THE PERSON WITH SUBSTANCE USE ISSUES (ADDICTION)

Addiction driven by:

- Genetic driven component
- 28% of Australians perceived acceptable for misuse of pharmaceuticals
- Cyclical usage drives inhibition of control (VTA →dopamine → nucleus accumbens (Pavlovian conditioning) → craving + withdrawals → harder to break cycle)
- Treat "addiction" as a **chronic disease** and a proper diagnosis– cannot be addressed with short-term Mx
- Appreciate that recovery is **progressive** ➔ Understand – what do we learn from relapse? What were the causes?
- *Mandatory reporting ONLY for* **RoSH others or themselves** ➔ local MH care call line

Drug and alcohol history:

- What is the **primary substance of concern** (e.g EtOH, drugs)
  - *Frequency, dosage (quantify), route of administration (oral, intranasal, injectable)*
  - *Duration of usage + REASON (when started and with who?)*
  - *Assoc. activities (e.g. social setting, work)*
  - *Acquisition of substance*
  - Escalation of behaviour (SUICIDAL ATTEMPTS, CRIME)
  - Previous withdrawals (e.g. seizure, psychosis) or previous hospital Axs
- **Past Hx of injecting drugs and behaviour**:
  - Injection location (e.g. IJV – stroke)
  - Sharing needles (access of needles – are they aware of needle replacement)
  - Filters use (to remove contaminants)
  - HCV/HIV
  - Concomitant use of benzo and alcohol
  - Previous ODs
- **Other addictions – identifying root cause**: (IMPACTS ON ADL)
  - Gambling, gaming, shopping
  - Risks of addiction (e.g. syncope, falls, LOC, seizures, driving, violence)
  - **Why** has patient developed addiction –underlying cause? – social context, personal stresses, boredom, rebellion
  - What are these barriers and obstacles that need to be overcome, ATTEMPTS TO QUIT
- **PMHx**:
  - Nutrition
  - Psych history ➔ diagnoses, # of MH admissions, suicide/self-harm attempts, mood , LoA
  - MH ➔ personality disorder, schizophrenia
  - Developmental history ➔ adverse childhood trauma
- **FHx:**
  - Family member usage of substance
- **SHx:**
  - Employment /education (*poor academics – ADHD?, autism?)*
  - Current Home life + family (?isolated, live alone, other loved ones using drugs?)
  - Forensic and law (?AVOs against/from them, DUY, family court pending)

PHYSICAL EXAM: INTOXICATION OR WITHDRAWAL	PHYSICAL EXAM: Medical issues
➢ Confusion (e.g. Wernicke's, DT's)	• MSE – sensory, intoxicated, mood
➢ Psychosis (e.g. stimulant related)	• Vitals
➢ Drowsy (alcohol, benzos, opiates)	• Track marks (recent/old) - IVDU → check site, cellulitis
➢ Agitated (sedative withdrawal, or stimulant toxicity)	•
➢ Tremor (alcohol, BZD withdrawal)	• LN
➢ Diaphoresis (alcohol and opioid withdrawal)	• Liver
➢ Slurred speech (alcohol, BZD intoxication)	• Heart
➢ Pupils (esp. opiates)	• Lung
	• CNS/PNS - CVS → cocaine

Main classes of drugs:

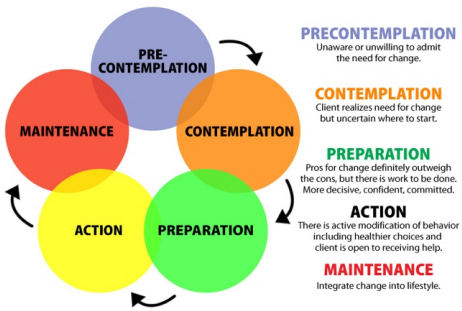
1) **Stimulants** (MDMA, ecstasy, cocaine, nicotine)
2) **Depressants** (opioids, EtOH, nicotine, cannabis)
3) **Hallucinogens** (LSD, psilocybin)
4) **Sedatives** (benzos)
5) **Inhalants** (e.g. Nitrous)
6) Others (pregabalin, quetiapine)

DSMV criteria for drug disorder:

1) **Impaired control** → cravings
2) **Social impairment** → absenteeism, damaged relationships, reduced ADL (e.g. surfing)
3) **Risky use** → IVDU, unprotected sex, tattoos, polydrug usage
4) **Pharmacological Properties** → *tolerance (needing more to get same effect), withdrawal (e.g. sweat & tremor for EtOH, cold-flu like Sx for opioids)*

Severity of addiction:

- Mild = 2-3 symptoms
- Moderate = 4-5 symptoms
- Severe = >5 symptoms



MOTIVATIONAL INTERVIEWING:

- A form of patient-centred care, a particular way of having a conversation about change in which you seek to strengthen the patient's own motivation for and commitment to do what is needed.
- ***AVOID righting reflex and using the term "denial"***
- ***Positives of motivational interviewing (esp. for alcohol, nicotine and cannabis users)***
  - *10-15min Patient centred approach effective for* ***non-dependent substance use***
  - Reduction sustained for 6-12 months
  - *Independent of gender or intervention intensity*
  - *FU associated with better outcomes*
- ***Negatives***
  - *No real difference between MET and other active treatments*

Steps	Process
1) ENGAGEMENT Recognise Express concern Intention to change Optimism about change	• Empathic listening and building rapport (• OARS = e.g. opened questions, affirmation, reflection and summarizing Aim = elicit **change talk (DARN = desire, ability, reason and need for change)** • **D – "I would really like to…"** • **A – "I was able to stop for…"** • **R = "I have to stop smoking to avoid asthma attacks, see my child grow up)** • **N – "I need to stop this…"**
2) FOCUSSING	Patient-led – i.e. *what changes in behaviour do they want to focus on*
3) EVOCATION	Develop further change – e.g. positive or negatives about change, discuss reasons for change
4) PLANNING	Patient makes the plan – i.e. *what do you want to try or tried in the past and how might you achieve this?*

Other management options:

5) Relapse prevention
   a. Teach behavioral strategies to dela with this e
   b. escape plans", drink refusal, problem solving
   c. identifying high risk situations such as cravings, social pressure, interpersonal conflicts

6) **Self-help groups (**AA and 12step programme)

7) **SMARTRecovery** - Group-based *CBT based with goal of abstinence (fewer meetings)*

Smoking + Alcohol Cessation

		Smoking Addiction	Alcohol use disorder (AUD)
Ask	***When did it all start and why?***	*Life event, stresses, traumatic past event, FHx of substance abuse*	Beware BZD and barbiturates withdrawal presents **similarly** to alcohol withdrawal since **ALL act on GABA receptors**
Assess	***Quantify usage***	• *Smoking pack years,* • ***3 W's? When** and **where** do they smoke or drink and with **who**?*	• *(AUDIT-C) ➔ How **often** drinking alcohol | **Number of standard** drinks/day | **binge drinking*** • ***3 W's? When** and **where** do they smoke or drink and with **who**?*
	Risk factors	• ***High risk groups = pregnant, ATSI, adolescents, pregnant, elderly*** • ***Social circumstances** = mental illness, DM, CVD, low SES*	
	Control	• *Previous attempts to quit* • *Barriers to relapsing (family member or partner usage, peer pressure)* • ***how many minutes to 1st cigarette after waking (smoking within 30 minutes = nicotine dependence)*** • ***Withdrawal symptoms =** tremor, tachycardia, sweating* • ***Cravings/Dependence symptoms =** anxiety, aggressive, agitated*	CAGE Questions ("yes" to any 2 = need further Ix ➢ Cut down attempts ➢ Annoyed about drinking habits ➢ Guilty about drinking
	Impact on life (ADLs) + SHx	• ***Relationships and social life** (Lives alone or with someone) → homeless, domestic violence* • ***Occupation** - job jumping, loss of jobs* • ***Assoc. injuries/Drink and driving? / truck/train driver*** ○ ***Crimes, law infringements, incaceration***	
	Psych	• *Mental health issues (A+D, schizophrenia, bipolar) – very big barrier – more likely to relapse and withdraw* • *Impact on sleep, mood, concentration, appetite* • *Intrusive thoughts – thoughts of self harm and suicidal ideation*	
	PMHx	• *Previous hospital admissions* • *Concurrent smoking + illicit drug usage* • ***Pre-existing lung disease (COPD, asthma, ILD)*** • ***CVD or RF = CAD, HC, DM, HTN, AF***	• *Previous hospital admissions* • *Concurrent smoking + illicit drug usage* • ***EtOH-related illness (pancreatitis, PUD, liver disease)*** • ***Regular meds (alcohol mixing esp. benzos, opiates)***
	Are they ready to quit?	• ***Pre-contemplation**: no interest in changing behaviour* • ***Contemplation**: an awareness of the negative aspects of smoking* • ***Preparation**: an understanding of why they should quit smoking* • ***Action maintenance**: an attempt to stop smoking* • ***Relapse**: the attempt to quit was unsuccessful*	1. **ASK** – identify issue 2. **Assess** – barriers, dependence 3. **Advise** – willingness to quit?, best things you can do for your health is quit 4. **Assist** -quit date, support? 5. **Arrange** – f/u- celebrate success + review failures for relapses
Advise	***Benefits to quit (educate)***	• *"The best thing you can do for your own health is to stop smoking"* • *Save money* • **Biggest cause of preventable illness such as stroke, MI, PE, throat, mouth, lung cancer, OP,** *impotence* • **Doing it for baby on the way** • **Reassurance that I will support them**	• *Emphasise benefits of reducing EtOH →save money, reduce cancers, better memory, reduce stress and liver damage* • **Understand that withdrawal symptoms is NORMAL and that taking alcohol/smoking is not ideal** • **Strong association w/ suicidal risk (2x in ATSI)** • **Stop for pregnancy**
Assist	***What can we do get started?***	***STAR (goals)*** 1. ***Set** quit date based on level of motivation* 2. ***Tell** friends and family to support efforts* 3. ***Anticipate** challenges/relapses – peak withdrawal on day 3* 4. ***Recommend** counselling programs + consider meds* ***Non-pharm*** ➢ *Face-face CBT counselling (trained therapist)* ➢ *Group counselling (community setting)* ➢ *Quitline 13 78 48* ***Pharm*** ➢ **Nicotine replacement therapy (1st line)** = patches, sprays (avoid in AF, HTN, ACS) **DUAL therapy – oatchy – switch size, gum (craving)** **STEP 1 (21mg)→ STEP 2 (14mg) → STEP 3 (7mg)** ➢ **Bupropion ➔** NORAD, Dopamine reuptake inhibitor and nicotine antagonist **(start 1-2 wks before quit date then for 12 weeks)**→ may cause hypersensitivity reactions, seizures, eating disorders ➢ **Varenicline (Champix) (start 1-2 wks before quit date then for 12 weeks** – nicotinic partial agonist (most effective)→ may cause hypersensitivity reactions ➢ **E-cigarettes = no evidence (last line)**	***STAR (goals)*** 1. **Set** *quit date based on level of motivation* 2. *limit alcohol ≤ 2 standard drinks* 3. **Tell** *friends and family to support efforts* 4. **Anticipate** *challenges/relapses (**socialising + withdrawal**)* 5. **Recommend** *counselling programs + consider meds* ***Non-pharm*** ➢ *↑Lifestyle = Encourage hydration + PPI (if sig. N/V)* ➢ *= improve sleep hygiene+ decrease stresses* ➢ Home detox program (only if sufficient carer support) ➢ Community programs (if unsuitable for home) ➢ **drug and alcohol support – NSW healthcare pathway if continued relapses** ***Pharm*** ➢ Anti-craving agents → naltrexone, acamprosate ○ AVOID for withdrawal -→ use BZDs ➢ ***PO diazepam** in early phases of withdrawal to prevent seizures (RAPID ONSET AND LONG HALD LIFE)* ➢ **Prophylactic = PO 100mg thiamine od for 1 to 2 wks** ➢ **Alcohol sensitiser (Ca carbamide or Disulfiram) = unpleasant reaction when taking EtOH (vomit, flush, nausea)** ***Delirium Tremens*** Suppressed SNS causes overactive SNS during withdrawal: [**withdrawal Sx peaks 48-72 hrs after last drink**] ➢ 6-24 hrs = anxiety-like symptoms, restless, inattentive, insomnia ➢ 24 hrs = hallucinations, hypervigilance, vivid dreams ➢ >48 hrs = Grand-mal seizures, tremors, ANS hyperactivity **Rx: (F/U on blood and advise on side-effects)** ➢ Move to quiet safe environment to prevent harm ➢ Timely IV thiamine or pabrinex (B1, B2, B6) =1st line ➢ 2nd line = benzo (diazepam with weaning dose) ➢ IVF – Rehydrate → ECG, lipase
		Specific pt / **Specific Treatment** **BF women / pregnant**: • **1st & ONLY line = nicotine replacement** • *Encourage to stop smoking (emphasise effects on foetus)* **Depression**: • *↓ antidepressant before starting buproprion* • *2nd line = Notriptyline* **Schizophrenia**: • *1st line= nicotine replacement* • *CI = Buproprion (cause psychosis)*	
Arrange	***FU***	1. *1-2 weeks to see progress then every month* 2. *At 3/12 and 1 year - check on side effects, smoking status and relapse* 3. *NB: highest relapse rates within first 3 mths of cessation* *Side effects:* ➢ ***Bupropion** = insomnia, seizure* ➢ ***Vernacaline** = nausea (will subside) + nightmares*	1. *Regular FU + monitor LFTs every 4 weeks* 2. *1-2 weeks to see progress then every month* ***Routine bloods – FBC, EUC, LFT (++ggt, albumin) + screen for*** • **GI (Cirrhosis)** = ascites, jaundice, HM, spider naevi, gynecomastia • **Neuro** = nystagmus, ataxis, peripheral neuropathy, ophthalmoplegia • **CV** = cardiomegaly, peripheral oedema' • **Intoxication signs =** Physical injuries (bruises), slow motor response, altered mental state, **delirium tremens!!**

ALCOHOL USE DISORDERS

Alcohol use disorder (alcoholism)

EPI

- 6.5% of population
- Males 3x more likely
- Low SES 2x more likely
- Remote area 2.5 x more likely
- **High mortality rates** = 1/3rd have road traffic injury

Define

1) > 2 std drinks per day
2) > 10 std drinks per week
3) > 4 std drink on one occasion
4) No alcohol during pregnancy or breastfeeding
5) No alcohol under age of 18

DDx

- ***Head injury - ICH, SDH***
- ***Hypoxia***
- ***Sepsis***
- ***Metabolic disturbances***
- ***Other drug withdrawal***
- ***Encephalopathy – Wernicke, hepatic, CO2***

Withdrawal Sx

Withdrawal Sx

- ***Gross tremor***
- ***ANS instability - agitation, restless***
- ***Confusion/Disorientation, hallucinations***
- ***CVS compensation → tachycardia, HTN***
- ***Delirium tremens***

KEY POINTS

- ***Alcohol Dependence and AA attendance best predictors of abstinence***
- ***Abstinence > 5 years – rarely assoc. with relapse***
- ***Alcohol abuse - assoc. with increased mortality***
- ***Alcohol abuse - fluctuates NOT progressive***

Comp.

Red flag	***Delirium tremens – 2-5 days after ceasing alcohol***
Neuro	• ***Generalised tonic-clonic Seizures (within 48 hrs)*** • ***Wernicke's-Korsakoff*** • *, dementia, cortical atrophy, peripheral neuropathy* • *Frontal lobe symptoms – abstract thinking, poor decision making and planning, impaired memory*
CVS	*CM, HTN, CAD or stroke*
GIT	*Fatty liver, hepatis, cirrhosis, acute pancreatitis, PUD, GORD*
Cancer	*10x greater risk →mouth, throat, oesophageal, pancreas, liver, breast*
Other	*Gout, pneumonia, OP, myopathy, FAS*

Ix

- Urinary ethyl glucuronide – detects low usage of alcohol 5g within 48-72 hrs
- **CT/MRI brain - cerebral atrophy**

Rx

Acute Mx

- ***High-dose IV/IMI thiamine 100mg***
- ***BZD for alcohol related seizures*** →CONSIDER dizepepam prophylaxis in those with hx of seizures

Long-term Mx

- ***Motivational enhancement therapy (MET)***
- ***CBT approach*** *-minimise relapses by developing behavioural strategies to deal with issue – e.g. drink refusal, "Escape plans"*
  - ***AA groups (12 step programmes)***
  - ***SMARTRecovery –*** *run by facilitator*
- ***Rx co-morbidities →MDD, bipolar, OCD, other substance use (e..g cannabis)***

Other pharmacotherapies = brief interventions

	Dose	***Benefits***	***A/E***
Naltrexone	*50mg PO daily*	*Reduce drinking dose, relapse and craving*	*n/V, headache, arthlagia, rash*
Acamprosate	*666mg (if >60kg) tds PO*	*Maintain abstinence*	*Nausea, diarrhoea*
Baclofen	*Off-label use 60-75mg /day*		*Seizure (if stopped abruptly)*
Topiramate			*Cognitive disturbance*

****All above require tolerability and motivation of patient to follow plan***

Opiate use disorder

EPI

- 1.2 % tried in last 12 mths
- Males 2x more likely
- Affected by availability and price
- Age of onset 15-25 years old

Define

Risk factors

- *Childhood sexual abuse OR disrupted childhood*
- *FHX of substance abuse*
- *Occupaitonal factors – doctors, nurses*
- *Chronic pain and dependence*
- *Concurrent EtOH or BZD usage*

Withdrawal Sx

High levels of co-morbidity

- Depressive disorders (MDD, Bipolar)
- Anxiety
- Personality disorders

General

- twitching muscles and kicking movements of lower limbs (kicking the habit),
- N/V/D
- low-grade fever,
- HTN, tachycardia, tachypnoea

For severe withdrawal

- Craving, anxiety, dysphoria,
- yawning,
- lacrimation, pupil dilatation, rhinorrhea, and restlessness

Comp.

Medical	• *IVDU – abscess, cellulitis, BBV, septicemia, endocarditis* • *STI* • *Toxicity / OD* • *Withdrawal* • *Sexual dysfn – reduced TT* • *Poor antenatal / perinatal outcomes*
Social	• ***Incarceration (up to 50%)*** • ***Stigmatised*** *by workplace/family as illicit drug* • ***Financial costs*** *($50-300/day)* • ***Intoxication*** *– cannot complete education, keep jobs care for dependents*

Ix

Urine drug screen

Rx

Non-drug	• *Psych interventions*
	• *Residential Rehab (25% dead, 25% opiate-free)*
	  ○ ***Reduce heroin use and ORD***
	  ○ ***Reduce crime, needle sharing,***
	  ○ ***Reduced concurrent drug use***
	• *Self-help groups*

Drug	***Agonist therapy (substitution)***
	• *(long half-life) to achieve stability –*
	• *reduce withdrawal symptoms*
	• *Program provides structured environment to keep contact with health services*
	• ***60-90mg Methadone*** ***PO*** ***(full agonist)***
	  ○ *Risk of OD in pregnancy (pre-mature labour + perinatal complications*
	  ○ *Deaths secondary to OD and polydrug use*
	• ***16-32mg buprenorphine*** ***SL*** ***(partial agonist)***
	  ○ *SL administration*
	  ○ *Withdrawal symptoms during initiation of Rx*
	  ○ *Abuse potential + ante-natal complications*
	  ○ *Also Approved for pregnancy*
	• ***Suboxone*** *(4:1 – buprenorphine + naloxone)*
	  ○ *Reduced abuse potientail and A/E*
	
	Antagonist therapy (less successful)
	• *Naltrexone – block positive reinforcement of drug use*
	• *Better for highly motivated + older age population*

Barriers affecting treatment

- *Early age of onset OR long history*
- *iVI abuse*
- *early drop out from treatment*
- *Co-morbidities – MDD, ASPD*

PERSON WITH SUBSTANCE USE DISORDER – DSM-V criteria

DSM V criteria – Substance use disorder (SUD)

Chronic relapsing lifestyle disorder AFFECTED by social, cultural and medical impacts

- **Causes of relapse ➔ stress, cues, priming dose,**

Maladaptive pattern of substance use leading to **clinically sig. impairment or distress**

Severity of SUD manifested by ≥ 2 criteria occurring at any time in same 12 month period

- **Mild = 2-3 criteria**
- **Moderate = 4-5 criteria**
- **Severe = 6+ criteria**

1.	**Dependence**	**1. Increased tolerance** **2. withdrawal when not using or reduced usage**
2.	**Risky use**	3. **Recurrent hazardous situation** - gambling, sex, drink/drive, crimes 4. **Continued use** despite psychosocial problems
3.	**Impaired control**	5. Taking **longer than intended**, **6. craving** 7. inc. **spending** a lot of time to **obtain** it) 8. **inability to cut down** (persists even after stopped)
4.	**Social impairment**	9. Cannot fulfil ADLs 10. +continued usage despite problems caused by its use 11. + cannot fulfil major obligations

Progression of Sx

1) **Experience** – euphoria → feeling good → escaping dysphoria
2) **Abstinence effects** go from: less energy → less excitement → depression, anxious
3) **Pre-occupation goes from:** anticipation → desire → obsession
4) **Behavioural:** voluntary -⟶ flawed control ⟶ impulsive

New treatments / concepts

- **Old effective Rx** – opioids substitutions, disulfiram
- **New Rx** – naltrexone, ondansetron, acamprosate, topiramate

1) **Neurotransmitter target essential** as part of treatment
   - Naltrexone, Acamprosate
   - Ondansetron, baclofen
2) **Combination treatment** may be needed
3) Addiction is **NOT** a disease
4) **Evidence for brain plasticity** – mature brain can generate new neurons (aided by exercise)
   - Generates new thoughts, feelings, cells, synapses and pathways
5) **AA (alcohol anonymous)** groups **and TSF (12-step** facilitation)– positively links people to free long-term recovery to peer support organisation
6) **Lifelong recovery process** – may not achieve full abstinence

Alcohol

Onset

	Mild	Mod	Sev
Onset	24 hrs	24 hrs	24 hrs
Peak	2-3 days	3-4 days	+2

OD Sx

- Disinhibition
- Impaired judgment
- Poor attention
- Poor memory (Korsakoff - confabulation?)
- Slurred speech
- Sedation

DDx
- **hypoBSL**
- **Asp. Pneumonia**
- **Infection**
- **Head trauma** (SDH)
- **Hypoactive delirium (elderly)**
- Severe anaemia
- Electrolyte
- hypothyroid (myxoedema coma)

WD Sx

- **Mild** –slurred speech, anxiety, sweat, headache, tremor, HTN, tachycardia
- **Mod** – dehydration, anorexia, N/V
- **Severe** – Panic attack, fever, disorientation, seizures , delirium tremens (after 2 days)

WD Rx

Supportive Rx
- A-E
- 100-300mg thiamine IV/IMI before CHO loading
- Re-HYDRATE
- Monitor EUC and BSL
- Diazepam (loading then fixed dose)
- Oxazepam (if cirrhosis in elderly as NO active metabolite produced)

BZD

Onset: Within 6 weeks even after low dose

OD Sx: –

WD Sx

Psych
- Anxiety, insomnia, agitation, depression, poor memory
- *Rare = delusions, paranoia, nightmare*

Somatic
- Muscle tension, twitching
- Rare = seizures, tinnitus, confusion

WD Rx

Supportive Rx
- A-E
- Prevent coma . / death

Stimulants

Onset: Within a few hrs

OD Sx

Psych
- Anxiety, hypervigilance
- Increased confidence

Somatic
- Mydriasis + **fever**
- Tachycardia, HTN
- Bruxism

WD Sx

Psych
- **Lethargy, apathy, social withdrawal**
- Hunger
- Bradycardia
- Hypersomnia

Main issue
- depression

WD Rx

Supportive Rx
- A-E
- Prevent suicidality

Cannabis

Onset: Within 6 weeks even after low dose

OD Sx

Psych (low dose)
- EUPHORIA,
- Increased confidence (low anxiety)

Psych (high dose)
- Paranoia
- Blood shot eyes

WD Sx

Psych
- Anxiety,
- insomnia,
- agitation,
- depression,
- anorexia
- 3-wk mood fluctuations

WD Rx

Supportive Rx
- A-E
- Prevent suicidality

Opiates

Onset

	SA	LA
	Heroin / morphine	methadone
Onset	12 hrs	1-2 days
Peaks	Day 1-3	Day 3-4
Finished	5 days	2 wks

OD Sx

Psych
- euphoria
- sedation
- reduced RR - coma
- Miosis

DDx: cocaine OD

Cocaine would produce fever!!

WD Sx

General
- N/V/D
- low-grade fever,
- HTN, tachycardia, tachypnoea

For severe withdrawal
- ANS = Craving, anxiety, dysphoria, restless
- Yawning,
- lacrimation, rhinorrhoea,
- mydriasis ,
- Muscle pain

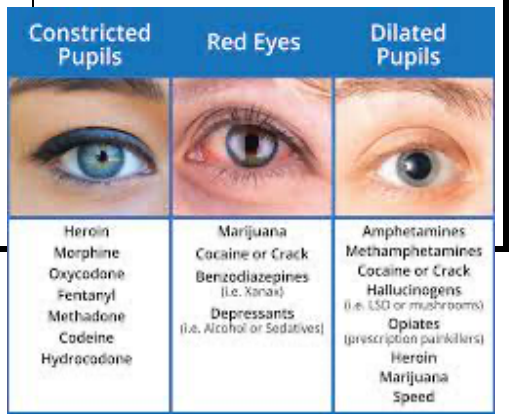
WD Rx

Supportive Rx
- **NON-Life-threatening** = Self-resolve in 7-10 days
- **NSAIDs** = for muscle cramps assoc. w/ opioid withdrawal
- **Increase methadone or buprenorphine dosage** (prevent cravings)
- ***Acute Rx:*** 400mcg naloxone → 800mcg + check EUC for further analgesia

Phencyclidine (PCP)

Types	Anaesthetic agent (powder, crystal, liquid or tablet) – non-competitive NMDA antag (Similar to ketamine
Indication	• Analgesia • Cognitive defects • Psychosis
OD	**TRIAD OF ➔ (1) Nystagmus (key Sx different from mania), (2) Muscle rigidity** and (3) **numbness** • **Low** dose = HTN, Altered mental status – dissociative anaesthesia • **Higher** doses – psychosis (delusions, hallucinations), HYPERACUSIS, pulmonary aspiration, LOC

Psychological Medicine: Cannabis, Stimulants and Hallucinogens

<table>
<tr><th>Class</th><th>Cannabis</th><th>METHAMPHETAMINES / COCAINE</th><th>HALLUCINOGENS / MDMA</th></tr>
<tr><td>Epi</td><td>36% lifetime use
(begins in late teens and young adults)
➢ Use mainly due to peer pressure</td><td>6% lifetime use
(begins in late teens and young adults)<table><tr><th>Meth</th><th>Amphetamine</th></tr><tr><td>More potent x100
Can be smoked
Lipophilic (X-BBB)
Shorter onset</td><td>Long-term misuse
Used for medical Rx (e.g. ADHD)</td></tr></table>*Ice vs speed = difference in purity</td><td><u>Different cultures use different hallucinogens</u>
➢ India = amanita muscari mushroom
➢ China = magic mushrooms “ling chih”
➢ Mexico = peyote (contains mescaline)
<u>Today</u>
➢ 73% LSD (lysergic acid diethylamine) made by Sandoz lab
➢ 61% - Indole ethylamines – psilocybin (shrooms)
➢ Phenethylamines – mescaline, MDMA</td></tr>
<tr><td>MoA</td><td>THC = Partial agonist to CB1 GPCR (not 100% Emax = hence safer → cannot overdose)
• Inhibiting GABA release disinhibits VTA DA cells → high sensation or euphoria
• Very long half-life (long-lasting effect)
• Synthetic CBD = FULL agonist (more powerful)</td><td>Block dopamine TRANSPORTER in mesolimbic pathway
➢ Dopamine spikes = rapid dependence with regular use
➢ Cocaine = SA (seconds)
➢ Methamphetamine = LA (20mins)</td><td>➢ All hallucinogens (except MDMA) are full or partial agonist at 5HT2A receptor
○ 2a receptor = affects our active coping to adverse situations to allow for major traumatic events or ambiguity/stress
○ Similar to MoA of olanzapine and SSRI
➢ Nb: MDMA works by releasing serotonin directly all at once</td></tr>
<tr><td>Sx</td><td>Psychoactive effects<table><tr><th>Low dose</th><th>High dose</th></tr><tr><td>➢ Euphoria
➢ Relaxant
➢ Sedation
➢ Ataxia
➢ Slowed reactions
➢ Heightened sensory acuity</td><td>➢ Dysphoria
➢ Anxiety
➢ Hallucinate
➢ Toxic psychosis (synthetic cannabis)</td></tr></table><u>Other effects</u>
➢ Conjunctival injection
➢ Increased appetite
➢ Reduces N/V
➢ Analgesia
➢ Tachycardia</td><td>Symptoms
➢ Euphoria
➢ Increased confidence
➢ Hypervigilance
➢ Impaired judgment
➢ Irritable / anxious – damage to relationships
➢ Grandiose thoughts
Signs
➢ Mydriasis
➢ Tachycardia
➢ HTN
➢ Bruxism - teeth grinding
➢ <u>Fever (if intoxicated)</u> → NOT present in heroin withdrawal (key difference)</td><td>Somatic
➢ Dizziness and paraesthesia
Perceptual
➢ Altered visual and auditory perception
Psychic (dream like state)
➢ Altered time sense
➢ Changed mood – more social
➢ Depersonalisation
Low addictive potential due to:
➢ Minimal effect on dopamine – hence less activation of reward pathway
➢ Tachyphylaxis (rapid tolerance develops)
➢ Low risk of withdrawal</td></tr>
<tr><td>Ix</td><td>Urine tox screen</td><td>➢ Urine tox screen</td><td>➢ Urine tox screen</td></tr>
<tr><td>Comp.</td><td><u>INTOXICATION</u>
➢ Paranoid ideation = “Others out to get them” – agitated, suspicious of others
➢ RED (bloodshot) eyes
➢ Tachycardia
<u>Long-term usage</u>
➢ DEPENDENCE nicotine component in cannabis
➢ Cannabis hyperemesis syndrome (N/V and epigastric pian) → dehydration and electrolyte imbalance
➢ Less social friends
➢ Young, thin patients</td><td>➢ Withdrawal – lethargy, apathy, social withdrawal, hunger, bradycardia, hypersomnia
➢ Tolerance – due to bluntered response to euphoric effect
➢ Psych = psychosis, grandiose ideation, depression, impulsivity
○ Suicidal + red eyes
➢ CVS – HTN, arrythmia, CM, ACS, Aortic dissection, PAH
➢ IVDU = septicaemia, endocarditis, abscess, BBV
➢ Skin = “meth bugs” (due to skin picking)
➢ Poor dentition and nutrition state</td><td>➢ Self-harm and harm to others
Depends on duration of action<table><tr><th></th><th>Dose</th><th>route</th><th>duration</th></tr><tr><td>LSD (5HT2A)</td><td>50-200mcg</td><td>PO</td><td>8-14h</td></tr><tr><td>Shroom (5HT2A)</td><td>10-40mg</td><td>PO</td><td>4-6h</td></tr><tr><td>MDMA (release 5-HT)</td><td>80-150mg</td><td>PO</td><td>4-6h</td></tr></table></td></tr>
<tr><td>Rx</td><td><u>Symptomatic Rx</u>
➢ anxiety → 2.5-5mg olanzapine PRN
➢ Insomnia → 15mg mirtazapine
➢ N/V → metoclopramide
➢ Cannabis hyperemesis → hot showers, anti-emetics
<u>Treat dependence</u>
➢ CBT
➢ Address social issues
➢ +/- anti-depressants</td><td>Supportive Rx
➢ <u>No</u> medication helps
➢ Psychotherapy - CBT
➢ Minimise involuntary admission (poorer outcomes)
Long-term Mx – difficult, no pharm agent of real benefit
➢ Mainly psychological</td><td>Supportive Rx
 
</td></tr>
</table>

<u>FUN FACT: Only drug Rx for the following addictions</u>

- Nicotine
- EtOH
- Opiates

*The rest require psych therapy (e.g. CBT)