constantly creating new products to evade legal bans on older compounds. Despite the similarity on the molecular level, these drugs are much more dangerous than marijuana, and have resulted in very serious health consequences including overdoses and aggressive or suicidal behavior in users.

Some new compounds have recently emerged that are sending many users to the hospital in cities around the country. They include:

AB-PINACA, AB-FUBINACA (sold as “Cloud 9,” “Relax,” or “Crown”) is sold as a liquid in eyedropper bottles and often used with vaporizing devices—e-cigarettes or “hookah pens.” Numerous hospitalizations in Michigan prompted the Macomb County Health Department to issue an emergency warning and ban on the sale of these drugs, which are reported to cause hallucinations, aggressive behavior, racing heartbeat, drowsiness, and vomiting.

MAB-CHMINACA, ADB-CHMINACA (sold as “Mojo,” “Spice,” “K2,” and “Scooby Snax”) resulted in over 150 hospital visits in Baton Rouge and Lafayette, LA in October, prompting the governor to ban the drug in that state. It is reported to cause severe agitation, anxiety, and paranoia; raised heartbeat and blood pressure; nausea and vomiting; muscle spasms, seizures, and tremors; intense hallucinations and psychotic episodes, including suicidal fixations and other harmful thoughts.

Caffeine Powder - Posted July 23, 2014



The death of an Ohio high school senior caused by an overdose of powdered caffeine has prompted the FDA to issue a safety advisory about caffeine powders. Bulk bags of pure caffeine

powder are readily available online, and these products may be attractive to young people looking for added caffeine stimulation or for help losing weight, but they are extremely dangerous. Just a teaspoon of pure caffeine powder is equivalent to about 25 cups of coffee—a lethal amount. Besides death, severe caffeine overdose can cause fast and erratic heartbeat, seizures, and vomiting, diarrhea, and disorientation— symptoms much more extreme than those of drinking too much coffee or tea or consuming too many sodas or energy drinks.

Although caffeine is generally safe at the dosages contained in popular beverages, caffeine powder is so potent that safe amounts cannot be measured with ordinary kitchen measuring tools, making it very easy to overdose on them even when users are aware of their potency. The FDA thus recommends that consumers avoid caffeine powder altogether, and wishes to alert parents to the existence of these products and their hazards.

e-Cigarettes - Posted November 10, 2013

E-cigarettes are increasingly popular battery-operated devices marketed as a safer alternative to smoking conventional cigarettes. They produce flavored nicotine aerosol that looks and feels like tobacco smoke but without the tar or other chemicals produced by burning tobacco leaves. However, while e-cigarettes do not produce tobacco smoke, it is still unclear how safe they are. They still deliver nicotine, which is a highly addictive drug. Also, vapor from some e-cigarette products has been found to contain known carcinogens and toxic chemicals. Until more studies are conducted, there is no way of knowing what the health consequences of repeated exposure to these chemicals may be, whether e-cigarettes are any safer than conventional cigarettes, or if they are useful to help a person quit smoking.

“Krokodil” - Posted November 8, 2013

“Krokodil,” a toxic homemade opioid that has been used as a cheap heroin substitute in poor rural areas of Russia, has recently been featured in news reports alleging its appearance in parts of the United States. The CEWG is investigating, although the DEA has not yet confirmed any krokodil in this country.

Krokodil is a synthetic form of a heroin-like drug called desomorphine that is made by combining codeine tablets with various toxic chemicals including lighter fluid and industrial cleaners. Desomorphine has a similar effect to heroin in the brain, although it is more powerful and has a shorter duration. Krokodil gets its name from the scaly, gray-green dead skin that forms at the site of an injection. The flesh destroyed by krokodil becomes gangrenous, and, in some cases, limb amputation has been necessary to save a user’s life.

“N-bomb” - Posted September 30, 2013

“N-bomb” refers to any of three closely related synthetic hallucinogens (25I-NBOMe, 25C-NBOMe, and 25B-NBOMe) that are being sold as legal substitutes for LSD or mescaline. Also called “legal acid,” “smiles,” or “25I,” they are generally found as powders, liquids, soaked into blotter paper (like LSD) or laced on something edible.

These chemicals act on serotonin receptors in the brain, like other hallucinogens, but they are considerably more powerful even than LSD. Extremely small amounts can cause seizures, heart attack or arrested breathing, and death. At least 19 young people are reported to have died after taking 25I- 25C- or 25B-NBOMe between March 2012 and August 2013. People may ingest one of these drugs unknowingly, believing it to be LSD; a young man in one medical case report published in late 2014 experienced severe hallucinations and panic and attempted suicide after such an ingestion.

“Syrup,” “Purple Drank,” “Sizzurp,” “Lean” - Posted May 26, 2013

Drinking prescription-strength cough syrup containing codeine and promethazine mixed with soda was referenced frequently in some popular music beginning in the late 90s and has now become increasingly popular among youth in several areas of the country, according to recent CEWG data. Codeine is an opioid that can produce relaxation and euphoria when consumed in sufficient quantities. Promethazine is an antihistamine that also acts as a sedative. Users may also flavor the mixture with the addition of hard candies.

Codeine and other opioids present a high risk of fatal overdose due to their effect of depressing the central nervous system, which can slow or stop the heart and lungs. Mixing with alcohol greatly increases this risk. Deaths from prescription opioid medications now outnumber overdose deaths from all other drugs (including cocaine and heroin), and codeine-promethazine cough syrup has been linked to the overdose deaths of some prominent musicians.

“Molly” - Posted May 26, 2013

Molly—slang for “molecular”—refers to the pure crystalline powder form of the club drug MDMA (3-4 methylenedioxymethamphetamine), which in pill form is known as ecstasy. Molly, which is usually purchased in capsules, has seen a surge in interest in the past few years, being celebrated frequently by popular music artists. MDMA in any form produces energy and euphoria in users but also may dangerously affect body temperature and cause confusion, depression, and sleep problems.

Users may be seeking out Molly to avoid the adulterants or substitutes known to be commonly found in pills sold as ecstasy, such as caffeine, methamphetamine, and other harmful drugs. But those who purchase what they think is pure MDMA as Molly may actually be exposing themselves to the same risks. Hundreds of “Molly” capsules tested in two South Florida crime labs in 2012, for example, contained methylone, a dangerous stimulant commonly found in “bath salts”. News reports elsewhere have reported “Molly” capsules containing cocaine, heroin, and other substances.

Is MDMA Addictive?

Research thus far on MDMA’s addictive properties has shown varying results, but we do know that some users report symptoms of dependence, including continued use despite knowledge of physical or psychological harm, tolerance (or diminished response), and withdrawal effects.

The neurotransmitter systems targeted by MDMA are the same as those targeted by other addictive drugs. Experiments have shown that animals will self-administer MDMA—an important indicator of a drug’s abuse potential—although the degree of self-administration is less than some other drugs of abuse such as cocaine.

Bath Salts (Synthetic Cathinones)

The term “bath salts” refers to an emerging family of drugs containing one or more synthetic chemicals related to cathinone, an amphetamine-like stimulant found naturally in the Khat plant.

Reports of severe intoxication and dangerous health effects associated with use of bath salts have made these drugs a serious and growing public health and safety issue. The synthetic cathinones in bath salts can produce euphoria and increased sociability and sex drive, but some users experience paranoia, agitation, and hallucinatory delirium; some even display psychotic and violent behavior, and deaths have been reported in several instances.

Bath salts typically take the form of a white or brown crystalline powder and are sold in small plastic or foil packages labeled “not for human consumption.” Sometimes also marketed as “plant food”—or, more recently, as “jewelry cleaner” or “phone screen cleaner”—they are sold online and in drug paraphernalia stores under a variety of brand names, such as “Ivory Wave,”

"Bloom," "Cloud Nine," "Lunar Wave," "Vanilla Sky," "White Lightning," and "Scarface."



Salvia

Salvia (*Salvia divinorum*) is an herb in the mint family native to southern Mexico. It is used to produce hallucinogenic experiences.



How Is Salvia Used?

Traditionally, *S. divinorum* has been ingested by chewing fresh leaves or by drinking their extracted juices. The dried leaves of *S. divinorum* can also be smoked in rolled cigarettes or pipes or vaporized and inhaled.

Although information about salvia is limited, its use may be driven in part by drug-related videos and information on Internet sites. Because of the nature of the drug's effects—brief hallucinogenic experiences that mimic psychosis—it is more likely to be used in individual experimentation than as a social or party drug.

How Does Salvia Affect the Brain?

The main active ingredient in salvia, salvinorin A, is a potent activator of nerve cell targets called kappa opioid receptors. (These receptors differ from the receptors activated by commonly known opioid drugs such as heroin and morphine.) Although salvia is generally considered a hallucinogen, it does not act at serotonin receptors that are activated by other hallucinogens like LSD or psilocybin, and its effects are reported by experienced users to be different from those drugs.

Subjective effects of salvia use have been described as intense but short-lived, appearing in less than 1 minute and lasting less than 30 minutes. They include psychedelic-like changes in visual perception, mood and body sensations, emotional swings, feelings of detachment, and a highly modified perception of external reality and the self, leading to a decreased ability to interact with one's surroundings. This last effect has prompted concern about the dangers of driving under the influence of salvinorin.

What Are the Other Health Effects of Salvia?

The psychological or physical health effects of salvia use have not been investigated systematically, and consequences of long-term use are not known. Experiments in rodents demonstrated deleterious effects of salvinorin A on learning and memory, but there is little evidence of salvia causing dependence or long-term psychiatric problems in humans.



6555 NW 9th Avenue, Ste. 210 | Fort Lauderdale, FL 33309
(954) 771-2091 – Fax (954) 771-2098

References:

1. The Developmental Model of Recovery: Recovery from Addiction: A Developmental Model By Terence T. Gorski . May 5 2008
2. SOCIAL DETERMINANTS OF DRUG USE - Catherine Spooner and Kate Hetherington - Technical Report Number 228. NATIONAL DRUG AND ALCOHOL RESEARCH CENTRE, UNIVERSITY OF NEW SOUTH WALES, SYDNEY, 20 4
3. Seven Counties Services, Inc. -
4. Habit Formation, Craving, Withdrawal, and Relapse Triggers: Addictions' Effect on the Amygdala - A. Tom Horvath, Ph.D., ABPP, Kaushik Misra, Ph.D., Amy K. Epner, Ph.D., and Galen Morgan Cooper, Ph.D. , edited by C. E. Zupanick, Psy.D.
5. Illegal Drugs in America – A Modern History. DEA Museum & Visitors Center • 700 Army Navy Drive, Arlington, VA 22202
6. History of Drugs in America. Casa Palmera. October 3, 2012.
7. Principles of Drug Addiction Treatment: A Research-Based Guide (Third Edition). National Institute on Drug Abuse. July 2014
8. The Addiction Recovery Guide – Addiction is a Brain Disease – Alan I. Leshner, MD
9. Early Onset Alcoholism ; Mark L. Willenbring, M.D
10. The Role of Addiction Psychiatry, Kathleen Brady, M.D., Ph.D.
11. Dual Disorders: Concepts and Definitions – Chapter 2. DualDiagnosis.org.
12. Stages of Addiction, Alcoholrehab.com 2014.
13. General Information on Drug and Alcohol Dependency, Recovery, and Relapse. Counselor's Manual for Relapse Prevention With Chemically Dependent Criminal Offenders Technical Assistance Publication (TAP) Series 19.
14. How to Become Unstuck in Recovery, alcoholrehab.com. 2012
15. NIDA: Commonly Used Prescription Drug Chart, National Institute of Drug Abuse December 2014.
16. NIDA: Emerging Trends, National Institute of Drug Abuse 2013- 2014.
17. NIDA: Tobacco/Nicotine, National Institute of Drug Abuse December 2014.