



## Department of Distance Education Punjabi University, Patiala

**Class : B.A.-I (Drug Abuse)**

**Semester : 2**

**Unit : I & II**

**Medium : English**

### ***Lesson No.***

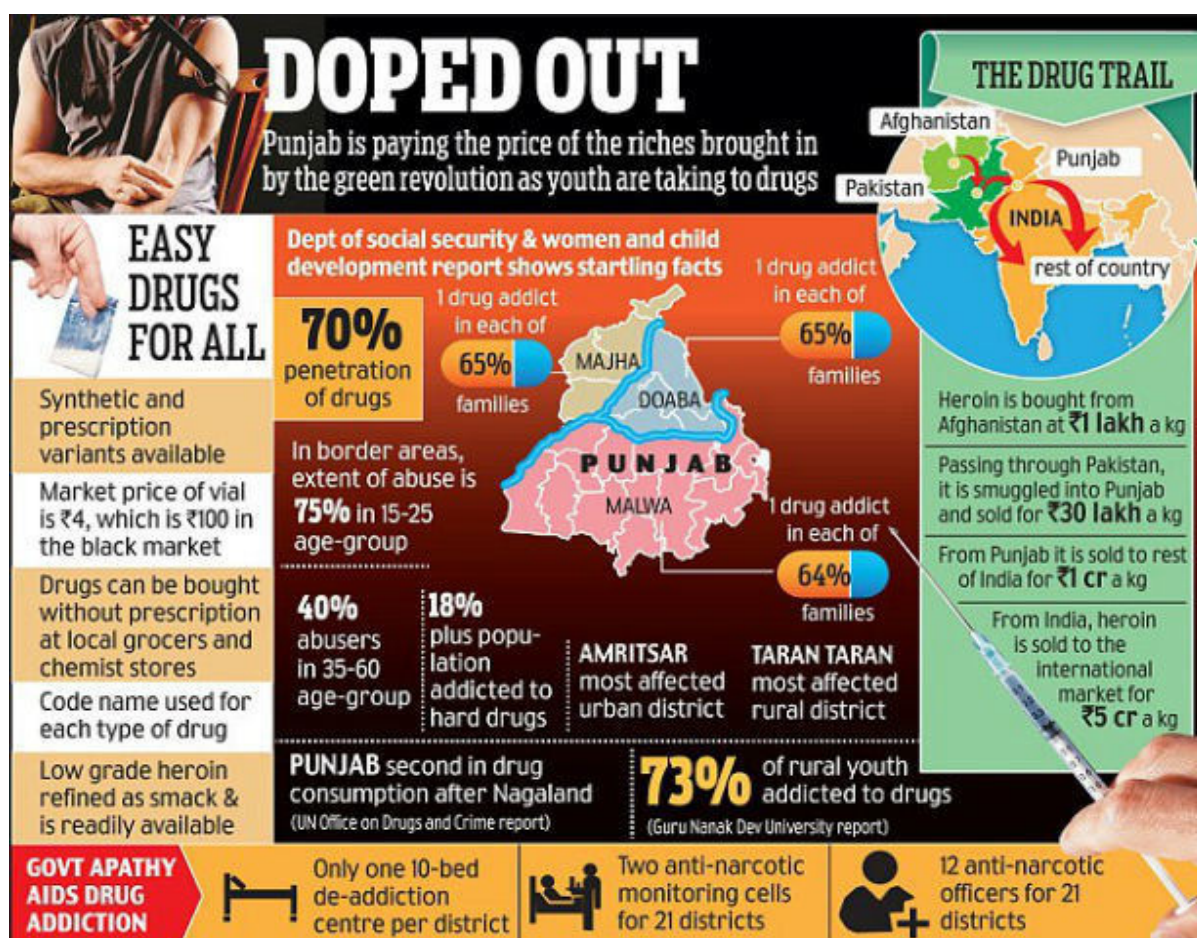
- 1.1 : Concept and Overview
- 1.2 : Introduction to Drug of Abuse: Withdrawal Symptom; Short Term and Long Term Effects
- 1.3 : Amphetamine as Stimulate
- 1.4 : Nicotine as Stimulate
- 1.5 : Drugs of Abuse
- 1.6 : Depressants
- 2.1 : Inhalents
- 2.2 : Steriods
- 2.3 : Drug Abuse: Behavioral and Psychological Indicators and Causes
- 2.4 : Management and Prevention of Drug Abuse
- 2.5 : Medical Treatments for the Management of Drug Abuse

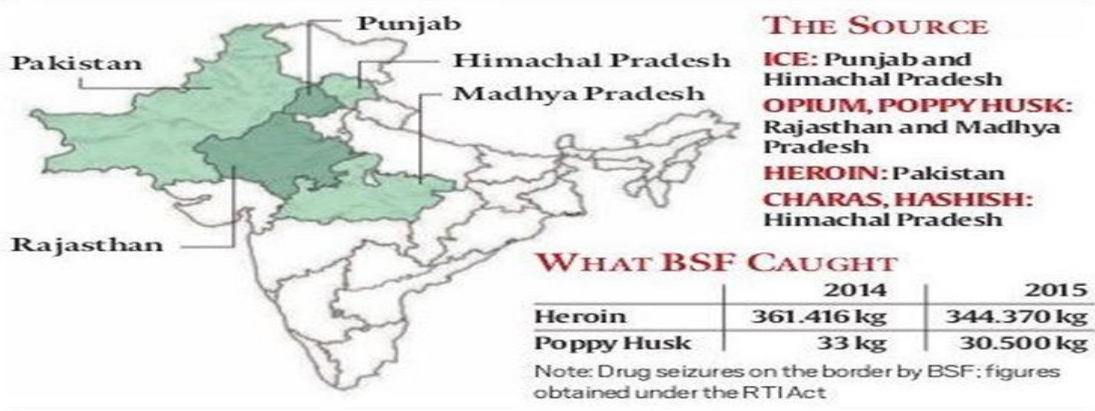
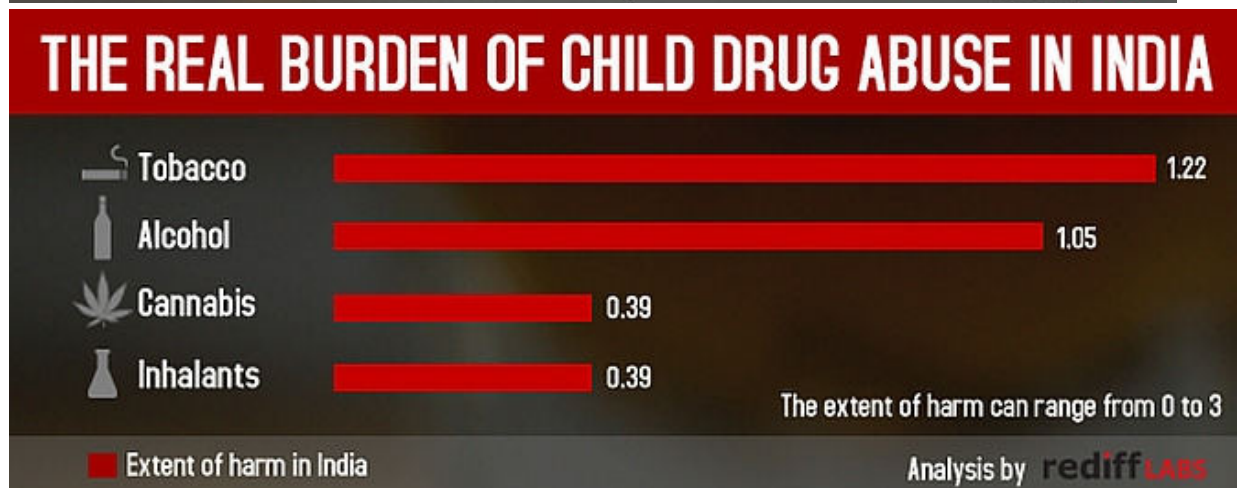
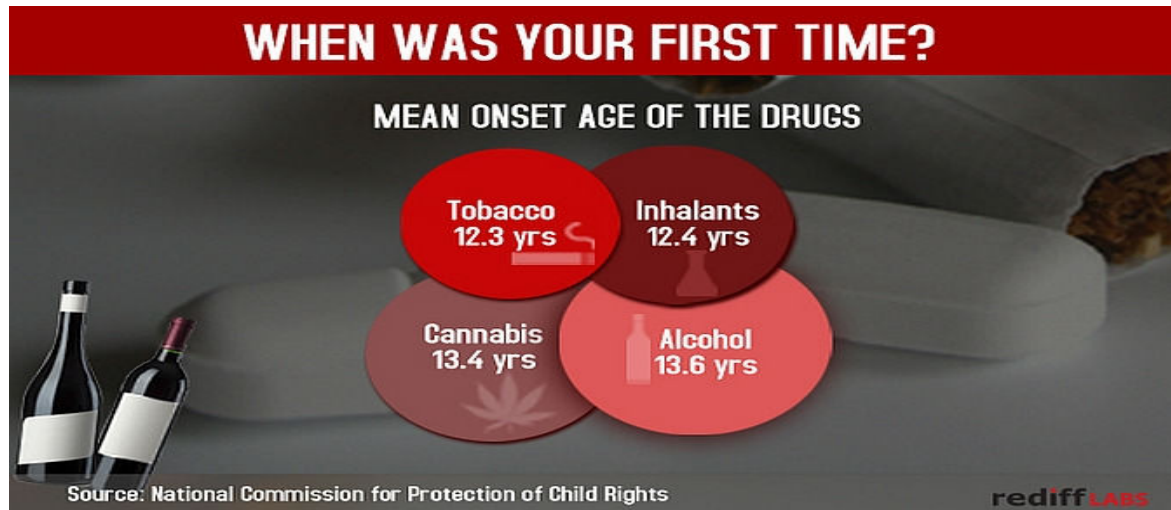
***Department website : [www.pbide.org](http://www.pbide.org)***

**Concept and overview**

**Contents :**

- What are drugs?
- What is drug abuse?
- Prevalence of the menace of drug abuse
- Difference between drug abuse, drug dependence and drug addiction
- Physical and psychological dependence-concept of drug tolerance





## VULNERABLE CHILDHOOD

DCPCR's special report on mental healthcare of children

Children comprise **40% of India's total population**

**Census 2011:** Of 20 million living in Delhi **two million below 6 years**

Most studies report prevalence of mental illness in **20% of child & adolescent population**



### SUBSTANCE ABUSE

- Tobacco:** cigarette, bidi, gutka
- Alcohol:** Beer, whisky, rum, vodka
- Cannabis:** Bhang, ganja, charas
- Inhalants:** Ink eraser fluid, glue, petrol
- Opioids:** Opium, heroin, pharmaceutical opioids (Propoxyphene, Pentazocine, Buprenorphine)
- Sedatives:** Diazepam, Nitrazepam, Alprazolam

### STUDIES WARN OF GROWING RISK

- Substance use rates of 40-80% reported in various studies on street children in different metro cities
- Mean age of onset is 9 years. Even younger children are victims
- Tobacco use reported in

- 50-75% street children, alcohol and inhalant use in 25-50% and cannabis in 15-25%
- Most street children using substances are school drop-outs. They work up to 8 hours daily to fund drug habit

SUNDAY TIMES OF INDIA, AHMEDABAD  
OCTOBER 14, 2012

TIMES NATION

# '73.5% Punjab youth drug addicts'

## State Admits Most Addicts In 16-35 Yr Group

Pritya Vadiv / iww

**Chandigarh:** Although the SAD-BJP combine is bearing its own government report on drugs which was quoted by Rahul Gandhi while saying seven out of 10 youngsters have taken to drugs in Punjab, another state government document has emerged where in the government admitted that "some 73.5% of the state's youth between 16 and 35 years are confirmed drug addicts".

The report is a part of the state disaster management plan for 2010-11, which cites "drug addiction" under



the "hazard" category and describes the menace as "grievous". Both revenue and disaster management departments come under cabinet minister Birkramji Singh Majithia.

The plan quotes surveys done by Guru Nanak Dev University, which was quoted by Rahul Gandhi. "Punjab's grievous drug problem was revealed recently in a report by Guru Nanak University in Punjab's largest city Amritsar, which declared that some 73.5% of the state's youth between 16 and 35 years were confirmed drug addicts," says the disaster management plan.

The plan also quotes Raj Pal Meena, the then head of the state's anti-narcotics task force saying, "Punjab is losing ground on the edge of an extraordinarily huge number of youngsters hooked on to marijuana, opium and heroin, in addition to unleashing a range of pro-

scrip over tablets."

VijayINDER Singla, member of Parliament, said, "The SAD-BJP government has to use these statistics as benchmark to make arrangements to tackle the drug problem. These are official figures and deputy chief minister Sukhbir Badal must apologise to the people of the state for misleading them."

A secretary of the department has been quoted in the disaster management plan: "Addicts used a variety of drugs, which included raw opium, smack, heroin, synthetic drugs like morphine, pethidine, cocaine and psychotropic substances like diazepam."

Vikram Choudhary, state president of Youth Congress, has blamed the political leadership in the state for "patronising drug lords". "The biggest reserves of drugs are from Jalandhar and Ferozepur areas which are Badal's strongholds," he said.



## Punjab police

Seizure of drugs (in kg)	2013	2014	2015 (upto March 24)
Heroin seized	463.6	636.9	174.7
Smack	48.9	15.4	1.8
Charas	173.1	103.2	11.7
Opium	963.8	556.1	89.2
Poppy Husk	2,36,639.2	98,795	6,926
Pseudoephedrine	960.3	250	0
Methamphetamine (Ice)	14.2	0.7	0
Capsules (in number)	30652590	3643724	722887
Number of arrests	16,821	17,022	2,747

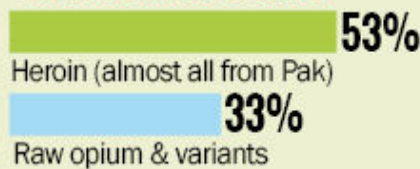


## PUNJAB'S DRUG MENACE

AIIMS says opioids worth Rs 7,500cr consumed every year



### MOST COMMON OPIOIDS



### 10 districts surveyed:

Bathinda, Ferozepur, Gurdaspur, Hoshiarpur, Jalandhar, Kapurthala, Moga, Patiala, Sangrur & Tarn Taran

**What is a Drug?**

- A chemical substance used in the treatment, prevention or diagnosis of disease or used to otherwise enhance physical or mental well-being.
- Any substance recognized in the official pharmacopoeia or formulary of the nation.
- Any substance intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in humans or other animals.
- Any article, other than food, intended to affect the structure or any function of the body of humans or other animals.
- Any substance intended for use as a component of such a drug, but not a device or a part of a device.
- A habit-forming medicinal or illicit substance, especially a narcotic.

**Drug**

In the broadest terms, a drug is “any substance which changes the way the body functions, mentally, physically or emotionally”.

This definition does not discriminate between:

- ❖ Alcohol
- ❖ Tobacco
- ❖ Caffeine
- ❖ Solvents
- ❖ Over The Counter Drugs
- ❖ Prescribed Drugs
- ❖ Illicit drugs

The use of a chemical, *legal or illegal*, which causes significant impairment in:

- physical functioning
- mental functioning
- emotional functioning
- social functioning

**“Substance use disorder” is a preferred term in the scientific community.**

**According to the WHO:**

*Substance abuse* refers to the harmful or hazardous use of chemicals, including alcohol and illicit drugs.

*Psychoactive substance use* can lead to dependence syndrome - a cluster of behavioural, cognitive, and physiological phenomena that develop after repeated

substance use and that typically include *a strong desire* to take the drug, *difficulties in controlling its use*, persisting in its use despite harmful consequences, a higher priority given to drug use than to other activities and obligations, increased tolerance, and sometimes a physical withdrawal state.

### **Drug Use**

Drug use is a broad term to cover the consumption of any 'substances'-alcohol, tobacco, caffeine, solvents, over the counter drugs, prescribed drugs, and illicit drugs within this there are stages:

- drug-free (i.e. non-use),
- experimental use,
- recreational use and
- harmful use, which is further sub-divided into misuse and dependence.

(The definitions are taken from the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) a diagnostic manual for clinicians.)

### **Abuse**

Substance abuse is described as a: 'maladaptive' pattern of substance use leading to clinically significant impairment or distress, as manifested by one (or more) of the following within a 12 month period:

- 1 Recurrent use leading to failure to fulfil major role obligations (work, home, school, etc.)
- 2 Recurrent use in situations where it is physically hazardous (e.g. drunk driving)
- 3 Repeated substance related legal problems (repeated disorderly conduct while drunk)
- 4 Persistent use despite recurrent social/interpersonal problems caused or exacerbated by the effects of a substance (e.g. arguments with spouse or physical fights)

### **The Diagnostic Features of Substance Dependence**

**Substance dependence** is defined as a maladaptive pattern of use that results in significant impairment or distress, as shown by the following features (3 or more) occurring within the same year:

1. Tolerance for the substance, as shown by either
  - a. the need for increased amounts of the substance to achieve the desired effect or intoxication, or
  - b. marked reduction in the effects of continuing to ingest the same amounts.
2. Withdrawal symptoms, as shown by either
  - a. the withdrawal syndrome that is considered characteristic for the substance,

**OR**

- b. the taking of the same substance (or a closely related substance, as when methadone is substituted for heroin) to relieve or to prevent withdrawal symptoms.
3. Taking **larger amounts of the substance or for longer periods of time** than the individual intended (e.g., person had desired to take only one drink, but after taking the first, continues drinking until severely intoxicated).
  4. Persistent desire to cut down or control intake of substance or lack of success in trying to exercise self-control.
  5. **Spending a good deal of time in activities directed toward obtaining the substance** (e.g., visiting several physicians to obtain prescriptions or engaging in theft), in actually ingesting the substance, or in recovering from its use. In severe cases, the individual's daily life revolves around substance use.
  6. The individual has reduced or given up important social, occupational, or recreational activities due to substance use (e.g., person withdraws from family events in order to indulge in drug use).
  7. Substance use is continued despite evidence of persistent or recurrent psychological or physical problems either caused or exacerbated by its use (e.g., repeated arrests for driving while intoxicated).

Note: Not all of these features need be present for a diagnosis to be made.

Source: Adapted from the DSM-IV-TR (APA, 2000).

When people use the term "dependence," they are usually referring to a physical dependence on a substance.

Dependence is characterized by the symptoms of tolerance and withdrawal. While it is possible to have a physical dependence without being addicted, addiction is usually right around the corner.

Addiction is marked by a change in behaviour caused by the biochemical changes in the brain after continued substance abuse. Substance use becomes the main priority of the addict, regardless of the harm they may cause to themselves or others. An addiction causes people to act irrationally when they don't have the substance they are addicted to in their system.

***Addiction encompasses both a mental and physical reliance on a given substance.***

Repeated use of a substance may alter the body's physiological reactions, leading to the development of tolerance or a physical withdrawal syndrome.

**Tolerance** is a state of physical habituation to a drug, resulting from frequent use, such that higher doses are needed to achieve the same effect.



**A withdrawal syndrome** (also called an abstinence syndrome) is a cluster of symptoms that occur when a dependent person abruptly stops using a particular substance following heavy, prolonged use. People who experience a withdrawal syndrome often return to using the substance to relieve the discomfort associated with withdrawal, which thus serves to maintain the addictive pattern. Withdrawal symptoms vary with the particular type of drug. With alcohol dependence, typical withdrawal symptoms include dryness in the mouth, nausea or vomiting, weakness, increased heart rate, anxiety, depression, headaches, insomnia, elevated blood pressure, and fleeting hallucinations.

When does drug abuse become drug addiction?

It rarely happens with the first use of a drug. Drug abuse and drug addiction can be thought of as points along a continuum.

**Any use of a mind-altering drug or the inappropriate use of medication (either prescription or over-the-counter drugs) is drug abuse**, but the point when drug abuse becomes drug addiction is less clear.

Different people may reach the point of addiction at different stages. Scientists continue to investigate the factors that contribute to the transition to drug addiction.

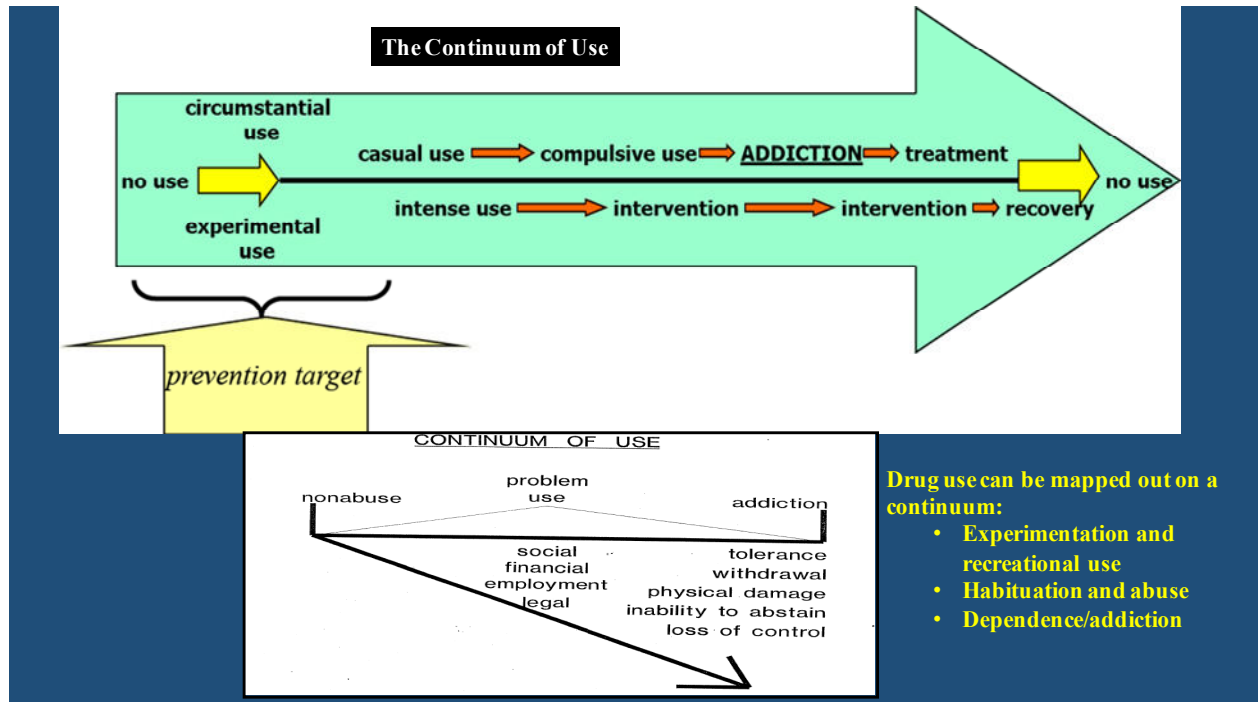
Drug addiction is defined as the continued compulsive use of drugs despite adverse health or social consequences.

Drug-addicted people have lost control of their drug use. Individuals who are addicted to drugs often become isolated from family or friends, have difficulty at work or school, may commit crimes, and become involved with the criminal justice system. For a person addicted to drugs, continuing to take them becomes the primary focus in life.

**By physiological dependence**, we mean that a person's body has changed as a result of the regular use of a psychoactive drug in such a way that it comes to depend on having a steady supply of the substance. The major signs of physiological dependence are the development of tolerance and a withdrawal syndrome.

**Compulsive use of a substance to meet a psychological need.** People can also develop psychological dependence on a drug without becoming physiologically or chemically dependent. These individuals come to compulsively use a drug to meet psychological needs. We can think of someone who compulsively uses marijuana to cope with daily stress, but is not physiologically dependent on the drug. On the other hand, a person may become physiologically dependent on a drug but not become a compulsive user. For example, people recuperating from surgery are often given narcotics derived from opium as painkillers. Some develop signs

of physiological dependence, such as tolerance and a withdrawal syndrome, but do not develop impaired control over the use of these drugs



***Prescription drugs are intended to help us, but can end up hurting us when misused or abused.***

#### Drug Misuse

- Taking a dose at the wrong time
- Forgetting to take a dose
- Stopping a medication too soon
- Accepting prescription medication from a friend
- Taking drugs for reasons other than what they were prescribed for

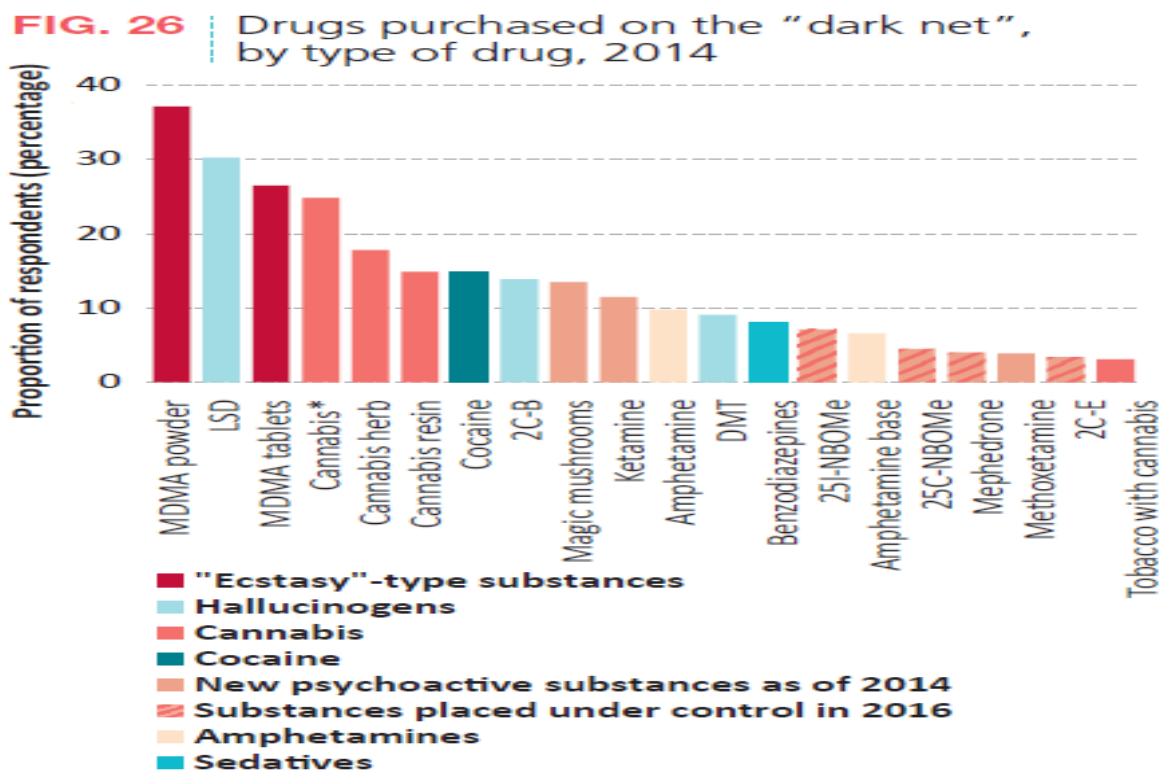
#### **Prescription Drug Abuse**

- Taking someone else's prescription to self medicate
- Using without a prescription
- Exceeding a recommended dose
- Taking prescription medicine in a way other than prescribed
- Taking medication to get a high  
(Improper Use to Abuse)

This includes painkillers, codeine based cough syrups, anti histamines, injectable opioids, sedatives, anabolic steroids etc.

**Substances that are commonly abused:**

- **Stimulants** (amphetamines, cocaine)
- **Depressants & sedatives** (barbiturates)
- **Hallucinogens** (cannabis, LSD)
- **Narcotic analgesics** (opium, morphine, codeine)
- **Volatile solvents** (glue, gasoline)
- **Legally sanctioned drugs** (antihistaminics, painkillers)
- **Steroids**
- **Tobacco**
- **Alcohol**

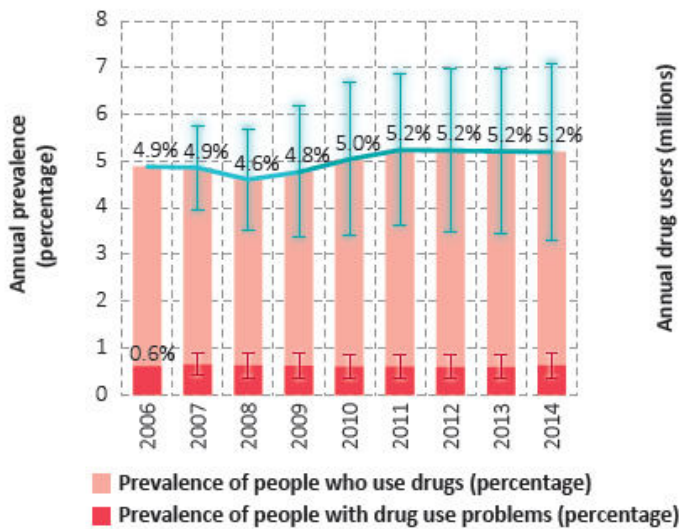


Source: UNITED NATIONS OFFICE ON DRUGS AND CRIME , World Drug Report, 2016

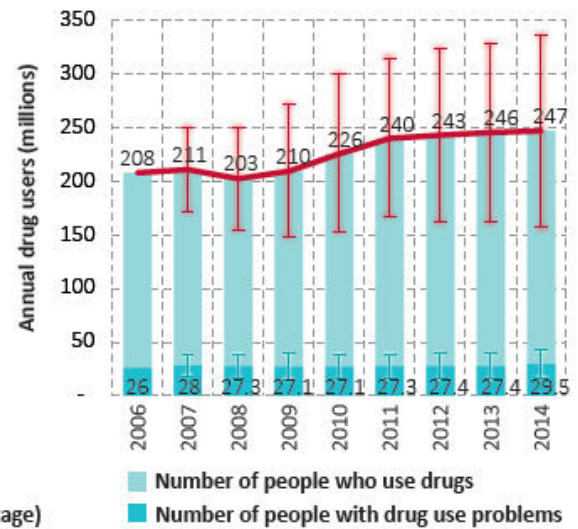
- **Substance use and abuse crosses all boundaries:**
  - **Gender**
  - **Age**
  - **Race and Ethnicity**

- **Socioeconomic Class**
- ***It is widely prevalent, cutting across age, class and gender.***

Global trends in the estimated prevalence of drug use, 2006-2014



Global trends in the estimated number of people who use drugs, 2006-2014



Source: Responses to the annual report questionnaire.

Source: Responses to the annual report questionnaire.

Note: Estimated percentage of adults (ages 15-64) who used drugs in the past year.

Note: Estimates are for adults (ages 15-64), based on past-year use.

Source: **UNITED NATIONS OFFICE ON DRUGS AND CRIME , World Drug Report, 2016**

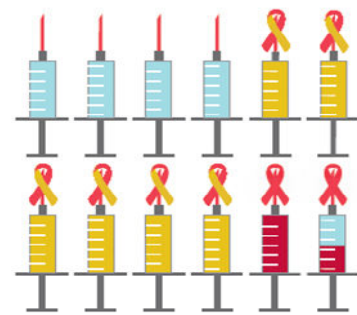
UNITED NATIONS OFFICE ON DRUGS AND CRIME , World Drug Report, 2016

FIG. 18 Drug-related mortality rate and number of drug-related deaths, by region, 2014

Region	Drug-related mortality rate per million population aged 15-64	Estimated number of drug-related deaths
Global average:	43.5	Total: 207,400
Africa	61.9	39,200
North America	164.5	52,500
Latin America and the Caribbean	15.6	5,200
Asia	29.6	85,900
Western and Central Europe	28.9	9,200
Eastern and South-Eastern Europe	55.9	12,700
Oceania	101.5	2,500

Sources: responses to the annual report questionnaire; Inter-American Drug Abuse Control Commission; and Louisa Degenhardt and others, "Illicit drug use", in *Comparative Quantification of Health Risks: Global and Regional Burden of Disease Attributable to Selected Major Risk Factors*, vol. 1, Majid Ezzati and others, eds. (Geneva, World Health Organization (WHO), 2004), p. 1,109.

12 million people inject drugs



1.6 million people who inject drugs are living with HIV  
6 million are living with hepatitis C

**Prevalence in India**

- Cannabis and opium have been traditionally used in India for centuries. The use of synthetic drugs and psychotropic substances is comparatively new.
- Information on substance use in India is mostly anecdotal due to the scarcity of data and reports available only from small-scale surveys.
- An epidemiologic study (Ray 2004) about substance use in India was the National Household Survey (NHS) in 2000–01, with 40,697 male respondents age 12 to 60 years in 25 states included in this study. Alcohol, cannabis, and opiates were found to be the three most commonly used substances and also the primary substances associated with the development of a substance use disorder. In the preceding month, 21.4 % used alcohol; 3.0 % used cannabis; and 0.7 % used opiates, which translated to 8.7 million users of marijuana and 2 million users of opioids. **These data from the year 2004 are the most comprehensive data on drug use in the country till now (Pawar et al. 2015).**
- Some researchers estimated between 180,000 and 1.1 million users of injected drugs in the country (Bergenstrom et al. 2013; Solomon et al. 2015).

**Warning Signs of Substance Abuse:**

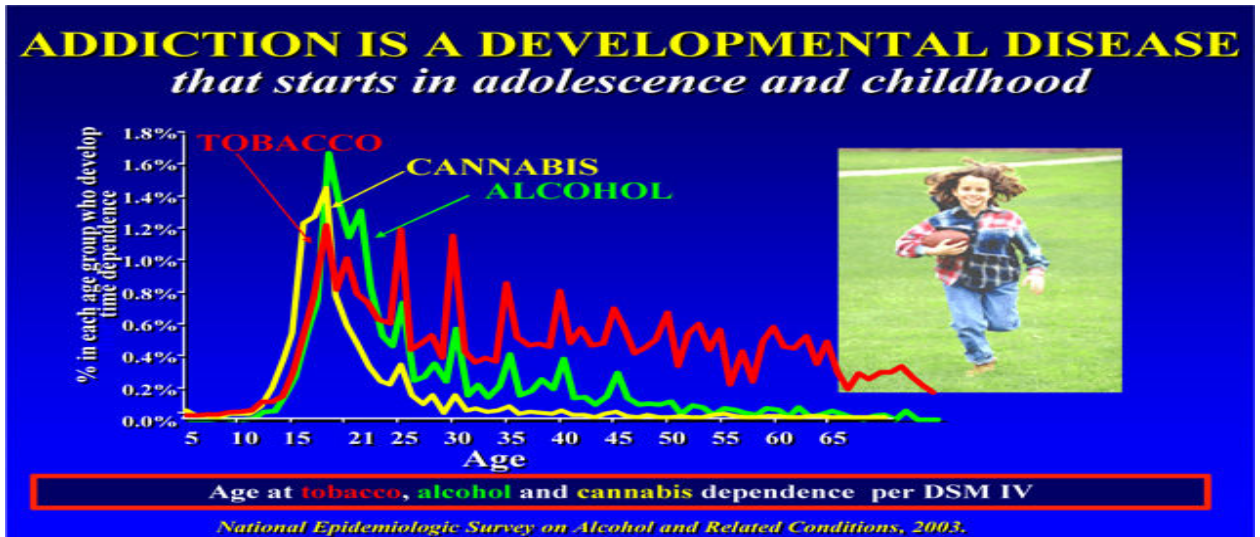
- Physical changes
- Emotional changes
- Academic performance
- Social Interactions
- Problems with the family

## Drugs affect the way you:

						
SEE	HEAR	SMELL	MOVE	EAT	THINK	SLEEP



**Effect of prolonged use of stimulants**



**40% start substance abuse between 13-20 years**

**WHY DO PEOPLE TAKE DRUGS?**

<b>PEER PRESSURE</b>		<b>FIT IN</b>
<b>MAKE FRIENDS</b>		<b>REBEL</b>
<b>RELAX</b>	<b>BOREDOM</b>	<b>TO ESCAPE</b>
<b>CURIOSITY</b>		<b>DEPRESSION</b>
<b>EXPERIMENTATION</b>	<b>STRESS</b>	<b>TO COPE</b>
<b>TO GET THAT MIND ALTERING EXPERIENCE</b>	<b>TO PARTY</b>	<b>ILLNESS</b>
		<b>GRIEF</b>
		<b>ADDICTION</b>

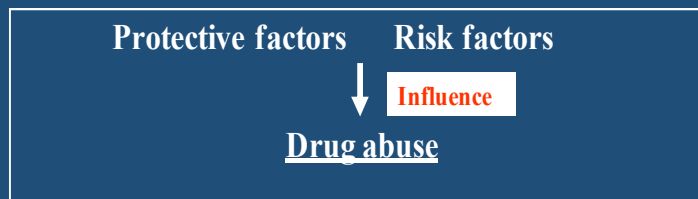
**Protective factors**

- a strong bond between children and their families;
- parental involvement in a child’s life;
- supportive parenting that meets financial, emotional, cognitive, and social needs; and
- clear limits and consistent enforcement of discipline.
- success in academics and involvement in extracurricular activities;
- strong bonds with pro-social institutions, such as school and religious institutions; and

- acceptance of conventional norms against drug abuse.
- Involvement in sports and cultural activities

### **Risk Factors**

- ineffective parenting;
- a chaotic home environment;
- a caregiver who abuses substances, suffers from mental illness, or engages in criminal behavior.
- inappropriate classroom behavior, such as aggression and impulsivity;
- academic failure;
- poor social coping skills;
- association with peers with problem behaviors, including drug abuse; and
- misperceptions of the extent and acceptability of drug-abusing behaviors in school, peer, and community environments.



✓ Risks appear at every transition from early childhood through young adulthood; therefore, prevention planners need to consider their target audiences and implement programs that provide support appropriate for each developmental stage.

✓ *A major focus is how prevention programs can strengthen protection or intervene to reduce risks.*



### **Suggested questions:**

1. **What is drug/substance abuse?**
2. **What are the common substances of abuse?**



3. **Why does substance abuse occur??**
4. **How can it be treated/prevented?**
5. **Role of a teacher/educator!**

**Suggested readings**

1. Kapoor.T. (1985) Drug Epidemic among Indian Youth, New Delhi: Mittal Pub
2. Modi, Ishwar and Modi, Shalini (1997) Drugs: Addiction and Prevention, Jaipur: Rawat Publication.
3. Ahuja, Ram, (2003), Social Problems in India, Rawat Publications: Jaipur
4. 2003 National Household Survey of Alcohol and Drug Abuse. New Delhi, Clinical Epidemiological Unit, All India Institute of Medical Sciences, 2004.
5. World Drug Report 2011, United Nations Office of Drug and Crime.
6. World Drug Report 2010, United Nations Office of Drug and Crime.
7. Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India, 2004.
8. The Narcotic Drugs and Psychotropic Substances Act, 1985, (New Delhi: Universal, 2012)

**Introduction to Drugs of Abuse; Withdrawal Symptom; Short Term and Long  
Term Effects**

**Contents:**

- **Withdrawal symptoms**
- **Physical dependence**
- **Psychological dependence**
- **Factors affecting withdrawal**
- **Stimulants**
- **Clinically they are useful in various conditions like:**
- **Side effects of stimulants on body**
- **Side effects on mind**
- **Cocaine (stimulant), street names, methods of use**
- **Cocaine is produced in two main forms**
- **Mechanism of action**
- **Actions of cocaine**
- **Adverse effects of cocaine:**
- **Short-term effects of cocaine**
- **Long-term effects of cocaine**
- **Psychological effects**
- **Cocaine withdrawal effects**
- **Suggested questions:**
- **Suggested readings**

**Withdrawal Symptoms**

- Group of symptoms that occur upon the abrupt discontinuation or decrease in intake of medications or recreational drugs.
- In order to experience the symptoms of withdrawal, one must have first developed a form of drug dependence
- ✓ Physical Dependence,
- ✓ Psychological Dependence,
- ✓ or Both.

***Physical Dependence***

A person who is physically dependent on a drug is used to functioning with the drug present.

### ***Psychological Dependence***

A person who is psychologically dependent on a drug may feel they have to use the drug in order to function effectively, or to achieve emotional satisfaction.

### ***Withdrawal***

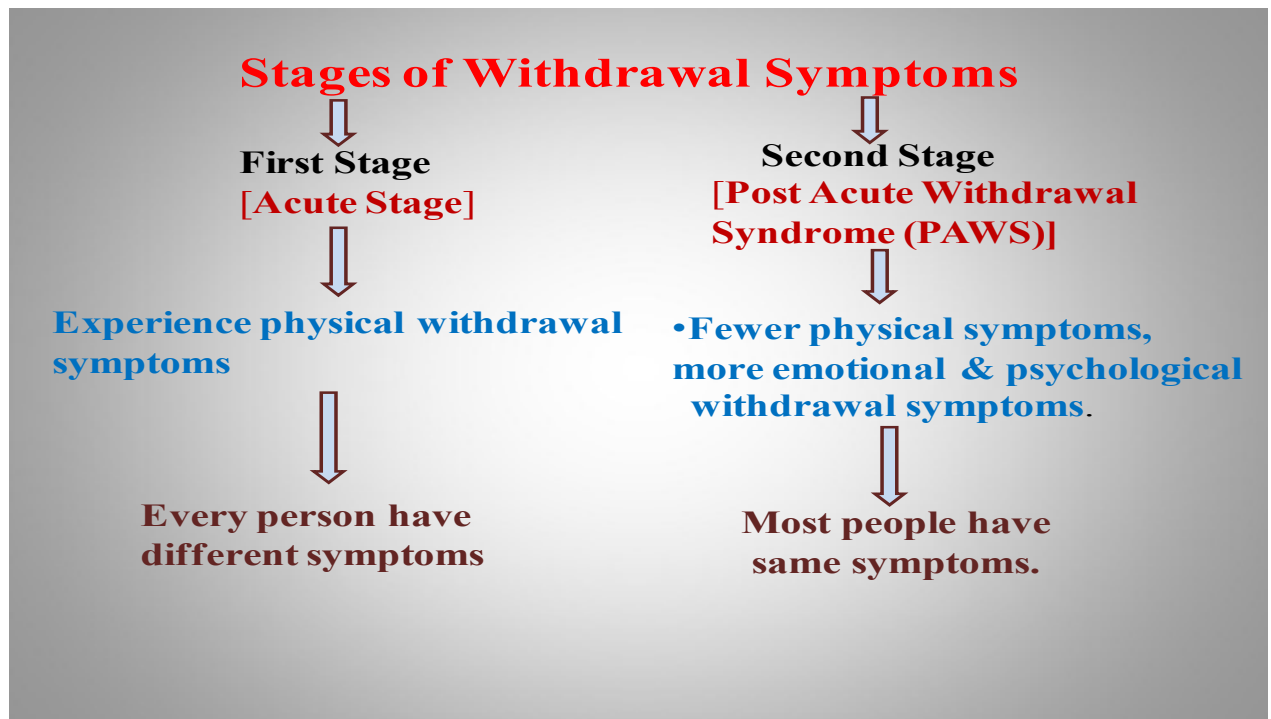
If a person who is physically or psychologically dependent suddenly stops taking the drug, they may experience withdrawal symptoms as their body readjusts to functioning without the drug.

There are many types of withdrawal symptom, such as depression, irritability, cramps, nausea, sweating and problems with sleep.

### **FACTORS AFFECTING WITHDRAWAL**

**The symptoms of drug withdrawal, and the length of that withdrawal, vary depending on factors including :**

1. **Length of time abusing the substance (Acute & Chronic)**
2. **Type of substance abused**
3. **Method of abuse (e.g., snorting, smoking, injecting, or swallowing)**
4. **Amount taken each time**
5. **Family history and genetic makeup**
6. **Medical and mental health factors etc.**



## Withdrawal Symptoms

### Physical Withdrawal Symptoms

- ✓ **Alcohol**
- ✓ **Opiates**
- ✓ **Tranquilizers**

- **Sweating**
- **Racing heart**
- **Palpitations**
- **Muscle tension**
- **Tightness in the chest**
- **Difficulty breathing**
- **Tremor**
- **Nausea, vomiting, diarrhoea**

### Emotional Withdrawal Symptoms

- ✓ **Almost produced by all drugs**

- **Anxiety**
- **Restlessness**
- **Irritability**
- **Insomnia (sleep impairment)**
- **Headaches**
- **Poor concentration**
- **Depression**
- **Social isolation**

## Withdrawal Symptoms

### **Dangerous Withdrawal Symptoms**

- ✓ **Suddenly stopping of substance abuse**
- **Grand mal seizures**
- **Heart attacks**
- **Strokes**
- **Hallucinations**
- **Delirium tremens (DTs)**

### **Post-acute Withdrawal Symptoms**

- **Mood swings**
- **Anxiety**
- **Irritability**
- **Tiredness**
- **Variable energy**
- **Low enthusiasm**
- **Variable concentration**
- **Disturbed sleep**

### **STIMULANTS :**

- Stimulants are the agents that primarily activate or stimulate CNS (central nervous system) to increase neural activity in the brain.
  - Stimulants tend to make people feel more alert, awake, or confident; and can produce feelings of happiness or euphoria.
  - Stimulants increase heart rate, body temperature and blood pressure. reduce a person's appetite, dilate pupils.
  - Person has difficulty in sleeping, and is talkative or agitated.
  - Some stimulants are also hallucinogenic.
  - Large quantities can cause anxiety, panic, seizures, headaches, stomach cramps, aggression and paranoia.
  - This class of drugs includes prescription drugs such as amphetamines (Adderall® and Dexedrine®), methylphenidate (Concerta® and Ritalin®), dietaids (such as Didrex®, Bontril®, Preludin®, Fastin®, Adipex P®, Ionomin®, and Meridia®) and illicitly produced drugs such as methamphetamine, cocaine.
  - **Street names**
- Bennies, Black Beauties, Cat, Coke, Crank, Crystal, Flake, Ice, Pellets, R-Ball, Skippy, Snow, Speed, Uppers, Vitamin R, Smart drug, JIF, Kibbles and bits.

➤ Looks like: Stimulants come in the form of pills, powder, rocks, injectable liquids

**Clinically they are useful in various conditions like:**

- Attention deficit disorder (ADD)
- ADHD (attention deficit hyperactive disorder)
- Narcolepsy (sleep disorder, where a person fall asleep several times a day)
- Apnoea in premature infants
- Obesity (anorectic agents)

Also used to

- stay alert and focused,
- lose weight,
- stay awake, and get high

**CNS stimulants:**

**1. Psychomotor stimulants**

Cause: Excitement, Euphoria, Decrease feeling of fatigue & Increase motor activity

eg. Methylxanthines (caffeine, theobromine, theophylline), nicotine, cocaine, amphetamine, atomoxetine, modafinil, methylphenidate.

**2. Hallucinogens (psychotomimetic):**

Affect thought, perception, and mood, therefore produce

- profound changes in thought patterns & mood,
- little effect on the brain stem & spinal cord

eg. Lysergic acid diethylamide (LSD), Phencyclidine (PCP), Tetrahydrocannabinol (THC), Rimonabant.

**Mild stimulants**

- > caffeine (in tea, coffee and cola drinks)
- > nicotine (cigarettes)
- > ephedrine (used in medicines for bronchitis, hay fever and asthma)

**Stronger stimulants**

- > amphetamines (speed, crystal meth, ice)
- > cocaine
- > ecstasy
- > slimming tablets (Duromine, Tenuate Dospan, Ponderax)
- > khat

**Side effects of stimulants on body include...**

- tremor, headache, flushed skin, chest pains with palpitations, excessive sweating, vomiting, and abdominal cramps.

**Side effects on mind include...**

- agitation, paranoia, hallucinations/hearing things, panic, aggression, depression and suicidal tendencies.

**Overdose can cause...**

- high fever, convulsions, stroke, or heart problems like cardiac arrest, sometimes leading to death. Physical activity (dancing or running) can increase risks by putting more pressure on heart.

**Cocaine (Stimulant)**

- Cocaine is a powerful addictive stimulant from the leaves of the coca plant *Erythroxylon coca* native to South America.
- Cocaine, the deadly white powder, creates a psychological dependency on the drug.
- Medically it can be used as local anesthesia for some surgeries, cocaine is an illegal drug.
- Tolerance develops very quickly making becoming addicted easier.
- People often mix cocaine with other drugs, such as heroin, marijuana, tranquilizers, and amphetamines.

**Street Names:** “Coke, Snow, Snow White, Rock, Powder, Blow, Flake, Charlie, Yeyo (Spanish), Nose Candy, Johnny, Sugar, Toot, Happy Trails” (CESAR)

**Methods of Use:** Snorted (“sniffing the powder into the nasal passages”), injection, ingested orally, rubbed on the gums, sprinkled on cigarettes or marijuana joints

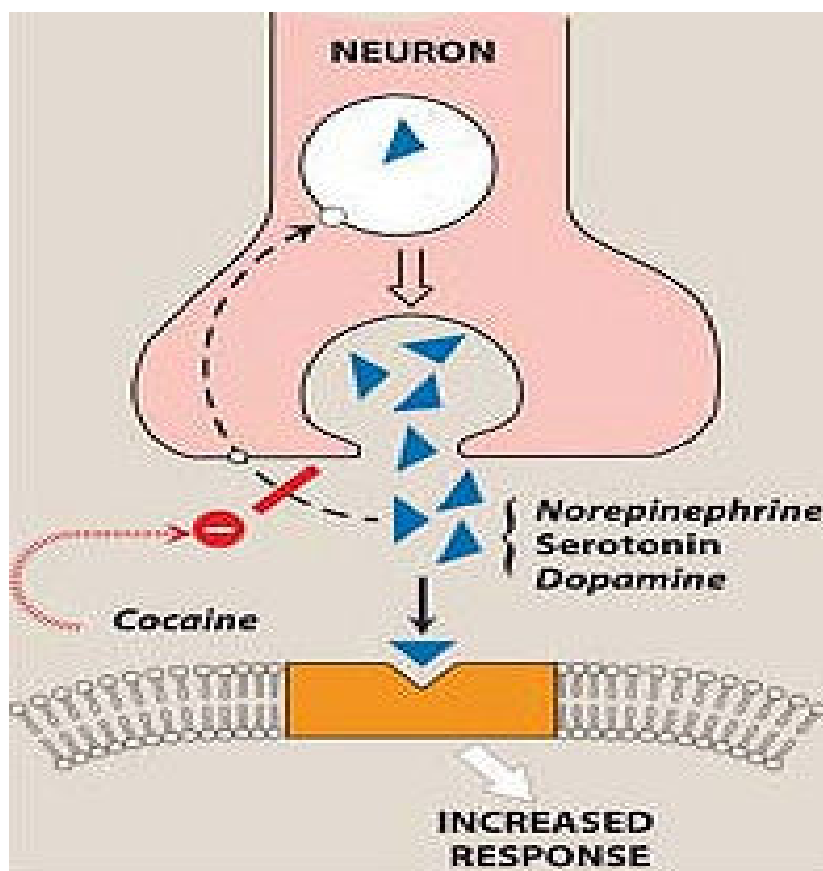
**Cocaine is produced in two main forms:**

- ✓ Powdered cocaine that is smoked, snorted, or injected
- ✓ Rock form or “crack” cocaine that is typically smoked

**Cocaine (highly addictive drug)**

**1. Mechanism of action:** blockade of reuptake of the monoamines (NE, serotonin and dopamine)

Thus, potentiates and prolongs the CNS and peripheral actions of these monoamines.



Initially produces the intense euphoria by prolongation of dopaminergic effects in the brain's pleasure system (limbic system).

Chronic intake of cocaine depletes dopamine. This depletion triggers the vicious cycle of craving for cocaine that temporarily relieves severe depression.

#### **Actions of cocaine:**

- A. CNS-behavioral effects:** result from powerful stimulation of cortex and brain stem.
  - increase mental awareness, feeling of well being, euphoria, hallucinations and delusions of paranoia.
  - increases motor activity, and at high doses, it causes tremors and convulsions, followed by respiratory and vasomotor depression.
- B. Sympathetic NS:** peripherally potentiate the action of NE→ fight or flight
- C. Hyperthermia:**
- D. local anesthetic action:**

#### **Adverse effects of cocaine:**



1. Anxiety reaction that includes: hypertension, tachycardia, sweating, and paranoia.

Because of the irritability, many users take cocaine with alcohol. A product of cocaine metabolites and ethanol is cocaethylene, which is also psychoactive and cause cardiotoxicity.

2. **Depression:** cocaine stimulation of the CNS is followed by a period of mental depression.
3. Addicts withdrawing from cocaine exhibit physical and emotional depression as well as agitation.

**4. Toxic effects:**

5. Seizures, fatal cardiac arrhythmias

**Very short half-life of less than an hour, meaning that it quickly takes effect and also rapidly leaves the bloodstream.**

**Short-term Effects of Cocaine**

- ✓ Elevate Heart Rate, Temperature, and Blood Pressure.
- ✓ Extreme Euphoria,
- ✓ Heightened Energy Levels
- ✓ Elevated Self-confidence,
- ✓ Loss of appetite (hunger)
- ✓ Nausea
- ✓ Disturbed sleep pattern
- ✓ Anxiety
- ✓ Paranoia
- ✓ Restlessness

**Long-term Effects of Cocaine**

- permanent damage to blood vessels of the heart and brain
- stroke
- high blood pressure
- liver and kidney and lung damage
- severe depression
- addiction
- hallucinations
- death

**Effects on Cardiovascular**

- irregular heartbeats
- in some cases may cause a heart attack (athletes taking energy drink mountain dew)

**Psychological effects**

- decreased sense of fatigue
- mood swings
- increase sense of confidence
- increase your anxiety and irritability

**Cocaine Withdrawal Effects****3-Phases:**

- ❖ **Initial Crash period:** 9-hours and four days

A person may sleep for days; increase in appetite, feel depressed and agitated.

- ❖ **Acute withdrawal:** 1-3 weeks

irritability, fatigue, depression, insomnia, anxiety, and drug cravings.

- ❖ **Extinction period:** several months

Cravings for cocaine along with depressed moods, Suicidal thoughts

**Suggested questions:**

1. **What are stimulants? Give examples.**
2. **Define Physical dependence and Psychological dependence.**
3. **Give Side effects of stimulants on body and mind.**
4. **Explain Short-term effects and Long-term effects of cocaine**
5. **Explain Cocaine withdrawal effects**

**Suggested readings**

1. Kapoor.T. (1985) Drug Epidemic among Indian Youth, New Delhi: Mittal Pub
2. Modi, Ishwar and Modi, Shalini (1997) Drugs: Addiction and Prevention, Jaipur: Rawat Publication.
3. Ahuja, Ram,(2003),Social Problems in India, Rawat Publications: Jaipur
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5. World Drug Report 2011, United Nations Office of Drug and Crime.
6. World Drug Report 2010, United nations Office of Drug and Crime.
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8. The Narcotic Drugs and Psychotropic Substances Act, 1985, (New Delhi: Universal, 2012)

**AMPHETAMINE AS STIMULANT**

**Contents:**

- **Define amphetamines.**
- **Examples of amphetamines**
- **Street Names of amphetamines**
- **Mechanism of action:**
- **Adverse effects**
- **Physical Symptoms**
- **Psychological Symptoms**
- **Suggested questions:**
- **Suggested readings**

**AMPHETAMINES ARE :**

- ❖ Strong central nervous system stimulants
- ❖ used in ADHD, weight loss, and narcolepsy.
- ❖ used to increase alertness, increase endurance, and enhance moods.
- ❖ Amphetamines, also known as “bennies,” “speed,” “uppers,” and “wake-ups”
- ❖ It usually comes as a grey, white, or dirty white, pale pink or yellow powder.
- ❖ This drug can be snorted, swallowed, injected or smoked, it has also been known to be mixed with liquid and drunk.
- ❖ Brand Names: Biphphetamine, Dexedrine, Adderall, Vyvanse
- ❖ Street Names: Black Beauties, Truck Drivers, Uppers, Speed, LA Turnaround, Hearts, Copilots, Eye-openers, Lid Poppers, Crosses, Bennies, Whizz, Billy

**Examples of amphetamines:**

- dextroamphetamine is the major member of this class.
- methamphetamine (speed) is a derivative of amphetamine that is smoked and is preferred by many abusers. Street Names: Meth, Crystal, Crystal Meth, Ice, Glass, Redneck Cocaine, Crank, Speed, Tina, Tick-Tock, Scootie, Yellow Barn/Powder, Hot Ice, Chalk

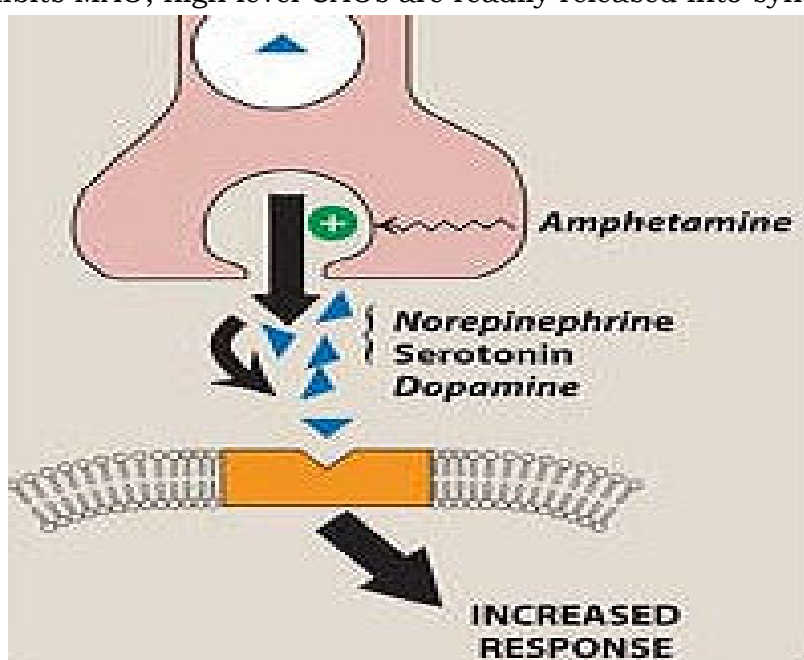
- Methylendioxyamphetamine (also known as MDMA, or Ecstasy) is a synthetic derivative of methamphetamine with both stimulant and hallucinogenic properties.

**Street Names:** Ecstasy, Molly, E, X, XTC, ADAM, Rolls, Pills, Love Drug, Go

**Mechanism of action:**

Amphetamine, act by

- releasing intracellular stores of catecholamines.
- also inhibits MAO, high level CAOs are readily released into synaptic spaces.



**Actions:**

**a. CNS:** the major behavioral effects of amphetamine result from a combination of its dopamine and NE release enhancing properties.

- Amphetamine stimulates the entire cerebrospinal axis, brainstem, and medulla.
- This leads to increased alertness, decreased fatigue, depressed appetite, and insomnia.

**b. Sympathetic Nervous System:** indirectly stimulating the receptors through NE release.

**Adverse effects:**

The amphetamines may cause addiction, dependence, tolerance, and drug seeking behavior.

- a. **CNS:** insomnia, irritability, weakness, dizziness, tremor, hyperactive reflex, confusion, delirium, panic states, and suicidal tendencies,

Chronic amphetamine use produce a state of “amphetamine psychosis” long-term amphetamine causes psychic and physical dependence, tolerance to its effects may occur within a few weeks.

**b. CVS:** palpitations, cardiac arrhythmia, high BP, anginal pain, and circulatory collapse. Headache, chills, and excess sweating may also occur.

**c. GIT:** anorexia (loss of appetite), nausea, vomiting, abdominal cramps, and diarrhea.

The anorectic effect of amphetamine is due to its action in the lateral hypothalamic feeding center.

### **Physical Symptoms**

- ✓ Oversleeping
- ✓ Excessive hunger
- ✓ Pain and discomfort in the stomach as a result of overeating
- ✓ Lack of coordination
- ✓ Shaking and the potential for seizures
- ✓ Dehydration
- ✓ Tachycardia
- ✓ Arrhythmia
- ✓ Cardiac arrest

### **Psychological Symptoms**

- ✓ Irritability
- ✓ Short-temper
- ✓ Hypersensitivity to light and sound
- ✓ Drug cravings
- ✓ Extreme mood Depression
- ✓ Anxiety
- ✓ Suicidal ideation
- ✓ Hallucinations
- ✓ Sensory misperception
- ✓ Auditory hallucinations
- ✓ Psychosis

### **Suggested questions:**

1. **Define amphetamines.**
2. **Give examples and Street Names of amphetamines.**
3. **Give adverse effects of amphetamines.**
4. **Explain Physical Symptoms of amphetamines.**
5. **Explain Psychological Symptoms of amphetamines.**

**Suggested readings**

9. Kapoor.T. (1985) Drug Epidemic among Indian Youth, New Delhi: Mittal Pub
10. Modi, Ishwar and Modi, Shalini (1997) Drugs: Addiction and Prevention, Jaipur: Rawat Publication.
11. Ahuja, Ram,(2003),Social Problems in India, Rawat Publications: Jaipur
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16. The Narcotic Drugs and Psychotropic Substances Act, 1985, (New Delhi: Universal, 2012).

### **NICOTINE AS STIMULANT**

#### **Contents:**

- **Nicotine introduction**
- **Smoking tobacco use**
- **Smokeless tobacco use**
- **Actions of Nicotine**
- **Adverse effects:**
- **Withdrawal symptoms**
- **Suggested questions:**
- **Suggested readings**

#### **Introduction:**

- Nicotine is found in the leaves of *Nicotiana rustica* in amounts of 2–14%, the tobacco plant *Nicotiana tabacum*, *Duboisia hopwoodii* and *Asclepias syriaca*.
- It constitutes approximately 0.6–3.0% of the dry weight of tobacco. It is the active ingredient in tobacco.
- Used in smoking cessation therapy.
- Nicotine remains important, because:
  - it is 2<sup>nd</sup> only to caffeine as the most widely used CNS stimulant
  - and 2<sup>nd</sup> only to alcohol as the most abused drug.

#### **Smoking tobacco use**

- Beedis
- Cigarettes and cigars
- Chillum
- Hookah

#### **Smokeless tobacco use**

- Khaini
- Gutkha
- Paan with tobacco
- Paan masala
- Mawa
- Mishri, gudakha and toothpastes

**Actions of Nicotine****Low dose: ganglionic depolarization****High dose: ganglionic blockade****I. CNS:**

1. Low dose: euphoria, arousal, relaxation, improves attention, learning, problem solving and reaction time.
2. High dose: CNS paralysis, severe hypotension (medullary paralysis)

**II. Peripheral effects:**

- Stimulation of sympathetic ganglia and adrenal medulla → ↑ Blood Pressure and Heart Rate
- Stimulation of parasympathetic ganglia → ↑ motor activity of the bowel
- At higher doses, BP falls & activating ceases in both GIT and bladder
- Most cigarettes contain **6-8 mg of nicotine**, by inhaling tobacco smoke, the average smoker takes in **1 to 2 mg of nicotine per cigarette**.
- the acute lethal dose is 60 mg,
- 90% of nicotine inhaled in smoke is absorbed.
- Tolerance to toxic effects of nicotine develops rapidly.

**Adverse effects:**

- CNS; irritability and tremors
- Intestinal cramps, diarrhea
- ↑HR & BP
- Withdrawal syndrome
- physical dependence on nicotine develops rapidly.
- Transdermal patch and chewing gum containing nicotine

**WITHDRAWAL SYMPTOMS:**

1. Urges to smoke
2. Depressed mood
3. Difficulty sleeping or sleep disturbances
4. Irritability, frustration or anger
5. Anxiety
6. Difficulty concentrating
7. Restlessness
8. Decreased heart rate
9. Increased appetite (hunger) or weight gain
10. Decreased adrenaline and cortisol (brain chemicals)



**The symptoms of nicotine withdrawal can begin within 30-minutes of last use of tobacco.**

**Suggested questions:**

- 1. What is nicotine and from where it is obtained?**
- 2. How is tobacco consumed?**
- 3. What are the effects and withdrawal symptoms of tobacco?**

**Suggested readings**

17. Kapoor.T. (1985) Drug Epidemic among Indian Youth, New Delhi: Mittal Pub
18. Modi, Ishwar and Modi, Shalini (1997) Drugs: Addiction and Prevention, Jaipur: Rawat Publication.
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**Drugs of Abuse**

**Contents:**

- **Introduction to Substance/Drug Abuse**
- **Drug Dependency**
- **Withdrawal Symptoms**
- **Psychological dependence**
- **Opium**
- **Morphine and Heroin**
- **Therapeutic uses of Opium and Morphine**
- **Morphine is an opioid pain medication (Narcotic Analgesic)**
- **Mode of Administration in the body**
- **Short Term Effects**
- **Dangerous Effects of Heroin**
- **Harmful Effects of Opiates**
- **Signs of Morphine Overdose**
- **Dependency and withdrawal Symptoms**
- **Withdrawal Symptoms of opiates**
- **Cannabis Sativa**
- **Marijuana, Hashish, Hashish Oil**
- **Mode of Abuse**
- **Immediate Effects of Cannabis**
- **Physical effects of marijuana**
- **Short Term Bad Effects**
- **Long Term Bad Effects**
- **Dependency**
- **Marijuana Myths and Facts**
- **Suggested questions**
- **Suggested readings**

**Introduction to Substance/Drug Abuse**

- Use of a drug in which the user consumes the substance or drugs which are harmful to themselves

- In 2013, drug use disorders resulted in 127,000 deaths
- In 1990, the number was 53,000
- The highest number of deaths are from opioid use disorders at 51,000

### Drug Dependency

Body becomes tolerant to a drug quickly. Person takes the drug more and more of the drug to feel the same effects. In doing that, the body becomes dependent, on the drug.

### Withdrawal Symptoms

The absence of a drug in the body induces development of abnormal symptoms

## Withdrawal Symptoms



### Physical Dependence

It is a physical condition caused by chronic use of a drug of abuse, in which abrupt or gradual drug withdrawal causes unpleasant physical symptoms

**Examples:** increase in heart rate, blood pressure, sweating, tremors, seizures (epileptic fits)

### Psychological dependence

It is a form of dependence that involves emotional-motivational withdrawal symptoms upon cessation of drug use.

**Examples:** Uneasiness, dissatisfaction, reduced capacity to experience pleasure, development of anxiety

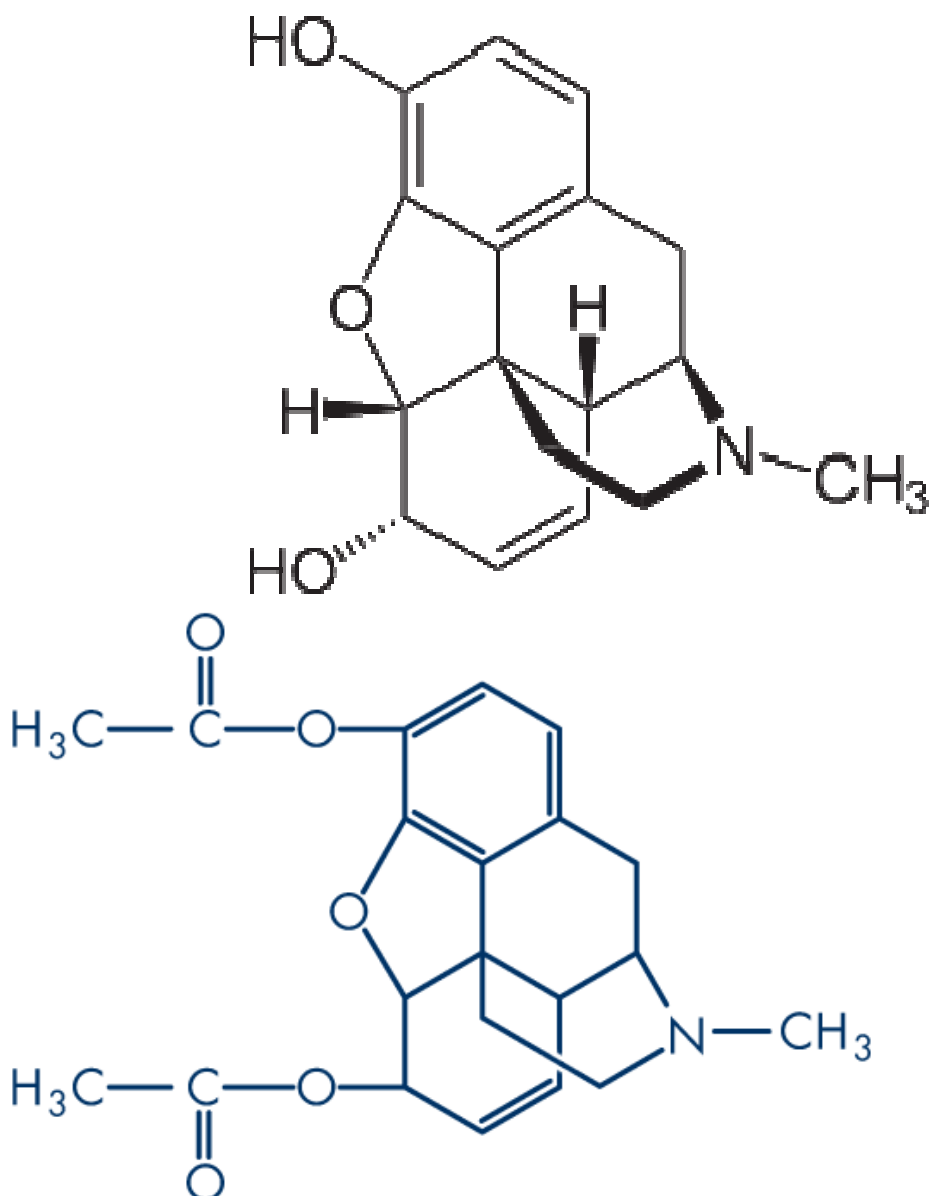
### Opium

It is the dried latex obtained from the opium poppy (scientific name: *Papaver somniferum*)

### Morphine and Heroin

Opium latex contains approximately 12 percent of the analgesic (pain relieving) alkaloid **morphine**

Morphine is chemically processed to produce **heroin**



### Heroin/Brown Sugar

**Brown sugar** is an adulterated form of heroin and is also called **smack**

It is formed by mixing the drug with talcum powder, powdered milk, sugar and other substances

### **Therapeutic uses of Opium and Morphine**

Morphine is an opioid pain medication (Narcotic Analgesic)

Morphine is used to treat moderate to severe pain

Example: Surgical pain, Neuropathic pain, cancer pain etc.

### **Mode of Administration in the body:**

- Oral
- Smoking
- injection

### **Short Term Effects**

These produce a state of 'HIGH' which is:

**Euphoria:** It is an affective state in which a person experiences pleasure or excitement and intense feelings of well-being and happiness

### **False Feelings**

- There is sensations of warmth and safety, when they are high on heroin
- People often disconnect from surrounding and there is a feeling of floating, dream-like state
- **Intense relaxation, decreased perception of pain**

### **Dangerous Effects of Heroin**

Many people find heroin very unpleasant

- It can cause immediate vomiting
- Suppressing breathing, cough reflex
- Increases the risk of choking
- It also causes constipation

### **Harmful Effects of Opiates**

- Nausea
- Vomiting.
- Itchy skin
- Appetite loss
- Constricted, or pinpoint pupils.
- Urinary retention
- Constipation
- Shallow or slowed breathing
- Altered or irregular heart rate and rhythm.
- Chest pain.
- Cyanosis (blue tint to skin, lips, fingernails, etc.)

- Dizziness
- Confusion

### Signs of Morphine Overdose

- Uncontrolled vomiting
- Breathing difficulties/respiratory arrest
- Bradycardia (slowed heartbeat)/cardiac arrest
- Convulsions
- Loss of consciousness

### Dependency and withdrawal Symptoms

- When morphine is used in large doses and/or abused, the user can quickly develop a physical and psychological addiction to the drug.
- Morphine withdrawal symptoms start to take place as soon as 6-12 hours after the last dose
- Early onset withdrawal symptoms include watery eyes, yawning and sneezing.

### Withdrawal Symptoms of opiates

Runny nose

Watery eyes

Fever

Vomiting

Nausea

Headaches

Sweating

Chills

Muscle aches

Diarrhea

Rapid heartbeat

Hypertension

Agitation

Anxiety

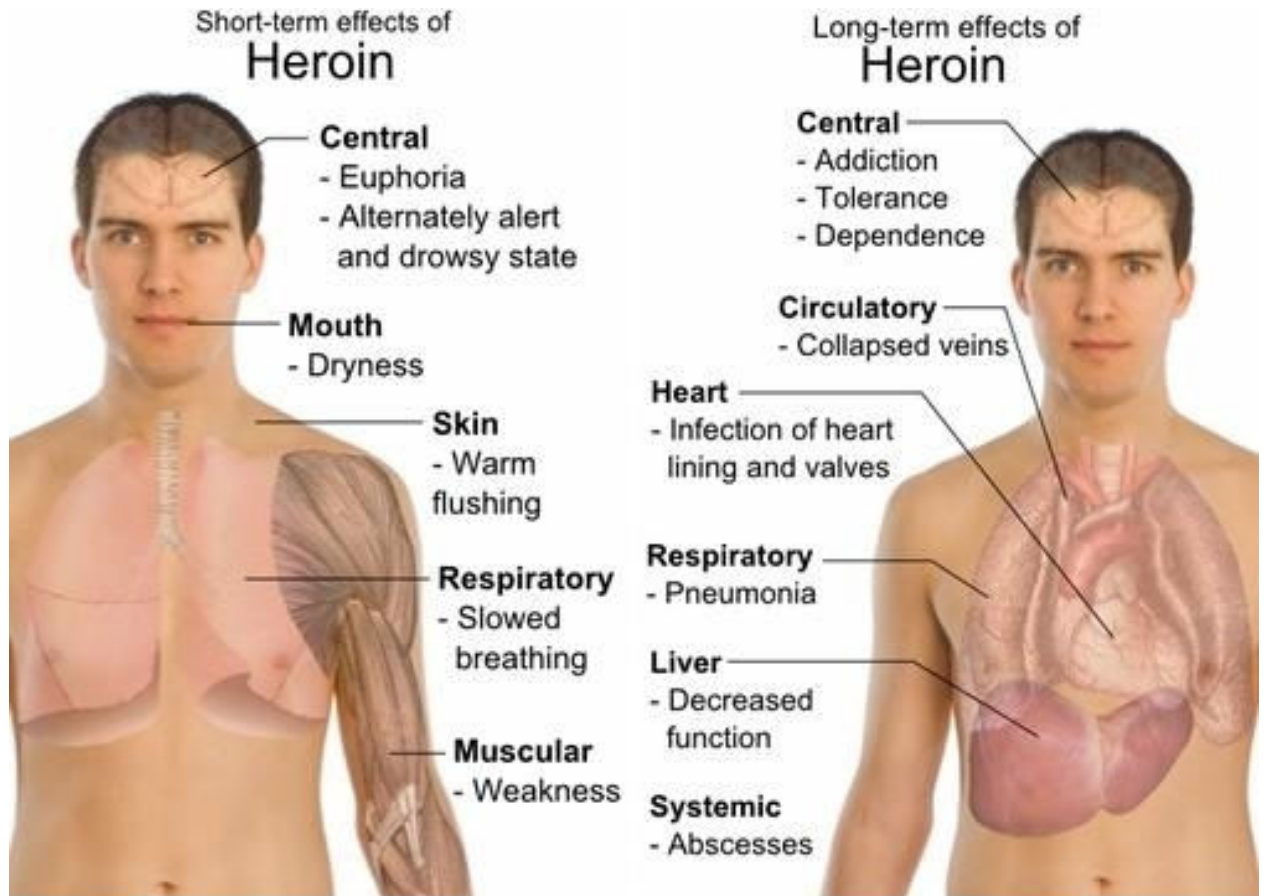
Irritability

Depression

Disorientation

Insomnia

First 6-12 hours	Symptoms usually present within six to 14 hours after quitting the drug. Anxiety, mood swings and drug cravings are often first symptoms.
15-48 hours	Flu-like symptoms, such as sweating, chills, muscle aches, fever and runny nose
3-5 days	Most physical symptoms begin to fade. Muscle aches start to curb, along with feelings of nausea. Psychological symptoms usually persist.
> 6 days	Physical symptoms subside, anxiety, irritability, depression and drug cravings may continue for several weeks to months



### **Cannabis Sativa**

- Its seeds are chiefly used to make hempseed oil which can be used for cooking, lamps, lacquers, or paints.
- The flowers (and to a lesser extent the leaves, stems, and seeds) contain psychoactive chemical compounds known as cannabinoids (THC) that are consumed for recreational and medicinal purposes

### **Cannabis (Bhang)**

- Cannabis is mostly used recreationally
- It may also be used for religious or spiritual purposes
- It consists of the leaves and plant tops of the plant.
- It is usually consumed as an infusion in beverage form, and varies in strength according to how much cannabis is used in the preparation.
- Typically, *bhang* is the most commonly used form of cannabis in religious festivals.

### Marijuana, Hashish, Hashish Oil

- Marijuana (Ganja) is the mixture made of flowers, leaves and small stems of *Cannabis sativa*
- Hashish (Charas) is a paste made of the resinous secretions which store in the female flowers (so only the female individuals can deliver hashish), of an intense coffee color
- Hashish is more powerful than marijuana, containing 40 % THC compared to 10 % in marijuana
- *Hashish oil is the essential oil of the female Cannabis Sativa plant*

### Ganja vs Hashish

#### Mode of Abuse

- Ganja and Hashish are usually smoked as a cigarette (called a joint or a nail) or in a pipe or bong
- Some users also mix marijuana into foods or use it to brew tea.

#### Immediate Effects of Cannabis

- The effects of smoking hashish can last between one and three hours
- People feel relaxed, euphoric, drowsy, sedated, and silly,
- Hashish enhances their senses of sight, smell, hearing, taste and time. Colors are more vivid and time moves slowly
- Contrary to popular belief, illusions and hallucinations occur infrequently.

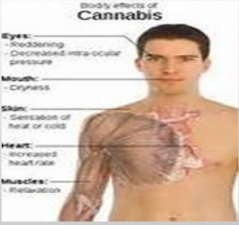
## Physical Effects of Marijuana

**Short term:**

- Increased heart rate
- Dry mouth and throat
- Red eyes
- Relaxation
- Sensation of hot and cold

**Long term:**

- Suppression of the immune system so reduced resistance to common illnesses (colds, bronchitis, etc.)
- Reduced sexual capacity
- Lung infections like pneumonia



**Body effects of Cannabis**


**Eye:**  
- Reddening  
- Decreased intra-ocular pressure

**Mouth:**  
- Dryness

**Skin:**  
- Sensation of heat or cold

**Heart:**  
- Increased heart rate

**Muscle:**  
- Relaxation



**Effects of Cannabis**

Approved in treatment of: chronic pain, muscle spasm, multiple sclerosis, chemotherapy-induced nausea and vomiting, and anorexia.

Relaxation of skeletal muscles, sedation, and decreased heart rate.

Relaxation of smooth muscles, including the bronchi, resulting in bronchodilation.

Relaxation of the gastrointestinal tract, resulting in decreased gastric acid secretion and delayed gastric emptying.

Relaxation of the urinary tract, resulting in increased urinary output.

Relaxation of the reproductive tract, resulting in decreased sperm count and motility.

Relaxation of the cardiovascular system, resulting in decreased heart rate and blood pressure.

Relaxation of the respiratory system, resulting in decreased lung volume and increased lung compliance.

Relaxation of the immune system, resulting in decreased resistance to common illnesses.

Relaxation of the endocrine system, resulting in decreased secretion of growth hormone and testosterone.

Relaxation of the nervous system, resulting in decreased alertness and increased drowsiness.

Relaxation of the digestive system, resulting in decreased appetite and weight loss.

Relaxation of the circulatory system, resulting in decreased blood flow and increased risk of stroke.

Relaxation of the reproductive system, resulting in decreased fertility and increased risk of miscarriage.

Relaxation of the immune system, resulting in decreased resistance to common illnesses.

Relaxation of the endocrine system, resulting in decreased secretion of growth hormone and testosterone.

Relaxation of the nervous system, resulting in decreased alertness and increased drowsiness.

Relaxation of the digestive system, resulting in decreased appetite and weight loss.

Relaxation of the circulatory system, resulting in decreased blood flow and increased risk of stroke.

Relaxation of the reproductive system, resulting in decreased fertility and increased risk of miscarriage.

### Short Term Bad Effects

- Problems with memory and learning
- Distorted perception (sights, sounds, time, touch)



- Difficulty in thinking and problem solving
- Loss of coordination;
- Increased heart rate, High blood pressure. This can be observed when the blood vessels in the eyes dilate
- Anxiety, and panic attacks
- Hashish reduces your ability to understand what other people are saying, to solve problems and to concentrate

**Long Term Bad Effects**

- People who smoke marijuana often have the same respiratory problems
- These individuals may have daily cough and phlegm, symptoms of chronic bronchitis, and more frequent chest colds.
- They are also at greater risk of getting lung infections like pneumonia
- Chronic use of marijuana can reduce testosterone levels and production of sperms in men
- In women, follicle-stimulating hormone, luteinizing hormone are reduced. The menstrual cycle can also be affected.

**Dependency**

- Marijuana and cannabis do not provoke physical dependence,
- They can generate a great psychological dependence. Symptoms induce anxiety, tension, insomnia, lack of appetite and temporary irritability, that pass after a week.
- The symptoms will start within a day of not using hashish, peak on days second and three of withdrawal, and disappear within a few weeks
- Some people keep having symptoms, such as nightmares and depression, for months after they quit smoking hashish

**Marijuana Myths and Facts.**

**MYTH:** Marijuana is safe because it is a plant.

**FACT:** Many plants are toxic and unsafe for human use, including marijuana.

**MYTH:** Marijuana users do not go on to use other drugs.

**FACT:** Studies show that marijuana users may have a predisposition to use other drugs.

**MYTH:** Marijuana wears off in a few hours.

**FACT:** Because marijuana is stored in the body, its effects may be felt for days or weeks following ingestion.

**MYTH:** Marijuana relieves stress.

**FACT:** Marijuana, like all drugs, merely postpones coping with problems and deadlines; marijuana can lead to depression.

**MYTH:** Marijuana is safer than alcohol.

**FACT:** Marijuana contains carcinogenic chemicals, and it is a dangerous substance that should not be considered a "safe" alternative to other drugs.

**MYTH:** Marijuana expands the mind.

**FACT:** Marijuana clouds the mind, interfering with memory, speech, comprehension and decision-making ability.

**MYTH:** Marijuana today is safer than earlier varieties.

**FACT:** Horticultural development has increased the potency of marijuana and added many other dangerous chemicals.

#### **Suggested questions**

- 1. What is drug dependence?**
- 2. Define psychological dependence?**
- 3. Define Mode of Administration of morphine and heroin in the body.**
- 4. Explain signs of morphine overdose.**
- 5. What is Marijuana, Hashish and Hashish Oil?**
- 6. Give Withdrawal Symptoms of opiates.**
- 7. Explain long term and short term effects of cannabis**

#### **Suggested readings**

25. Kapoor.T. (1985) Drug Epidemic among Indian Youth, New Delhi: Mittal Pub
26. Modi, Ishwar and Modi, Shalini (1997) Drugs: Addiction and Prevention, Jaipur: Rawat Publication.
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32. The Narcotic Drugs and Psychotropic Substances Act, 1985, (New Delhi: Universal, 2012)

## **DEPRESSANTS**

### **Contents:**

- **CNS Depressants definition**
- **Street names**
- **Classes of CNS depressants**
- **Alcohol**
- **Withdrawl effects of alcohol**
- **Barbiturates**
- **Examples of well known barbiturates**
- **Withdrawl effects of barbiturates**
- **Benzodiazepenes**
- **Examples of benzodiazepenes**
- **Withdrawl effects of benzodiazepenes**
- **Ketamine**
- **Opiates**
- **GHB**
- **Oxycontin**

### **CNS DEPRESSANTS –**

- Drugs that depress the overall functioning of the Central Nervous System (CNS) to induce sedation, muscle relaxation, and drowsiness.

Street names: Barbs, Benzos, Downers, Georgia Home Boy, GHB, Grievous Bodily Harm, Liquid X, Nerve Pills, Phennies, R2, Reds, Roofies, Rophies, Tranks, Yellows.

#### **Available in the form of pills, syrups, and injectable liquids.**

- They affect concentration and coordination, and slow down a person's ability to respond to unexpected situations.
- In small quantities depressants can cause a person to feel more relaxed.
- In larger quantities they can cause unconsciousness, vomiting and death.

#### **Cause: Dose-Dependent CNS Depression**

#### **Depending on dose, a person may experience**

- calming, relief from stress/anxiety
- slowing, sedation

- sleep
- anesthesia
- coma
- death due to respiratory depression
- Alcohol
- Barbiturates (Nembutal, seconal, Phenobarbital)
- Ketamine
- Opiates and opioids (heroin, opium, morphine, codeine, methadone, pethidine, palfium)
- Cannabis (marijuana, hashish)
- Oxycontin
- GHB (gamma hydroxylbuteric acid)
- Benzodiazepines (calmpose, rohypnol, *Valium*, *Serepax*, *Mogadon Normison*)
- Some solvents and inhalants (petrol, glue, paint thinners, lighter fluid)

**Classification of CNS depressants according to their actions:**

1. Sedative-hypnotics
2. Tranquillizers
3. Anesthetics

**CNS depressants generally:** ↓ vitality, ↓ excitability, ↓ HR & RR .

**1. Sedative -hypnotics****Sedatives:**

Drugs which decrease the activity, calm the recipient, cause sedation and in large dose they induce sleep.

**Hypnotics:**

Drugs which induce sleep that resembles the natural sleep. e.g. Barbiturates

**2. Tranquillizers**

Tranquillizers are drugs which relieve mental anxiety and stress without affecting the consciousness e.g. Chlorpromazine (CPZ)

**3. Anesthetics**

Drugs which cause unconsciousness and generalized loss of pain sensation to permit the performance of surgery. e.g. thiopental (IV), halothane (inhalation).

MOA: Decrease propagation of nerve impulses by interfering with electrolytes conductance through the cell membrane.

**ALCOHOL**

- Alcohol is the MOST ABUSED drug.

- Alcohol is a Central Nervous System (CNS) depressant.
- Alcohol is considered to be a gateway drug to other drug use.
- Alcohol (Madira & sura)
  - Clear colorless hydroxylated hydrocarbon a product of fermentation of fruits, grains, or vegetables.
  - In bloodstream it circulates to brain in about 30 seconds.
  - Side effects from mild hangover-type symptoms to coma and death.
  - Alcohol withdrawal syndrome is a potentially life-threatening condition that occur in people who have been drinking heavily for weeks, months, or years and then either stop or significantly reduce their alcohol consumption.



- ✓ Tremor
- ✓ Hallucinations
- ✓ Seizures
- ✓ Agitation
- ✓ Fluctuating Levels of Alertness

#### **Cardiovascular system**

cardiomyopathy, cardiac arrhythmias, abnormal metabolism, increase of catecholamine, hypertension

#### ✓ **Gastrointestinal tract**

Oesophagal reflux, barrett's oesophagus, gastric pain, mallory-weiss syndrome and oesophagal cancer, gastric bleeding.

**These effects are due to sudden withdrawal of alcohol and results in increase in  $Ca^{2+}$  ions.**

### **BARBITURATES**

- ❖ **Barbiturates are prescription sedatives or tranquilizers.**
- ❖ Barbiturates are multi-colored pills and tablets and are Central Nervous System (CNS) depressants that cause drowsiness.
- ❖ Barbiturates are also known as: Downers, Sleepers, Stumbles, Barbs, Red Devils, Rainbows.
- ❖ **Mode of Action:**
- ❖ They have GABA like action → ↑ opening time of chloride channels → ↑ conductance of chloride ions → hyperpolarization.
- ❖ **Classification according to their duration of action:**
  1. Long-acting.
  2. Intermediate-acting.
  3. Short acting.
  4. Ultrashort acting.

#### **Mode of Action (MOA):**

They have GABA like action → ↑ opening time of chloride channels → ↑ conductance of chloride ions → hyperpolarization.

#### **Classification according to their duration of action:**

1. Long-acting.
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4. Ultrashort acting.

### **BARBITURATES**

- Nembutal
- Seconal
- Phenobarbital
- Nembutal (pentobarbital) is commonly prescribed to treat insomnia. It is a highly addictive drug.
- Seconal (Secobarbital Sodium) is a barbiturate derivative that depresses the CNS. Prescribed as a sleeping pill and sedative, can also be used to treat epilepsy and as a preoperative anesthesia. Withdrawal symptoms can begin within 24 hours of the last dose and can last for as long as eight days.

- Phenobarbital (Brand Name: Solfoton) is a barbiturate used to treat or prevent seizures. Phenobarbital is also used short-term to treat insomnia, or as a sedative before surgery.

#### **Some Well-Known Barbs**

- sodium thiopental (Pentothal)(U)
- secobarbital (Seconal)(S)
- pentobarbital (Nembutal)(S)
- amobarbital (Amytal)(I)
- phenobarbital (Luminal)(L)
- mephobarbital (Mebaral) (L)

#### **Barbiturates Withdrawal Effects**

- ✓ Agitation
- ✓ Delirium
- ✓ Convulsions
- ✓ Weakness
- ✓ Anxiety
- ✓ Nausea and vomiting
- ✓ Sleep disturbances
- ✓ Tremors
- ✓ Hallucinations
- ✓ Dangerously high fevers
- ✓ Seizures

**Onset : 8-16 hours after the last dose.**

**Duration: 15-days and more**

#### **BENZODIAZEPINES**

- Benzodiazepines (benzos) used primarily to treat anxiety, panic disorders, and seizures. They may also be used as sleep aids or muscle relaxants.
- When drug is suddenly removed, a rebound effect can occur.
- Acute phase: lasts anywhere from 7 - 90 days
- Post-acute: last up to 2-years.
- Benzodiazepines
- MOA:
- Bind non-selectively to benzodiazepine receptors
- (GABAA-dependent).
- GABAA receptors → increase Cl influx → hyperpolarization
- GABAB receptors → Gi protein → ↓cAMP → relaxation

**Examples:**

- ❑ Diazepam (sedative) .
- ❑ Triazolam (hypnotic) .
- ❑ Diazepam (Valium, calmpose): Valium withdrawal lasts longer than that of most other benzodiazepines. Valium is a long-acting benzodiazepine designed to deliver extended relief from anxiety.
- ❑ Alprazolam (Alprex; Xanax): a benzodiazepine that is used to treat anxiety disorders, panic attacks and other related psychiatric disorders. Short-acting anxiolytic.
- ❑ Flunitrazepam: is a potent hypnotic.
- ❑ It causing strong amnesia (memory loss).
- ❑ It also has sedative, muscle relaxant and anxiolytic properties
- ❑ In treatment of severe insomnia (sleep loss).

**Withdrawal Symptoms**

- ✓ Increased irritability and/or emotional outbursts
- ✓ Inability to concentrate, perform simple tasks and/or memory problems
- ✓ Body Aches, pains, and/or muscle stiffness/soreness
- ✓ Sleep disturbance
- ✓ Anxiety and or panic attacks
- ✓ Suicidal thoughts, seizures, death (severe symptoms)

**KETAMINE**

- ⊕ Ketamine, or ketamine hydrochloride, is a Central Nervous System (CNS) Depressant and a dissociative anesthetic, or a drug that separates perception from sensation.
- ⊕ Ketamine is used primarily as an anesthetic in veterinary medicine, but is also sometimes used with small children and elderly.
- ⊕ Ketamine can be found as a clear white liquid or as a white powder.

**OPIATES**

- ◇ Opiates are drugs that are derived from the Poppy Plant and are Central Nervous System (CNS) depressants.
- ◇ The most common opiates are:
  - Opium
  - Heroin
  - Morphine
  - Codeine
- ◇ Opiates are known by several different names: Smack, Soapium, Chiva, Poppy, Flower, Hazel, Morf, H .

**GHB**



- ▲ GHB, or Gamma Hydroxybutyric acid, is a central nervous system (CNS) depressant that sometimes causes hallucinations.
- ▲ GHB is usually found as a clear liquid with a slightly salty taste, but can also be found as a small tablet or capsule, all of which dissolve quickly in liquid.
- ▲ GHB usually is sold by capful or teaspoon, also known as a “dose”.

**OXYCONTIN**

- ◆ Oxycontin is a synthetic opium derivative that is available by prescription.
- ◆ Oxycontin is an extremely potent pain killer that comes in time release tablets that last for up to twelve hours.
- ◆ Oxycontin is prescribed to cancer patients and chronic pain sufferers to help in managing pain.

**Suggested questions:**

1. What are CNS depressants?
2. What are the withdrawal effects of depressants?
3. Define sedatives, tranquillizers and anesthetics?
4. What are the withdrawal effects of alcohol?
5. What are the withdrawal effects of barbiturates?
6. What are GHB and opiates?

**Suggested readings**

33. Kapoor.T. (1985) Drug Epidemic among Indian Youth, New Delhi: Mittal Pub
34. Modi, Ishwar and Modi, Shalini (1997) Drugs: Addiction and Prevention, Jaipur: Rawat Publication.
35. Ahuja, Ram,(2003), Social Problems in India, Rawat Publications: Jaipur
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40. The Narcotic Drugs and Psychotropic Substances Act, 1985, (New Delhi: Universal, 2012).

## **INHALANTS**

### **Contents:**

- **Terminology**
- **Types of inhalants**
- **Why are inhalants so popular?**
- **Inhalants: pharmacokinetics**
- **Effects of inhalants: nitrous oxide, solvents, poppers (club drugs)**
- **Tolerance and withdrawal effects**

### **TERMINOLOGY**

**Sniffing** - Inhaling vapors from an open container or off a heated pan

**Huffing** - Inhaling vapors from a volatile-soaked cloth held against the face

**Bagging** - Application of the volatile into a paper or plastic bag, which is then held over the face.

Inhalants don't get a lot of attention but in the 1990s, they were the second most commonly-used illicit drug among 12- 17-year olds. **(Brouette & Anton, 2001).**

### **Types of Inhalants**

All different psychoactive substances are together grouped as Inhalants in three groups.

1. Solvents
2. Anesthetics
3. Nitrites

### **Solvents (common household products)**

<b>Adhesives</b>	<b>model airplane glue, rubber cement, household glue</b>
<b>Aerosols</b>	<b>spray paint, hairspray, air freshener, deodorant, fabric protector</b>
<b>Solvents and gases</b>	<b>nail polish remover, paint thinner, type correction fluid and thinner, toxic markers, pure toluene, cigar lighter fluid, gasoline, carburetor cleaner, octane booster</b>

<b>Cleaning agents</b>	<b>dry cleaning fluid, spot remover, degreaser</b>
<b>Food products</b>	<b>vegetable cooking spray, dessert topping spray (whipped cream), whippets</b>

**Anesthetics:**

<b>Anesthetic</b>	<b>nitrous oxide, ether, chloroform Isoflurane, desflurane...</b>
-------------------	---

**Nitrites**

Sodium nitrite	Curing meat
Amyl	Vasodilator; treatment for angina
Butyl	"Poppers", "Rush," "Locker room," "Bolt," "Climax," also marketed in head shops as "video head cleaner"

**Why are Inhalants so Popular?**

- Easy to obtain
- The high is achieved instantly and lasts 5-15 minutes.
- Easy to conceal (e.g., permanent markers, correction fluid)
- Since inhalants are common, youths have misperception of safety

**Inhalants: Pharmacokinetics**

- Route of Ingestion:  
Inhaled, either directly or by pouring/spraying into a bag or onto a cloth
- Metabolism: in Liver
- Distribution: Some leave the body quickly others are absorbed by fatty tissues in the brain and nervous system.
- Half life: Short half-life: Varies among Inhalants, typically 1-5 mins

**Inhalants: Effects**

- Chemicals become absorbed into fatty tissues in the brain and the nervous system
- Typically affecting the myelin surrounding the bodies nerve cells
- with long term use myelin is broken down and ultimately nerve cells can not transmit messages to one another.

**Nitrous Oxide****EFFECTS:**

- Immediate effects, usually lasts less than a min. Repeated use extends and intensifies the experience.

- Results in temporary loss of motor control and a "dissociative" psychological effect, where sensations and perceptions become disconnected.
- Effects include a dreamy mental state, and mild audio and visual hallucinations.

**Solvents**

- Immediate effects.
- Effects include euphoria, delirium and hallucinations.
- Solvents are highly addictive and will cause damage to the liver and CNS.

**Poppers (Club Drugs)****EFFECTS:**

- Immediate effects: typically within a few seconds and lasts for 1-2 mins.
- Causes muscles to relax; therefore, the heart rate increases as well as cardiac output. As a result oxygen-rich blood will quickly reach the brain to produce a "rush".

**Users may experience:**

- Euphoria
- Light-headedness
- Sleepiness
- Distorted Space Perception
- Nausea
- Spinning
- Drunkenness
- Altered shapes and colors
- Dizziness
- Numbness

**Undesirable Effects**

- Slowed breathing
- Slowed heart rate
- Disorientation
- Loss of body control

**Death due to**

**Suffocation:** Choking on one's vomit while unconscious

**Asphyxiation:** Decrease in oxygen and increase in carbon dioxide.

Occurs after losing consciousness with plastic bag over the head.

"Sudden Sniffing Death": Prolonged session of inhalation leading to the failure of the heart.

Can happen any given time someone abuses inhalants.

### **Inhalants: Effects on the Body**

- A. Blood- inhalant chemicals will block the oxygen carrying capacity of blood
- B. Lungs- repeated use causes damage
- C. Heart- results in “Sudden Sniffing Death Syndrome”
- D. Liver- components of aerosol and paints will damage the liver
- E. Kidney- Toluene (inhalant substance) will damage the kidney’s ability to control the amount of acid in the blood, may result in kidney stones.

## Possible Long Term Effects of Prolonged Inhalant Abuse

- Depressed CNS Function
- Impaired Motor Coordination
  - Loss/Impaired Vision
  - Reduced Lung Function
    - Hearing Loss
    - Liver Damage
  - Reduced Kidney Function
- Decreased Sensory Capacity



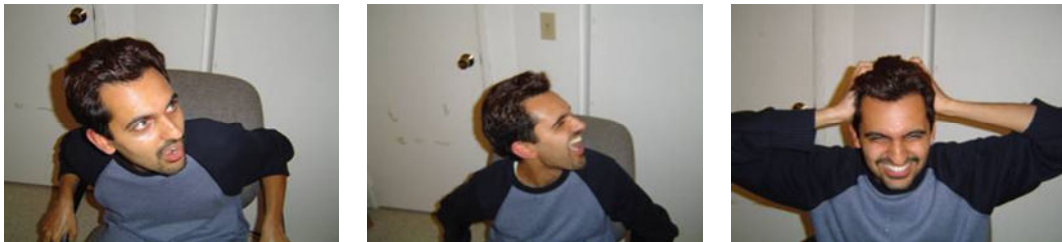
- Heart Damage
- Neuronal Myelin Sheath Damage
  - Muscle Tremor
- Numbness in extremities
  - Slurred Speech
  - Memory Loss
- Decreased Sensory Capacity

Note: Neurological Deficits appear to be reversible with time and appropriate medical/rehabilitative services.

### Tolerance and Withdrawal Symptoms

- Tremors
- Irritability
- Insomnia
- Delirium
- Tingling Sensations
- Seizures
- Muscle Cramps
- Anxiety

Physical withdrawal may arise a few hours to a few days after inhalant use.



#### Suggested questions

1. What are inhalants?
2. What are the effects of inhalants?

**3. Describe withdrawal effects of inhalants?**

**4. What is sniffing, huffing and bagging?**

**5. Define types of inhalants?**

**Suggested readings**

41. Kapoor.T. (1985) Drug Epidemic among Indian Youth, New Delhi: Mittal Pub
42. Modi, Ishwar and Modi, Shalini (1997) Drugs: Addiction and Prevention, Jaipur: Rawat Publication.
43. Ahuja, Ram,(2003),Social Problems in India, Rawat Publications: Jaipur
44. 2003 National Household Survey of Alcohol and Drug Abuse. New Delhi, Clinical Epidemiological Unit, All India Institute of Medical Sciences, 2004.
45. World Drug Report 2011, United Nations Office of Drug and Crime.
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47. Extent, Pattern and Trend of Drug Use in India, Ministry of Social Justice and Empowerment, Government of India, 2004.
48. The Narcotic Drugs and Psychotropic Substances Act, 1985, (New Delhi: Universal, 2012)

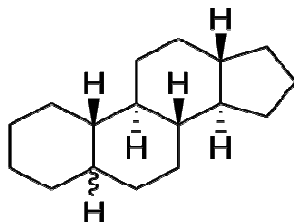
### Steroids

#### Contents:

- **Steroids**
- **Anabolic steroids**
- **Doping**
- **List of anabolic steroids:**
- **Available forms**
- **Therapeutic uses**
- **Harmful effects**
- **Dependence/withdrawal**
- **Suggested questions**
- **Suggested readings**

#### STEROIDS

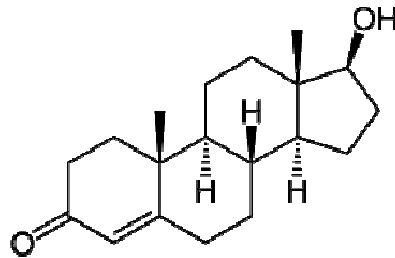
- **Steroids are a large group of chemical substances classified by a particular carbon structure.**



- Steroids are commonly used to relieve swelling and inflammation (Eg. **prednisone** and cortisone).
- Naturally occurring steroids include vitamin D; sex hormones, such as testosterone and estradiol.

**Anabolic Steroids:** Anabolic steroids are steroidal androgens including natural androgens like testosterone as well as synthetic substances that are structurally related and have similar effects to testosterone.

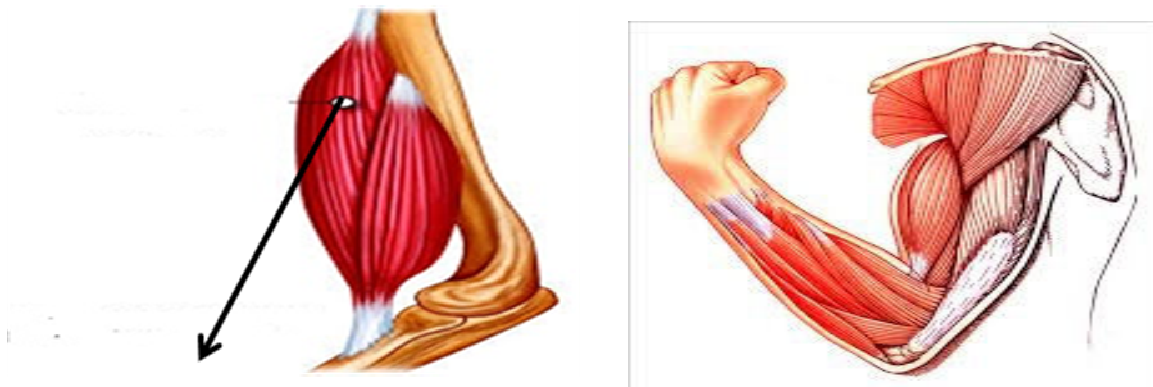




### Testosterone

Induce the development and maintenance of masculine characteristics such as the growth of the vocal cords and body hair.

- These steroids are anabolic (increase growth and differentiation of cells) and increase protein within cells, especially in skeletal muscles.



### Skeletal muscle

- In the presence of adequate diet, these steroids increase the body weight and result in increased muscular strength through high-intensity exercise.
- Anabolic steroids are used in sports, racing, and bodybuilding as, **“Performance-enhancing drugs”**



**Doping:** Doping refers to the use of banned athletic performance-enhancing drugs by athletic competitors.

Many sports organizations have banned the use of performance-enhancing drugs and have very strict rules and penalties for people who are caught using them.

**List of anabolic steroids:**

- Testosterone undecanoate
- Testosterone enanthate
- Testosterone cypionate
- Testosterone propionatenandrolone
- Nandrolone decanoate
- Nandrolone phenylpropionate
- Stanozolol
- Methandrostenolone

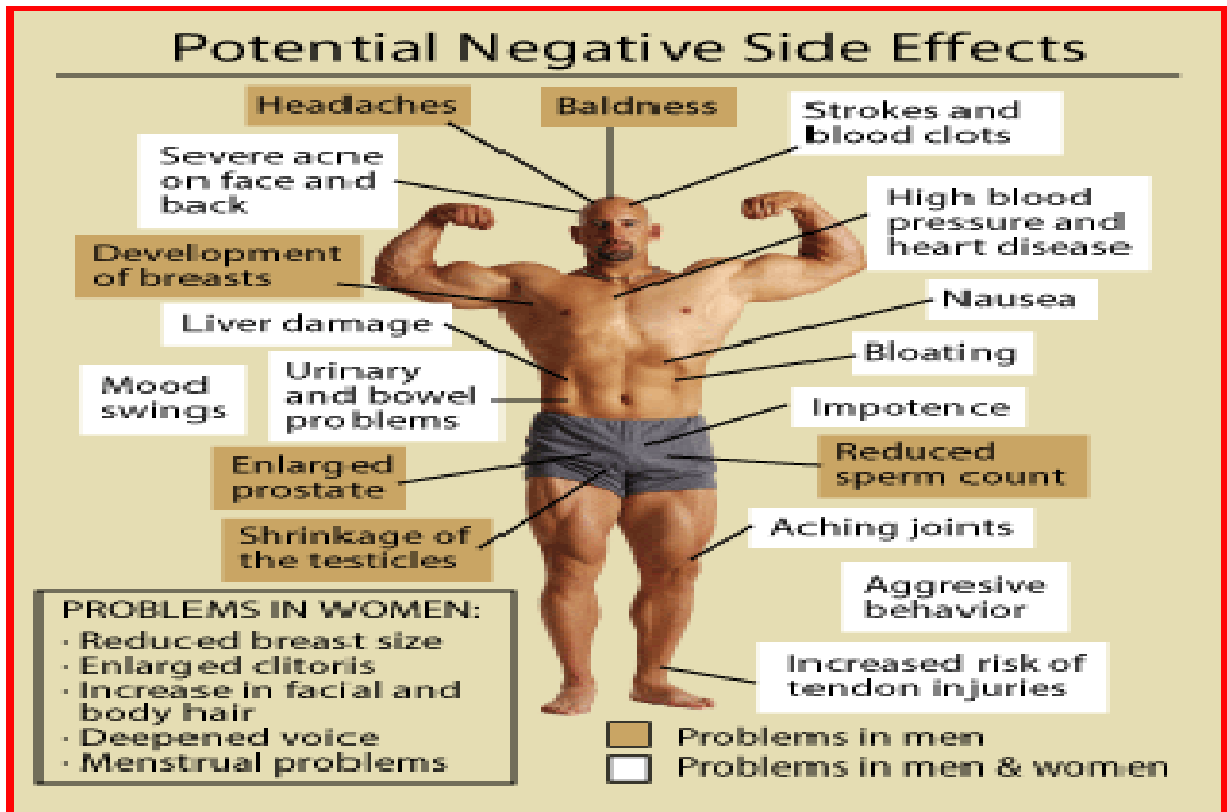
**Available forms:** Oral Pills, creams, injectables, skin patches.

**Therapeutic Uses :**

- Increase Maximum Inspiratory Pressure
- Stimulate muscle growth and appetite
- Stimulate growth of bone marrow
- Induce male puberty
- Hormone replacement therapy for men with low levels of testosterone
- Treat chronic wasting conditions, such as cancer and AIDS

**Harmful effects:**

- Psychiatric symptoms including Anxiety, aggression and violence
- Growth defects (quickens bone maturation; may reduce adult height at high doses)
- Kidney damage
- Liver damage
- Gynecomastia in men (increased conversion of testosterone to estradiol)
- Masculinization in women (increase in body hair, deepening of the voice)
- Hypertension
- Hyperlipidemia (Increase LDL, "bad" cholesterol and decrease HDL, "good" cholesterol)
- Structural alterations in heart (enlargement and thickening of the left ventricle)
- Carcinogenic



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## Gym Steroids

Widely used. Safety profile is "so-so".

cholestasis

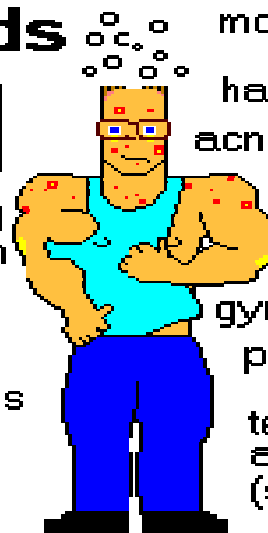
peliosis



hepatocellular carcinoma

personality changes

They DO enhance muscle growth for strength sports. It is your decision.



jaundice

mood swings

hair loss

acne

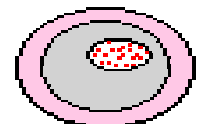
xanthomas

gynecomastia

prostatitis

testicular atrophy (sweet peas)

short stature for life (younger athletes)



accelerated atherosclerosis

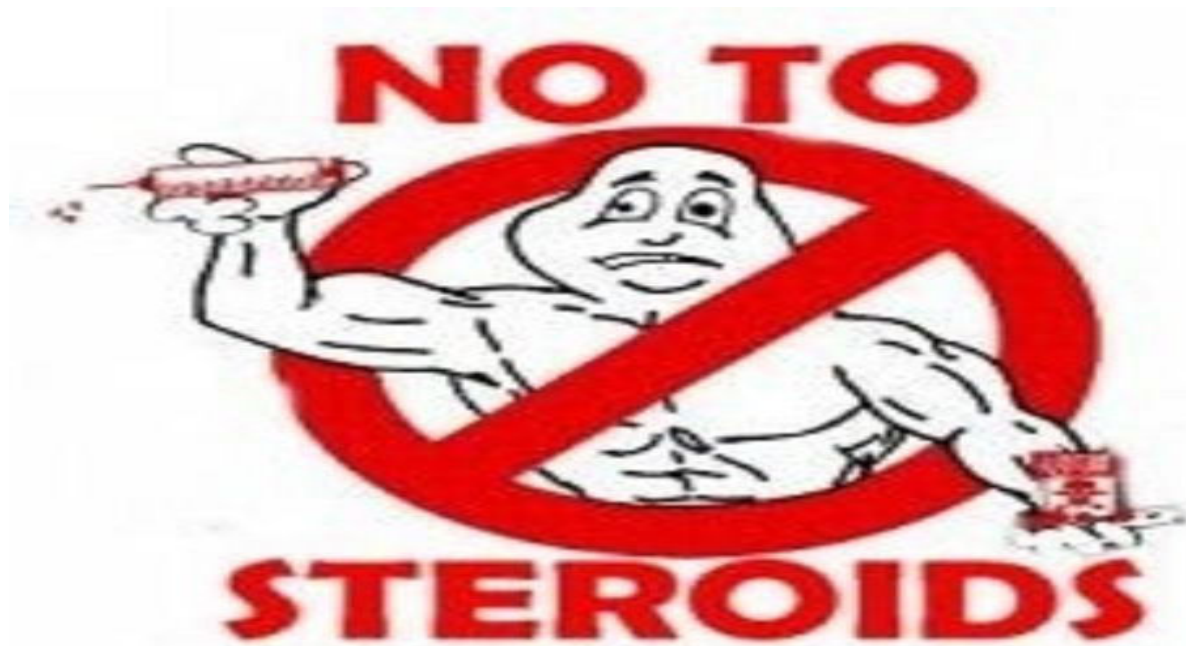
Are you breaking the law?

altered libido



**Dependence/Withdrawal:**

- Mood disturbances (depression, mania, psychosis)
- Fatigue
- Restlessness
- Loss of appetite
- Insomnia

**Suggested questions**

1. **What are steroids? Give examples.**
2. **Define doping.**
3. **What are the harmful effects of steroids?**
4. **Explain withdrawal symptoms of steroids?**

**Suggested readings**

49. Kapoor.T. (1985) Drug Epidemic among Indian Youth, New Delhi: Mittal Pub
50. Modi, Ishwar and Modi, Shalini (1997) Drugs: Addiction and Prevention, Jaipur: Rawat Publication.
51. Ahuja, Ram,(2003), Social Problems in India, Rawat Publications: Jaipur
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56. The Narcotic Drugs and Psychotropic Substances Act, 1985, (New Delhi: Universal, 2012)

**Drug Abuse: Behavioral and Psychological Indicators & Causes**

**Contents:**

- **Substance Abuse: Prevention**
- **Teenagers and Drugs**
- **Behavioral and Psychological indicators**
- **Warning Signs of Teen Substance Abuse**
- **Social problems**
- **Causes of Drug abuse**
- ***Causes of Drug Addiction***
- **DRUG ABUSE PREVENTION CURRICULUM CONTENT**
- **Prevention programs for middle and high school students**
- **Prevention programs for middle and high school students**
- **Counselling for treatment of drug addicted patient**
- **Counseling/listening Strategies**
- **STAGES OF COUNSELLING**
- **How to cope with adolescence problems**
- **Role of Teachers**
- **Group Counselling**
- **Group guidance, group counselling and group psychotherapy.**
- **Significant features of group counselling**
- **Suggested questions**
- **Suggested readings**

**Substance Abuse: Prevention**

**A teacher's role.**

With globalization the world has become a global village. Access through e-technology has brought the world at one's door step. Along with this negative behavior & criminal activities too have appeared in abundance. Drug abuse is one of them. A teacher can help in its eradication. Substance abuse includes alcohol, tobacco and drug abuse.

- A drug is any chemical that produces a therapeutic or non-therapeutic effect in the body.

**Teenagers and Drugs**

- Teenagers may be involved with legal or illegal drugs in various ways.
- Experimentation with drugs during adolescence is common.
- Unfortunately, teenagers often don't see the link between their actions today and the consequences tomorrow.
- They also have a tendency to feel indestructible and immune to the problems that others experience.
- Using alcohol and tobacco at a young age increases the risk of using other drugs later.
- Some teens will experiment and stop, while few continue to use occasionally, without significant problems.
- Others will develop a dependency, moving on to more dangerous drugs and causing significant harm to themselves and possibly others

**Behavioral and Psychological indicators**

- **Physical**
  - Persistent fatigue
  - Repeated health complaints
  - Red and glazed eyes
  - Lasting cough
  - Erratic appetite

After math of drug abuse



Some of the Long Term effects of stimulant drug use.

**Warning Signs of Teen Substance Abuse**

○ **Emotional**

- personality change
- sudden mood changes
- irritability
- irresponsible behavior
- low self-esteem
- poor judgment
- depression
- general lack of interest

○ **In School**

- decreased interest
- negative attitude
- drop in grades
- many absences
  - truancy
  - discipline problems

○ **In Family**

- Starting arguments
- Negative attitude
- Breaking rules / rebellion

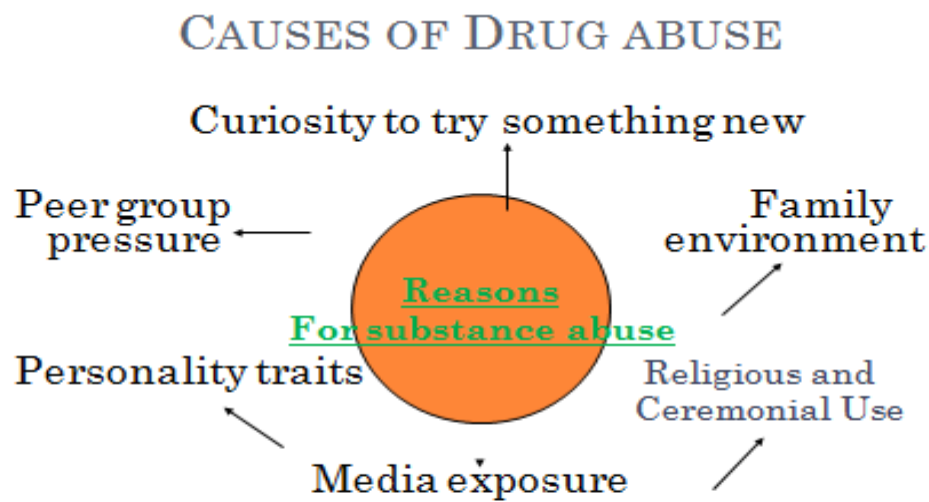


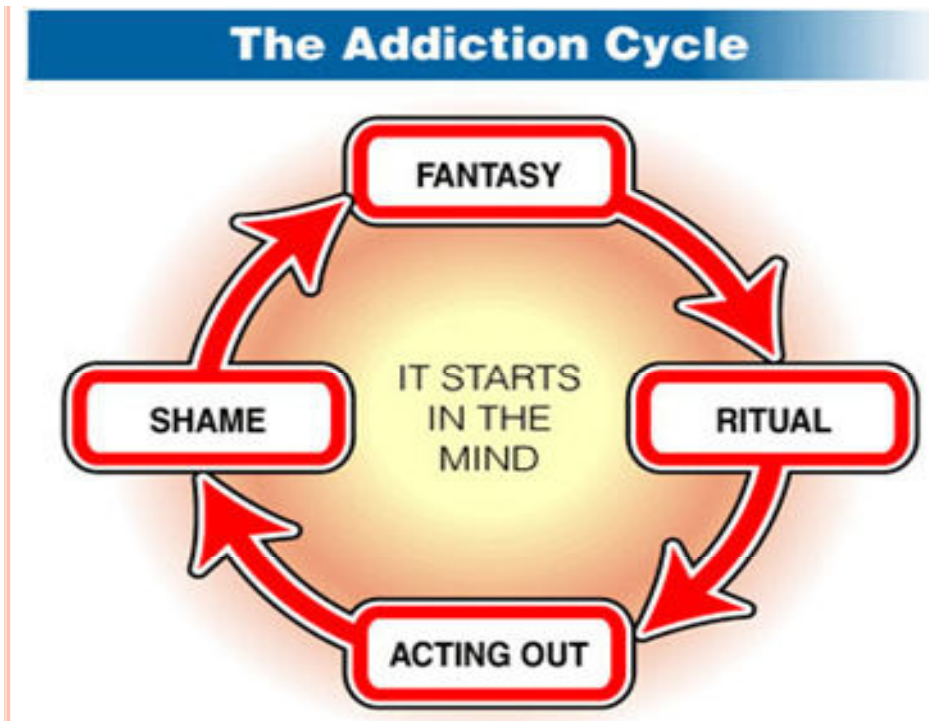
- withdrawing from family
- Secretiveness
- Warning Signs of Teen Substance Abuse

#### **Social problems**

- New friends who make poor decisions and are not interested in school or family activities
- Problems with the law
- Changes to less conventional styles in dress and music

Causes of Drug abuse







### ○ **Causes of Drug Addiction**

- If we wish to prevent drug addiction, or cure it we must learn about the factors causing it. The treatment has to be in accordance to the factors which lead to it.
- Rather than a single cause of drug addiction, it is likely that a multiple factors lead to drug addiction in any given person.
- **The major causes can be broadly grouped as follows:-**
  - 1) **Genetic & biological Causes**
  - 2) **Psychological Causes**
  - 3) **Environmental Causes**
- 1) **Genetic & biological Causes**
  - Family history, genetic predisposition Preexisting psychiatric or personality disorder, or a medical disorder.
  - Prolonged use of pain killers or sleeping pills, anti allergic, steroids or any other addictive medicine.
  - However, it is known that some genes, like those involved in brain receptors of nicotine, contribute to the cause of drug addiction.

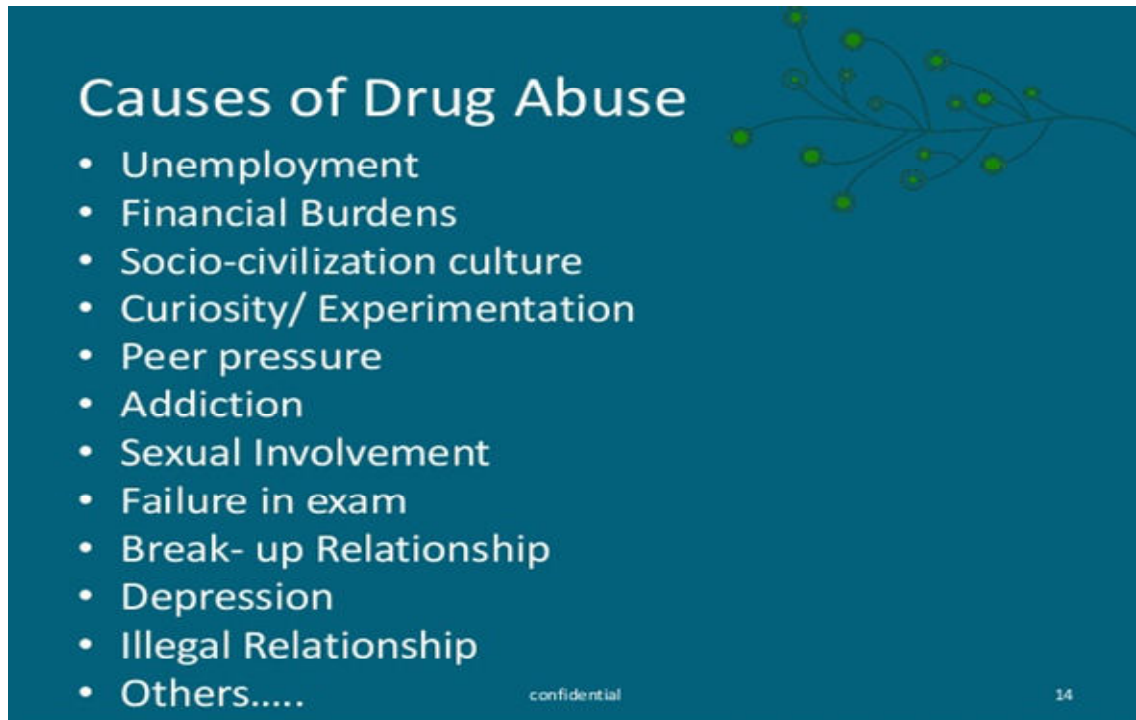
## 2) **Psychological Causes**

- The period of adolescence is the most vulnerable period as far as drug abuse is concerned.
- Apart from the period of adolescence period, vulnerability to drug abuse in life can be due to many psychological factors:
- **Poor mental health can be risk factors.** A mental illness such as depression or mood disorder
- Inability to connect with others, lack of friends
- Poor family relations, such as marital discord, or parent child conflict.
- Poor stress coping skills.
- Poor goal setting.



- Some traumatic episode in life such as death of a dear one, accident, terminal disease.
- Job stresses, dealing with negative boss, bad colleagues, sexual harassment in the case of women.
- Some personality traits can play a part in likelihood of abusing drugs.
- Curious, adventuresome people will often experiment with drugs..

- People who are sad or lonely might take a drug to relax or feel better.
- People with high need of social approval, will do it under peer pressure.



**Causes of Drug Abuse**

- Unemployment
- Financial Burdens
- Socio-civilization culture
- Curiosity/ Experimentation
- Peer pressure
- Addiction
- Sexual Involvement
- Failure in exam
- Break- up Relationship
- Depression
- Illegal Relationship
- Others.....

confidential 14

### 3) Environmental Causes

#### DRUG ABUSE PREVENTION CURRICULUM CONTENT

- Normative education
- Social skills
- Social influences
- Perceived harm
- Protective factors
- Refusal skills

Prevention programs can be designed to intervene as early as **preschool** to address risk factors for drug abuse, such as

- aggressive behavior,
- poor social skills,
- academic difficulties.

Prevention programs for elementary school children should target improving academic and social-emotional learning to address risk factors for drug abuse, such as early aggression, academic failure, and school dropout.

**Education should focus on the following skills:**

- self-control
- emotional awareness
- Communication
- social problem-solving
- academic support.

**Prevention programs for middle and high school students should increase academic and social competence with the following skills:**

- study habits and academic support
- Communication: : interpersonal skills
- peer relationships
- self-efficacy and assertiveness
- emotional awareness and their management
- Sex education

**Prevention programs for middle and high school students**

- drug resistance skills (role plays, simulations, brainstorming, group activities)
- reinforcement of anti-drug attitudes
- strengthening of personal commitments against drug abuse.
- Sex education

The use of "peer leaders" has been successful both in and out of school.

Peer leaders receive special training to help them develop strong communication and problem-solving skills.

**Counseling for treatment of drug addicted patient:**

- Counseling is the process of giving help to an individual faced by a problem, by making her/him understand and accept her/his assets and liabilities and then arrive at a solution to the problem and then implement the decision.

**What Counseling is 'not'.**

- It is not 'Advice Giving'. Nor is it dictating to others.
- It is not solving another's problem, but helping her/him to solve their own problems.
- It is not carrying another person's burden, but assisting her/him to carry and face their own problems.
- It is not making 'Decisions' for others. It is helping them to arrive at their own decisions.
- Hence it requires a considerable amount of training and learning of skills and an immense measure of self restraint

**It's need**

Society is made of people who have some similarities and many dis-similarities in terms of their thinking and behaviour.

- Counselling is needed wherever there are people needing help to make better adjustments in life & society.
- It is needed universally by people of all castes and creeds, of all ages.
- It is needed for every disaster & crisis management.
- It is needed at home, at work and in the society.
- It is need at every developmental stage of life.

**Counseling/listening Strategies**

- Listen patiently and empathetically
- Speak briefly-, minimal encouragers, use of silence
- Briefly paraphrase and clarify.
- Reflect student feelings and meaning:
- Ask open-ended questions.
- When in doubt, focus on feelings.
- Be concrete- by asking for examples in vivid details of feelings and thoughts.
- Utilize student metaphors.
- Gently challenge- support but also point out verbal/nonverbal discrepancies in student language-

**STAGES OF COUNSELLING****1. PRIMARY STAGE*****Building Relationship:***

Building of Rapport with the client. and making the person feel at ease.

*Skill required for doing this is building of TRUST & Attending skill*

**2. RESPONDING STAGE**

*Assessing the Problem*

Helping client to do self exploration and analyze the behavior causing problem.

*The skill required by the counselor is 'Active listening' and asking probing questions for understanding underlying emotions of the client.*

This process of assessment involves a series of skills of observation, inquiry, recording information, forming hypotheses, hunches etc

**3. INTEGRATIVE UNDERSTANDING**

*Setting Goal* is important to give structure to the entire counselling process.

Doing data analysis by taking stock of the assets and liabilities of the client and help to accept self-knowledge.

*Skill required is Paraphrasing & Empathy*

#### 4. DECISION MAKING

##### Selecting and Using Counselling Strategies.

Helping client to make 'Action Oriented' solutions; explore for alternatives and motivation for implementing the decisions.

*Skill required is Decision making*

#### 5. CELEBRATING THE INSIGHTS

##### Termination And Follow-Up

- Testing the merits of new solutions, adopting them and seeing their workability.
- If satisfactory then appreciate and dissolve the counseling relationship.
- A sudden break in relationship may become traumatic for a client, therefore the counsellor should prepare the client for termination.
- *Skill: Learning detached attachment*

##### Expression

- Expression is the basic unit in communication. Expression can be verbal or non-verbal. Hence body language is important.
- Mehrabian (1971) states that only 7% of human communication is verbal, whereas 58% is gestures and 35% is voice tone!

##### ○ Three types of listening

- Superficial listening.
- Selective listening.
- Attentive listening.

- **Superficial listening:** In this type of listening, we listen with lot of our own pre-occupations and there is hardly any trusting quality as it is done with very partial attention to the content that is being communicated, therefore receiver may not fully understand what the 'sender' is trying to communicate.

##### ○ Selective listening

In this type of listening, we listen to only that which we want to, and conveniently leave the rest which might be the most important thing the other person is attempting to convey.

The communication may also be coloured by receiver's own perceptions and prior experience and socio-cultural background.

##### ○ Attentive listening:

- This is listening not only to the words but also to the thoughts and feelings whether pleasant or unpleasant.



- This is deep and serious listening which enhances trust and prepares the ground for a more objective consideration of issues by the counselee and his or her healing and growth.
- This type of listening is essential in counselling.
- It is important to resist distractions such as noises, views, people anything or anyone that will take us away from the person to whom we are listening.

### **Empathy**

- *Empathy* involves seeing the world through the counselee's eyes- understanding his/her feelings & thoughts & and accept. :*To put oneself in other person's shoes*
- Being nurturing and tolerant
- Encourages a positive behavior towards people in need or difficulty
- This gives the client the feeling that you are in touch with them.

### **How to cope with adolescence problems**

- Meditation
- Desensitization
- Relax with the help of physical exercises.
- Do Yoga
- Take balanced & healthy Nutrition
- Deep muscle relaxation
- Developing positive attitude

### **Role of Teachers**

- Search for and identify what the student does well
- Communicate to all students what areas they are doing well in
- This does not mean to ignore negative behaviour or areas of weaknesses
- Create a classroom environment that is Supportive of the adolescents learning.
- Don't show favoritism
- Reduce competition among students
- Peer influences are important and can be used as a positive
- Demonstrate positive behaviors.
- Adolescence model after adults that are around them
- Continually seek to engage the students.
- Remind them of the long term as well as short term goals i.e. improve skills as well as higher Education.
- Establish that mastery and skill development are the goals not performance.

- Students focused on performance goals are concerned with demonstrating high ability relative to others, competing for grades, or gaining recognition for their abilities.
- Establish a long term outlook on the learning
- Sexuality is of high interest .
- Male teachers may experience females liking them etc..
- Be careful not to encourage this Even if they misbehave

**Group Counselling**

- Group procedures have proved to be an important part of guidance and counselling work, in all types of settings e.g., schools, institutions, community and special groups.
- Groups help in developing trust and self-reliance amongst its members.
- It is also a time saving procedure as many members benefit by learning from the problem-solving of other members.

**Group guidance, group counselling and group psychotherapy.**

- However, group procedures are most effective when members have similar needs, such as some information, experiential learning, support, and a platform for expressing and sharing experiences.
- Group counselling provides opportunity for catharsis and individual healing as it fosters warm relationships among the group.
- Group methods are especially helpful for rehabilitation and recovery of students who are facing crisis situations or problems such as alcoholism, drug abuse, single or divorced parents, disaster, diseases like HIV/AIDS,

**Significant features of group counselling**

- acceptance of each other by group members,
- confidence among its members,
- respect between the members,
- tolerance for individual differences, and
- insight into different solutions and perspectives to similar problems.

## A POEM

Baba Black sheep  
Have you any Dope  
Yes sir yes sir  
Lots and lots to go  
Heroin for my master  
Cocaine for my dome  
Hashish for the little boy  
But they'll all be dead  
All the same

**Suggested questions**

1. What is substance abuse?
2. What are the causes of drug abuse?
3. What are the causes of drug addiction?
4. How drug abuse can be prevented?
5. What is the role of teacher, family and counselling in preventing drug abuse?
6. How to cope with adolescence problems

**Suggested readings**

57. Kapoor.T. (1985) Drug Epidemic among Indian Youth, New Delhi: Mittal Pub
58. Modi, Ishwar and Modi, Shalini (1997) Drugs: Addiction and Prevention, Jaipur: Rawat Publication.
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**MANAGEMENT AND PREVENTION OF DRUG ABUSE**

**Contents:**

- **Drug abuse**
- **Definition according to who (world health organization)**
- **Basic principles**
- **Demand reduction strategy- a welfare approach**
- **Levels of prevention**
- **Various schemes financially assisted by ministry**
- **Social treatment modalities or therapies**
- **Psychotherapies used in drug de-addiction rehabilitation centres:**
- **Other treatment modalities**
- **Suggested questions**
- **Suggested readings**
- **DRUG ABUSE:** Drug abuse is the self administration of a drug for non-medical reasons, in quantities and frequencies, which may impair an individual's ability to function effectively, and which may result in social, physical and emotional harm.

**According to WHO (World Health Organization)**

Drug abuse is a “ state of periodic or cronic intoxication detrimental to the individual and society, produced by repeated consumption of drug”

**BASIC PRINCIPLES**

- No single treatment is appropriate for all individuals.
- Treatment needs to be readily available.
- Effective treatment attends to multiple needs of individual, not just his or her drug use.
- An individual's treatment and services plan must be assessed continually and modified as necessary to ensure that the plan meets the person's changing needs.
- Remaining in treatment for an adequate period of time is critical for treatment effectiveness.

- Counselling (individual and/or group) and other behavioural therapies are critical components of effective treatment for addiction.
- Medications is an important element of treatment for many patients, especially when combined with counseling.
- Addicted individuals with mental disorders should have both disorders treated in an integrated way.
- Medical detoxification is only the first stage of addiction treatment and by itself does little to change long term drug use.
- Treatment does not need to be voluntary to be effective.
- Possible drug use during treatment must be monitored continuously.
- Treatment programmes should provide assessment for HIV/AIDS, hepatitis B, tuberculosis and other infectious diseases. It should also provide counseling to help patients modify or change behaviours that place themselves or others at risk of infection.
- Recovery from drug addiction can be a long term process and frequently requires multiple episodes of treatment.

#### **Demand Reduction Strategy- A Welfare Approach**

The government of India is tackling the issue of drugs through its two-pronged strategy viz. supply reduction and demand reduction. Supply reduction falls under the preview of enforcement agencies. The demand reduction strategy is under the domain of social sector. Ministry of Social Justice & Empowerment in the Government of India is responsible for implementation of demand reduction activities in the country.

The basic objective of the strategy is to empower the society and community to deal with the problem, which can be best handled through community based interventions at three different levels.

#### **LEVELS OF PREVENTION**

There are three levels of prevention. These are:

- **PRIMARY LEVEL PREVENTION**
- **SECONDARY LEVEL PREVENTION**
- **TERTIARY LEVEL PREVENTION**
- **Primary level prevention:** Primary level preventive measures are taken before the occurrence of a problem to prevent its occurrence. It is concerned with protecting the host, preventing modification of the environment, and controlling the agents. There are three major goals for primary prevention of drug abuse: (a) to prevent non-users from initiating use of psychoactive substances, (b) to prevent progression from experimentation to chronic use,

and (c) to prevent expansion to the use of other drugs. The measures include education and risk factor modification.

- Proper psychological development of children through adequate interaction between the parents and the children, and between the teachers and the children. It mainly encompasses providing love and security and channelizing the children's energy into constructive work.
- Dissemination of information on the harmful effects of drug abuse and alcoholism.
- Early revelation of the problem to the parents and the public at large by using the mass media and making various other approaches.
- Incorporation of drug dependence education in regular education.
- Strict legal control restricting the availability of drugs.
- Positive social measures providing alternatives to drug use, especially for the high risk group.
- Following up those no longer taking drugs.
- Involvement of people like, religious leaders, private doctors, indigenous practitioners for advocating measures like abstinence from alcohol and drugs, generating public opinion, mass education, early detection, etc is very important.
- Emphasis on moral and cultural education, both at school and home.
- Channelization of children's energy into constructive work like outdoor and indoor games, arts, handicrafts, dramas, folk dances, national voluntary service, etc (CHN,1995).
- **Education:** education usually focuses on acquainting the public, particularly young people, with the hazards of substance abuse. Both general public education campaigns and school based education programmes have shown moderate success in limiting the use of psychoactive substances; however, they tend to be more effective in moderating the effects of substance abuse, such as preventing drug related motor vehicle fatalities. One of the criticisms of school-based programmes is that they may not be reaching groups at greatest risk for substance abuse, those with family history of abuse or display characteristics associated with potential abusers. Merely providing information on the consequences of substance use and abuse has been shown to be insufficient to curb use. Instead education programmes should emphasize the development of life skills related to decision making, refusal, and critical analysis that affect substance use decisions. In addition, education should address interpersonal communication, problem solving, and stress management to

provide practical approaches to factors that promote substance use and abuse.

- **Secondary Prevention:** Secondary prevention is employed when there is an existing problem with substance abuse. The goal in secondary prevention is early intervention aimed at those who have not yet developed irreversible pathological changes due to drug abuse. The main elements of secondary prevention include screening, intervention, and treatment.

**The main objectives of these activities are**

- Recognition of the problem
- Understanding of the disease of addiction
- Acceptance of other inputs
- Demonstration of new behaviour and attitude
- Developing a new healthy daily pattern of living
- **Screening:** Secondary prevention begins with screening for excessive or inappropriate use of psychoactive substances. Routine screening should be undertaken in multiple settings in which addicts are seen. For example, universal screening for alcohol use is recommended for all women of childbearing age, not only those who are pregnant. Brief intervention is recommended for those who have evidence of high risk drinking and pregnant women should be advised to discontinue alcohol use altogether

**INTERVENTION:**

Intervention, in context of drug abuse, is the act of confronting the drug abuser with the intent of making a referral for assistance in dealing with the abuse. The goal of intervention is to elicit an agreement from the individual involved to be evaluated for a possible problem with drug abuse.

**DETOXIFICATION:**

Detoxification is the management of acute alcohol or drug intoxication and withdrawal while in either independent living or in a sheltered living environment. This is the medical process of taking the affected person safely through the predictable sequence of symptoms that occur when blood alcohol/ other chemical level drop during withdrawal.

- **Tertiary Prevention:** This includes social, economic, educational and psychosocial rehabilitation of individuals who have stopped abusing drugs, and involve the following measures:
- **Rehabilitation:** Rehabilitation provides help to enable addicts out of his/her dependency on drugs and make positive changes in the life style. It is a term for the processes of medical or psychotherapeutic treatment, for dependency on psychoactive drugs such as alcohol, prescription drugs, and street drugs

such as cocaine, heroin etc. The general intent is to enable the addicts to cease substance abuse, in order to avoid the psychological, legal, financial, social and physical consequences that can be caused, especially by extreme abuse.

**Transitional services:** Transitional services involve the gradual serving of ties with treatment centre. Substance abusers spend ever-increasing amounts of time away from the centre. They may start with an over- night pass, go on to weekend privileges, and finally work up to a week away from the centre. Skill for community living and help in locating work and housing are provided. Once living in a community, many transitional programmes encourage individuals to return to the treatment centre for weekly, semi-monthly, or monthly “rap” sessions. At these sessions, problems of adjustment and daily living and ways of coping are discussed.

**AFTER CARE-** It is the continued provision of some therapeutic input to maintain the gains in functioning achieved through intensive intervention and stabilization while in either independent living or in a transitional or long term supportive, sheltered living environment. Social skills and activities of daily living are taught and assistance is given in looking for job and preparing for a job interview. Opportunities for socializing are provided. Many day-care centres develop a high degree of autonomy. A system of peer group control may develop, and members may actively set and reinforce rules.

**Relapse Prevention-** It is the continued provision of therapeutic activities to avoid the return to prior patterns of drinking and to maintain the gains in functioning achieved through brief intervention or intensive interventions and stabilization while in either independent living or in a transitional or long term supportive, sheltered living environment.

**Harm Reduction:** Harm reduction is an intervention that concentrates not on ending drug dependence but on controlling the harm that drug dependence does to the society at large. First introduced in the Netherlands in the 1980s, harm reduction policies attempt to integrate drug abusers into the large society and to distinguish between use and misuse. Harm reduction began when it was first discovered that HIV was often transmitted through the sharing of needles for drug injections. A needle exchange programme whereby heroin addicts trade in their contaminated needles for clean ones was introduced as a part of harm reduction programme. A 2002 review found insufficient evidence that NSP (needle syringe programme) prevents transmission of hepatitis C virus, tentative evidence that it prevents transmission of HIV and sufficient evidence that it reduces self reported injecting risk behavior.



- **Safe injection sites:** SIS, or Drug Consumption Rooms (DCR), are legally sanctioned, medically supervised facilities designed to address public nuisance associated with drug use and provide a hygienic and stress free environment for drug consumers. The facilities provide sterile injection equipment, information about drugs and basic health care, treatment referrals, and access to medical staff.

**Various schemes financially assisted by Ministry are the following:**

- Awareness and Preventive education
- Drug Awareness and Counselling Centres
- Treatment Cum Rehabilitation Centres
- Workplace Prevention Programme
- De-Addiction Camps
- NGO Form for Drug abuse Prevention
- Innovative Interventions to Strengthen Community Based Rehabilitation
- Technical Exchange and Man Power Development Programmes
- Surveys, Studies, Evaluation and Research on the subjects covered under the scheme.

**Under the Awareness and Prevention Education four areas are covered:**

- Production and dissemination of educative and publicity material
- Poster/ flash cards/flannel/ flip charts
- Pamphlets/ brochures/leaflets
- Hoardings/panels/banners
- Booklets/periodicals etc.

**Community participation programmes:**

- Corner meetings/workshops/conferences
- Essay/debates/slogans/dramas/one act play competitions
- Street plays/folk media etc.

**SOCIAL TREATMENT MODALITIES OR THERAPIES**

**FAMILY AND MARITAL THERAPY:** The family has been recognized as a fundamental unit of social organization in human life. Regardless of the specific pattern of family life, the fundamental narratives, myths, legends and folklore of all cultures emphasize the power of family relations to mould the character of individual and serve as an example of moral and political order of society. Many therapies now regard the participation of the patients spouse and sometimes other family members as an essential ingredient of recovery. The spouse of the problem drinker or drug abuser often needs an opportunity to discuss the stresses that the family has experienced and to obtain information about the nature of the alcohol and drug dependence. Some therapists have endeavored to

move away from a patient centred approach to alcohol problems and have come to regard the abuse as one fact to a disturbed family system.

**Women's Groups:** An increasing number of women develop alcohol related problems, it has become evident that programmes must accommodate to their specific needs. Women commonly feel more quilting and stigmatized about having a drinking or drug abuse problem and some way find it easier to speak freely if they can have part of their treatment within a service for women only. In such a setting they find it easier to talk openly about their difficulties and particularly to discuss some of the sexual abuses many alcoholic women have experienced. In facilitating access to treatment for women, additional services such as neighborhood-based clinics and provision of crèches are important consideration.

- **Alcoholics Anonymous, A1-Anon, and A1 -Ateen:** Alcoholics Anonymous claims worldwide to have helped more than a million members. A1-Anon, an organization for relatives and friends of alcoholics, deserve similar recognition as an extremely valuable resource. A1-Ateen has evolved specially for the teenage children of alcoholics.

Alcoholics Anonymous provides a fellowship which encourages frankness about alcohol problems in a group surrounded by others who can readily identify with the drinker's suffering and at the same time offers support in finding a new way of life. AA firmly believes that abstinence is the only route to recovery for who regard themselves as truly alcoholic.

- **Therapeutic Communities:** Charles Dietrich in the USA developed the method after Second World War. Therapeutic community is the community itself consisting, of peers and staff who, as role models of successful personal change, serve as guides in the recovery process. Thus, the community provides a 24 hour learning experience in which the individual changes his conducts, attitude and emotions and they are monitored and mutually reinforced in the daily regime. The therapeutic community offers a systematic approach to achieve its main rehabilitative objective. Social relationships and social environments are focus of care.

- **Employee Assistance Programme:** Alcohol and drug dependence frequently manifest as impaired work performance. This fact can be turned to therapeutic advantage by creation of "Employee Assistance Program" whereby a company establishes a policy for dealing with employee whose work performance is impaired by alcohol misuse or other factors. The policy needs to be developed levels within the organization.

- **Psychotherapy:** Psychotherapy is a form of treatment by psychosocial methods and used for emotional and personality problems of the addicts by trained persons.

#### **Psychotherapies used in Drug De-Addiction Rehabilitation Centres:**

##### ➤ **Motivational Psychotherapy:**

- Explain the complications and personal risks of consuming the alcohol and other drugs.
- Availability of treatment opinion to change their behavior related to alcohol consumption.

##### ➤ **Individual Psychotherapy:**

- Educate each affected individual the detrimental effect of alcohol consumption and the strategies to overcome the habit.
- Precautionary measures or activities to prevent these occurrences of complications with alcohol and other drugs.

##### ➤ **Group therapy:**

- Observe the problem of alcoholic.
- Provide an opportunity to observe other problems and discuss with each other and explain them to workout in better ways to coping with these problems.

##### ➤ **Counselling:**

The therapist has to counsel the client to find the problem and shows the ways to solve the same and also guides the individual the various methods to relax the mind and engaging themselves in productive activities

##### ➤ **Cognitive therapy:**

Help the client to identify the maladaptive thinking pattern, evil effects of alcoholism and guide the individual to slowly reduce the dose of alcohol and other drugs by understanding the effects of alcohol and other drugs.

#### **Other treatment modalities are**

- occupational therapy
- recreational therapy
- vocational therapy and
- spiritual treatment modalities.

#### **Suggested questions:**

1. **Define drug abuse according to WHO.**
2. **Give basic principles of management and prevention of drug abuse.**
3. **What are the levels of prevention?**
4. **Explain social treatment modalities or therapies.**

#### **Suggested readings**

65. Kapoor.T. (1985) Drug Epidemic among Indian Youth, New Delhi: Mittal Pub
66. Modi, Ishwar and Modi, Shalini (1997) Drugs: Addiction and Prevention, Jaipur: Rawat Publication.
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**MEDICAL TREATMENTS FOR THE MANAGEMENT OF DRUG ABUSE**

**Contents:**

- **Principles of drug abuse management**
- **Behavioral interventions**
- **Medical treatment**
- **Classification of drugs of abuse**
- **Medications for various drugs of abuse**
- **Suggested questions**
- **Suggested readings**

**PRINCIPLES OF DRUG ABUSE MANAGEMENT**

- The management program (MP) to be effective need not to be voluntary.
- Every drug abuser is different, and so a single line MP may not be effective in all drug abusers.
- An effective MP should address all needs of the patient, including needs of drug use.
- The important components of a MP are initial detoxification followed by treatment of medical treatment of withdrawal symptoms, behavioral counseling, treatment of related mental disorders such as depression and anxiety, and monitoring drug uses during the MP.
- Staying in treatment long enough is critical.
- MP should be reviewed at regular intervals and be modified if found not effective in the patient.
- The patients should be tested for other infectious diseases associated to drug abuse such as AIDS, hepatitis B and C, tuberculosis, and other diseases, and made them aware about their risks and steps to reduce their risk of these illnesses.
- Long term follow up is essential to prevent relapse.

**1. BEHAVIORAL INTERVENTIONS**

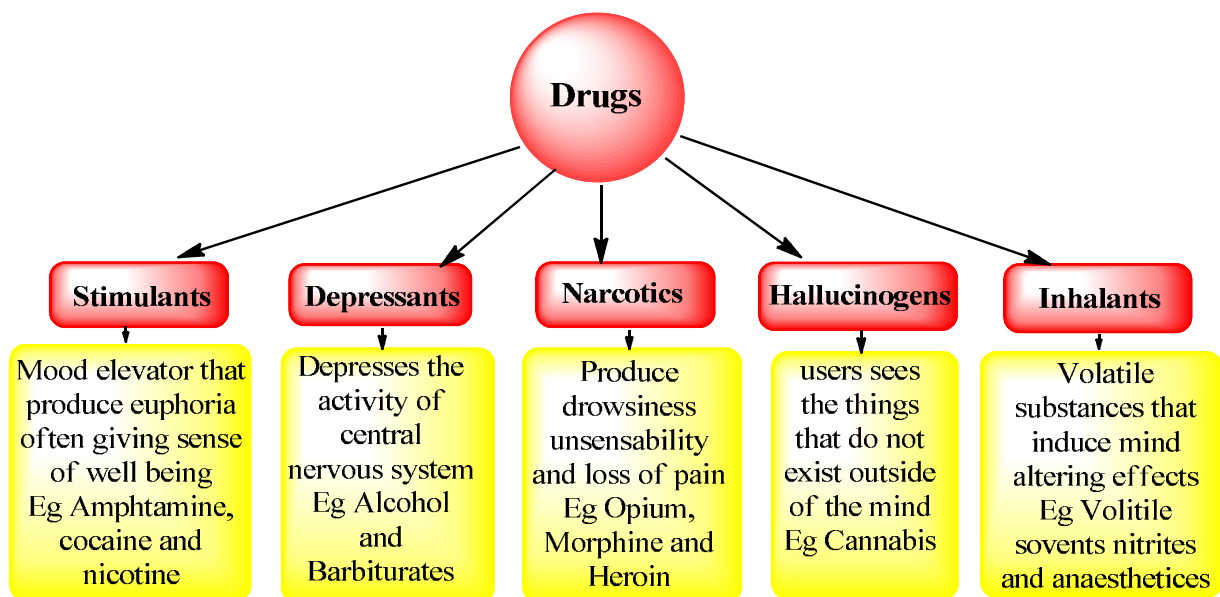
- Cognitive behavioural therapy
- Contingent management
- Multidimensional family therapy

- Motivational incentives
- Motivational interviewing

## 2. MEDICAL TREATMENT

- The first step in medical treatment of drug abuse is “Detoxification”.
- Detoxification or detoxication is the physiological or medicinal removal of toxic substances from a living organism, including the human body, which is mainly carried out by the liver.
- When a patient stops drug abuse (voluntary or in-voluntary), the withdrawal symptoms often lead the patient again to the drug abuse.
- Patients who do not receive any further treatment after detoxification usually resume their drug use.
- In almost 80% of detoxification cases, medications are required.
- Various drugs are used as medicines for treatment of withdrawal symptoms, prevent relapse, and for treatment of co-occurring conditions.

### Classification of drugs of abuse



### A. MEDICATIONS FOR OPIOID WITHDRAWAL

- Opioid addiction isn't a moral or mental weakness. It's a chronic medical condition that results from changes in the brain in susceptible people. Once narcotic addiction has developed, escaping the cycle of detox and relapse is typically a long-term process.

- Opioid withdrawal is difficult to endure, and is a major reason for relapse and continued prescription drug abuse. Medications are used to prevent symptoms of opioid withdrawal during detox, easing the person out of physical dependence. Various drugs used in treatment of Opioids are Methadone, Buprenorphine and Naltrexone

### **METHADONE**

- Methadone is the most effective known treatment for narcotic addiction.
- Methadone is a long-acting opioid drug.
- It activates the same opioid receptors as other narcotics, effectively eliminating withdrawal symptoms.
- Providing the correct dose of methadone prevents opioid withdrawal symptoms and eases drug craving but it does not provide the euphoria.
- The dose can be slowly tapered off, freeing the person from physical dependence without withdrawal symptoms.

### **BUPRENORPHINE**

- Buprenorphine alone ([Subutex](#)) is a newer drug that helps to detox from opioid addiction.
- Buprenorphine activates opioid receptors, reducing drug craving and preventing withdrawal.
- Buprenorphine not only gives the addicts almost-the-same high that they get from heroin or other opiates, but the drug comes quite cheap when compared to narcotics.
- A buprenorphine tablet costs Rs 7.34 whereas one gram of heroin is available around Rs 1,500 to Rs 3,000.
- Drugs such as buprenorphine and methadone have been shown to be effective at managing opioid withdrawal symptoms when combined with counseling and behavioral therapy.
- The U.S. Food and Drug Administration approved Probuphine, the first buprenorphine implant for the maintenance treatment of opioid dependence.
- Probuphine implant lasts for six months and has been approved as part of a complete treatment programme

### **NALTREXONE**

- Naltrexone (Revia, Vivitrol) is an opiate receptor-blocking medication used in maintenance therapy for narcotic addiction, especially to prevent relapse.
- Unlike methadone and Suboxone, naltrexone does not activate receptors at all, so it does not reduce opioid withdrawal or craving.

- However, because naltrexone blocks opiate receptors, a person won't get high if he or she uses drugs while taking the medicine.
- The drug is most effective when used as part of a broader comprehensive recovery treatment program.

**B. TOBACCO**

- Tobacco use is the greatest potentially remedial problem throughout the world.
- Anxiety, awakening during sleep, depression, difficulty in concentrating, impatience, irritability/anger and restlessness
- Patients who quit smoking tend to gain weight; therefore, patients should be encouraged to follow a low-calorie diet and exercise regimen during and after cessation.
- In patients attempting smoking cessation, exercise has been shown to help curb long-term weight gain and to help alleviate nicotine withdrawal symptoms.
- Nicotine replacement therapies like use of gums, lozenges, nasal sprays, transdermal patch containing nicotine.
- Oral Therapies includes use of Bupropione and Varenicline
- Antidepressant bupropion was approved by the FDA in 1997 to help people quit smoking and is marketed as Zyban, Elontril and wellbutrin. Varenicline tartrate (Chantix) is a medication that recently received FDA approval for smoking cessation. This medication, which acts at the sites in the brain affected by nicotine, may help people quit by easing withdrawal symptoms and blocking the effects of nicotine if people resume smoking.

**C. ALCOHOL**

- Alcohol is the most widely abused substance worldwide.
- Alcohol is classified as a depressant because it has biochemical effects similar to those of a class of antianxiety agents, one can think of alcohol as an over-the-counter tranquilizer.
- Alcohol affects vision, coordination, reaction time, multitasking ability, judgment, and decision-making.
- Withdrawal symptoms are life threatening and begin too early. Three stages include anxiety, insomnia, nausea in first stage 2, increase in blood pressure, body temperature, heart beat in second and 3 Hallucination, fever and seizures in third stage.
- Various drugs used for treatment of alcohol dependence Disulfiram, Naltrexone, Acamprosate and Topiramate

**DISULFIRAM**



Disulfiram (Antabuse®) interferes with degradation of alcohol, resulting in the accumulation of acetaldehyde, which in turn, produces a very unpleasant reaction that includes flushing, nausea, and palpitations if a person drinks alcohol.

The utility and effectiveness of disulfiram are considered limited because compliance is generally poor. However, among patients who are highly motivated, disulfiram can be effective, and some patients use it episodically for high-risk situations, such as social occasions where alcohol is present. It can also be administered in a monitored fashion, such as in a clinic or by a spouse, improving its efficacy.



### **NALTREXONE**

Naltrexone blocks opioid receptors that are involved in the rewarding effects of drinking and the craving for alcohol. It has been shown to reduce relapse to problem drinking in some patients.

An extended release version, Vivitrol—administered once a month by injection—is also FDA-approved for treating alcoholism, and may offer benefits regarding compliance.



### **Acamprosate**

- Acamprosate (Campral®) acts on the gamma-aminobutyric acid (GABA) and glutamate neurotransmitter systems and is thought to reduce symptoms of protracted withdrawal, such as insomnia, anxiety, restlessness, and dysphoria.
- Acamprosate has been shown to help dependent drinkers maintain abstinence for several weeks to months, and it may be more effective in patients with severe dependence.

### **Topiramate**

Topiramate is thought to work by increasing inhibitory (GABA) neurotransmission and reducing stimulatory (glutamate) neurotransmission, although its precise mechanism of action is not known. Although topiramate is more effective than naltrexone but it has not yet received FDA approval for treating alcohol addiction, it is sometimes used off-label for this purpose.



### CANNABIS

- **Cannabis** also known as marijuana, is a green, brown or gray mixture of dried, shredded leaves, stems, seeds and flowers of the hemp plant *Cannabis sativa* belonging to the family *cannabaceae*
- Marijuana is used as a psychoactive (i.e. mind altering) recreational drug, for certain medical ailments and for religious and spiritual purposes.
- Sinsemilla, hash/hashish (resinous form) and hash oil (sticky black liquid) are stronger forms of marijuana. The flowering tops, leaves, and stalks of the mature female plant are commonly used as the herbal form of cannabis, but sometimes the resinous extract of compressed herb is also used and is called “hash.
- Medical cannabis can be administered by using a variety of methods, including liquid tinctures, vaporizing or smoking dried buds, eating cannabis edibles, taking capsules, using lozenges, dermal patches or oral/dermal sprays.
- No medicine is available for its treatment. But early and small studies have suggested that busperone, gabapentin and zolpidem can be used.
- An anti-anxiety/anti-stress medication called buspirone (BuSpar®), and an anti-epileptic drug called gabapentin (Horizant®, Neurontin®) that may improve sleep and, possibly, executive function.

### COCAINE

- Cocaine is highly addictive drug.
- It is an alkaloid found in the leaves of *Erythroxylon coca*, a shrub indigenous to Andes.

- In the presence of ethanol a different metabolite is produced – coca ethylene.
- Coca ethylene has the same physiological effect on the brain as cocaine but more toxic.
- Alcohol/Cocaine is the largest two drug combination resulting in death. Cocaine is usually snorted in powder form or smoked in the form of crack
- No drug is approved by US-FDA but Disulfiram proved to be beneficial in some cases.

### **AMPHETAMINE**

- The amphetamines are a class of synthetic stimulants that affects chemicals in the brain and nerves.
- They are indirect-acting sympathomimetic drugs that cause the release of endogenous biogenic amines, such as dopamine and noradrenaline.
- Amphetamines are also therapeutically used to treat medical disorders like Obesity, Parkinson's disease.
- The most potent form of amphetamine, liquid methamphetamine, is injected directly into the veins and produces an intense and immediate rush.
- Street names for methamphetamine includes “speed”, “meth” and “crank”.
- Crystallised methamphetamine is known as “ice”, “crystal” or “glass”.
- Methyl phenidate, Fluoxetine and imipramine are used for amphetamine abuse.
- [Methylphenidate](#) if you have severe intravenous amphetamine dependence.
- [Fluoxetine](#) may decrease your cravings.
- [Imipramine](#) may help you stick with your treatment for amphetamine dependence.

### **Medicinal treatment for various drugs:**

1. Medication for Opioid without: Methadone, Buprenorphine, Naloxone
2. Medication for Tobacco: Bupropion and varenicline, Bupropion
3. Medication for Alcohol: Disulfiram, Naltrexone, Acamprosate and Topiramate
4. Medication for cannabis: Busperone, gabapentin, Zolpidem
5. Medication for cocaine: Disulfiram
6. Medication for Amphetamine: Methyl- Phenidate, Fluoxetine, imipramine.

### **No Drug Problem is Incurable**

### **All one need is Will, Guidance and Support**

### **Suggested questions**

1. **Define Principles of drug abuse management.**

**2. Explain Medical treatment for opioids.**

**3. Classification of drugs of abuse.**

**Suggested readings**

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