

SUBSTANCE-RELATED AND ADDICTION DISORDERS:

Note: does not include gambling disorder

A problematic pattern of substance use that leads to some form of functional impairment or distress. If it is not causing problems to the patient, then it's not a substance use disorder even if the substance is frequently used.

- **At least 2** criteria within a **12-month** period (using substance more than originally intended, persistent desire or unsuccessful cut down, significant time wasted in obtaining, using or recovering, cravings, failure at school, work, home, continued use despite social problems, continued use despite health problem (cirrhosis), use in dangerous situations (driving), development of tolerance, development of withdrawal.

NOTE: it is possible to have a substance use disorder without tolerance or withdrawal symptoms

- Substance abuse is the **1st most common psychiatric disorder in men.**
- One-year prevalence of 8% in the U.S.
- **Alcohol and nicotine are the most common abused substances.**
- **Most commonly used illicit substance is marijuana “pot”, “weed”.**
- Psychiatric symptoms that can occur with substance use: mood, psychotic, personality.
- Detection: by direct testing of substance

Alcohol	Blood, urine, breath
Cocaine	Urine
Amphetamines	Urine
Phencyclidine (PCP)	Urine, high CK, high AST
Sedative hypnotics	Urine, blood
Opioids	Urine, order separate panel for methadone and oxycodone
Marijuana	Urine

- Treatment of substance disorders: behavioural counselling with every disorder, psychosocial trx: motivational intervention, CBT, contingency management, individual and group therapy, pharmacotherapy for some drugs of abuse.
- **Rule: withdrawal symptoms of a drug are usually the opposite of its intoxication effect.**
- **Rule: generally, withdrawal from depressants is life-threatening, while withdrawal from stimulants is not.**

Substance & its MOA	Intoxication	Treatment of intoxication	Withdrawal	Treatment of withdrawal	Associated disorder
Alcohol (EtOH) Potent CNS depressant: activates GABA, DA, Serotonin receptors, inhibits glutamate receptors	<ul style="list-style-type: none"> ▪ Impaired fine motor control ▪ Impaired judgement and coordination ▪ Ataxic gait, poor balance ▪ Lethargy, difficulty sitting upright, difficulty with memory, N&V ▪ Coma (very high blood alcohol level) 	<ul style="list-style-type: none"> ▪ ABC, Glc, electrolytes, acid-base balance ▪ Thiamine (B1) to prevent Wernicke's encephalopathy ▪ Naloxone if opioids are co-ingested. <p>NOT INDICATED: gastric lavage/emesis</p>	<ul style="list-style-type: none"> ▪ Insomnia, anxiety, irritability, hand tremor ▪ Anorexia, nausea, vomiting ▪ Autonomic hyperactivity (diaphoresis, tachycardia, HTN) ▪ Psychomotor agitation, fever, seizures, 	<p>Cessation of chronic alcohol use is potentially lethal bc of compensatory hyperactivity and glutamate excitotoxicity.</p> <p>Give:</p> <ul style="list-style-type: none"> ▪ Benzodiazepines (diazepam, lorazepam, chlordiazepoxide) ▪ Carbamazepine/valproic acid in mild withdrawal ▪ Thiamine, folic acid, multivitamins (banana bag) 	<p>Alcohol use disorder: <u>AUDIT-C</u> is used to screen for it. Biochemical markers: BAL, AST, ALT, GGT, MCV</p> <p>Possible treatments of alcohol use disorder:</p> <ul style="list-style-type: none"> ▪ Naltrexone (reduces cravings) ▪ Acamprosate (to prevent relapse post-detoxification) ▪ Disulfiram (blocks Aldehyde dehydrogenase) ▪ Topiramate (reduces cravings)

	<ul style="list-style-type: none"> Respiratory depression and death (very high BAL) 	/activated charcoal	hallucinations, delirium tremens (most serious form of EtOH withdrawal)	<ul style="list-style-type: none"> Hydration and I=electrolytes in alcoholic ketoacidosis <p>Monitor with <u>CIWA scale</u></p>	
Cocaine Blocks the reuptake of catecholamines (adrenaline, noradrenaline, DA) -> stimulant effect	<ul style="list-style-type: none"> Euphoria, confidence Hypo or hypertension Brady or tachycardia Agitation or depression Weight loss, nausea Seizures, arrhythmia, hyperthermia Paranoia, hallucinations MI, ICH, stroke 	<ul style="list-style-type: none"> Benzodiazepines for agitation and anxiety Antipsychotics (haloperidol) for severe agitation or psychosis Ice bath, cooling blanket in hyperthermia + symptomatic tx 	<p>Abrupt abstinence is not life-threatening.</p> <ul style="list-style-type: none"> Post intoxication depression (malaise, fatigue, hypersomnolence) Occasional suicidality 	<ul style="list-style-type: none"> Supportive Hospitalisation in cases of severe psychiatric symptoms 	
Amphetamines Block reuptake and facilitate	*** similar to cocaine ***	<ul style="list-style-type: none"> Rehydrate and correct electrolytes. 	<ul style="list-style-type: none"> Withdrawal can cause 		

<p>release of DA and noradrenaline - > stimulant. *Substituted amphetamines “designer” or “club drugs” like MDMA “ecstasy” release DA, serotonin and noradrenaline</p>	<ul style="list-style-type: none"> ▪ MDMA may cause sense of closeness to others. ▪ Overdose: hyperthermia, dehydration, rhabdomyolysis (increased CK), renal failure ▪ Chronic use: accelerated tooth decay “meth mouth” 	<ul style="list-style-type: none"> ▪ Treat hyperthermia <p>NOTE: medical indications of Methamphetamine:</p> <ol style="list-style-type: none"> 1. ADHD 2. Narcolepsy 3. Binge eating 4. Depressive disorders (occasionally) 	<p>prolonged depression.</p> <ul style="list-style-type: none"> ▪ Complications of long-term use cause ongoing psychosis even during abstinence 		
<p>PCP “angel dust” blocks NMDA glutamate receptors and activates DA neurones -> stimulant or depressant, hallucinogenic</p>	<ul style="list-style-type: none"> ▪ Agitation, HTN, tachycardia, rigidity ▪ Violence (more than other drugs) ▪ Depersonalisation, hallucination, 	<ul style="list-style-type: none"> ▪ benzodiazepines (lorazepam) for agitation and anxiety ▪ antipsychotics (haloperidol) for severe agitation or psychosis 	<p>No withdrawal symptoms but “flashbacks” *flashbacks mean spontaneous recurrence of symptoms mimicking intoxication</p>		

	<p>synaesthesia (hearing a sound causes one to see a colour)</p> <ul style="list-style-type: none"> ▪ rhabdomyolysis (increased CK) ▪ Nystagmus (rotatory nystagmus is pathognomonic of PCP intoxication), ataxia, dysarthria ▪ overdose: seizures, coma, death 				
<p>Sedative hypnotics (benzodiazepines and barbiturates) Potentiate GABA receptors -> depressants</p>	<ul style="list-style-type: none"> ▪ drowsiness, confusion ▪ slurred speech, ataxia, incoordination, nystagmus 	<ul style="list-style-type: none"> ▪ activated charcoal or gastric lavage (if ingestion is before 4-6 hrs) 	<p>** BARBITURATE WITHDRAWAL HAS THE HIGHEST MORTALITY RATE OF ALL SUBSTANCE WITHDRAWALS**</p>	<ul style="list-style-type: none"> ▪ Benzodiazepines (gradually tapered doses) ▪ Carbamazepine or valproic acid taper 	

	<ul style="list-style-type: none"> ▪ hypotension, impaired judgment, respiratory depression ▪ overdose: coma or death. ▪ synergism with alcohol/opioids 	<ul style="list-style-type: none"> ▪ Barbiturates: alkalinise urine with NaHCO₃ ▪ Benzodiazepines: administer Flumazenil 	<p>Abrupt abstinence after chronic use is life threatening. Withdrawal symptoms are like those of alcohol:</p> <ul style="list-style-type: none"> ▪ Insomnia, anxiety, irritability, hand tremor ▪ Anorexia, nausea, vomiting ▪ Autonomic hyperactivity (diaphoresis, tachycardia, HTN) 		
<p>Opioids (Heroin, oxycodone,</p>	<ul style="list-style-type: none"> ▪ Most used are prescription opioids 	<ul style="list-style-type: none"> ▪ ABC (ventilatory 	<ul style="list-style-type: none"> ▪ Dysphoria 	<ul style="list-style-type: none"> ▪ Clonidine for autonomic signs and withdrawal 	Opiate use disorder

<p>codeine, methadone, morphine) Stimulate opiate receptors -> analgesic, sedative</p>	<p>(oxycodone) NOT HEROIN</p> <ul style="list-style-type: none"> ▪ Opioids are associated with MORE DEATHS bc of unintentional overdose. خطير جدًا. ▪ Associated with infection secondary to needle sharing from street heroin use. Intoxication: ▪ Drowsiness, N&V, slurred speech ▪ Constricted pupils (EXCEPT for meperidine) 	<p>support might be required)</p> <ul style="list-style-type: none"> ▪ Naloxone for overdose 	<ul style="list-style-type: none"> ▪ Yawning, weakness, insomnia ▪ Lacrimation, sweating, rhinorrhoea ▪ Dilated pupils ▪ N&V, abdominal cramps ▪ HTN, tachycardia ▪ Arthralgia/myalgia 	<ul style="list-style-type: none"> ▪ NSAIDs for pain ▪ Loperamide for diarrhoea ▪ Dicyclomine for abdominal cramps ▪ Buprenorphine/methadone for severe symptoms <p>Monitor with <u>COWS scale</u></p>	<p>Treatment of this disorder:</p> <ul style="list-style-type: none"> ▪ Methadone ▪ Buprenorphine (prevents intoxication from intravenous injection) ▪ Naltrexone
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	<ul style="list-style-type: none"> ▪ Seizures, respiratory depression ▪ Constipation pay attention: as intoxication causes constipation, withdrawal is going to cause diarrhoea with dehydration being a significant cause of death. ▪ Serotonin syndrome if taken with MAOi 				
Hallucinogens (LSD, mushrooms, mescaline)	<ul style="list-style-type: none"> ▪ Perceptual changes (illusions, hallucination, synaesthesia, 	<ul style="list-style-type: none"> ▪ Benzodiazepines for agitation (1st line) 	No withdrawal syndrome but long-term use produces "flashbacks"		

<p>Act on the serotonergic system -> hallucinogenic</p>	<p>body image distortions)</p> <ul style="list-style-type: none"> ▪ Dilated pupils, tachycardia, tremor, sweating, palpitations ▪ HTN, hyperthermia ▪ Incoordination ▪ “Bad trip”: anxiety with panic and psychosis (paranoia, hallucinations) 	<ul style="list-style-type: none"> ▪ Antipsychotics (2nd line) 			
<p>Marijuana (cannabis, pot, weed, grass) Releases the psychoactive component “THC”</p>	<ul style="list-style-type: none"> ▪ Euphoria ▪ Anxiety, impaired motor coordination ▪ Mild tachycardia ▪ Dry mouth with 	<ul style="list-style-type: none"> ▪ Supportive ▪ Psychosocial trx: contingency management, support groups 	<ul style="list-style-type: none"> ▪ Irritability, anxiety, restlessness, aggression ▪ Headaches, sweating ▪ Insomnia, weird dreams 	<ul style="list-style-type: none"> ▪ Supportive ▪ Symptomatic 	

	<p>increased appetite “the munchies”</p> <ul style="list-style-type: none">▪ Conjunctival injection (red eyes)▪ Cannabis-induced psychosis (hallucinations, paranoia, delusions)▪ NO OVERDOSE IN MARIJUANA USE▪ Chronic use: Asthma, chronic bronchitis, cancer, immunosuppression, reproductive hormone imbalance	<p>NOTE: some uses of marijuana in the medical field:</p> <ul style="list-style-type: none">▪ Increasing appetite in AIDS patients▪ For chronic pain in cancer▪ For nausea and vomiting in chemotherapy.▪ Lowering IOP in glaucoma	<ul style="list-style-type: none">▪ Low appetite		
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Inhalants (glue, paints, solvents, fuels)
Generally act as CNS depressants

- Perceptual disturbances (hallucinations, illusions, paranoia)
- Dizziness, headache
- N&V
- Nystagmus, tremor, hyporeflexia, muscle weakness, slurred speech
- Euphoria, hypoxia
- Intoxication is acute (15-30 mins)
- Overdose: respiratory depression and death

- ABC (may need O2 in hypoxia)
- Identification of the solvent bc it may require chelation like leaded gasoline

No withdrawal but irritability, sleep disturbance, anxiety, depression, N&V, craving may occur

	<ul style="list-style-type: none"> Chronic use: permanent CNS damage, peripheral systems damage 				
Caffeine (coffee, tea, energy drinks) Adenosine antagonist that increases cAMP -> excitatory	<ul style="list-style-type: none"> Overdose: more than 2 cups of coffee cause anxiety, insomnia, muscle twitch, rambling speech, diuresis, GI disturbances, tachycardia 	Supportive and symptomatic	If cessation is abrupt, withdrawal occurs in 50-70% of users: headache, fatigue, irritability drowsiness, muscle ache, depression. <ul style="list-style-type: none"> Usually resolves in 1.5 weeks 		
Nicotine (tobacco) Stimulates nicotinic receptors and has dopaminergic effects	Both tolerance and physical dependence <ul style="list-style-type: none"> Restlessness, insomnia, anxiety Increase in GI motility 	Treatment of nicotine dependence: - Varenicline (partial nAChR agonist). -Bupropion (NDRI) -NRT -Behavioural support. *relapse is common.	<ul style="list-style-type: none"> Intense cravings, dysphoria, anxiety, poor concentration Increased appetite, weight gain 		