



SUBSTANCE ABUSE

in CHILDREN & ADOLESCENTS

The Emerging Demons



A Social Initiative from

Indian Academy of Pediatrics Delhi



Substance abuse

depression
health
addiction
crime
heroin
therapy
pill
mental
serious
despair
stress
intoxication
injection
bad
idea
syringe
danger
dependence
tobacco
problems
unhealthy
junkie
illness
issue
addicted
injection
overdose
amphetamines
alcohol
cocaine
narcotic
bottle
drunk
healthcare
adult
medical
advice
medicine
unhappy
counseling
support
drug
death
risk
stop
needle
dependence
depressed
anxiety
crime
dangerous
sadness
alcoholism
problem
loneliness
social
issues
meeting
counselor
illegal
addict

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Foreword



Dr Piyush Gupta
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*It gives me immense pleasure to introduce the book : **SUBSTANCE ABUSE IN CHILDREN and ADOLESCENTS.***

*I will like to **Congratulate Author Dr. Lalit Mendiratta**, Consultant Pediatrician, President IAP Delhi, **Dr. Deepa Passi**, consultant paediatrician for providing information on this important issue on substance abuse which has short and long term detrimental impacts on children & adolescents. India has the highest proportion of adolescents population (22.8%) and substance abuse over the years has been progressively increasing among them. The paediatricians are the first line of contact with children and adolescents and have the first opportunity to prevent, and get early detection and treatment of substance abuse. This book would provide important issues related to substance abuse not only for paediatricians but also for medical students, school teachers and children.*

We all have to make our joint efforts together to stop this demons of substances creeping in our society before it can spoil the youth of our country , the future of country.

Dr. Piyush Gupta
President CIAP 2021

Foreword



Dr Sangeeta Yadav

Vice President IAP North Zone 2021

Jt Secretary Liaison CIAP 2018-19

President IAP Delhi 2007

Secretary IAP Delhi 2000

Dear Colleagues,

Greetings!

*Congratulations to Author **Dr Lalit Mendiratta, President IAP Delhi, Dr Deepa Passi,** and Team Indian academy of Pediatrics Delhi for launching the book on **Substance Abuse in Children & Adolescents 2021** as a part of Community awareness programs during the year 2021. I am very glad to know that a very practical and useful book related to substance abuse for the Adolescents, Parents & Care givers is being launched.*

The adolescent years are a key window for both substance use and the development of substance use disorders. India with the largest adolescent population of 22.8% is at the highest risk of substance abuse. Thus, adolescents are a major target for prevention messages promoting healthy, drug-free behaviour and giving young people encouragement and skills to avoid the temptations of experimenting with drugs. Addiction is not the only danger. Abusing drugs during adolescence can interfere with meeting crucial social and developmental milestones and also compromise cognitive development. Most teens with drug problems don't want or think they need help, and parents are frequently blind to indications their teenage kids may be using drugs-or they may dismiss drug use as just a normal part of growing up.

The book provides an insight on commonly used drugs by children and adolescents and their effects on the physical and mental health. The importance of early detection by signs and symptoms of substance abuse has been discussed and which should always alert the paediatricians as they are the first point of contact with children and adolescents. The role of prevention at all levels has been highlighted. The information in the book will help teachers also in educating children about substance abuse. I am sure this book will not only be contributing towards the awareness but provide guidance for prevention from this menace and its consequences which significantly compromises quality of life of the individual and the family at large.

With Best wishes towards this endeavor

In Academy Service

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A Social Initiative From
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Introduction:

Being a teenager and raising a teenager are enormous challenges. For many teens, substance abuse becomes part of the landscape of their teenage years. Adolescence is a time of physical, psychological, social and emotional changes. At this stage of life, adolescents adopt behaviors that can lead to various health risks, including substance use. Substance use among children & adolescents ranges from experimentation to severe substance use disorders particularly through peers. All substance use, even experimental use, puts children & adolescents at risk of short-term problems such as accidents, fights, unwanted sexual activity and overdose. Factors that contribute to the emergence of substance abuse in the pediatric population are multifactorial. Behavioral, emotional, and environmental factors that place children at risk for the development of substance abuse may be remediated through prevention and intervention programs that use research-based, comprehensive, culturally relevant, social resistance skills training and normative education in an active school-based learning format.

The epidemic of substance abuse in young generation has assumed alarming dimensions in India. Changing cultural values, increasing economic stress and dwindling supporting bonds are leading to initiation to substance abuse. According to WHO, substance abuse is persistent or sporadic drug use inconsistent with or unrelated to acceptable medical practice. Today there is no part in the world that is free from drug abuse and India too is caught in vicious cycle of drug abuse and numbers are increasing day by day. Substance abuse has led to a detrimental impact not only on individual but also on families, society and nation. With most drug users in 18-35 years there is loss of human potential and damage to physical, psychological, moral and intellectual capabilities of children & adolescents. Substance abuse is one of the major areas of concerns in adolescent's health and their behavior. Substance use is pervasive and endemic among adolescents. It is associated with high-risk sexual behaviour, road traffic accidents, violence, crime, homicide and suicide in adolescents. Polysubstance abuse further increases the risk of infections like HIV, Hepatitis B, C, sexual transmitted diseases and infective endocarditis.

This book is an attempt to highlight the issues of Substance Abuse in children & adolescents, along with emphasis on early detection & prevention. Our endeavor is to raise the awareness not only in pediatricians but also the teachers, parents & students.

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AIM of this book

- To highlight the importance of substance use in children and adolescents.
- To determine the role of pediatrician not only in prevention but also early detection and treatment of substance use in children and adolescents.
- To educate the children and adolescents, parents, school teachers other community workers in prevention of substance use.

Terminologies

SUBSTANCE- refers to any Drugs, Medication or Toxins that shares the potential of drug abuse.

USE- Drinks, swallows, smokes, sniff or injects drugs.

DRUG MISUSE- The occasionally inappropriate or unintentional use of medication.

ABUSE- Use for purposes of intoxication or for treatment beyond intended use.

DEPENDANCE- Use despite adverse consequences.

ADDICTION- Is a physical and psychological dependence on Drugs of abuse in a way that it affects the Central Nervous System and that withdrawal symptoms are experienced when the substance is discontinued.

*Addiction is a mental disorder
Substance abuse can be a choice*

What is substance abuse?

The non-medical use of chemical substances in order to achieve alteration in psychological functioning has been termed as substance abuse.

DSM-5 (Diagnostic & Statistical Manual of Mental Disorders) guidelines for the diagnosis of a substance use disorder require that the individual have significant impairment or distress from their pattern of drug use, and at least two of the symptoms listed below in a given year.^[1]

1. Using more of a substance than planned, or using a substance for a longer interval than desired
2. Inability to cut down despite desire to do so
3. Spending substantial amount of the day obtaining, using, or recovering from substance use
4. Cravings or intense urges to use
5. Repeated usage causes or contributes to an inability to meet important social, or professional obligations
6. Persistent usage despite user's knowledge that it is causing frequent problems at work, school, or home
7. Giving up or cutting back on important social, professional, or leisure activities because of use
8. Using in physically hazardous situations, or usage causing physical or mental harm
9. Persistent use despite the user's awareness that the substance is causing or at least worsening a physical or mental problem
10. Tolerance: needing to use increasing amounts of a substance to obtain its desired effects
11. Withdrawal: characteristic group of physical effects or symptoms that emerge as amount of substance in the body decreases

Notable changes between the DSM IV and DSM-5 include:

- In the DSM-IV, substance use disorder was broken into two separate diagnoses of substance abuse and substance dependence. In the DSM-5, they combined these two diagnoses into one, to create a single diagnostic category of substance use disorder.
- The substance use disorder criterion of legal problems from the DSM-IV was dropped in favour of cravings or a strong desire or urge to use a substance in the DSM-5.
- In addition, three categories of disorder severity were formed, using the number of patient symptoms. Out of 11 potential symptoms, 2-3 symptoms are diagnosed as a mild substance use disorder, 4-5 symptoms as moderate, and 6 or more symptoms as a severe substance use disorder. In the DSM-IV, patients only needed one symptom present to be diagnosed with substance abuse, while the DSM-5 requires two or more symptoms in order to be diagnosed with substance use disorder.
- The DSM-5 eliminated the physiological subtype and the diagnosis of polysubstance dependence

According to the DSM-5, a diagnosis of substance use disorder is based on evidence of impaired control, social impairment, risky use, and pharmacological criteria.^[2]

DSM-5 Criteria for Substance use Disorder (≥2 items in 12 months)

DSM-IV: Abuse	1	Failure to fulfill responsibilities ✓	} Mild=2-3 } Mod=4-5 } Severe=6+
	2	Use in physically hazardous situations ✓	
	3	Legal problems was in DSM-IV but it was replaced with Craving in DSM-5	
	4	Social / Interpersonal problems ✓	
DSM-IV: Dependence	5	Use larger amts or longer than intended ✓	
	6	Cannot cut down ✓	
	7	↑ Time spent to get, use and recover ✓	
	8	Give up or ↓ other important parts of life ✓	
	9	Ongoing use despite problems ✓	
	10	Tolerance ✓	
	11	Withdrawal ✓	

Substances are divided into the following categories:

1. LICIT:

These are not prohibited or regulated by law.
e.g., tobacco, cigarettes, alcohol, khat & coffee

2. ILLICIT:

These are prohibited by law.
e.g., cocaine, heroin, cannabis (marijuana & hashish)

Global Prevalence:

According to world statistics the pic is grim and drug abuse is the third largest business following oil and arms trade with around more than 190 million people consuming one drug or the other. Substance use and misuse are globally prevalent and remain an ongoing health crisis affecting every region of the world. In 2016, the United Nations Office on Drugs and Crime (UNODC) estimated that 275 million people aged 15–64 used drugs at least once [6], and the prevalence of drug use and drug use disorders has increased significantly in the period 2010–2016 [7]. Substance use disorders caused approximately 20 million disability-adjusted life years (DALYs) and 8.6 million years of life lost (YLL) across regions and countries [8,9,10]. The World Health Organization (WHO) estimated that in 2016, drug and alcohol use disorders were responsible for respectively 160,235 and 145,565 deaths, which increased markedly from 1990 [11]. These ongoing burdens are becoming great challenges for health systems of every country

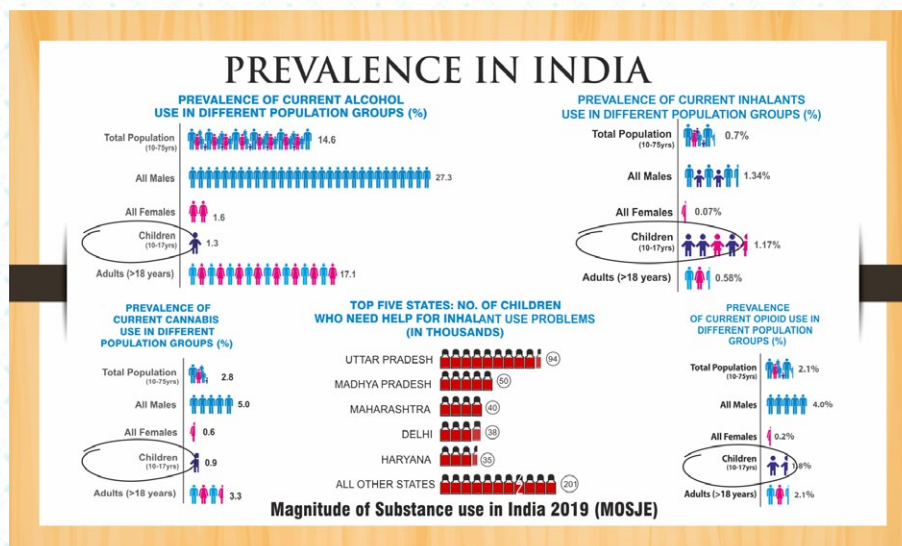
Prevalence in India

Substance abuse is one of the major areas of concerns in children & adolescents' health and their behaviour. **India has the highest proportion of adolescent's population (22.8%)** [3,4]. In spite of such a large risk of substance use in this huge population the problem of substance use is not recognised and underestimated in India. Substance abuse in most cases has its onset in adolescence and 70% adults addicted to substances initiate use during teenage.

A meta-analysis by Reddy and Chandrashekar (1998) revealed an overall **substance use prevalence of 6.9/1000** for **India** with urban and rural rates of 5.8 and 7.3/1000 population. The rates among men and women were 11.9 and 1.7% respectively. [12]

In a huge population in India (22.8%) between 10 to 19 years there has been limited data on the prevalence of substance use. A national household survey was done in 2001 and subsequently in 2006. A data of pattern and profile of children on substance use in India was published by Dhawan et al in 2017 in a study by National Drug Dependence Treatment Centre AIIMS along with National Commission for Protection of Child Rights (NCPCR) and Society for Promotion of Youth and Masses (SPYM). The latest is 2019 report by Ministry of Social Justice and Empowerment. The results over the years from these studies reveal the increased prevalence of substance use over the years and progressively increase in involvement of children and adolescents as well.

Cannabis, heroin & Indian produced pharmaceutical drugs are the most frequently abused drugs in India. [5]



This shows: prevalence of various substance use in Indian population according to a data from Ministry of Social Justice and Empowerment 2019.

The prevalence of Alcohol use in children 10 to 17 years is 1.3%

The Cannabis use in children 10 to 17 years is 0.9%

The prevalence of Inhalants 10 to 17 years is 1.17% which is more than age group above 18 years (0.58 %).

The prevalence of Opioids use in 10-17 years is 1.8% and at par with age group above (2.1%)

World day against drug abuse 2021:

June 26, is celebrated as INTERNATIONAL DAY against Drug abuse and illicit trafficking every year to sensitise youth in particular to menace of drug.

World Day against Drug Abuse 2021:

The theme of this year's International Day against Drug Abuse and Illicit Trafficking is-

“SHARE FACTS ON DRUGS. SAVE LIVES.”



Causative Factors:

Factors that Contribute to Addiction.

Substance use can progress due to several factors that influence substance-seeking behaviours. These factors are broadly classified under **2 major categories**:

Extrinsic Factors

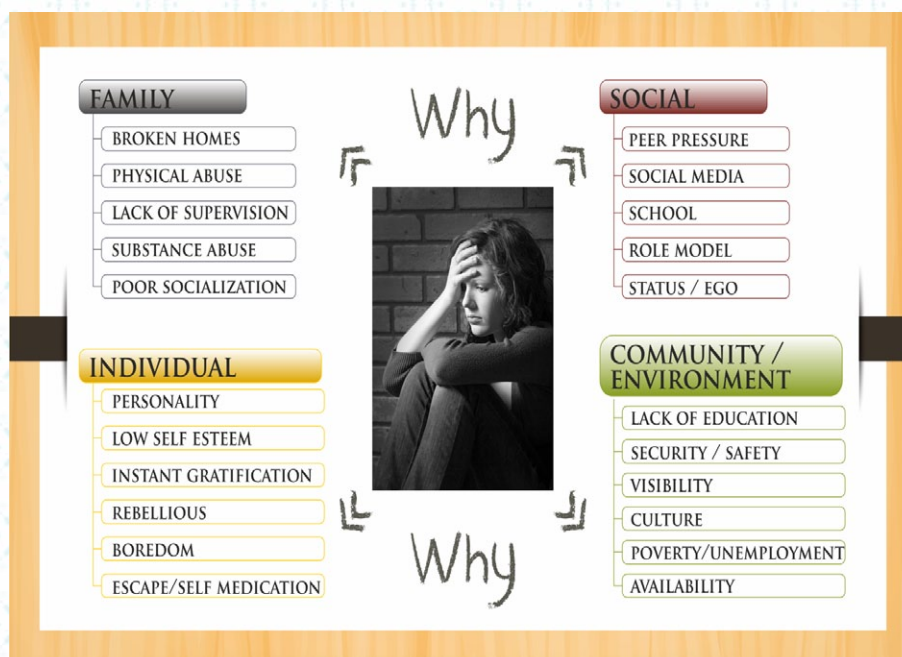
- **Individual:** Children & adolescents who are impulsive & aggressive have low self-esteem are particularly vulnerable. The person's unique psychological makeup, coping skills, temperament, resilience capacity, and personality all factor in. Another group includes those who are victims of child & sexual abuse & adolescents who experience dating violence. Those who belong to gangs & street children are more prone to initiate substance abuse earlier.

- **Family:** Family dynamics and early childhood experiences shape a person's mental wellbeing. A history of abuse, neglect, attachment disorder and family discord can set the stage for a substance use disorder later in life. Family history of addiction and other still unknown biological factors can predispose someone to addiction. Experiencing trauma or the loss of a parent or sibling, or any devastating life event can lead someone to begin self-medicating symptoms of depression or anxiety. ^[13,14]
- **School:** Early school failure, poor school connectedness, truancy are some factors that can make children more vulnerable. Easy availability of drugs around the school premises & usage of drugs in hostel are other factors.
- **Community:** This is one of the most important factors in India due to easy procurement of drugs. Lax law enforcement, media glamourisation, extreme poverty, slums, illiteracy & unemployment are the other reasons for the growing drug use menace.
- **Peer:** Peer influence plays a pivotal role in the initiation of tobacco and drug usage. Bullying both physical & cyber bullying is another contributory factor these days. Delinquent & violent peer group make the teens easily susceptible. Peer pressure may be a factor not only in drug use but also in drug abstinence. ^[15]

Intrinsic Factors:

This includes

- ADHD
- Autistic Spectrum Disorders (ASD)
- Conduct disorders
- Anxiety
- Stress
- Depression



WHY DO ADOLESCENTS TAKE DRUGS?

Adolescents experiment with drugs or continue taking them for several reasons

To feel good

Stimulants may lead to feelings of power, self-confidence and increased energy. Depressants tend to provide feelings of relaxation and satisfaction.

To feel better

People may use substances to reduce social anxiety or stress when building connections with others or to reduce symptoms associated with trauma or depression.

To do better

The increasing pressure to improve performance leads many people to use chemicals to “get going” or “keep going” or “make it to the next level”.

To explore

Some people have a higher need for novelty and a higher tolerance for risk. These people may use drugs to discover new experiences, feelings or insights.

WHAT DRUGS ARE COMMONLY USED BY ADOLESCENTS?

Alcohol and tobacco are the drugs most commonly abused by adolescents, followed by marijuana. The next most popular substances differ between age groups.

Young adolescents tend to favor inhalant substances (such as breathing the fumes of household cleaners, glues, adhesives, paints, thinners, petrol, whiteners, nail-polish removers, and shoe polish or pens) whereas older teens are more likely to use synthetic marijuana (“K2” or “Spice”) and prescription medications—particularly opioid pain relievers like Vicodin®, Oxycontin and stimulants like Adderall®. The prescription and over-the-counter medications account for a majority of the drugs most commonly abused by high-school seniors.

Substances frequently abused by adolescents

- Alcohol
- Tobacco
- Hallucinogens
- Amphetamines
- Anabolic steroids
- Methamphetamine
- Marijuana
- Prescription drugs
- Cocaine
- Opiates
- Inhalants

Drugs affect mostly three areas of the brain:

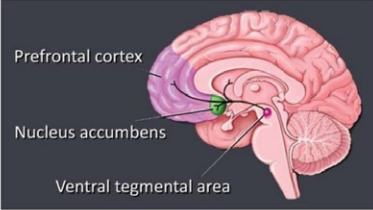
The **brain stem** is in charge of all the functions our body needs to stay alive-breathing, moving blood, and digesting food.

- **The limbic system** links together a bunch of brain structures that control our emotional responses, such as feeling pleasure when we eat chocolate or kiss someone we love.
- **The cerebral cortex** is the mushroom-shaped outer part of the brain (the gray matter). In humans, it is so big that it makes up about three-fourths of the entire brain. It's divided into four areas, called lobes, which control specific functions. Some areas process information from our senses, allowing us to see, feel, hear, and taste.

The front part of the cortex, known as the pre-frontal cortex or forebrain, is the thinking center. It powers our ability to think, plan, solve problems, and make decisions. It develops fully by 25 years of age. **Drugs are chemicals.** When someone puts these chemicals into their body, either by smoking, injecting, inhaling, or eating them, they tap into the brain's communication system and tamper with the way nerve cells normally send, receive, and process information. Different drugs-because of their chemical structures-work differently.

NEUROBIOLOGY

- Different neuro-developmental models postulate why adolescents are prone to experimenting with drugs and alcohol and engaging in other risky behaviors.
- Dynamic shifts in brain morphology, fiber architecture and biochemistry occur during adolescence.
- Imbalance between
 - a control / regulatory system involving the medial and ventral PFCs;
 - a reward (approach) system involving the ventral striatum & midbrain dopaminergic system; and
 - a threat (harm-avoidance) system involving the amygdala



REWARD PATHWAY
Main Neurotransmitter Involved-DOPAMINE

How drugs of addiction can kill?

There are many ways in which drugs of addiction can kill people through overdose.

Stimulants such as cocaine and methamphetamine trigger the release of the adrenaline-like hormone norepinephrine, which causes:

- Increased motor activity.
- Increased heart rate.
- Increased blood pressure.
- Narrowing of blood vessels

1. **Brain damage:** Increased blood pressure increases the risk of a ruptured blood vessel in the brain. Narrowing of blood vessels reduces blood flow around the brain.
2. **Heart attack:** Increased oxygen demand by the heart (because of increased motor activity) accompanied by reduced blood supply (narrowing of blood vessels) can lead to heart attack.
3. **Overheating:** One function of dopamine is to regulate body temperature. Altering dopamine levels with stimulants can affect the body's ability to cool itself. Combined with increased motor activity, this can lead to a dangerous increase in body temperature, resulting in organ failure and death.

What are protective & risk factors for substance abuse



What are the signs & symptoms of substance abuse?

Signs are the outwardly observable behaviors or consequences related to the use of the substance.

Symptoms are the personal, subjective experiences related to the use of the substance.

A **substance use disorder** (or SUD) is a clustering of two or more signs and symptoms related to the use of a substance.

If an adolescent starts behaving differently for no apparent reason—such as acting withdrawn, frequently tired or depressed, or hostile—it could be a sign he or she is developing a drug-related problem. Parents and others may overlook such signs, believing them to be a normal part of puberty.

The following behaviors may indicate an adolescent is having a problem with substance abuse. However, each adolescent may experience symptoms differently.

SIGNS OF SUBSTANCE ABUSE:

- An increased tolerance or need for increased amounts of a substance to attain the desired effect,
- Withdrawal symptoms with decreased use,
- Unsuccessful efforts to decrease use,
- Increased time spent in activities to obtain substances,
- Withdrawal from social and recreational activities, and continued use of a substance even with awareness of physical or psychological problems encountered by the extent of the substance use.

SYMPTOMS OF SUBSTANCE ABUSE

- Getting high on drugs or getting intoxicated (drunk) on a regular basis.
- Lying, especially about if and how much they are using or drinking.
- Avoiding friends and family members.
- Avoiding eye contact & hugs by parents.
- Changes in eating or sleeping habits.
- Change in peer group.
- Changed preferences for music & movies with high action drama & drug use.
- Giving up activities they used to enjoy such as sports or spending time with friends.
- Change in time at home, late nights & sleep-overs,
- Talking a lot about using drugs or alcohol
- Efforts to mask the smell like usage of perfume, chewing peppermint, rinsing of mouth.
- Believing they need to use or drink in order to have fun
- Getting in trouble at school or with the law
- Taking risks, such as sexual risks or driving under the influence of a substance
- Suspension from school for a substance-related incident
- Missing school due to substance use
- Decline in academic performance
- Carelessness with grooming, poor hygiene, altered eating habits & sleep patterns
- Spending more time aloof in bedroom & toilet
- Finding of injection marks called as “track marks” which are dark linear marks more commonly on the non-dominant hand which the adolescent will usually try to hide by wearing full sleeves shirt
- Stealing
- Depressed, hopeless, or suicidal feelings

The symptoms of substance abuse may resemble other medical problems or psychiatric conditions.

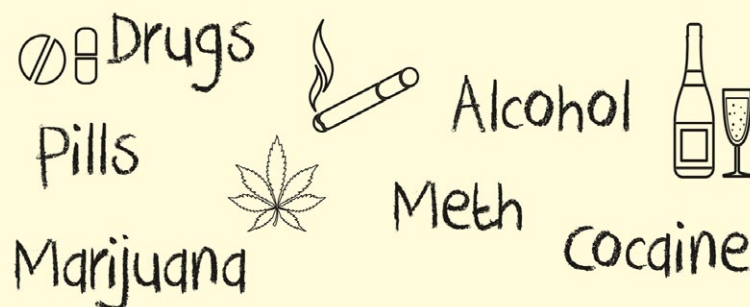
Headache, Sore throat, Worsening asthma, chronic cough, chest pain, gastritis, hepatitis, needle puncture marks and pancreatitis may be signs of drug abuse

RED FLAG SIGNS OF DRUG ABUSE IN AN ADOLESCENT

- Efforts to mask smell by frequent use of perfume or washing hands
- Avoiding Eye Contact and Hug by Parents
- New Set of Friends (seniors)
- Social Isolation with Loss of Interest in activities enjoyed earlier
- Scholastic Deterioration, Irritability and Conflicts with Parents and Teachers
- Poor Hygiene, Altered Appetite and Sleep Pattern
- Stealing Money, Changed Preference of Movies
- Spending Extra Time in the Toilet

STAGES OF DRUG ABUSE:

Various stages can be memorized by the simple acronym of **T.R.A.P**



T.R.A.P

The 4 stages of Addiction

T TRIAL OR EXPERIMENTATION.

This first stage of drug or alcohol addiction can be difficult to catch on to, especially if a loved one is trying a substance for the first time. It can be hard for you to determine if this experimental use will turn into something more serious, **but predisposing factors for drug abuse exists.**

- **Need for immediate gratification**
- **Decreased impulse control**
- **Available drugs, alcohol, inhalants**
- **Need for peer acceptance**

Trial or Experimentation

- Loss of body's defense and warning systems
- Experimentation can occur without the desire to continue drug use **BUT** may lead to regular use



R REGULAR USE.

During this stage, individuals will have incorporated their substance abuse into their everyday lives. During this time, you can begin to notice if their regular use is slowly becoming problematic, and if they go through periods of time where they use, they stop using, and then they use again.

RISKY USE.

Risky use can be difficult to determine, especially since you might think something is considered risky that another person might not. However, as an individual keeps using, you will notice significant changes in their behavior that will likely to alarm you.

- Behavioral changes and some consequences
- Increased frequency of use, use alone
- Buying or stealing drugs

You should work toward trying to discover ways to help them get treatment for their risky use before it escalates.

Regular Use

- Loss of coping skills & social functioning decreases
- Increased risk of abusing the substance



A ABUSE OR DEPENDENCE.

By the time an individual grows dependent on their substance(s) of choice, both their body and mind are reliant on the substances.

Daily use of drugs


- Loss of control
- Multiple consequences and risk taking
- Estrangement from family and straight friends

At this time, it is best if you help your loved one by providing them substance abuse treatment options that can help end their dependency.

Abuse

- Continued use of drugs despite severe social (job, family, friends) and legal consequences
- Preoccupation with the drug, craving, irritability and fatigue if the drug is not used

you will buy my drugs at high prices,
and you will abuse them



P PHYSICAL/PSYCHOLOGICAL ADDICTION.

The continual abuse of substances will always lead to a drug addiction, when a drug addiction finally develops, the only option for help is to change the behaviors surrounding the abuse, which will require professional intervention

- Polysubstance use
- Guilt, withdrawal, shame, remorse, depression
- Physical and mental deterioration, self- destructive, suicidal tendencies

Physical / Psychological Addiction

- Withdrawal symptoms and compulsive use of the drug occurs despite severe negative consequences



CONSEQUENCES OF TEEN DRUG ABUSE

Negative consequences of teen drug abuse might include:

- **Drug dependence.** Teens who misuse drugs are at increased risk of serious drug use later in life.
- **Poor judgment.** Teenage drug use is associated with poor judgment in social and personal interactions.
- **Sexual activity.** Drug use is associated with high-risk sexual activity, unsafe sex and unplanned pregnancy.
- **Mental health disorders.** Drug use can complicate or increase the risk of mental health disorders, such as depression and anxiety.
- **Impaired driving.** Driving under the influence of any drug can impair a driver's motor skills, putting the driver, passengers and others on the road at risk.
- **Changes in school performance.** Substance use can result in a decline in academic performance.

HOW IS SUBSTANCE ABUSE DIAGNOSED?

Adolescents who use drugs are most likely to visit a doctor's office with no obvious physical findings. Substance abuse problems are more likely to be discovered by doctors when adolescents are injured in accidents occurring while under the influence, or when they are brought for medical services because of intentional efforts to hurt themselves.

Clinical findings often depend on the substance abused, the frequency of use, and the length of time since last used, and may include the following:

1. Weight loss
2. Constant fatigue
3. Red eyes
4. Little concern for hygiene

COMMON DRUGS USED BY TEENS

There are several popular drugs with teens, all with different effects and rates of use.

COMMON SUBSTANCES USED IN INDIA

- The commonest drugs of abuse (in decreasing order of frequency): tobacco, alcohol, cannabis and inhalants, followed by pharmaceutical opioids, heroin / smacks and sedatives
- Gradually moving towards Western World
- Regional Variation
 - Opioid use-Punjab; percentage of people effected highest in NE States
 - Sedative use - NE States

Study done by AIIMS and NCPCR (Natl Med J India 2017; 30:224-9)

COMMONLY ABUSED PRESCRIPTIONS DRUGS AVAILABLE AT DRUG STORE

- **Depressants:** Barbiturates, Benzodiazepines, Zolpidem
- **Opioids and Morphine Derivatives:** Codeine, Methadone, Fentanyl and analogs, Oxymorphone, Meperidine, Propoxyphene
- **Stimulants:** Amphetamines, Methylphenidate
- **Others:** Dextromethorphan, Ephedrine

NIDA US DEEP OF HEALTH AND HUMAN SERVICES

COMPLICATIONS OF DRUG USE

Drug misuse, abuse, and addiction can all lead to both short-term and long-term health effects.

SHORT-TERM EFFECTS

- Changes in appetite
- Sleeplessness or insomnia
- Increased heart rate
- Slurred speech
- Changes in cognitive ability
- A temporary sense of euphoria
- Loss of coordination
- An inability to cease using a drug
- Relationship problems
- Poor work or academic performance
- Difficulty maintaining personal hygiene
- Noticeable changes in appearance, such as extreme weight loss
- Increased impulsivity and risk-taking behaviors
- Loss of interest in formerly enjoyable activities

LONG-TERM EFFECTS

All misused drugs affect the brain. They cause large amounts of **dopamine**, a neurotransmitter that helps regulate our emotions, motivation and feelings of pleasure, to flood the brain and produce a “high.” Over time, this behavior can turn into a substance dependency, or drug addiction.

Chronic drug use can alter a person’s brain structure and function, resulting in **long-term psychological effects**, such as:

- Depression
- Anxiety
- Panic disorders
- Increased aggression
- Paranoia
- Hallucinations

Long-term drug use can also affect a person’s memory, learning, and concentration. The long-term physical effects of drug use vary depending on the type of drug and the duration of use.

Chronic drug use is associated with the following health conditions:

Cardiovascular disease

Stimulants, such as cocaine and methamphetamines, can damage the heart and blood vessels. The long-term use of these drugs can lead to coronary artery disease, arrhythmia, and heart attack

Respiratory problems

Drugs can damage the respiratory system and lead to chronic respiratory infections and diseases. Opioids slow a person's breathing by binding to specific receptors in the central nervous system that regulate respiration & a large dose can stop breathing if taken with alcohol or other drugs.

Kidney damage

Heroin, ketamine, and synthetic cannabinoids can cause kidney damage or kidney failure.

Liver disease

Chronic drug and alcohol use can damage the liver cells, leading to inflammation, scarring, and even liver failure.



LIFE-CHANGING COMPLICATIONS

Dependence on drugs can create a number of dangerous and damaging complications, including:

- **Getting a communicable disease.** People who are addicted to a drug are more likely to get an infectious disease, such as HIV, Hepatitis B, C and sexual transmitted diseases and infective endocarditis, either through unsafe sex or by sharing needles.
- **Accidents.** People who are addicted to drugs are more likely to drive or do other dangerous activities while under the influence.
- **Suicide.** People who are addicted to drugs die by suicide more often than people who aren't addicted.

- **Family problems.** Behavioral changes may cause marital or family conflict & custody issues.
- **Problems at school.** Drug use can negatively affect academic performance and motivation to excel in school.
- **Legal issues.** Legal problems are common for drug users and can stem from buying or possessing illegal drugs, stealing to support the drug addiction, driving while under the influence of drugs or alcohol, or disputes over child custody.
- **Financial issues.** Spending money to support drug use takes away money from other needs, could lead to debt, and can lead to illegal or unethical behaviors.

Based on their effects on the central nervous system, drugs can be broadly categorized into three categories:

1. **Depressants:** include alcohol, marijuana, opioids, oxytocin, barbiturates, inhalants including petrol, glue, lighter fluid & paint thinners.
2. **Hallucinogens:** these include psychoactive drugs that distort thinking capacity leading to delusions. This group includes LSD (d-lysergic acid diethylamide), mushrooms(psilocybin), DMT (dimethyltryptamine) & mescaline.
3. **Stimulants:** these include cocaine, Narcotics like morphine, pethidine, codeine containing cough syrups, amphetamine, anabolic steroids, date-rape drugs & electronic cigarettes

COMMON RECOGNIZING SIGNS OF DRUG USE OR INTOXICATION:

Signs and symptoms of drug use or intoxication may vary, depending on the type of drug are given below.

ALCOHOL:

This is the most psychoactive substance used by teens and tends to be episodic and heavy. Adverse effects of early onset and heavy alcohol use are

1. Impaired memory function ^[16,17]
2. Damages hippocampus, the part of brain that is important for memory and learning.^[18]
3. Teens who drink heavily have poorer school performance than peers ^[19]
4. Teenagers who start drinking at an earlier are at high risk of motor vehicle accidents, fights, unintentional injuries ^[20]
5. More likely to engage in risky sexual behaviors and can result in early pregnancies. ^[21]
6. Altered body odor, gastritis & black outs



MARIJUANA

Also known as weed, pot, or grass, marijuana is a psychoactive stimulant harvested from the Cannabis plant. It's made from the flowers, stems, and leaves of the hemp plant *Cannabis sativa*. Marijuana smoke has a distinctive and pungent usually sweet-and-sour odor. Tetrahydrocannabinol, also known as THC, is the main psychoactive chemical in marijuana, hash oil, and hashish.



Physical and Psychological Signs of Marijuana Addiction

- Anxiety or paranoid thinking
- Lack of motivation
- Trouble sleeping
- Increased appetite for sweets
- Dizziness
- Distorted perception of reality
- Weight gain
- Impaired memory
- Euphoria (feeling “high”)

CANNABIS PREPARATIONS



NAME	PART OF PLANT	THC
MARIJUANA	LEAVES, STEMS	1-3%
SINSEMILLA GANJA	STERILE FLOWER HEADS	3-8%
HASHISH	CANNABIS RESIN	10-15%
CANNABIS/ HASH OIL	RESIN CONCENTRATE (ALCOHOL EXTRACT)	20-60%

Behavioral Signs of Marijuana Addiction

People suffering from marijuana addiction can display many problems:

- Frequent feeling of dryness in mouth “cotton mouth”
- Smells heavily of marijuana
- House smells heavily of deodorizers or air fresheners to mask the smell of marijuana
- Items associated with marijuana pipes like rubbing alcohol, cotton swabs, lighters, and matches start to go missing
- Heavy eating outside of mealtime
- A heightened sense of visual, auditory and taste perception
- Increased blood pressure and heart rate
- Flu like symptoms red eyes, dry mouth
- Cannabis odour on clothes or yellow fingertips
- Gynecomastia, small testes & irregular periods.

Long-term (chronic) use is often associated with:

- Decreased mental sharpness
- Poor performance at school or at work
- Reduced number of friends and interests

OPIOIDS:



Opioids are a class of drug that includes both prescription pain medicines and illegal drugs such as heroin.

Key facts ^[22,23,24,25]

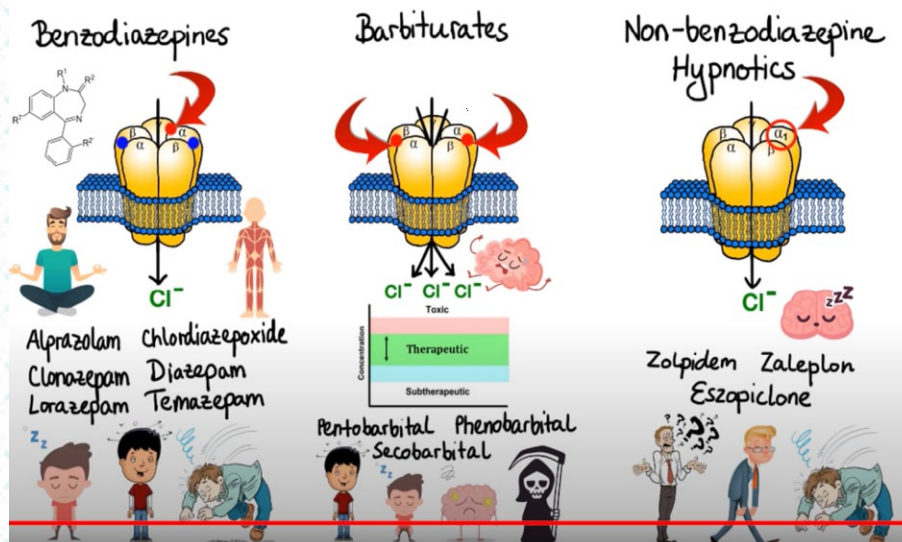
- The term “opioids” includes compounds that are extracted from the poppy seed as well as semisynthetic and synthetic compounds with similar properties that can interact with opioid receptors in the brain.
- Opioids are commonly used for the treatment of pain, and include medicines such as morphine, fentanyl and tramadol.
- Their non-medical use, prolonged use, misuse and use without medical supervision can lead to opioid dependence and other health problems.
- Due to their pharmacological effects, opioids can cause breathing difficulties, and opioid overdose can lead to death.
- Worldwide, about 0.5 million deaths are attributable to drug use. More than 70% of these deaths are related to opioids, with more than 30% of those deaths caused by overdose.
- There are effective treatment interventions for opioid dependence that can decrease the risk of overdose, yet less than 10% of people who need such treatment are receiving it.
- The medication naloxone can prevent death from an opioid overdose if administered in time.

The most common physical & behavioral signs of opiate abuse & addiction are:

- Needle marks on arms and legs from intravenous (injected) use
- Constricted, “pinpoint” pupils
- Having trouble staying awake, or falling asleep at inappropriate times
- Flushed, itchy skin
- Bronchospasm
- Constipation

BARBITURATES, BENZODIAZEPINES & HYPNOTICS

Barbiturates, benzodiazepines and hypnotics are prescription central nervous system depressants.



- **Barbiturates.** Examples include phenobarbital and secobarbital (Seconal).
- **Benzodiazepines.** Examples include sedatives, such as diazepam (Valium), alprazolam (Xanax), lorazepam (Ativan), clonazepam (Klonopin) and chlordiazepoxide (Librium).
- **Hypnotics.** Examples include prescription sleeping medications such as zolpidem (Ambien, Intermezzo, others) and zaleplon (Sonata).

Signs and symptoms of recent use can include:

- Drowsiness
- Slurred speech
- Lack of coordination
- Irritability or changes in mood
- Problems concentrating or thinking clearly
- Memory problems
- Involuntary eye movements

HALLUCINOGENS



Use of hallucinogens can produce different signs and symptoms, depending on the drug. The most common hallucinogens are lysergic acid diethylamide (LSD) and phencyclidine (PCP).

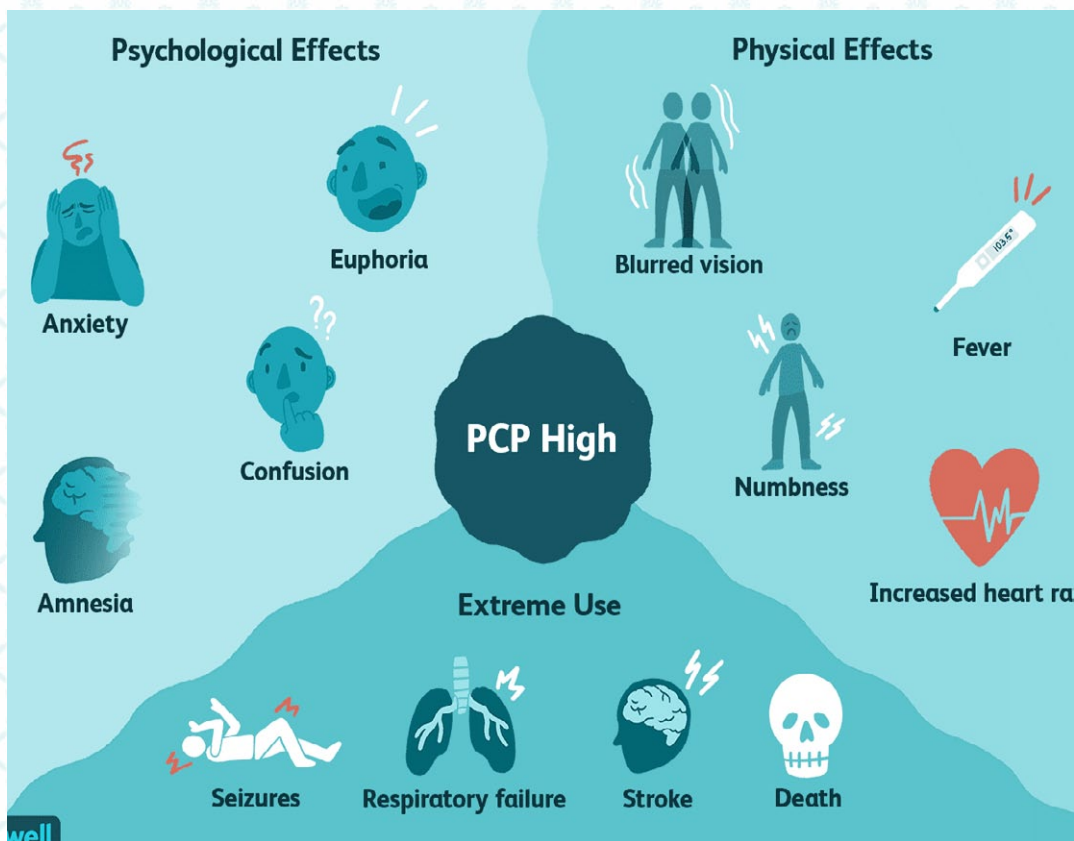
LSD:

CASE STUDY	LYSERGIC ACID DIETHYLAMIDE (LSD)
HALLUCINOGENS	LONG-TERM CONSEQUENCES
LYSERGIC ACID DIETHYLAMIDE (LSD)	* FLASHBACKS <small>HIGH YIELD</small>
CANNABIS (MARIJUANA)	* PSYCHOSIS <small>HIGH YIELD</small>
MDMA (ECSTASY)	<ul style="list-style-type: none">PERCEPTUAL DISTORTIONHALLUCINATIONSDELUSIONSDISORGANIZED THOUGHT & SPEECH
PHENCYCLIDINE (PCP)	* TYPICALLY DOESN'T CAUSE DEPENDENCE <small>HIGH YIELD</small>
REVIEW	
SUMMARY	

NOT LIKELY to SUFFER from WITHDRAWAL if DRUG is STOPPED

PCP:

Phencyclidine (PCP) is an illegal street drug that usually comes as a white powder, which can be dissolved in alcohol or water. It can be bought as a powder or liquid.



INHALANTS

HERE IS A LIST OF 10 COMMON INHALANTS

PAINT THINNER	FREON	GASOLINE OR ETHER	SPRAY PAINT	LIGHTER FLUID
NITROUS OXIDE ("laughing gas")	BUTANE	COMPUTER DUSTER SPRAY	GLUE	NAIL POLISH AND NAIL POLISH REMOVER

POPULAR INHALING METHODS

Many of the most popular inhalants can be found in your home—in your kitchen, bathroom and garage. If you're a parent, these are items you should keep out of the reach of children and monitor where your teenagers are concerned.

Users may inhale chemical vapors directly from open containers. This is known as sniffing.	Some breathe the fumes from rags soaked in chemicals. This is known as huffing.
Others huff by spraying the substance directly into their nose or mouth or by pouring it onto their clothing to sniff it periodically.	Bagging is when a user inhales fumes from substances inside a paper or plastic bag.

Signs and symptoms of inhalant use vary, depending on the substance. Some commonly inhaled substances include glue, paint thinners, correction fluid, felt tip marker fluid, gasoline, cleaning fluids and household aerosol products. Due to the toxic nature of these substances, users may develop brain damage or sudden death.

Signs and symptoms of use can include:

- Possessing an inhalant substance without a reasonable explanation
- Brief euphoria or intoxication
- Decreased inhibition
- Combativeness or belligerence
- Dizziness
- Nausea or vomiting
- Involuntary eye movements
- Appearing intoxicated with slurred speech, slow movements and poor coordination
- Irregular heartbeats
- Tremors
- Lingering odour of inhalant material
- Rash around the nose and mouth

TOBACCO:



Tobacco is an agricultural crop. Nicotine is the addictive drug found in tobacco. Tobacco is usually smoked, but can also be “dipped” or “chewed” so the nicotine is absorbed through the gums (snuff).

HOOKAHS



Hookahs vary widely in shape and size, but the basic design includes

- Head, consisting of a ceramic bowl with a conical cap; a
- Metal body that is attached to a glass bottle partially filled with water; and
- Flexible tube with a mouthpiece affixed to the neck of the bottle.

The tobacco (shisha, maassel, tumbâk, or jurâk) is moist, shredded, and mixed with sweeteners such as honey, molasses, or fruit. It is placed in the head of the hookah with a heating apparatus (usually charcoal). Combustion begins in the head, and the smoke then passes through the water in the body of the pipe, where it is cooled and diluted before travelling through the hose from which the smoker inhales it.

BIDIS:



Bidis (pronounced “bee-dees”) are thin, hand-rolled, filter less cigarettes consisting of flavored or unflavored tobacco wrapped in a tendu or temburni leaf (plants indigenous to India and South-East Asian countries).

Nicotine is highly addictive, as addictive as heroin and cocaine ^[26]

Weight control & reduction of appetite are critical aspects of the appeal of smoking for many women & girls.

Evidence shows that around 50% of those who start smoking in the adolescent years continue to smoke for 15 to 20 years. More women than men smoke “light” or “ultra-light” cigarettes-almost two thirds of women smokers (63%) and less than half of men smokers (46%). ^[27]

A common misconception is that “low tar” or “light” means low risk. “Light” cigarettes are as dangerous as regular cigarettes because of the increased ventilation in the “light” cigarettes’ filters.

Addiction to nicotine does not happen quickly, after using tobacco once or twice- it develops over time.

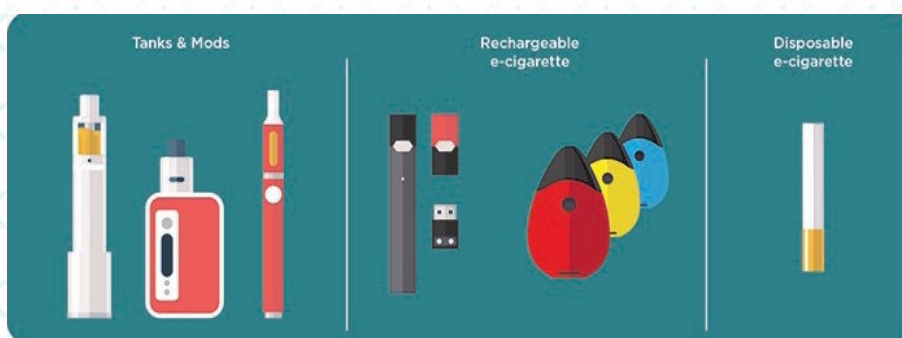
Some teens smoke because

- They see their parents or friends doing it.
- They see smoking in popular media.
- Smoking may make teens feel confident, and provide a common ground for interacting with like-minded teens - a way to instantly bond with a group of kids.
- Smoking cigarettes can be a form of rebellion to flaunt their independence and make their parents angry.

Smoking can cause

- Chronic lung disease,
- Coronary heart disease,
- Stroke,
- Cancer of the lungs, larynx, esophagus, mouth, bladder, cancer of the cervix, pancreas, and kidneys,
- Smokeless tobacco and cigars also have deadly consequences, including lung, larynx, esophageal, and oral cancer.

E-CIGARETTES/VAPING



E-Cigarettes?

- E-cigarettes come in many shapes and sizes. Most have a battery, a heating element, and a place to hold a liquid.
- E-cigarettes produce an aerosol by heating a liquid that usually contains nicotine-the addictive drug in regular cigarettes, cigars, and other tobacco products-flavorings, and other chemicals that help to make the aerosol. Users inhale this aerosol into their lungs. Bystanders can also breathe in this aerosol when the user exhales into the air.
- E-cigarettes are known by many different names. They are sometimes called “e-cigs,” “e-hookahs,” “mods,” “vape pens,” “vapes,” “tank systems,” and “electronic nicotine delivery systems (ENDS).”
- Some resemble pens, USB sticks, and other everyday items.
- E-cigarettes can be used to deliver marijuana and other drugs.

WHAT IS IN E-CIGARETTE AEROSOL?

Beyond the issue of nicotine addiction, the ingredients used in flavoring agents and additive agents, like propylene glycol and vegetable glycerin, can also be harmful for health. When heated, these additive agents can produce various compounds, including formaldehyde and acetaldehyde, which are carcinogenic to humans.



In the interest of public health, electronic cigarettes (e-cigarettes) were banned in September, 2019, by the Indian Government.

BATH SALT DRUGS

Common or street names: Ivory Wave, Vanilla Sky, Cloud Nine, Blue Silk, Zoom, Bloom, Ocean Snow, Lunar Wave, White Lightning, Scarface, Hurricane Charlie, Drone, Energy-1, Ocean Burst, Pure Ivory, Snow Leopard, Stardust, White Night, White Rush, Charge Plus, White Dove, plant fertilizer, plant food

Bath salts are a designer drug of abuse with reports of dangerous intoxication.

“Bath salts” are not a hygiene product used for bathing, as the name might imply, but are dangerous

synthetic cathinones. These mind-altering drugs are strong central nervous system stimulants that inhibit the dopamine-norepinephrine reuptake system (neurotransmitters in the brain).

Bath salts can lead to serious, and even fatal adverse reactions. [28, 29]

The most commonly reported ingredient is methylenedioxypropylamphetamine (MDPV), MDPV is of the phenethylamine class and is structurally similar to cathinone, an alkaloid similar in structure and effects to amphetamine and found in the khat plant.

Users usually snort the drug up the nose, but it can also be injected, smoked, swallowed or used rectally.

What are the effects of bath salts?

Bath salts are noted for producing a “high” similar to methamphetamine: the sought after effects may include:

- Euphoria increased wakefulness, concentration
- elevated sex drive hallucinations
- talkativeness empathy
- a “rush”.

Higher doses can lead to serious behavioural and psychiatric effects such as:

- severe panic attacks psychosis (hallucinations, delusions)
- paranoia agitation (extreme distrust)
- confusion insomnia (inability to sleep)
- irritability violent behaviour.

DATE-RAPE DRUGS:




WHAT IS DATE-RAPE /CLUB DRUGS?

Date-rape drugs are substances that make it easier for someone to rape or sexually assault another person.

The person who's attacked might become confused, have trouble defending them, or not be able to remember what happened later.

COMMON TYPES OF DATE-RAPE DRUGS

- **GHB (Gamma-Hydroxybutyrate)** is usually a liquid that can be mixed with other liquids. It also comes as a powder. Neither form has a smell or a taste. can make you sleepy, forgetful, or weak. It can also cause seizures, slow heartbeat, slow breathing, and a coma. The effects start in 15 to 30 minutes and last 3 to 6 hours.
- **Rohypnol (FLUNITRAZEPAM)** used to come as a white tablet that doesn't have a smell or taste. If someone puts it in a clear drink, the liquid turns blue. In high doses, it can cause trouble controlling your muscles, amnesia, loss of inhibitions, and loss of consciousness. Its effects usually start within 30 minutes and peak about 2 hours after you take it. As little as 1 milligram can affect you for 8 to 12 hours.
- **Ketamine** is a clear liquid or an off-white powder that's often injected. You can't smell or taste it. It usually takes effect within 30 minutes and lasts an hour or two. But you could be affected for a day or more.



	As Soon as	Avg. Duration
Rohypnol	20 min	8-12 Hrs
GHB	15 min	3-6 Hrs
Ketamine	5 min	30-60 min
Chloral Hydrate	15 min	2 Hrs

HOW TO AVOID DATE-RAPE DRUGS?

A few tips can help keep you safe when you're out:

- Pour your own drinks.
- Avoid open containers that could be spiked, like punch bowls.
- Don't accept drinks from other people.
- Keep control of your drink at all times. Carry it yourself, even if you have to take it to the bathroom with you.
- Don't drink anything that tastes strange.
- Stick with your friends.
- Ask them for help if you start to feel odd.

SUMMARIZATION of effects of common drugs of substance abuse

Class	Example	Effects
Depressants	Valium, Xanax, Klonopin	Sedaation, Memory Loss
Stimulants	Cocaine, Crack, Amphetamines	Increased enery, insomnia, Loss of appetite
Psychedelics	LSD, psilocybin mushrooms	Visual distortions
Opiates	Heroin, Oxycontin, Percocet	Intense rush, warm relaxed feelings
Cannabinoids	Marijuana, Has	Relaxation
Alcohol	Whisky, Beer, Wine	Slurring, Staggering, Erratic behaviour increased enery and concentration relaxation
Caffeine	Coffee, Red bull, Cola	
Nicotine	Cigarettes, Cigar, Chew	
Inhalants	Nitrous oxide, gasonline	Brief, Intense High
Botanically Sourced substance	Salvia, Loco weed	Multiple, variable
Synthetic Designer drugs	Spice, Molly, Bath salts	Multiple, variable

WHAT IS DRUG SLANG?

Slang are terms are derived from a wide variety of sources, including the physical appearance and type of drug, geographic location, the effect it has on users, and how it's packaged for sale. Some street names for drugs are simply designed to cover up the topic of conversation and throw eavesdroppers off track.

While drug slang is always evolving, there are some commonly used terms associated with different types of drugs.







COMMON STREET NAMES AND TERMS

- Cannabis-Charas / Ganja / Hashish / Bhang / Joit
- Afeem (Opium)
- Heroin (Morphine derivative)- H, Dr feelgood, smack, thunder, mud, skag and brown sugar
- Club Drugs: Ecstasy (MDMA), Herbal Ecstasy (EPHEDRINE), Liquid Ecstasy (y) BUTYROLACTONE), Thunder Nectar (BUTANEDIOL), K (Ketamine), Cloud9 (BATH SALTS)
- Smokeless Tobacco (SLT): CHEW AND SNUFF FORMS: Highly dangerous
- K2 Also called as spice, funky monkey is synthetic marijuana
- HUFFING Practice of inhaling fumes using a paper bag containing a chemical soaked cloth, spraying aerosol directly in to nose, mouth or using a balloon, plastic bag

GENERATION -Z- CHANGING SCENIARIO FOR TEENS TO SHOP FOR DRUGS

These words tough may sound simple they have a different meaning in the drug cartel world.

Street Language for Drugs	
Meth	Chawal & Ajinomota'
Cocaine	Dandruff
Marijuana	Kothimbar
Hallucinogenic	Pikachu
MDMA	Hello Kitty
Hydroponic Weed	Jungle Boy

Current Trend of using Emoji to express emotions			
	Cannabis		 Maple Leaf
	Ecstasy Pills		 Toffee
	Cocaine		 Snowman

SO, PARENTS BEWARE!

Keep yourself updated with technology. The potent combination of smart phone, technology, social media, networking & e-commerce platforms have given an easy access to teens to go in for virtual transactions & getting the drugs delivered at the doorstep.

The adolescents are making use of Snapchat, Instagram, WhatsApp, Signal & Wicker (with end-to-end encryption & auto-destruct features) to get access to the illicit drugs. Hence, we are fighting a new war on the dark web.

D- Commerce & making transactions in the digital playground has reduced the risks of hanging around with the drug peddlers.

Typing in “SCORE ADDA” on Google Maps throws drug peddlers. up location where one can search for marijuana.

Payments are being made in crypto currency, there are posts on Reddit forum called (INDIAN ENTS) –

persons who smoke cannabis; offer glimpses of a thriving community. **Marijuana** is being sold in cookies, brownies & even in pakoras being fried in cannabis oil!

Peer pressure is another risk factor which leads adolescents to use- they use it to fit in gangs, out of boredom, to feel good, as a stimulant or simply to experiment because of their inherent impulse taking behavior.

Drug laws need to be centered around honesty & compassion, not jail & hard punishment.

DRUG ABUSE IN SCHOOLS:

It is a shocking revelation indeed to know that youngsters are consuming drugs, as they would otherwise consume candies. A study conducted by the Society for the Promotion of Youth and Masses (SPYM) revealed the youngest child to be only seven years old. The epidemic of substance abuse among the young generations has assumed an alarming dimension in India. Experts say the age of initiation into drugs is getting younger. The drugs are easily accessible just as it is easy to dial a phone number! The Indian schools are a DRUG haven with DELHI taking the lead in stats. Both the wealthy & poor are victims of drug abuse. Both strata of teens fall a prey to drug peddlers.

DOES THE GEOGRAPHICAL LOCATION OF INDIA GOT SOMETHING TO DO WITH THIS INCREASE?

India is sandwiched between two largest illicit producers of opium in Asia. **The GOLDEN CRESCENT (IRAN, PAKISTAN & AFGHANISTAN) & THE GOLDEN TRIANGLE (VIETNAM, BURMA, LAOS & THAILAND)**. Delhi being central has attracted many drug smugglers. **City high on drug abuse map becomes new 'UDTA' State.** Delhi is just a model for the rising substance abuse in India. Such issues are prevalent in every state and it is the children who are paying the price. Their innocence has been replaced by drugs-It is a painful truth.

IS DRUG CONSUMPTION LEGAL IN INDIA?

Various Acts like the NDPS (Narcotic Drugs and Psychotropic Substances) Act, 1985 have been imposed to curb the menace of drug abuse. Authorities have imposed stringent laws to check the inflow of goods into the country. However, the problem of drug use continues to this very moment. The Narcotic Drugs and Psychotropic Substances Bill, 1985 was introduced in the Lok Sabha on 23 August 1985. It came into force on 14 November 1985 as THE NARCOTIC DRUGS AND PSYCHOTROPIC SUBSTANCES ACT, 1985 (shortened to NDPS Act). Under the NDPS Act, it is **illegal** for a person to produce/manufacture/cultivate, possess, sell, purchase, transport, store, and/or **consume** any narcotic **drug** or psychotropic. Subsequently, NDPS rules which would be applicable to all states and union territories has been announced by the government of India in May 2015.^[30] It also has included 6 drugs namely Morphine, Fentanyl, Methadone,

Oxycodone, Codeine and Hydrocodone.^[31] According to these rules, there is a single agency - the state drug controller-who can approve recognized medical institutions (RMI) for stocking and dispensing without the need for any other licenses. The RMIs are obliged to ensure proper documentation and to submit annual consumption statistics to the drug controller of the state. The Act extends to the whole of India and it applies also to all Indian citizens outside India and to all persons on ships and aircraft registered in India.

Alcohol laws in India

Legal drinking age: Varies in states from minimum 18–25 years.

Drunk driving law: The blood alcohol content (BAC) legal limit is 0.03% or 30 mg alcohol in 100 mL blood. 1st March 2012, Union Cabinet approved changes to the Motor Vehicle Act-higher penalties, including fines from Rs. 2,000 to Rs. 10,000 and imprisonment from 6 months to 4 years. Penalties are assessed depending on BAC at the time of the offense.

Tobacco Laws in India

The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply, and Distribution) Act, 2003 or COTPA, 2003-Act of Parliament of India enacted in 2003.

- Advertisement of tobacco products is prohibited.
- Prohibits smoking of tobacco in public places and open spaces.
- Sale is prohibited to persons below 18 years of age; and in places within 100 meters radius of educational institutions.
- Fine up to Rs.200/- for smoking in public place, selling to minors, or selling within a radius of 100 meters from an educational institution.
- Places where products are sold must display appropriate messages such as “Tobacco Causes Cancer” and “Sales of tobacco products to a person under the age of 18 years is a punishable offense under law”.
- The Prohibition of Electronic Cigarettes (Production, Manufacture, Import, Export, Transport, Sale, Distribution, Storage and Advertisement) Act, 2019.

SMARTER DRUG LAWS:

The Union social justice ministry has proposed an important amendment to the Narcotic Drugs and Psychotropic Substances Act- treat those apprehended with small quantities of drugs as victims rather than culprits.

Terming them as drug users instead of NDPS Act’s definition of drug consumers as “addicts”, the ministry recommended a mandatory minimum period of 30 days at a rehabilitation/ de- addiction facility followed by one year of community service.

Drug laws need to be centered around honesty & compassion, not jail & hard punishment.

PREVENTION of SUDS in CHILDREN & ADOLESCENTS [32]

Working on the child's emotional competence from day one is, a preventive measure that demands attention. Awareness is necessary but it is not sufficient. Schools must aim to build social and emotional resilience in the child, so that they're able to handle their emotions well and learn to say no without the fear of being judged.

- **While it is necessary to educate the child, it is also vital for parents to establish a strong relationship with their kid as opposed to only focusing on the child's career growth.**
- The laws should be made stringent regarding the sales of drugs and alcohol to children.
- While the school dropouts should be sent back to school after the completion of their treatment, others must be given vocational training to ensure a livelihood, and at the same time keep the youth engaged and sober. It is important to protect the youngsters from the environment that got them addicted in the first place.

The best way to prevent an addiction to a drug is not to take the drug at all. If your doctor prescribes a drug with the potential for addiction, use care when taking the drug and follow the instructions provided by your doctor. Never buy drugs off the counter.

TIPS FOR PARENTS:

Take these steps to help prevent drug misuse in your children and teenagers:

- **Communicate.** Talk to your children about the risks of drug use and misuse.
- **Listen.** Be a good listener when your children talk about peer pressure, and be supportive of their efforts to resist it.
- **Set a good example.** Don't misuse alcohol or addictive drugs. Children of parents who misuse drugs are at greater risk of drug addiction.
- **Strengthen the bond.** Work on your relationship with your children. A strong, stable bond between you and your child will reduce your child's risk of using or misusing drugs.
- **Parental monitoring and supervision** are critical for drug abuse prevention. These skills can be enhanced with training on rule-setting; techniques for monitoring activities.
- **Praise** for appropriate behavior.
- **Know your teen's activities.** Pay attention to your teen's whereabouts. Find out what adult-supervised activities your teen is interested in and encourage him or her to get involved.
- **Establish rules and consequences.** Explain your family rules, such as leaving a party where drug use occurs and not riding in a car with a driver who's been using drugs. If your teen breaks the rules, consistently enforce consequences.
- **Use authoritative parenting style & set 'clear limits'.**
- **Monitor media usage & exposure.**
- **Know your teen's friends.** If your teen friends use drugs, your teen might feel pressure to experiment, too.
- **Keep track of prescription drugs.** Take an inventory of all prescription and over-the-counter medications in your home.

- **Teach Life Skills:** Enhance self-esteem & self-confidence. Help them develop coping, assertive skills (learn to politely say ‘no’ at home), critical thinking & communication skills.
- **Ensure a healthy lifestyle**
- **Provide support.** Offer praise and encouragement when your teen succeeds. A strong bond between you and your teen might help prevent your teen from using drugs.

TIPS FOR ADOLESCENTS:

1. **Avoid Temptation and Peer Pressure.** Develop healthy friendships and relationships by avoiding friends or family members who pressure you to use substances. It’s often said “we become most like those we surround ourselves by,” meaning if you surround yourself with people who abuse drugs and alcohol you are more likely to as well.

Peer pressure is a major part of life for teens and adults.

If you are looking to stay drug free develop a good way to just say NO, prepare a good excuse or plan ahead of time to keep from giving into peer pressure.

2. **Examine the risk factors.** Look at your family history of mental illness and addiction, several studies have shown that this disease tends to run in the family, but can be prevented. The more you are aware of your biological, environmental and physical risk factors the more likely you are to overcome them.
3. **Keep a well-balanced life.** People often turn to drugs and alcohol when something in their life is missing or not working.
4. **Practicing stress management skills** can help you overcome these life stressors and will help you live a balanced and healthy life.
5. **Develop goals and dreams for your future.** These will help you focus on what you want and help you realize that drugs and alcohol will simply get in the way and hinder you from achieving your goals.

PREVENTION PRINCIPLES

Prevention programs should

- Enhance protective factors and reverse or reduce risk factors.[33]
- All forms of drug abuse, alone or in combination, including the underage use of legal drugs (e.g., tobacco or alcohol); the use of illegal drugs (e.g., marijuana or heroin); and the inappropriate use of legally obtained substances (e.g., inhalants), prescription medications, or over-the-counter drugs [34]
- Address the type of drug abuse problem in the local community, target modifiable risk factors, and strengthen identified protective factor [33]
- Be tailored to address risks specific to population or audience characteristics, such as age, gender, & ethnicity, to improve program effectiveness.[35]
- Enhance family bonding and relationships and include parenting skills.

SCHOOL BASED PREVENTION PROGRAMS

1. Promoting Alternative Thinking Strategies (PATHS)

PATHS is a comprehensive program for promoting emotional health and social competencies and reducing aggression and behavior problems in elementary school children, while enhancing the educational process in the classroom. This K–5 curriculum is designed for use by educators and counselors in a multiyear, universal prevention model. Although primarily for use in school and classrooms, information and activities are also included for use with parents. PATHS has been shown to improve protective factors and reduce behavioral risk factors that impact youth problem behaviors.^[36]

2. Skills, Opportunity, & Recognition (SOAR) (Formerly, Seattle Social Development Program)

This universal school-based intervention for grades one through six seeks to reduce childhood risks for delinquency and drug abuse by enhancing protective factors. The multicomponent intervention combines training for teachers, parents, and children during the elementary grades to promote children's bonding to school, positive school behavior, and academic achievement.^[37]

3. Life Skills Training (LST) Program

LST is designed to address a wide range of risk and protective factors by teaching general personal and social skills, along with drug resistance skills and normative education.

LST covers three major content areas:

- 1 **Drug resistance skills and information:** Enables young people to recognize and challenge common misconceptions about tobacco, alcohol and other drug use. Through coaching and practice, they learn information and practical ATOD (Alcohol, Tobacco, and Other Drug use) resistance skills for dealing with peers and media pressure to engage in ATOD use.
- 2 **Self-management skills:** help learn how to examine their self-image and its effects on behaviour; set goals and keep track of personal progress; identify everyday decisions and how they may be influenced by others; analyze problem situations, and consider the consequences of each alternative solution before making decisions; reduce stress and anxiety, and look at personal challenges in a positive light.
- 3 **General social skills:** develop the necessary skills to overcome shyness, communicate effectively and avoid misunderstandings, initiate and carry out conversations, handle social requests, utilize both verbal and nonverbal assertiveness skills to make or refuse requests, and recognize that they have choices other than aggression or passivity when faced with tough situations.

LST was shown to reduce the prevalence of substance abuse long term by as much as 66 percent, with benefits still in place beyond the high school years.^[38]

TYPES OF COPING SKILLS

<p>Self-Soothing (Comforting yourself through your five senses)</p> <ol style="list-style-type: none"> 1. Something to touch (ex: stuffed animal, stress ball) 2. Something to hear (ex: music, meditation guides) 3. Something to see (ex: snowglobe, happy pictures) 4. Something to taste (ex: mints, tea, sour candy) 5. Something to smell (ex: lotion, candles, perfume) 	<p>Distraction (Taking your mind off the problem for a while)</p> <p>Examples: Puzzles, books, artwork, crafts, knitting, crocheting, sewing, crossword puzzles, sudoku, positive websites, music, movies, etc.</p>	<p>Opposite Action (Doing something the opposite of your impulse that's consistent with a more positive emotion)</p> <ol style="list-style-type: none"> 1. Affirmations and Inspiration (ex: looking at or drawing motivational statements or images) 2. Something funny or cheering (ex: funny movies / TV / books)
<p>Emotional Awareness (Tools for identifying and expressing your feelings)</p> <p>Examples: A list or chart of emotions, a journal, writing supplies, drawing / art supplies</p>	<p>Mindfulness (Tools for centering and grounding yourself in the present moment)</p> <p>Examples: Meditation or relaxation recordings, grounding objects (like a rock or paperweight), yoga mat, breathing exercises.</p>	<p>Crisis Plan (Contact info of supports and resources, for when coping skills aren't enough.)</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>Family / Friends Therapist Psychiatrist Hotline Crisis Team / ER 911</p> </div>



Let's protect youth from Substance Abuse

- Strengthen the Individual's personal & social skills to increase self esteem & resistance to peer pressure
- Health education to college students & the youth about the dangers of Drug Abuse
- Over all Improvement in the Socio-Economic Condition of the population.



PREVENTION OF DRUG ABUSE

- | | |
|--|---|
| <ul style="list-style-type: none"> • OFFICE PRACTICE • COMMUNITY LEVEL • UNIVERSAL PREVENTION • SELECTIVE PREVENTION • INDICATED PREVENTION | <ol style="list-style-type: none"> 1 Screening for substance use at every visit 2 Anticipatory guidance on Social Resilience 3 Parental guidance session <p>School based drug prevention program</p> <p>for everyone in population</p> <p>for at-risk groups</p> <p>for individuals showing danger signs</p> |
|--|---|

DIAGNOSIS, ASSESSMENT & MANAGEMENT OF SUBSTANCE ABUSE

HISTORY AND EVALUATION

- HEEADSSS SCREEN
- DETAIL HISTORY OF DRUG
- DRUG USE, EXTENT OF USE, SETTING OF USE, AND
- DEGREE OF SOCIAL, EDUCATIONAL AND VOCATIONAL DISRUPTION
- FLAG SIGNS: Headache, Sore throat, Worsening asthma, Chronic Cough, Chest Pain, Gastritis, Hepatitis, Needle puncture marks and pancreatitis

EMPATHY
NON-JUDGEMENTAL
OPEN ENDED QUESTIONS

HEEADSSS Screen test is the basic psychosocial history for evaluation of any adolescent. It includes

Home: Family composition, living and sleeping arrangements, relationship with other family members.

Example: How would you describe your relationships with your parents?

Education Attendance/ Absences. Satisfaction with performance. Pressure to perform. Failure in passing in any subject, falling grades, specific learning disabilities, vision, hearing, peer and teacher interaction.

Example: Compared to your previous grades, how do you rate your studies this year?

Eating: Food habits, skipped meals, dieting, vomiting, attitudes to eating, schedules, body images concerns.

Example: On a routine day can you tell me about your treatment plan?

Activities: Exercise, hobbies, sports, TV viewing, mobile use, computer and internet access, gaming, fighting

Example: What are the activities you do to relax. How much time you spend on TV, mobile and social media?

Drugs: cigarettes, alcohol, tobacco or other medication history.

Example: What are your views on smoking? How can it affect your health? Do your friends smoke and you? How would you say no to a close friend who is offering you a cigarette or alcohol?

Suicide: Feeling of persistent low mood > 2 weeks, prior suicidal thoughts or prior attempts at self-harm, sleep disturbances, disinterest in earlier activities you used to enjoy.

Example: Many young people feel very sad or low and may even feel life is not worth living, have you experienced these thoughts?

Sexuality: Menstrual history, attitudes to a sexual relationship, sexual orientation (Homo/Hetero), sexual activity, number of partners, contraception, pregnancy.

Example: I would always ask a teenager a few questions pertaining to sexual health, are you ok with that? You please let me know if you are uncomfortable with it.

Safety: Explore how safe the adolescents living and working conditions are, safety practice including obtaining a license before starting to drive, helmet and seat belt use, drinking while driving.

Example: Do you feel safe at home and school? Where do you play? Do you drive a vehicle? Do you wear helmet and seat belt while driving?

A confidential comprehensive history taking is the key.

The **four** important considerations in history **evaluation** are:

1) Empathy	2) Non judgmental	3) Open ended questions.	4) Confidentiality
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In the history evaluation look for the warning signs as enumerated in the beginning. Pediatricians should have high index of suspicion for substance use in children and adolescents as they are first point of contact and during each visit it is a unique opportunity to screen them for substance use. It can be in an outpatient, inpatient or emergency setting. In 2016 American Academy of Pediatrics endorsed the simple tool SBIRT Model to use and implement for management of Substance Abuse in Adolescents the other to common model to manage Substance Abuse in Adolescents are S2BI & CRAFFT.

1. SBIRT (Screening Brief Intervention Referral to Treatment) model to manage substance use in adolescence.

SBIRT MODEL FOR MANAGEMENT

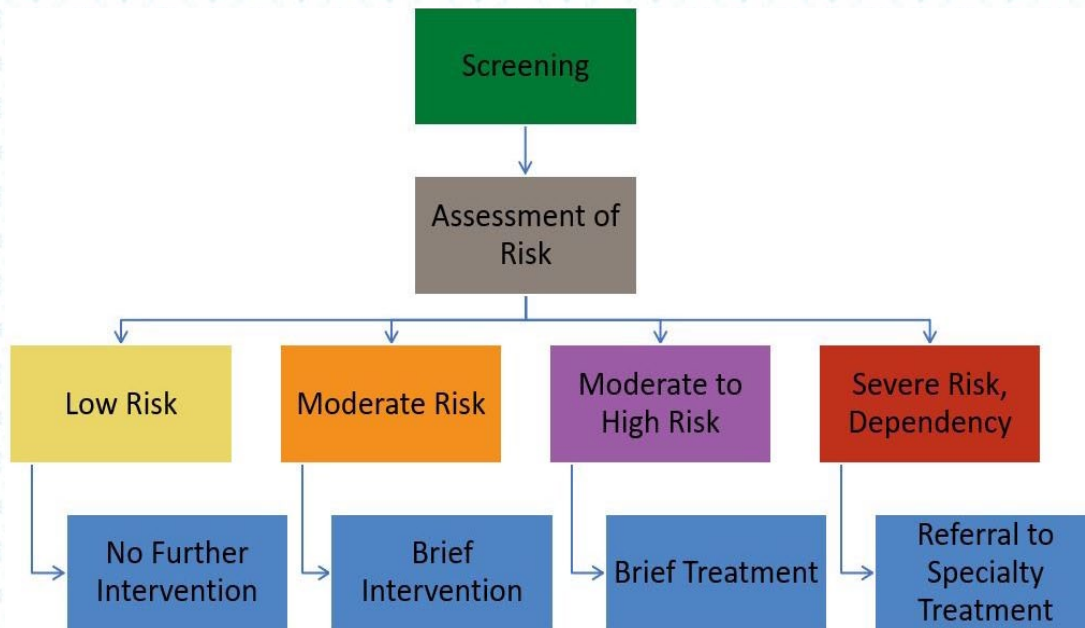
- **SCREENING:**
Quickly assess the severity of substance abuse and identify the appropriate level of treatment.
- **BRIEF INTERVENTION:**
Increase insight and awareness of substance Motivational towards behavioural change.
- **REFERRAL TO TREATMENT:**
Providing those identified needing extensive treatment with access to speciality care.

The three components are

- a Screening
- b Brief intervention
- c Referral to treatment

a Screening:

Identifies substance use along a continuum, from no use to a severe substance use disorder (SUD), using questionnaire from a validated screening tool.



b Brief intervention:

ASSESSMENT OF SUD (SUBSTANCE USE DISORDER)

NO USE:
NO SUD

ONCE OR TWICE:
NO SUD

MONTHLY USE:
MILD OR MODERATE SUD

WEEKLY USE:
SEVERE SUD

Screening to Brief Intervention (S2BI) Tool

The following questions will ask about your use, if any, of alcohol, tobacco and other drugs. Please answer every question by checking the box next to your choice.

IN THE PAST YEAR, HOW MANY TIMES HAVE YOU USED:

TOBACCO?

Never
 Once or twice
 Monthly
 Weekly or more

Alcohol?

Never
 Once or twice
 Monthly
 Weekly or more

Marijuana?

Never
 Once or twice
 Monthly
 Weekly or more

STOP if answer to all previous questions are "never". Otherwise, continue with question on the back.

OVER

S2BI Tool developed at Boston Children's Hospital with support from the National Institute on Drug Abuse.
It is best used in conjunction with "The Adolescent SBIRT Toolkit for Providers" mass.gov/maclearinghouse/no-charge.

1 Category NO USE (NO SUD):

- Provide positive encouragement and clear messages.
- Praise these patients and frame the decision not to use alcohol or other drugs as an active choice

Example: “You have made a smart decision not to use alcohol, tobacco or other substance.”

Probe to find out why they have made this decision and their answers will give you an additional opportunity to support them and affirm their choice.

Follow up with a clear strong message about not using drug.

Example: “As your doctor, I care about your health. One of best way you can do to stay healthy is to continue not to use alcohol, tobacco or other substance.”

Encourage him or her to participate in activities they enjoy, to choose friends who don't drink or use drugs and never go for a ride in a vehicle with someone who has been using drugs.

2. Category Use or Mild Group (No SUD):

A key goal of brief intervention in this group is to prevent escalation of use to a higher level. Research indicates that this is possible to stop use with encouragement ^[44]

Example: Clear advice to quit. “I recommend you to stop drinking or drug intake and now is the best time.”

Information about harmful effects of substance use: “You have heard about tobacco causing cancer and heart disease and are very addictive.” Quitting now will be much easier than later.”

- **Reinforcement for adolescent strengths and healthy decisions.**

Example: I know you are on the soccer team of school. That is great. Not using marijuana will help you perform you best on the field.

Make a plan and involve the patient in it.

- Many adolescents are concrete thinkers and helping them think through the specifics of how to quit and how to deal with related challenges can be valuable.
- The process also can help adolescents feel in charge of their own behavior and can enhance their commitment to behavior change.
- The treating physician should maintain confidentiality of this plan in medical record.

Follow up -includes

- A follow up specified scheduled visit and gives the opportunity to find out whether they met goals, challenges they experienced and how they dealt with their challenges.
- Not meeting the goals laid out in the plan may indicate a more serious SUD and help the physician to determine the next steps for care.

Advice to the family

If you suspect or know that your teen is experimenting with or misusing drugs:

- Talk to him or her.
- Encourage honesty.
- Focus on the behaviour, not the person.
- Check in regularly.
- Get professional help.

It's never too soon to start talking to your teen about drug abuse. The conversations you have today can help your teen make healthy choices in the future.

c Referral to treatment

Different approach is required for moderate to severe categories of adolescents and after a brief intervention referral to treatment center is warranted.

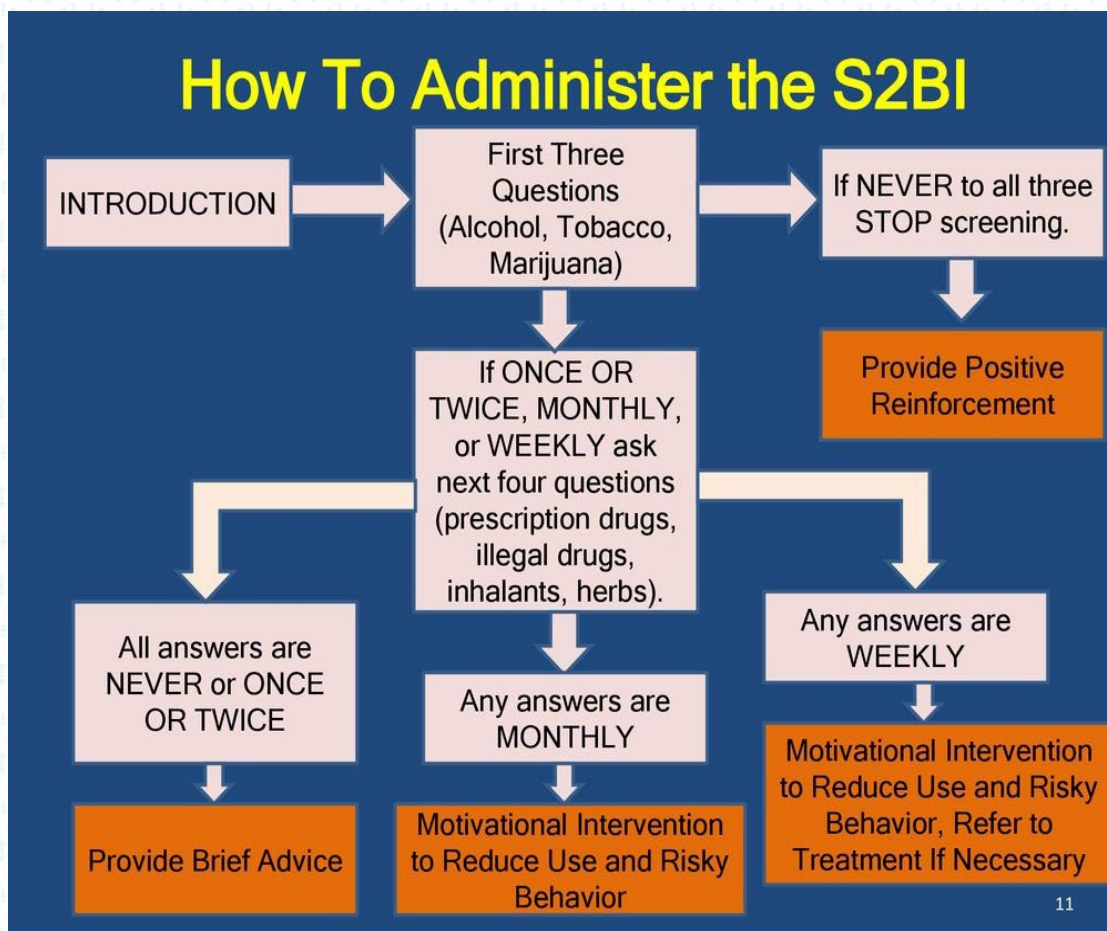
Although there's no cure for drug addiction, treatment options explained below can help you overcome an addiction and stay drug-free. Your treatment depends on the drug used and any related medical or mental health disorders you may have. Long-term follow-up is important to prevent relapse.

2. **S2BI** ^[39]

Screens for tobacco, alcohol, marijuana and other illicit drugs use

Discriminates substance use in to four groups

- **No Use (no SUD)**
- **Once or twice (no SUD)**
- **Monthly Use (Moderate SUD)**
- **Weekly Use (Severe SUD)**



3. CRAFFT

Good tool for quickly identifying problems associated with substance use.






If adolescents report alcohol or drug use in the past 12 months and answer “Yes” to at least two CRAFFT items, they are at high risk for having an alcohol or drug-related disorder (see graph), thus requiring further assessment.

CRAFFT (Y / N)

- C-Have you or your friend ever been in a Car (any vehicle) while under the influence of any substance.
- R-Do you use alcohol or any substance to Relax
- A-Do you use alcohol or any substance when Alone
- F-Do you ever forget thing you did while using alcohol or any drug
- F-Do your Friend and family ever tell you that you should cut down
- T-Have you ever gotten in to Trouble because of your use
- Score of 2+- Potential of significant problem

A framework called the “5R’s” offers a useful roadmap for guiding the provider through the key components of an effective brief intervention, as shown below.

The “5R’s”: Brief Counseling Talking Points

-  1. **REVIEW:** Screening Results
-  2. **RECOMMEND:** Not to use
-  3. **RIDING/DRIVING:** Risk Counseling
-  4. **RESPONSE:** Elicit self-motivational statements
-  5. **REINFORCE:** Self-efficacy

Among all SBIRT, S2BI & CRAFFT are the best validated tools which can be used for management of substance abuse.

OTHER VALIDATED SCREEN TOOLS ARE

VALIDATED SCREENING TOOLS	
AUDIT	<i>Alcohol use Disorder identification Test.</i>
DAST	<i>Drug Abuse Screening Test.</i>
POSIT	<i>Problem oriented screening instrument for Teenagers.</i>
ASSIST	<i>Alcohol, Smoking & substance Abuse involvement Screening test.</i>
GAIN / GAIN-SS	<i>Global Appraisal of Individual needs.</i>

ARE THEIR EFFECTIVE TREATMENTS FOR DRUG ADDICTION?

- Yes, there are treatments to help manage addiction, but there is no cure.
- It is considered a chronic disease, meaning it lasts a long time and needs to be managed with regular treatment.
- If people follow treatment plans, they can go for many years leading healthy lives.

Types of Treatment

Treatment will vary for each person, depending on the type of drugs used and the person's specific circumstances.

Generally, there are two types of treatment for drug addiction:

- **Behavior change**- helping people learn to change behaviors that trigger drug use
- **Medications**- helping people manage cravings for some drugs, such as tobacco, alcohol, heroin, or other opioids.

Length of Treatment

Most people who have become addicted to drugs need long term treatment and, many times, repeated treatments.

Even when someone relapses and begins using drugs again, they should not give up hope- they might need to change to a different treatment plan.

Motivation for Treatment

Most people go into drug treatment either because a court ordered them to do so or because loved ones wanted them to seek treatment. Many people are tired of addiction and its problems, and chose to go into treatment.

Many types of treatment work for people with addiction. No single treatment is right for everybody; in fact, treatment often combines a few of these options. They include:

Behavioral counseling to be provided at the referral centre:

- This can help people change their attitudes and behaviors related to drug use. For example, they may need to learn how to avoid or cope with “triggers” that could lead them to use drugs again.
- Behavioral counseling can also teach healthy life skills. If a person has used drugs to try to escape stress, for instance, they may learn healthier ways to deal with stress.
- Help you develop ways to cope with your drug cravings
- Suggest strategies to avoid drugs and prevent relapse
- Offer suggestions on how to deal with a relapse if it occurs
- Talk about issues regarding your job, legal problems, and relationships with family and friends
- Include family members to help them develop better communication skills and be supportive
- Address other mental health conditions

Self-help groups

- Self-help support groups, such as Narcotics Anonymous, help people who are addicted to drugs.
- The self-help support group message is that addiction is a chronic disorder with a danger of relapse. Self-help support groups can decrease the sense of shame and isolation that can lead to relapse.
- Your therapist or licensed counsellor can help you locate a self-help support group. You may also find support groups in your community or on the internet.

Medications.

- Some medications can help the brain function normally again; they can also decrease cravings for the drug that could lead to relapse. Currently, medications are available to treat addiction to opioids, nicotine, and alcohol.
- Medications can also treat “co-occurring” mental health conditions, like depression or anxiety, that sometimes contribute to addiction or lead people to try drugs in the first place.

Some other things to know related to treatment:

Withdrawal symptoms.

- Many people don't stop taking drugs because when they try, they have uncomfortable withdrawal symptoms. There are two options that can help:
- The U.S. Food and Drug Administration (FDA) is allowing the sale of an electrical device that is attached behind the ear. It stimulates nerves attached to the brain to provide relief from withdrawal symptoms.
- The FDA recently approved the medicine lofexidine to help with uncomfortable symptoms of opioid withdrawal.

Long-term follow-up to prevent relapse.

- Addiction is a chronic (long-term) condition, so follow-up treatment is important. It could include both medical and mental health services. Treatment needs to address all of a person's needs, not just their drug use.

If you think you may be addicted to drugs, it's important to talk to a medical professional about it.

It may be one of the best things you could do to protect your body, your mind, and your future.

Principles of Effective Treatment

The primary goals of drug-use disorder treatment (also called recovery) are abstinence, relapse prevention, and rehabilitation. During the initial stage of abstinence, an individual who suffers from chemical dependency may need help avoiding or decreasing the effects of withdrawal. That process is detoxification or "detox."

SUMMARY OF EFFECTIVE TREATMENT PROGRAM:

- Addiction is a complex but treatable disease that affects brain function and behavior.
- No single treatment is right for everyone.
- People need to have quick access to treatment.
- Effective treatment addresses all of the patient's needs, not just his or her drug use.
- Staying in treatment long enough is critical.
- Counseling and other behavioral therapies are the most commonly used forms of treatment.
- Medications are often an important part of treatment, especially when combined with behavioral therapies.
- Treatment plans must be reviewed often and modified to fit the patient's changing needs.
- Treatment should address other possible mental disorders.
- Medically assisted detoxification is only the first stage of treatment.
- Treatment doesn't need to be voluntary to be effective.
- Drug use during treatment must be monitored continuously.
- Treatment programs should test patients for HIV/AIDS, hepatitis B and C, tuberculosis, and other infectious diseases as well as teach them about steps they can take to reduce their risk of these illnesses.

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- PIC 31 https://player.slideplayer.com/93/15428297/slides/slide_11.jpg
- PIC 32 <https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.childrenscolorado.org%2F4903d0%2Fglobalassets%2Fhealthcare-professionals%2Fcharting-pediatrics%2Fs2bi.pdf&psig=AOvVaw1UO0PbAUBQaMkTzl59h6xU&ust=1636776431979000&source=images&cd=vfe&ved=0CA sQjRxqFwoTCMCFk8H5kfQCFQAAAAAdAAAAABAS>
- PIC 33 https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcQHChaaAjZD3v4eyIeSTMifJJAkt17yfhyL_XMcTbz0xpx2t4UA91w8u57_6WtJ3rJOwQ&usqp=CAU



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