

# SUBDTANCE USE DISORDERS



- problematic pattern of substance use that leads to some form of functional impairment or distress
- Keep in mind that frequent use of a substance does not necessarily indicate a substance use disorder unless it is causing problems for the patient.

- **Intoxication** : condition caused by recent ingestion of a substance that alters a person consciousness , cognition , perception , judgment , affect and behavior
- **Withdrawal** : Physical &/ or mental effects that person experiences after stop using or reduce taking of a substance
- Withdrawal symptoms of a drug are usually the opposite of its intoxication effects. For example, alcohol is sedating, but alcohol withdrawal can cause brain excitation and seizures.

- 1- Stimulants : Amphetamines ,Caffeine ,Cocaine and Nicotine
- 2- Hallucinogens : Marijuana , Phencyclidine(PCP) , Lysergic acid diethylamide(LSD)
- 3- Depressants :Opioids , Benzodiazepines, Barbiturates

manifested by at least two of the following within a 12-month period:

- Tolerance (needing higher amounts of the substance to achieve the desired effect and less effect of drugs over time)
- Withdrawal ( Symptoms that occur upon the abrupt discontinuation or decrease in the intake of drugs)
- Using substance more than originally intended.
- desire unsuccessful efforts to cut down
- Craving
- Significant time spent in obtaining, using, or recovering from substance.
- Failure to fulfill obligations at work, school, or home.
- Limiting social, occupational, or recreational activities because of substance use
- Limiting social, occupational, or recreational activities
- Use in dangerous situations (e.g., driving a car).
- Continued use despite subsequent physical or psychological problem

# EPIDEMIOLOGY

- Prevalence : 8%
- More common in men
- Alcohol and nicotine are the most commonly



# PSYCHIATRIC SYMPTOMS

- Mood symptoms
- Psychotic symptoms
- Personality disorders
- psychiatric comorbidities (e.g., major depression, anxiety disorders)

# 1- COCAINE

- Cocaine blocks the reuptake of dopamine, epinephrine, and norepinephrine from the synaptic cleft, causing a stimulant effect
- Dopamine plays a role in the behavioral reinforcement (“reward”) system of the brain
- Route of administration: intranasally, inhalational, IV, & orally





# INTOXICATION

- **General** : Euphoria, heightened self-esteem, increase or decrease in blood pressure, tachycardia or bradycardia, nausea, dilated pupils, weight loss, psychomotor agitation or depression, chills, and sweating.
- **Dangerous** : Seizures, cardiac arrhythmias, hyperthermia, paranoia, and Hallucinations
- **Deadly** : vasoconstrictive effect may result in MI, intracranial hemorrhage, or stroke.
- **Management** :
  - mild-to-moderate agitation and anxiety: **Reassurance of the patient and benzodiazepines.**
  - severe agitation or psychosis: **Antipsychotics** (haloperidol )
  - Symptomatic support (i.e., control hypertension, arrhythmias)
  - Temperature of >102°F should be treated aggressively with an ice bath, cooling blanket, and other supportive measures.

# Treatment of cocaine use disorder

- there is no (FDA)-approved pharmacotherapy for cocaine use disorder.
- Off-label medications are sometimes used (naltrexone, modafinil, topiramate).
- Psychological interventions (contingency management, relapse prevention, NA, etc.) are the mainstay of treatment

COCAINE



# Withdrawal

- Usually **not life-threatening**
- post-intoxication depression (“**crash**”): Malaise, fatigue, hypersomnolence, depression, anhedonia, hunger, constricted pupils, patients can become suicidal.
- With mild-to-moderate cocaine use, withdrawal resolve within 72 hours ,With heavy chronic use last for 1–2 weeks
- Treatment is supportive



## 2- Amphetamines

- Block reuptake and facilitate release of dopamine and norepinephrine from nerve endings, causing a stimulant effect
- Examples : Dextroamphetamine (Dexedrine), methylphenidate (Ritalin), methamphetamine (Desoxyn, “ice,” “speed,” “crystal meth,” “crank”).
- Methamphetamines are easily manufactured in home laboratories , using over-the-counter medications (e.g., pseudoephedrine).
- Methamphetamines are used medically in the treatment of : (ADHD), binge eating, and occasionally depressive disorders.

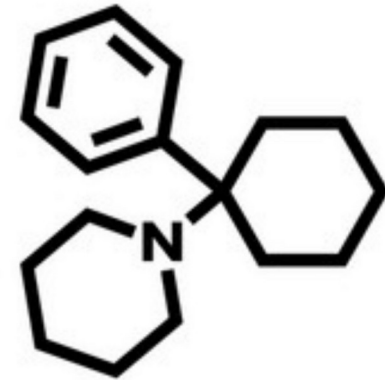
# INTOXICATION

- similar to those of cocaine
- Amphetamine withdrawal can cause prolonged depression
- **Complications** of their long half-life can cause ongoing psychosis, even during abstinence.
- **Overdose** : hyperthermia, dehydration , rhabdomyolysis, and renal failure.
- **Treatment** : Rehydrate, correct electrolyte balance, and treat hyperthermia



# 3- Phencyclidine (PCP)

- “angel dust,” is a dissociative, hallucinogenic drug that antagonizes (NMDA) glutamate receptors and activates dopaminergic neurons
- . It can have stimulant or CNS depressant effects, depending on the dose
- PCP can be smoked as “wet” (sprinkled on cigarette) or as a “joint” (sprinkled on marijuana).



**phencyclidine**

# INTOXICATION

- agitation, depersonalization, hallucinations, synesthesia (one sensory stimulation evokes another —e.g., hearing a sound causes one to see a color )
- impaired judgment, memory impairment, combativeness, nystagmus ,ataxia, dysarthria, hypertension, tachycardia, muscle rigidity, and high tolerance to pain.
- **Overdose** can cause seizures, delirium, coma, and even death.
- **Treatment :**
  - Monitor vitals
  - benzodiazepines ( to treat agitation, anxiety, muscle spasms, and seizures)
  - antipsychotics (to control severe agitation or psychotic symptoms.)

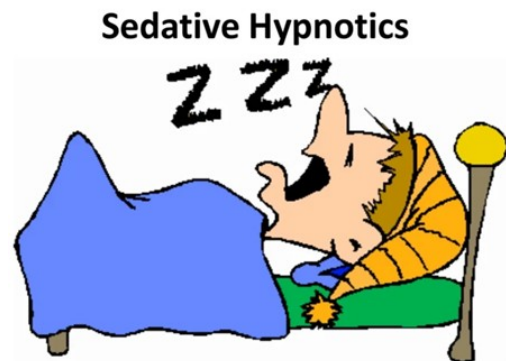
# WITHDRAWAL

- No withdrawal syndrome, but “flashbacks” (recurrence of intoxication symptoms due to release of the drug from body lipid stores) may occur



# 4- Sedative-Hypnotics

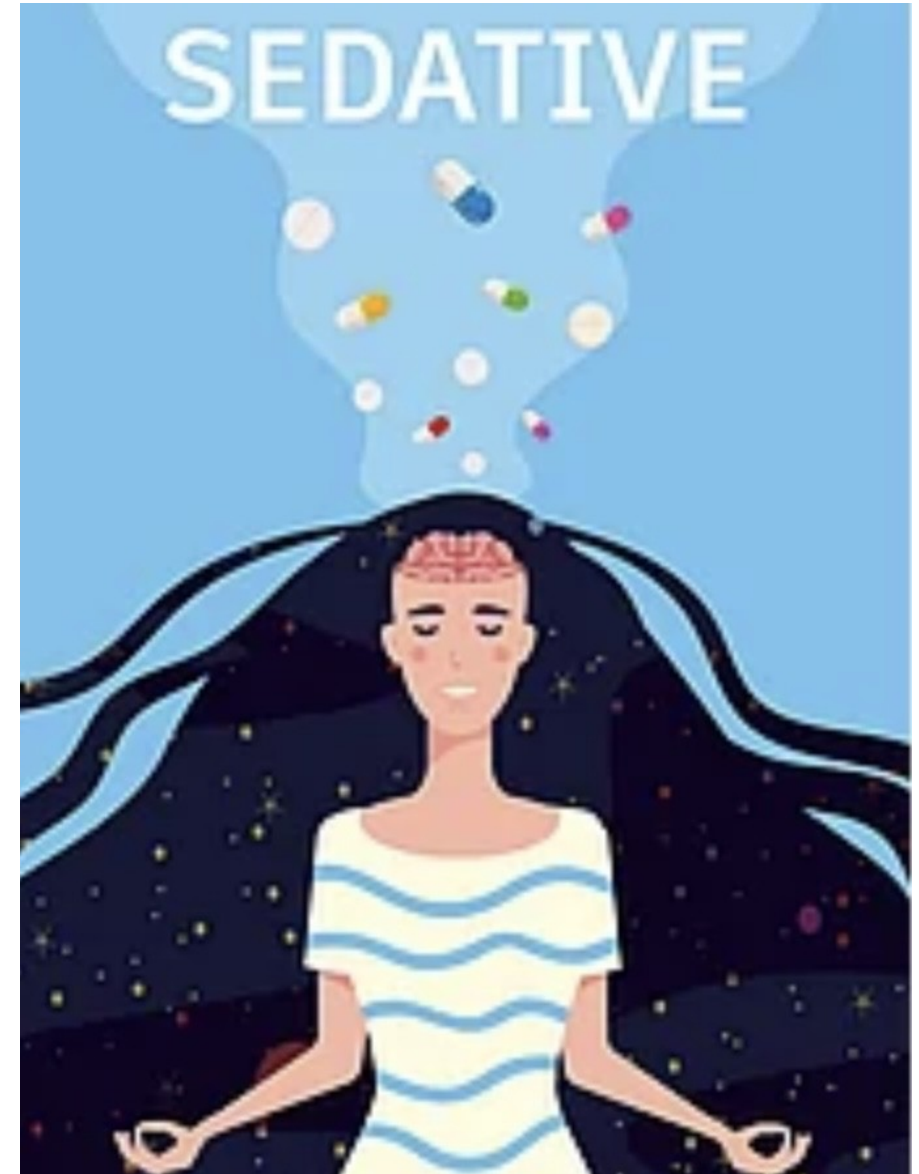
- Benzodiazepines (BZDs)
- used in treatment of anxiety disorders
- Easily obtained via prescription from physicians' offices
- Potentiate the effects of GABA by modulating the receptor, thereby increasing frequency of chloride channel opening.



- Barbiturates
- Used in the treatment of epilepsy and as anesthetics
- Potentiate the effects of GABA by binding to the receptor and increasing duration of chloride channel opening.
- At high doses, barbiturates act as direct GABA agonists, and therefore have a lower margin of safety relative to BZD
- respiratory depression can occur

# INTOXICATION

- drowsiness, confusion, hypotension, slurred speech, incoordination, ataxia, mood lability, impaired judgment, nystagmus, respiratory depression, and coma or death in overdose.
- Long-term sedative use may lead to dependence and may cause depressive symptoms
- **Treatment** : Maintain airway, breathing, and circulation. Monitor vital signs.
- barbiturates only :Alkalinize urine with sodium bicarbonate to promote renal excretion.
- benzodiazepines only: Flumazenil in overdose.



# WITHDRAWAL

- **life threatening.**
- Signs and symptoms of withdrawal are the same as these of EtOH withdrawal.  
Tonic-clonic seizures may occur
- **Treatment :**
- Benzodiazepines (stabilize patient, then taper gradually).
- carbamazepine or valproic acid taper not as beneficial.

# 5- Hallucinogens

- psilocybin (mushrooms), mescaline (peyote cactus), and lysergic acid diethylamide (LSD)
- **INTOXICATION** : perceptual changes (illusions, hallucinations, body image distortions, synesthesia), labile affect, dilated pupils, tachycardia, hypertension, hyperthermia, tremors, incoordination, sweating, and palpitations.
- lasts 6–12 hours
- **Treatment**: Monitor for dangerous behavior and reassure patient , Use benzodiazepines as first-line for agitation
- No withdrawal syndrome





# 6- Marijuana

- Cannabis (“marijuana,” “pot,” “weed,” “grass”)
- Marijuana has shown some efficacy in treating nausea and vomiting in chemotherapy patients, increasing appetite in AIDS patients, in chronic pain and lowering intraocular pressure in glaucoma

# INTOXICATION

- euphoria, anxiety, impaired motor coordination, perceptual disturbances mild tachycardia, anxiety ,conjunctival injection (red eyes), dry mouth, and increased appetite
- Cannabis-induced psychotic disorders with paranoia, hallucinations, or delusions may occur
- Chronic use may cause respiratory problems such as asthma and chronic bronchitis, immunosuppression, cancer
- **Treatment:** Supportive, psychosocial interventions (e.g., contingency management, groups)

# Withdrawal

- irritability, anxiety, restlessness, aggression, strange dreams, depression, headaches, sweating, chills, insomnia, and low appetite.
- **Treatment:** Supportive and symptomatic



## 7- Inhalants

- drugs that are inhaled and absorbed through the lungs
- CNS depressants
- m/c used by preadolescents or adolescents rate of use is similar between boys and girls (but rare in adult females).
- Examples: Solvents, glue, paint thinners, fuels, isobutyl nitrates



# INTOXICATION

- **Effects:** paranoia, lethargy, dizziness, nausea/ vomiting, headache, nystagmus, tremor, muscle weakness Perceptual disturbances,
- Acute intoxication: 15–30 minutes.
- **Overdose:** May be fatal secondary to respiratory depression or cardiac arrhythmias.
- **Treatment:** Monitor airway, breathing, and circulation; may need oxygen with hypoxic states.
- **withdrawal :** does not usually occur, but symptoms may include irritability, sleep disturbance, anxiety, depression, nausea, vomiting, and craving.



## 8- Caffeine

- is the most commonly used psychoactive substance
- form of coffee, tea, or energy drinks
- adenosine antagonist causing increase (cAMP) stimulating the release of excitatory neurotransmitters
- Stimulant

# OVERDOSE

- More than 250 mg (2 cups of coffee): Anxiety, insomnia, muscle twitching, rambling speech, flushed face, diuresis, gastrointestinal disturbance, restlessness, excitement, and tachycardia
- More than 1 g: tinnitus, severe agitation, visual light flashes, and cardiac arrhythmias
- More than 10 g: Death may occur secondary to seizures and respiratory failure
- **Treatment:** Supportive and symptomatic.

# WITHDRAWAL

- occur in 50–75% of caffeine users
- headache, fatigue, irritability, nausea, vomiting, drowsiness, muscle pain, and depression
- resolves within 1½ weeks.

# 9- Nicotine

- derived from the tobacco plant, It is highly addictive through its effects on the dopaminergic system
- causes both tolerance and physical dependence
- Cigarette smoking is the leading cause of preventable morbidity and mortality
- (COPD), cardiovascular diseases, and various cancers
- 15% of U.S. adults
- **Effects:** Restlessness, insomnia, anxiety, and increase in GI motility
- **Withdrawal symptoms:** Intense craving, dysphoria, anxiety, poor concentration, increase in appetite, weight gain, irritability, restlessness, and insomnia
- Cigarette smoking during pregnancy is associated with low birth weight, (SIDS) Sudden infant death syndrome , and a variety of postnatal morbidities.



# TREATMENT OF NICOTINE DEPENDENCE

- Nicotine replacement therapy (NRT): Available as transdermal patch, gum, lozenge, nasal spray, and inhaler
- Varenicline (Chantix)
- Bupropion (Zyban)
- Behavioral support

THANK YOU

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