ijamrsd.com
ISSN: 2583-6404
Journal of Advanced Multidisciplinary Research Studies and Development
Peer Reviewed Referred Journal | Bi-monthly | Open Access

AN OVERVIEW ON DRUGS ADDICTION

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Abstract
A decade ago, we hypothesized that drug addiction can be viewed as a transition from voluntary, recreational drug use to compulsive drug-seeking habits, neurally underpinned by a transition from prefrontal cortical to striatal control over drug seeking and taking as well as a progression from the ventral to the dorsal striatum. Here, in the light of burgeoning, supportive evidence, we reconsider and elaborate this hypothesis, in particular the refinements in our understanding o ventral and dorsal striatal mechanisms underlying goal-directed and habitual drug seeking, the influence of drug-associated pavlovian-conditioned stimuli on drug seeking and replace, and evidence for impairments in top-down prefrontal cortical inhibitory control over this behavior. We further review animal and human studies that have begun to define etiological factors and individual differences in the propensity to become addicted to drugs, leading to the description of addiction endophenotypes, especially for cocaine addiction. We take overviewed on, what is drug and drug addiction, where drug actual use?, substance use disorder, why do people prefer to take drugs, why some people become addicted to drugs while others don't? How to stop/manage or inhibit drug addiction.
Keywords: Drug Addiction, Drug, Cocaine Addiction, Drug Use.

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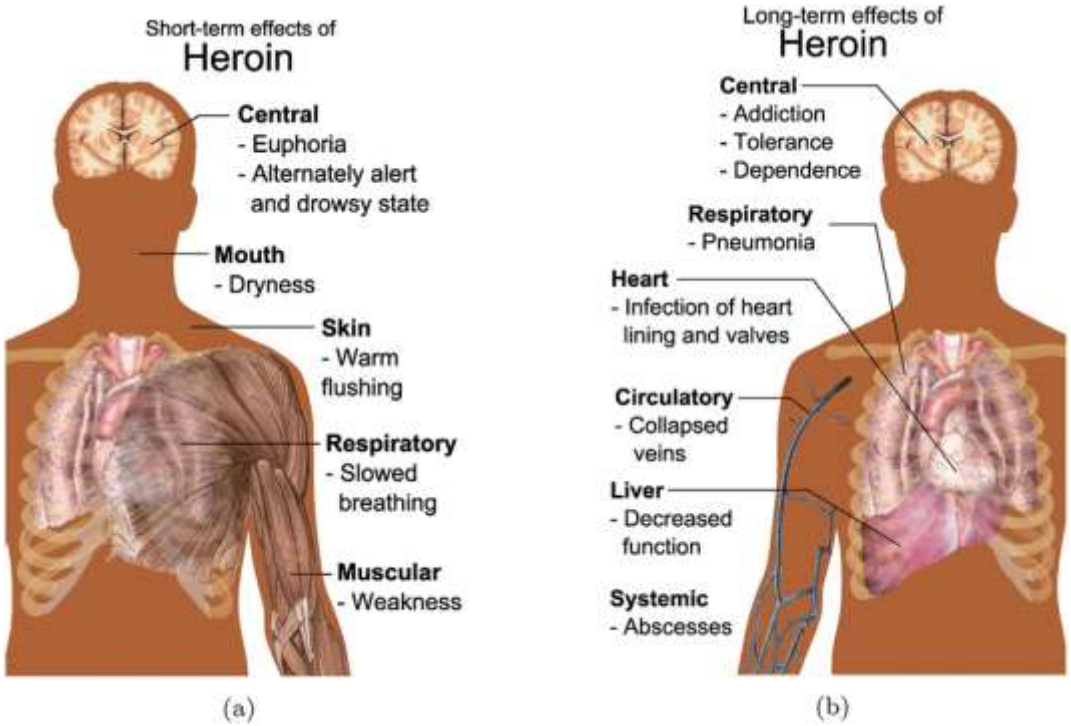
What is Drug?
A drug is a chemical substance that, when introduced into a living organism, produces a biological effect other than that of a nutrient or essential dietary ingredient.

What is Addiction?
Addiction is considered a brain barrier because it changes a function of brain which are involved in rewards, stress, and self control.
Addiction is also known as a chronic disorder which is directly affected on brain functions that brain is not worked well.
Addiction also created other diseases, like heart diseases, panic attacks, paralysis, etc, it disrupt the normal healthy functioning of an organ in the body, these have serious harmful effects, if its untreated, they can last a lifetime and lead to death.



Representation: side effects of use of (Heroin)

What is the Actual Use of Drugs:

Drug use, or misuse, includes:

- Using illegal substances, such as:

1. Anabolic steroids
2. Club drugs
3. Heroin
4. Inhalants
5. Marijuana
6. Methamphetamine

Substance Use Disorders:

- **Alcohol:** The most common substance addiction, where a person can't control their alcohol consumption despite negative health and social consequences.
- **Opioids**: Includes prescription painkillers (e.g., codeine, oxycodone, fentanyl) and illicit drugs like heroin. Tolerance and withdrawal symptoms can make it difficult to stop using.
- **Cannabis:** problematic use of cannabis (marijuana) is characterized by cravings, tolerance, and withdrawal symptoms when not using.
- **Sedatives, hypnotics, and anxiolytics:** This category includes anti-anxiety medications and sleeping pills (e.g., benzodiazepines).
- **Tobacco/Nicotine;** The addictive component in cigarettes and vaping devices makes it hard for users to stop.
- **Inhalants:** This involves inhaling vapours form common household products like paints thinners or glue.

Why do People Prefer to take Drugs?

People take drugs for few reasons:

- **To feel better:** Drugs can produce intense feelings of pleasure. This initial euphoria is followed by other effects, which differ with the type of drug used. For example, with stimulants such as cocaine, the high is followed by feelings of power, self-confidence, and increased energy.
- **Work load and social pressure:** In this respect, teens are particularly at risk because peer pressure can be very strong.
- **To do better:** Some people feel pressure to improve their focus in school or at work or their abilities in sports.

Why Some People Become Addicted to Drugs While, Others Don't?

- **Brain chemicals:** Alcohol consumption release natural opioid and dopamine chemicals in the brain that produce feelings of pleasure and rewards .
- **Dopamine pathway**: The brain's reward circuitry becomes altered with prolonged alcohol use. Over time, the brain requires alcohol to release dopamine, leading to dependence and intense cravings for the substance.
- **Biology:** The genes that people are born with account for about half of a person's risk for addiction.
- **Environment:** A person's environment includes many different influences, from family and friends to economic status and general quality of life.
- **Development:** Genetic and environmental factors interact with critical developmental stages in a person's life to affect addiction risk.

Drug Addiction Symptoms or Behaviors:

1. Feeling that you have to use the drug regularly or even several times a day.
2. Having intense urges for the drug that block out any other thoughts.
3. Over time, needing more of the drug to get the same effect.
4. Spending money on the drug, even though you can't afford it.
5. Driving or doing other risky activities when you're under the influence of the drug.

How to Stop Drug Addiction:

1: avoid places where you know drugs and alcohol will be available.
2: surrounding yourself with friends who don't use drugs.
3: learning how to cope with stress and relax without drugs.
4: distracting yourself with activities like exercise or listening to music.

Classification of Drugs:

Drug Classification	Medical Uses	Short-Term Effects	Overdose Effects	Health Risks	Risk of Physical/ Psychological Dependence
Stimulants					
Amphetamines	Weight control	Increased alertness, excitability; decreased fatigue, irritability	Extreme irritability, feelings of persecution, convulsions	Insomnia, hypertension, malnutrition, possible death	Physical: possible Psychological: moderate to high
Cocaine	Local anesthetic	Increased alertness, excitability, euphoric feelings; decreased fatigue, irritability	Extreme irritability, feelings of persecution, convulsions, cardiac arrest, possible death	Insomnia, hypertension, malnutrition, possible death	Physical: possible Psychological: moderate (oral) to very high (injected or smoked)
MDMA (Ecstasy)	None	Mild amphetamine and hallucinogenic effects; high body temperature and dehydration; sense of well-being and social connectedness	Brain damage, especially memory and thinking	Cardiovascular problems; death	Physical: possible Psychological: moderate
Caffeine	None	Alertness and sense of well-being followed by fatigue	Nervousness, anxiety, disturbed sleep	Possible cardiovascular problems	Physical: moderate Psychological: moderate
Nicotine	None	Stimulation, stress reduction, followed by fatigue, anger	Nervousness, disturbed sleep	Cancer and cardiovascular disease	Physical: high Psychological: high

Management and Treatment on Drug Addiction:

A variety of drugs are used to help individuals in the process of recovery from drug addiction.

Nicotine:

Medications for nicotine use disorders commonly target cessation rather than relapse prevention . However, maintenance treatment may be necessary for individual with frequent relapses. Bupropion has been shown effective for relapse prevention and has been studied for up to 12 months after nicotine cessation.

Alcohol:

Disulfiram is a medication that inhibits aldehyde dehydrogenase resulting in the build-up of acetaldehyde, which produces uncomfortable physical effects. As a result, disulfiram acts as a deterrent against an alcohol relapse until the body metabolizes the medications. One significant challenge regarding the use of disulfiram is non-adherence. Supervised treatment with disulfiram has correlated with an increased time to relapse and a reduced number of drinking days.

Naltrexone is a medication used to help prevent relapses on alcohol by reducing cravings. It is available in an oral tablet and a monthly injections. Studies have shown that the use of naltrexone is associated with a reduce risk of relapse with a number-needed-to-treat (NNT) to prevent a return to any drinking of 20.

Acamprosate is another medication used to help prevent relapses of alcohol use. Studies have shown an NNT to prevent a return to any drinking of 12.

Opioids:

Methadone is a fill of opioid agonist used to reduce the risk o relapses. Some studies have shown methadone to be the most effective treatment for opioid dependence as it has demonstrated a lower rate of relapse compared with buprenorphine. However, methadone's potential for abuse and it's desirability for some patients. Higher dose and greater individualization in dosing correlate with greater retention in treatment.

Cannabis:

Several agents have been studied to assits with cannabis relapse prevention, but limited evidence prevents the widespread application of these findings to clinical practice. Some studies have shown that preparation containing THC can improve rates of treatment completion.

Methamphetamines:

A wide variety of medications targeting diverse pathways have been studied for methamphetamine addiction. Agents studied include antidepressants; psychostimulants, topiramate, baclofen, gabapentin, antipsychotics, N-acetylcysteine, acamprosate, oxazepam, naltrexone, atomoxetine, oxytocin, and others.

Monitoring:

Various forms of monitoring have been used to detect drug/alcohol use. Objective evidence of abstinence has been a critical component of many relapse prevention programs. The results often inform contingency management programs (discussed above) of drug tests. Also, the use of some medications (i.e., buprenorphine and methadone) require periodic drug screens to ensure the individual is not diverting the medication or using other substances of abuse. Lastly, even in the absence of explicit consequences for alcohol or drug use, knowing they may be subject to testing provides a measure of deterrence against relapses for some individuals.

Urine drug screens have been the most widely used and can detect the widest variety of substances. However, urine drug screens require the individual to travel to a clinic or testing center and have some cost associated with the testing materials and staff time. Point-of-care tests often use drug test strips or cups that can provide results in approximately five minutes. Laboratory tests take longer and often have a greater associated cost, but offer higher sensitivity and specificity.

Breathalyzers have also been widely used to detect alcohol use. Breathalyzers have the advantage of being quick and inexpensive to administer. However, at this time, breathalyzers are only able to detect alcohol, so they may not provide deterrence against relapse on other substances unless combined with random urine drug screens. Smartphone technology has resulted in remote breathalyzer programs in which an individual can provide a sample into a Bluetooth-connected breathalyzer while the mobile phone takes a picture to confirm their identity.

Skin monitors have also been used to detect alcohol use but are limited to alcohol, expensive, and usually only available to individuals in the criminal justice system.

Salvia tests are sometimes used to detect the use of certain drugs.

Hair follicle drug tests are available for some substances but are not widely used in treatment.

Peer Support:

A variety of peer support programs have been established to allow individuals who have progressed in recovery to assist people in earlier stages.

The most widely used programs include Alcoholics Anonymous (AA), Narcotics Anonymous, and SMART Recovery. These groups emphasize the need for frequent meetings, working through a specified program, and guidance from a mentor. Evidence for the efficacy of peer support groups in preventing relapses is limited. One small study found that AA may help with treatment acceptance and retention. More broadly, there is a lack of evidence that peer support groups are superior to other relapse prevention interventions. However, it bears mentioning that the efficacy of these interventions may be challenging to ascertain as researchers cannot randomly allocate the motivation to engage in the groups that appear to be a significant predictor of their impact.

Although the term "recovery coach" was first used in 2006, the service has not gained wide adoption in addiction treatment. Peer recovery coaches are individuals who have experienced addiction themselves but have been abstinent for an extended period (often at least one or two years). Peer recovery coaches complete approximately 40 hours of training in addition to a minimum number of hours of work in the field to obtain certification. Peer recovery coaches can then contract with clinics or offices to work one-on-one with assigned individuals as a service that is billable through Medicaid in many areas. Culturally-specific training programs have undergone

development in some areas. For example, in the Mid-west, individuals can train in a program that emphasizes Native American values and traditions with the intention that they will be able to offer more effective support to other Native Americans.

Emerging Interventions:

Several developing interventions are currently under scrutiny as treatments for addiction. A limited number of studies have considered the use of transcranial magnetic stimulation (TMS) as a treatment for addiction. One meta-analysis showed a reduction in cravings for cannabis in participants who received TMS versus controls. However, one challenge regarding the application of TMS to the prevention of relapses is that there are no evidence-based protocols established.

Several hallucinogenic agents have been examined in several studies over the past 30 years. Some studies have shown improvements in areas such as cravings, alcohol consumption, and drinking consequence.

Other Issues:

Drug "vaccines" were initially promoted as a very promising intervention to prevent relapses. Although researchers have developed treatments that have been effective in animal studies, none have been able to demonstrate the same results in humans.

Treatment Programs:

Treatment programs for substance use disorder usually offer:

- Individual, group or family therapy sessions
- A focus on understanding the nature of addiction, becoming drug-free and preventing relapse
- Levels of care and settings that vary depending on your needs, such as outpatient, residential and inpatient programs.

Withdrawal Therapy:

The goal of detoxification, also called "detox" or withdrawal therapy, is to enable you to stop taking the addicting drug as quickly and safely as possible. For some people, it may be safe to undergo withdrawal therapy on an outpatient basis. Others may need admission to a hospital or a residential treatment center.

Withdrawal from different categories of drugs — such as depressants, stimulants or opioids — produces different side effects and requires different approaches. Detox may involve gradually reducing the dose of the drug or temporarily substituting other substances, such as methadone, buprenorphine, or a combination of buprenorphine and naloxone.

Behavior Therapy:

As part of a drug treatment program, behavior therapy — a form of psychotherapy — can be done by a psychologist or psychiatrist, or you may receive counselling from a licensed alcohol and drug counsellor. Therapy and counselling may be done with an individual, a family or a group. The therapist or counsellor can:

- Help you develop ways to cope with your drug cravings
- Suggest strategies to avoid drugs and prevent relapse
- Offer suggestions on how to deal with a relapse if it occurs
- Talk about issues regarding your job, legal problems, and relationships with family and friends
- Include family members to help them develop better communication skills and be supportive
- Address other mental health conditions

Self-help Groups:

Many, though not all, self-help support groups use the 12-step model first developed by Alcoholics Anonymous. Self-help support groups, such as Narcotics Anonymous, help people who are addicted to drugs.

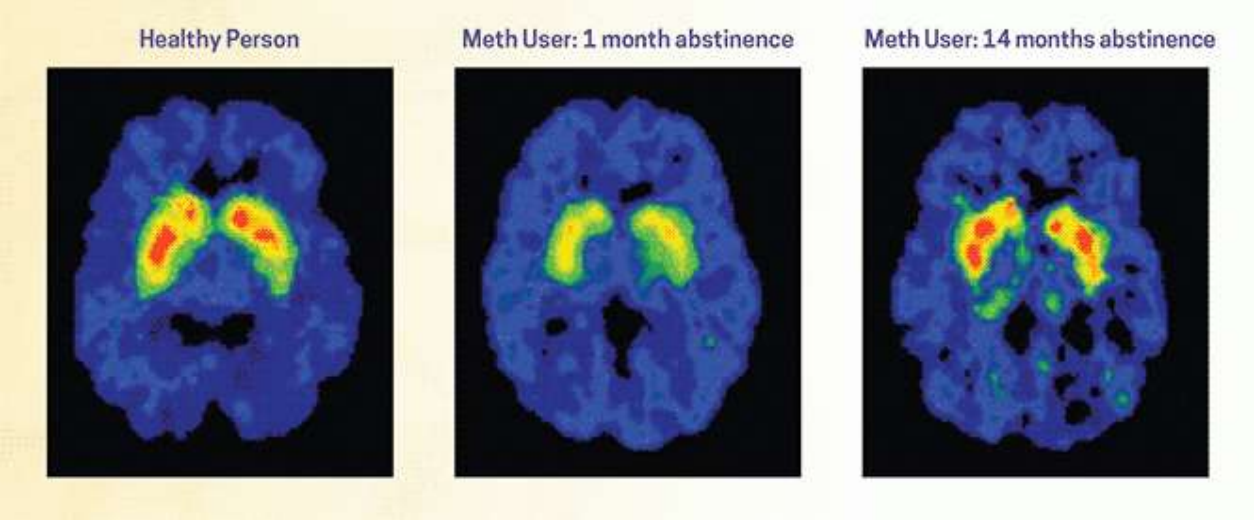
Can Addiction be Cured?

Like treatment for other chronic diseases such as heart disease or asthma, addiction treatment is not a cure, but a way of managing the condition. Treatment enables people to counteract addiction's disruptive effects on their brain and behavior and regain control of their lives

What Medications and Devices 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 various physical and emotional symptoms, including restlessness or sleeplessness, as well as depression, anxiety, and other mental health conditions. Certain treatment medications and devices reduce these symptoms, which makes it easier to stop the drug use.
- **Staying in treatment:** Some treatment medications and mobile applications are used to help the brain adapt gradually to the absence of the drug. These treatments act slowly to help prevent 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 use (such as people, places, things, and moods), and contact with drugs are the most common triggers for relapse. Scientists have been developing therapies to interfere with these triggers to help patients stay in recovery.



These images showing the density of dopamine transporters in the brain illustrate the brain's remarkable ability to recover, at least in part, after a long abstinence from drugs—in this case, methamphetamine.

Who is at Risk for Drug Addiction?

Various risk factors can make you more likely to become addicted to drugs, including:

- **Your biology:** People can react to drugs differently. Some people like the feeling the first time they try a drug and want more. Others hate how it feels and never try it again.
- **Mental health problems.:** People who have untreated mental health problems, such as depression, anxiety, or attention deficit/hyperactivity disorder (ADHD) are more likely to

become addicted. This can happen because drug use and mental health problems affect the same parts of the brain. Also, people with these problems may use drugs to try to feel better.

Sober Living:

Some individuals benefit from spending time in a sober living home after inpatient treatment. This is a long-term option where people live in structured, supportive, drug- and alcohol-free housing with peer support and accountability. Sober living homes are particularly helpful for individuals who require a gradual transition into everyday life.

Assessment:

A comprehensive assessment is one of the most important steps in the addiction treatment process, as it allows the medical and clinical team to better understand each patient's physical and emotional health and readiness for change. During this phase, clinicians will evaluate a full history of factors such as the types of substances used, the duration and severity of one's use, and the presence of any co-occurring mental health conditions. This may include psychological evaluations, lab work, and other screenings.

The goal of assessment is to develop an integrated, personalized treatment plan that addresses the whole person, not just the substance use. Most treatment facilities view assessment as an ongoing process, with patients reassessed throughout their stay to ensure their evolving needs are met and their recovery plan remains effective.

Aftercare Planning:

Research shows that continued involvement in recovery significantly improves long-term outcomes. Before finishing treatment, it's essential to work with your treatment team to develop an aftercare plan that aligns with your lifestyle and personal goals. This can include regular therapy, attending support groups, relapse prevention strategies, and follow-up visits with your treatment provider.

Summery:
Drug Addiction is very armful to every person. Now a days it has become a major problem all across the globe. It is a chronic brain disease. It destroy one's mind and body. It is a psychological disorder that leads a person to use drugs legally and illegally. Drug addiction is alters brain function and behavior, making it difficult for individuals to stop using substance even when they recognize the negative impacts on their health and relationships. Drug addiction treatment to be fully accepted and effective today: however it has its issues. All specialists chase the same goal- spare the patients from the drug abuse, but there are difference in their methods. In this way, some state that the objectives and aims of treatment should include drug-fee techniques of achieving this aim. Others say that treatment should improve an addict's ability to function in society rather than ensure that he or she is drug-free. I think that the last program is not the most effective approach

to drug addiction treatment, and many studies support it; this program can only be used in exceptional cases.drug addiction is the serious subject that I included the overall topics related this serious subject this was my opinion on the drug addiction it included what is drug addiction? Where its affected? Treatment on it this is the all over information I added on this.

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