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Dual Diagnosis

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Dual Diagnosis

Dual diagnosis (also called **co-occurring disorders**, **COD**, or **dual pathology**) is the condition of suffering from a mental illness and a comorbid substance abuse problem.

The concept can be used broadly, for example depression and alcoholism, or it can be restricted to specify severe mental illness (e.g. psychosis, schizophrenia) and substance misuse disorder (e.g. cannabis abuse), or a person who has a milder mental illness and a drug dependency, such as panic disorder or generalized anxiety disorder and is dependent on opioids.

Diagnosing a primary psychiatric illness in substance abusers is challenging as drug abuse itself often induces psychiatric symptoms, thus making it necessary to differentiate between substance induced and pre-existing mental illness.

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Dual Diagnosis

Complications include:

- Identifying pre-existing mental illness;
- Factors associated with self medication;
- Separating the symptoms of intoxication with the symptoms of mental illness;
- The psychiatric consequences of illicit substances and compounds on the brain and mental processes;
- Factors and complications associated with withdrawal;
- Contraindications of illicit substances and pharmacology and the associated risk factors;
- Medical / health complications of illicit substances;
- The problems associated with addiction, dependency, and psychological defences including reactance theory and cognitive dissonance;
- The NHS stance on dual diagnosis and the associated challenges / risks that clinicians face.

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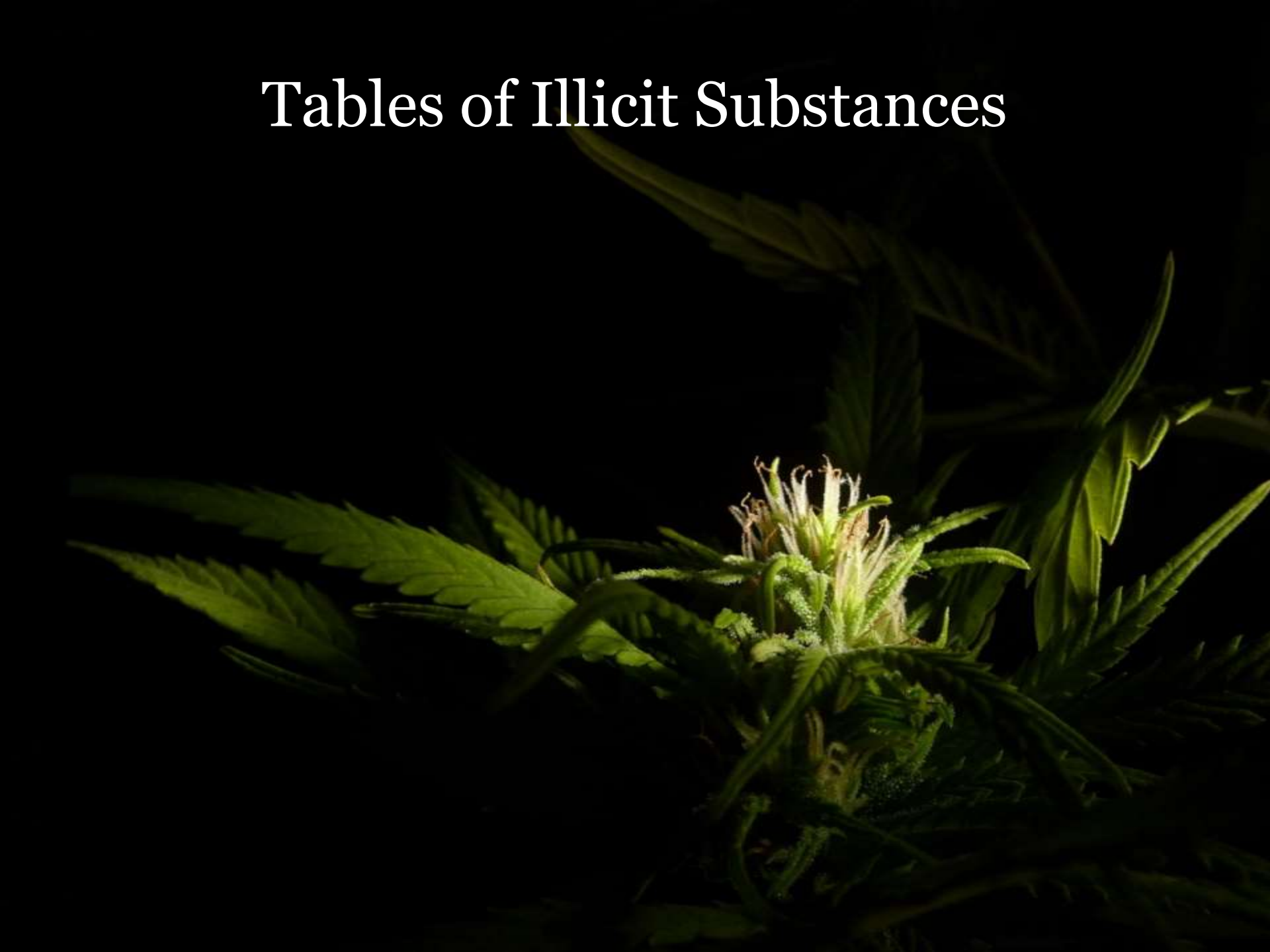
Dual Diagnosis

Workshop agenda:

- Classifications of illicit drugs and mechanisms of action;
- Cognitive models of mental disorder and substance use / dependency;
- Overview of Mental Disorder and psychobiology;
- Medical and psychiatric complications of illicit drugs;
- Overview of psychiatric pharmaceuticals;
- Risk factors associated with co-ingestion of illicit substances and pharmaceuticals;
- Recognising the risks within primary and secondary care;
- Understanding psychological resistance and denial;
- Understanding best-practice in motivation and persuasion;
- The Nice Guidelines and how these can help?

Tables of Illicit Substances



Tables of Illicit Substances

Amphetamine	One of a class of sympathomimetic amines with powerful stimulant action on the central nervous system. The class includes amphetamine, dexamphetamine and methamphetamine
Benzodiazepine	A group of structurally related drugs used mainly as sedatives/hypnotics
Cannabis	Denotes psychoactive preparations of the marijuana (hemp) plant, Cannabis sativa
CNS stimulants	A loosely defined group of drugs that tend to increase behavioural alertness, agitation, or excitation
Cocaine	An alkaloid obtained from coca leaves or synthesised from ecgonine or its derivatives. A powerful central nervous system stimulant
Crack/rock cocaine	A highly pure form of the freebase of cocaine
Hallucinogen	A chemical agent that induces alterations in perception, thinking and feeling

Tables of Illicit Substances

Heroin	A simple derivative of morphine. Heroin is the most widely used illicit opioid because of its potency, availability, solubility in water and speed with which it crosses the blood-brain barrier
Ketamine	A dissociative anaesthetic with central nervous system depressant, stimulant, analgesic, and hallucinogenic effects similar to phencyclidine, but less potent and of a shorter duration. Used in human anaesthesia and veterinary medicine. Some ketamine users may experience a terrifying feeling of almost complete sensory detachment that is likened to a near-death experience; known as the 'K-hole'
Khat	The leaves of the plant, Catha edulis, which are chewed or brewed as a drink
Lysergic acid diethylamide (LSD)	A semi-synthetic product of lysergic acid, a natural substance from the parasitic rye fungus Claviceps purpurea. See serotonergic hallucinogens

Tables of Illicit Substances

MDMA	3,4-methylenedioxymethamphetamine, a synthetic derivative of amphetamine, exhibiting both stimulant and mild hallucinogenic properties. Entactogenic effects include feelings of euphoria and solidarity, heightened sensory awareness and ease of contact with others. Commonly known as ecstasy, a wide range of substances, including MDMA analogues or 4-MTA, may appear in varying concentrations in ecstasy tablets. Most ecstasy tablets now available in the UK no longer contain MDMA
Mescaline	A hallucinogenic substance found in the peyote cactus in South-Western USA and North Mexico. See serotonergic hallucinogens
Methadone	A synthetic opioid drug
Methamphetamine	A derivative of amphetamine. The pure crystalline hydrochloride form of methamphetamine known as ‘ice’ may be smoked, achieving as rapid or even more rapid onset of effects than injection of methamphetamine powder (the hydrochloride salt form). Methamphetamine freebase is a colourless volatile oil insoluble in water

Tables of Illicit Substances

Methylphenidate	A mild central nervous system stimulant. Commonly used in the treatment of attention-deficit disorders in children
Novel synthetic drugs	New drugs and drug classes that have emerged since 2003. These drugs may or may not be scheduled as controlled substances and in some cases may be sold as legal highs
Opioid	The generic term applied to alkaloids from the opium poppy (Papaver somniferum), their synthetic analogues, and compounds synthesised within the body
Psilocybin	A naturally occurring hallucinogen found in certain species of mushroom. See serotonergic hallucinogens
Synthetic cannabinoids (SCRAs)	Products typically containing synthetic cannabinoid receptor agonists sprayed onto a mixture of 'smokeable herbs'. The class of products is commonly known as ‘Spice’. See novel synthetic drugs
THC	Δ9-tetrahydrocannabinol, the most active constituent in cannabis

Glossary of Terms

Glossary of psychiatric complications associated with drug use

Alcoholic cerebellar degeneration	Neurological complication characterised by unsteadiness and lack of coordination (cerebellar ataxia) predominantly affecting the lower extremities
Alcoholic gastritis	Inflammation of the mucosal lining of the stomach caused by alcohol
Amotivational syndrome	A constellation of features thought to be associated with substance use, principally cannabis use. Features include apathy, loss of effectiveness, diminished capacity to carry out complex or long-term plans, low tolerance for frustration, impaired concentration and difficulty in following routines
Amphetamine psychosis	A disorder characterised by paranoid delusions, frequently accompanied by hallucinations, hyperactivity and mood swings. Develops during or shortly after repeated use of moderate or high doses of amphetamine
Anorectic	Causing loss of appetite
Anxiolytics	Anti-anxiety drugs
Blackout	A period of memory loss during which there is little recall of activities; not associated with loss of consciousness

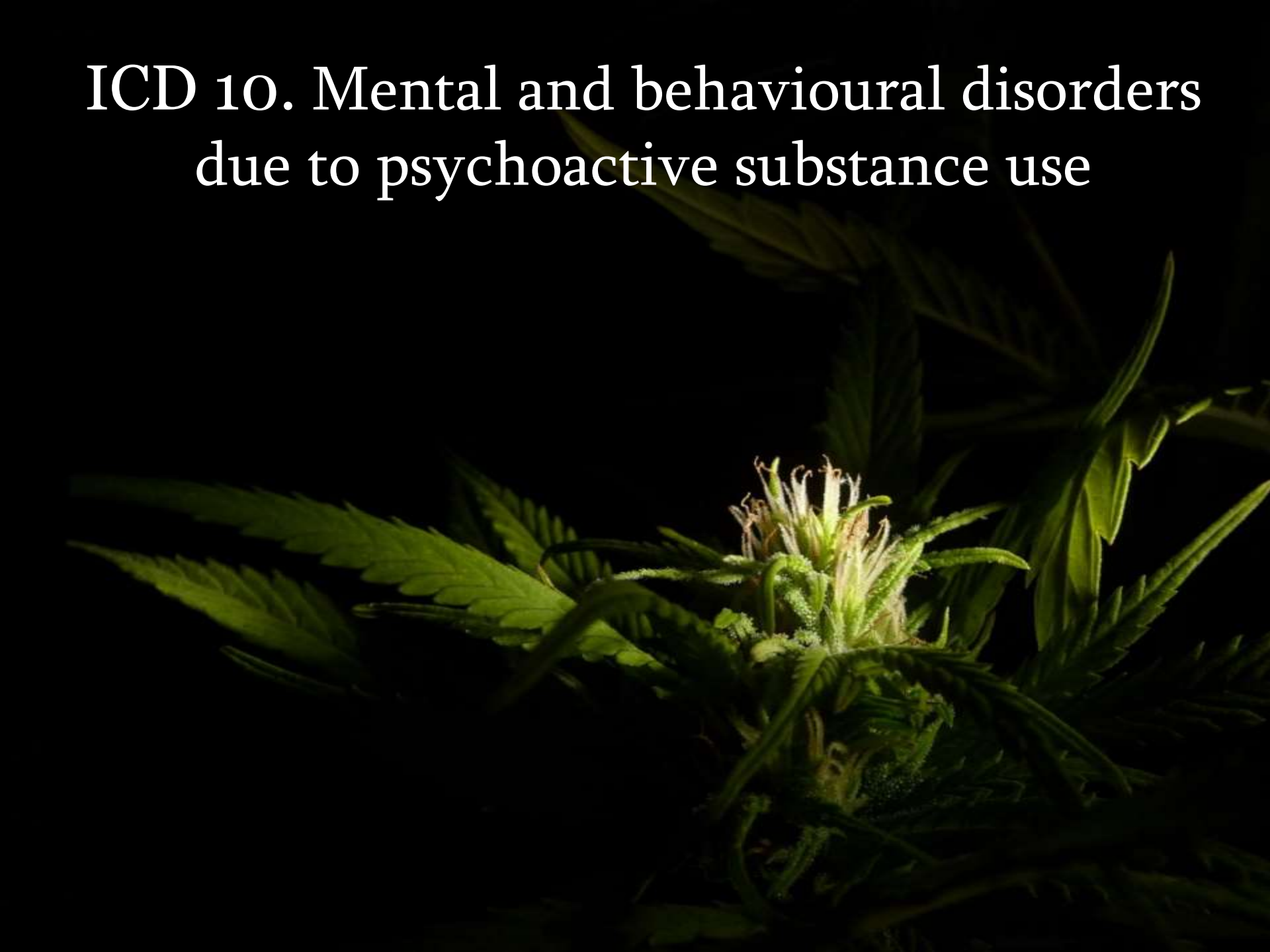
Glossary of psychiatric complications associated with drug use

Delirium	An acute organic cerebral syndrome characterised by concurrent disturbances of consciousness, attention, perception, orientation, thinking, memory, psychomotor behaviour, emotion and the sleep-wake cycle. An alcohol-induced withdrawal syndrome with delirium is known as delirium tremens
delirium tremens	Withdrawal syndrome with delirium; an acute psychotic state occurring during the withdrawal phase in people with alcohol dependence. Characterised by confusion, disorientation, paranoid ideation, delusions, illusions, hallucinations, restlessness, distractibility, tremor, sweating, tachycardia and hypertension
Depressant	Any drug that suppresses, inhibits, or decreases some aspect of central nervous system activity
Dissociative anaesthetic	Compound, such as phencyclidine or ketamine, which produces an anaesthetic effect characterised by a feeling of being detached from the physical self
Flashbacks (HPPA)	A spontaneous recurrence of visual distortions, physical symptoms, loss of ego boundaries, or intense emotions that occurred during past use of hallucinogens and dissociative drugs

Glossary of psychiatric complications associated with drug use

Hallucinations	Hallucinations involve sensing things while awake that appear to be real, but instead have been created by the mind
Psychosis	A loss of contact with reality, usually including delusions and hallucinations
Rhabdomyolysis	A condition caused by the breakdown of skeletal muscle fibres resulting in the release of muscle fibre content (myoglobin) into the bloodstream
Serotonin syndrome	A potentially life threatening drug reaction that causes the body to have too much serotonin
Sympathomimetic	Producing physiological effects resembling those caused by the action of the sympathetic nervous system
Wernicke–Korsakoff syndrome	A spectrum of disease resulting from vitamin B1 (thiamine) deficiency
Withdrawal syndrome	A group of symptoms of variable clustering and degree of severity which occur on cessation, or reduction of use of a psychoactive substances that has been taken repeatedly, usually for a prolonged period and/or in high doses

ICD 10. Mental and behavioural disorders due to psychoactive substance use



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ICD-10

- **ICD-10**
- Mental and behavioural disorders due to psychoactive substance use
- F10.- Mental and behavioural disorders due to use of alcohol
- F11.- Mental and behavioural disorders due to use of opioids
- F12.- Mental and behavioural disorders due to use of cannabinoids
- F13.- Mental and behavioural disorders due to use of sedatives or hypnotics
- F14.- Mental and behavioural disorders due to use of cocaine
- F15.- Mental and behavioural disorders due to use of other stimulants, including caffeine
- F16.- Mental and behavioural disorders due to use of hallucinogens
- F17.- Mental and behavioural disorders due to use of tobacco
- F18.- Mental and behavioural disorders due to use to volatile solvents
- F19.- Mental and behavioural disorders due to multiple drug use and use of other psychoactive substances

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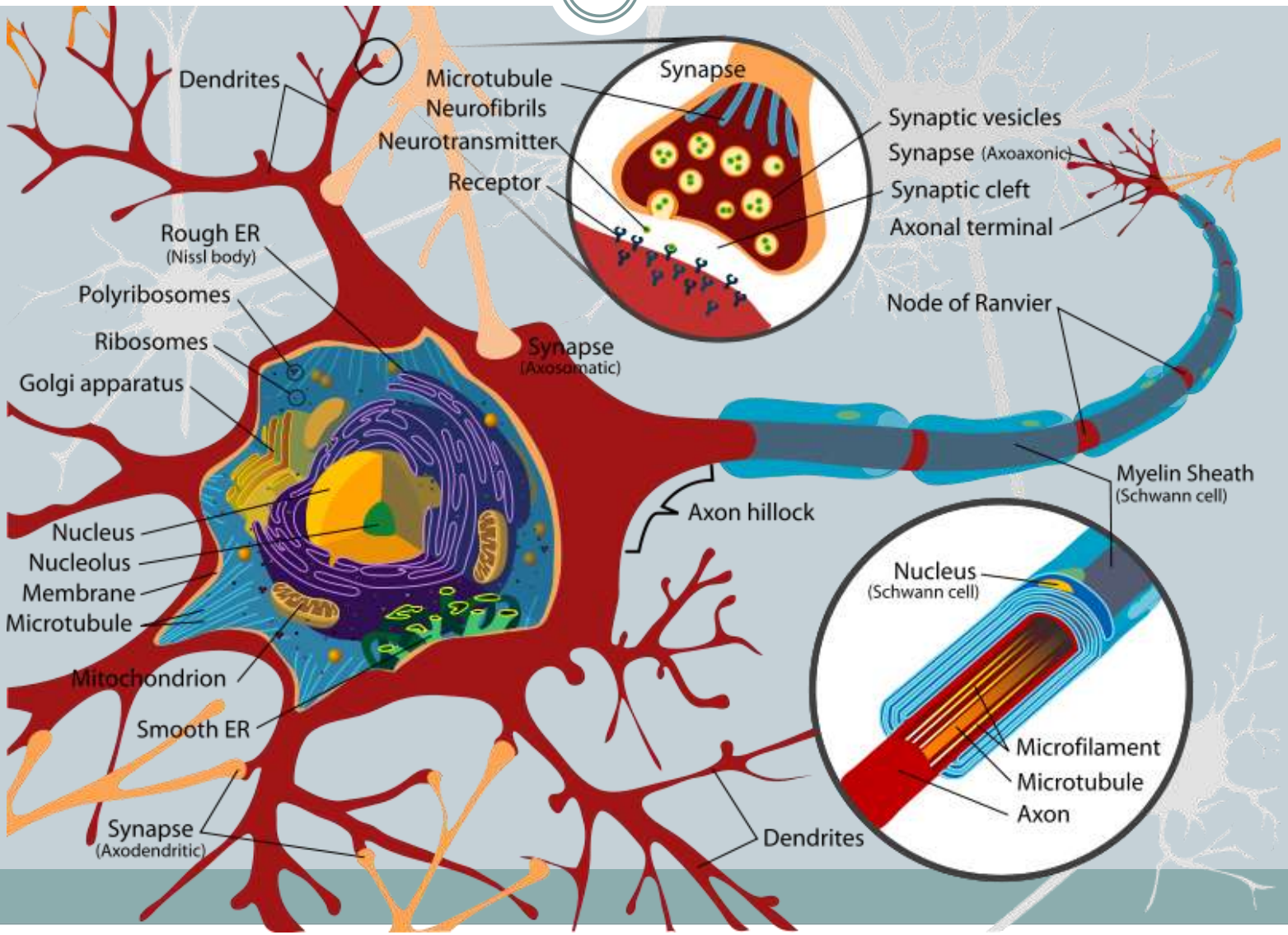
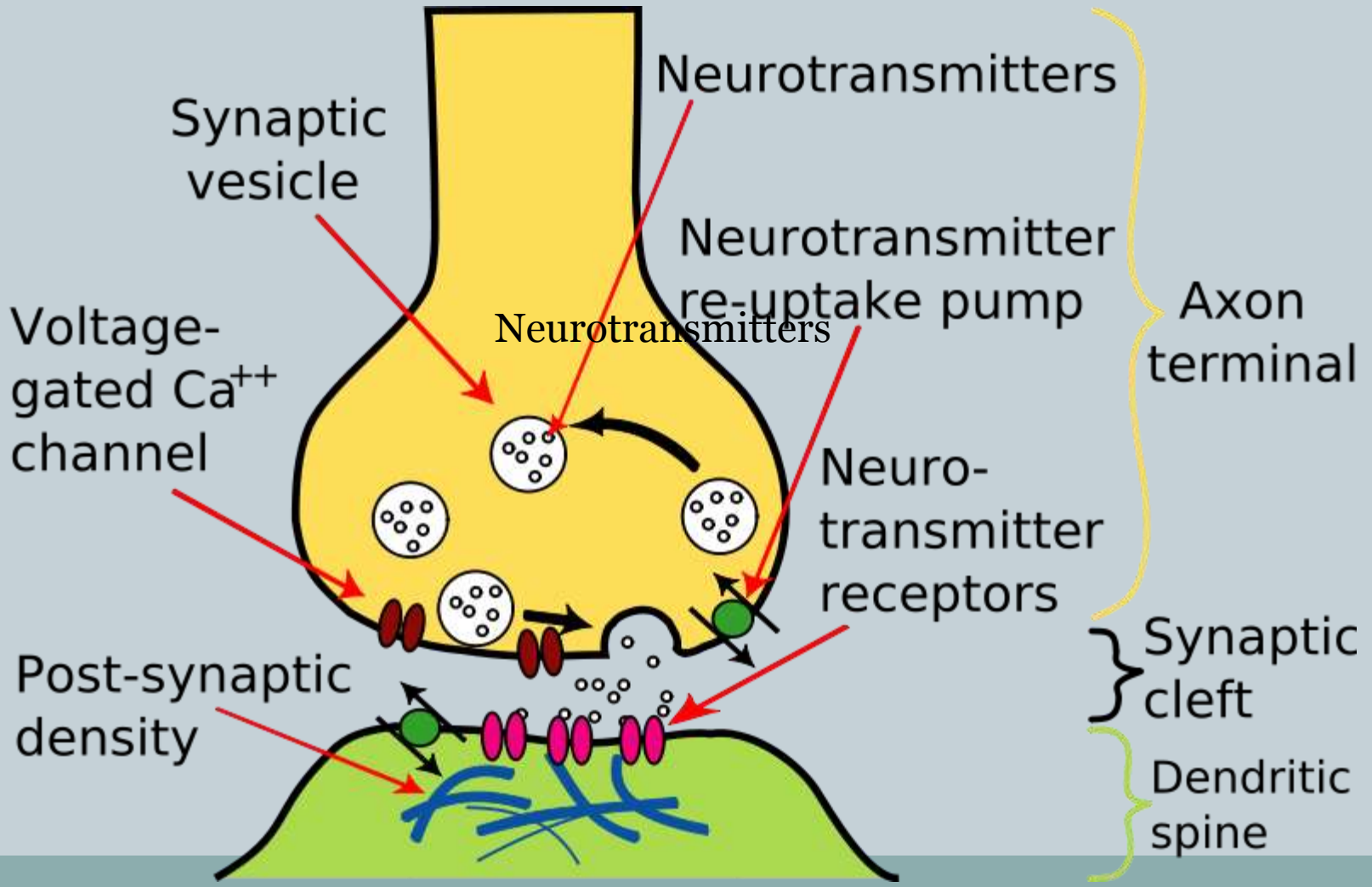
Psychobiology

Neurotransmitters



Neurotransmitters



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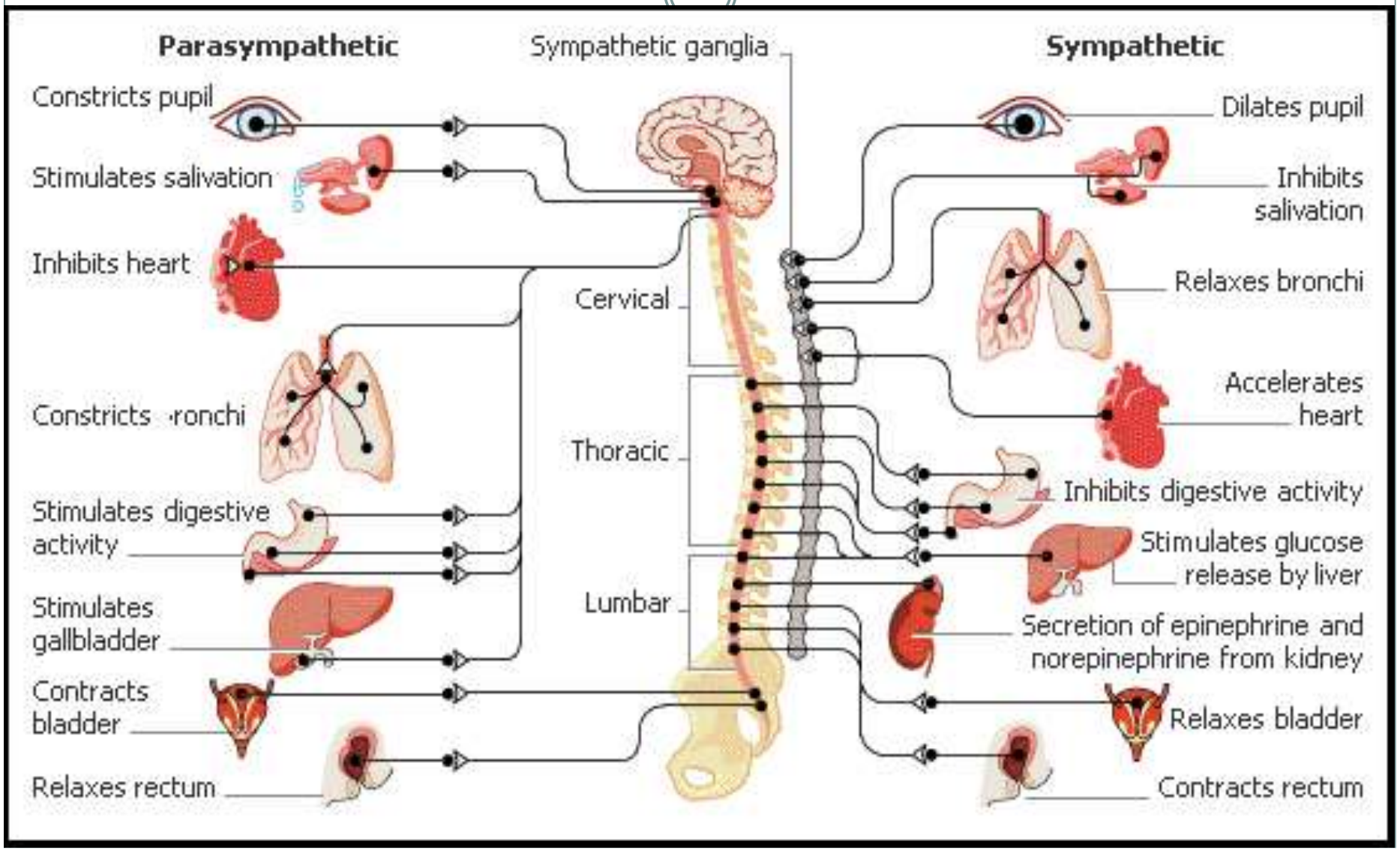
Autonomic Nervous System



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Dopamine

- **Dopaminergic pathways:**
- Ventra tegmental area (VTA) projections
- VTA → Amygdala
- VTA → Cingulate gyrus
- VTA → Hippocampus
- VTA → Nucleus accumbens
- VTA → Olfactory bulb
- VTA → Prefrontal cortex
- Nigrostriatal pathway
- Substantia nigra → Dorsal striatum
- Tuberoinfundibular pathway
- Arcuate nucleus → Hypothalamus

Regulated effects and processes

- Cognitive control & working memory (co-regulated by norepinephrine)
- endocrine function
- mood
- motivation
- motor system function
- reward (primary mediator)

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Serotonin

- **Serotonergic pathways:**
- Caudal nuclei (CN):
  Raphe magnus, raphe pallidus, raphe obscuris
- Caudal projections
- CN → Cerebral cortex
- CN → Thalamus
- CN → Caudate putamen & nucleus accumbens
- CN → Substantia nigra & ventral tegmental area
- Rostral nuclei (RN):
  Nucleus linearis, dorsal raphe, medial raphe,
- Rostral projections
- RN → Amygdala
- RN → Cingulate gyrus
- RN → Hippocampus
- RN → Hypothalamus
- RN → Neocortex
- RN → Septum
- RN → Thalamus
- RN → Ventral tegmental area

Regulated effects and processes

- Arousal
- attention
- body temperature
- emotion and mood
- reward (minor role)
- satiety
- sensory perception
- sleep

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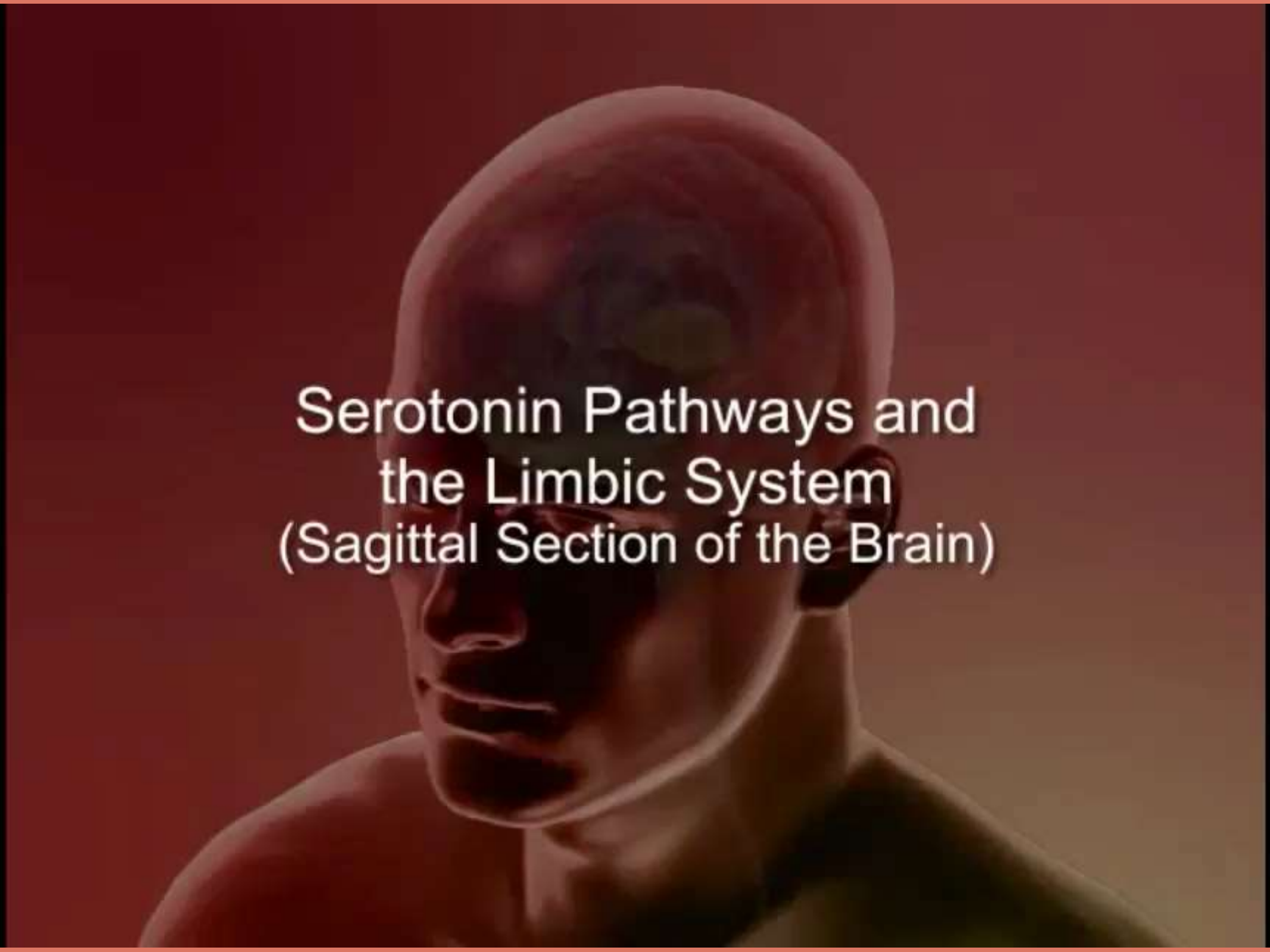
Noradrenalin

- **Noradrenergic pathways: Locus coeruleus (LC) projections**
- LC → Amygdala & Hippocampus
- LC → Brain stem & Spinal cord
- LC → Cerebellum
- LC → Cerebral cortex
- LC → Hypothalamus
- LC → Tectum
- LC → Thalamus
- LC → Ventral tegmental area
- Lateral tegmental field (LTF) projections
- LTF → Brain stem & Spinal cord
- LTF → Olfactory bulb

Regulated effects and processes

- Anxiety
- arousal
- cognitive control & working memory (co-regulated by dopamine)
- hunger
- negative emotional memory
- respiration
- reward (minor role)
- sleep-wake cycle


Serotonin Pathways and
the Limbic System
(Sagittal Section of the Brain)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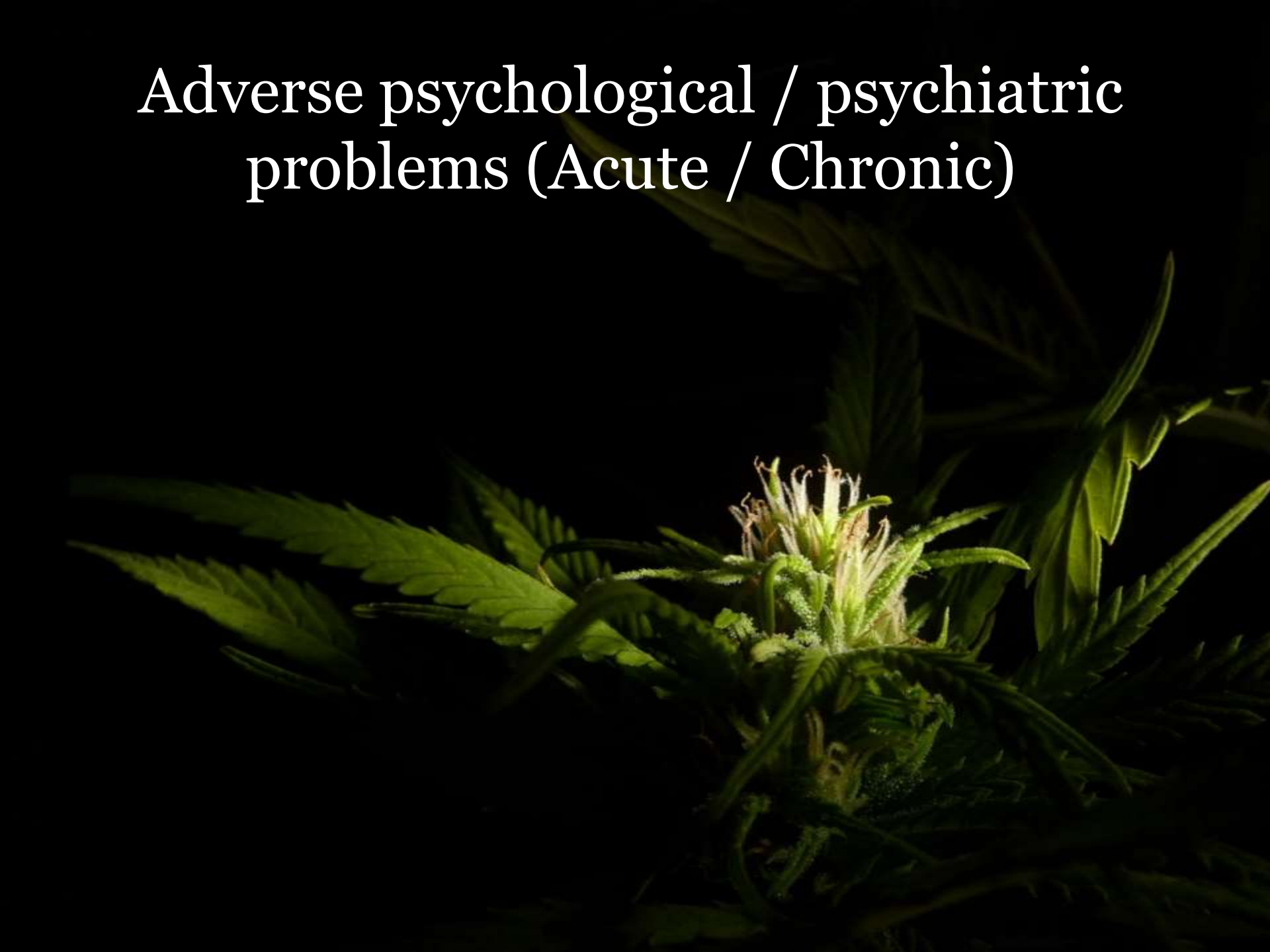
Adverse psychological / psychiatric problems (Acute / Chronic)



Adverse psychological / psychiatric problems associated with the Alcohol

Acute:

Organic/neurological

- impairment in memory, planning and judgement (psychomotor and cognitive impairment)
- temporary loss of the ability to form new memories (anterograde amnesia)
- memory blackout

Personality/mood

- reduced inhibitions
- argumentative and aggressive behaviour
- thoughts about suicide (suicidal ideation) may be intensified with alcohol use

Adverse psychological / psychiatric problems associated with the Alcohol

Chronic:

Organic/neurological

- neurobiological brain injury
- alcoholic cerebellar degeneration
- deficiency of vitamin B1 (Wernicke–Korsakoff syndrome)
- memory loss, memory blackouts

Personality/mood

- psychotic symptoms during intoxication or withdrawal (including depression, paranoia and anxiety)
- loss of self esteem

Withdrawal

- Withdrawal can be fatal
- Convulsions
- Tremors
- Anxiety
- Paranoia
- Hallucinations
- Sudden and severe mental or neurological changes (delirium tremens)

Adverse psychological / psychiatric problems associated with the Amphetamines

Acute

Organic/neurological

- toxic delirium with amnesia
- as stimulant effects dissipate users may experience drowsiness, reduced ability to concentrate, and/or judgement and learning impaired

Personality/mood

- low mood (dysphoria)
- anxiety, depression
- irritability, aggression

Acute paranoid psychosis

- psychotic reaction similar to acute paranoid schizophrenia (vivid visual, auditory, or tactile hallucinations, paranoid ideation possibly resulting in aggressive behaviour)
- may develop after single or repeated ingestion of amphetamines
- people with underlying mental health problems are at greatest risk

Adverse psychological / psychiatric problems associated with the Amphetamines

Chronic
Organic/neurological

- cognitive deficits associated with damage to the nervous system and brain (e.g. impairment of memory, learning and monitoring of complex goal-directed behaviour [executive function])
- behaviour stereotypes – mechanical hyperactivities, repetitive actions, stereotype motor phenomena (e.g. teeth grinding)

Chronic paranoid psychosis

- psychotic reaction similar to paranoid schizophrenia – hallucinations, paranoid ideation possibly resulting in aggressive behaviour, potentially reversible
- incidence and severity of methamphetamine psychosis related to frequency of use and injection or smoking as the route of administration
- symptoms usually resolve with abstinence, but case reports suggest some methamphetamine users may experience prolonged or recurrent psychosis, even after stopping use

Adverse psychological / psychiatric problems associated with the Amphetamines

Chronic

Personality/mood

- irritability
- suspiciousness
- dysphoria
- anxiety
- paranoid psychosis
- depression
- restlessness
- delirium
- depersonalisation
- feelings of persecution·
- Lethargy
- Methamphetamine

Withdrawal

- rarely life threatening
- symptoms may include depression (increasing risk of suicide), seclusiveness, craving, fatigue/exhaustion, weakness, lack of energy and sleep disturbance
- psychotic symptoms may also be a feature of the methamphetamine withdrawal syndrome

Adverse psychological / psychiatric problems associated with the MDMA

Acute:

Personality/mood

- anxiety, panic attacks
- confusion
- depressive symptomatology
- insomnia
- restlessness
- fatigue
- anorexia
- paranoia
- visual and auditory hallucinations are rare – tend to be associated with high doses
- suggestions that may have mild and transient effects on cognition after acute administration
- individual or unpredictable psychotic episodes may occur
- incorrect interpretation of emotions and other social cues

Adverse psychological / psychiatric problems associated with the MDMA

Chronic:

Organic/neurological

unclear whether long term use is associated with memory and learning (cognitive) impairment

growing evidence that chronic, heavy use is most strongly associated with subtle cognitive effects

unclear whether deficits reflect the use of MDMA or the combination of MDMA and other substances

Personality/mood

repeated use may have long- lasting effects on mood and personality characteristics such as depression and anxiety, but evidence is inconsistent

Withdrawal

features of a withdrawal syndrome are not clearly defined and mainly based on user reports

Adverse psychological / psychiatric problems associated with the Cannabis

Acute:

Organic/neurological

perceptual distortion (hallucinations)
amnesia/forgetfulness
confusion of thought processes, impaired judgement

Personality/mood

the effects of cannabis upon mental state vary considerably between individuals; determined by dose, route of administration, expectations, concomitant use of other drugs, emotional state, and psychiatric illness:

– temporary psychological distress (especially naive users)
– low mood (dysphoria)
– anxiety
– confusion
– drowsiness
– depression
– panic attacks
– agitation
– symptoms indicative of a persistent and pervasive elevated (euphoric) or irritable mood (hypomanic symptoms)
– short-lived and reversible psychotic reaction

Adverse psychological / psychiatric problems associated with the Cannabis

Chronic:

Organic/neurological

- no evidence of structural change in brains of heavy long term cannabis users
- no severe or grossly debilitating impairment in cognitive function (subtle impairment in higher cognitive functions of memory, learning processes, attention and organization and the integration of complex information – may or may not be reversible after abstinence

Personality/mood

- evidence that early initiation and regular, heavy cannabis use is associated with a small but significantly increased risk of psychotic symptoms and disorders in later life
- complex association between cannabis use and schizophrenia – some evidence that use may exacerbate psychotic symptoms and is linked with relapse but it is unknown whether this is a universal risk or due to differences in individual vulnerability
- insomnia, depression, aggression, anxiety
- inconsistent and mixed evidence for whether heavy, chronic cannabis use is associated with a persistent 'amotivational syndrome' characterised by social withdrawal and apathy

Adverse psychological / psychiatric problems associated with the Cannabis

Chronic:

Dependence

- good evidence for a cannabis dependence syndrome
- frequent, heavy users are at the greatest risk of dependence

Withdrawal

- irritability
- anxious mood
- physical changes (tremor, perspiration and nausea)
- sleep disturbance

increased risk of experiencing psychotic symptoms in vulnerable individuals e.g. those with a personal or family history of schizophrenia

- use may precipitate relapse of schizophrenia
- use may adversely affect the course of schizophrenia

Adverse psychological / psychiatric problems associated with the Cocaine

Acute:

Personality/mood

- sleep disturbance
- anxiety
- paranoia
- grandiosity
- transient psychotic reactions
- hallucinations (visual, auditory and tactile) after large doses
- aggression and possible violence (especially associated with crack cocaine use)

Adverse psychological / psychiatric problems associated with the Cocaine

Chronic:

Personality/mood

- anxiety, depression
- obsessional rituals/preoccupation, repetitive behaviours
- sleep disturbance (decrease in quantity and quality of sleep)
- irritability, restlessness
- auditory hallucinations
- paranoid delusions and psychosis
- hyperexcitability
- exhaustion
- aggression and possible violence (especially associated with crack cocaine use)

Toxic syndrome

- psychotic reaction similar to acute paranoid schizophrenia and psychoses with vivid auditory and tactile hallucinations, picking and excoriation of skin, delusions of infection from parasites, paranoid ideation

Neurological

- studies have shown that chronic cocaine use may contribute to cognitive impairments in the group of processes involved in the learning, control and monitoring of complex goal-directed behaviour (executive function)
- may include deficits in memory function and inhibitory control

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Adverse psychological / psychiatric problems associated with the Cocaine

Withdrawal

- symptoms may be mild to moderate but type and severity vary from person to person:

– craving
– exhaustion/lack of energy, fatigue
– over-eating
– depression
– low (dysphoric) mood
– unpleasant dreams
– insomnia or hypersomnia, psychomotor retardation
– agitation, irritability
– anxiety, restlessness,

Adverse psychological / psychiatric problems associated with the Serotonergic Hallucinogens

Acute:

Personality/mood

- dysphoria
- unpleasant distortions in shapes and colours
- frightening illusions, delusions; 'true hallucinations' in psychiatric terms (i.e. indicative of psychiatric morbidity) are very rare
- anxiety, panic, depression
- dizziness, disorientation
- impaired concentration
- frequent mood changes (emotional lability)
- recall of psychologically troubling memories
- depersonalisation and derealisation at high doses
- short lived psychotic episode (hallucinations, paranoia)
- precipitates relapses in schizophrenia

Adverse psychological / psychiatric problems associated with the Serotonergic Hallucinogens

Chronic:

Personality/mood

- persistence of low-level hallucinations, known as hallucinogen persisting perception disorder – rare
- brief flashbacks or recollection of previous hallucinatory experience may occur days or months after use
- depression
- feelings of isolation
- Delirium

Psychosis

uncertain whether drug induced condition or unmasking of a latent mental illness

Adverse psychological / psychiatric problems associated with the Opioids

Acute:

- no acute psychological adverse effects
- cause little psychomotor or cognitive impairment in tolerant user

Dependence

- characterised by profound psychological and physical dependence
- develops after repeated administration over a period of time, which varies according to the quantity, frequency and route of administration – factors of individual vulnerability and the context of drug use also play a role

Withdrawal

- rarely life threatening
- dependent on opioid used, dose, route of administration, the interval between doses, duration of use, and users' physical and psychological health
- symptoms include watery eyes, nasal discharge, yawning, sweating, sleep disturbance, dilated pupils, anorexia, gooseflesh, restlessness, irritability, tremor, sneezing, weakness, depression, nausea, vomiting, abdominal cramps, muscle spasms and diarrhoea

Adverse psychological / psychiatric problems associated with the Khat

Acute:

Personality/mood

- insomnia
- transient confusional states

Chronic:

Organic/neurological

- hallucinations
- giddiness/dizziness
- confusion/disorientation

Dependence

- limited evidence for a khat dependence syndrome
- elements of ICD 10 stimulant dependence have been described among users including:

– compulsive consumption – tolerance– borderline withdrawal syndrome of tiredness, fine tremors and nightmares – craving and the urge to seek out khat are well known

Nice Guidelines

Nice Guidelines

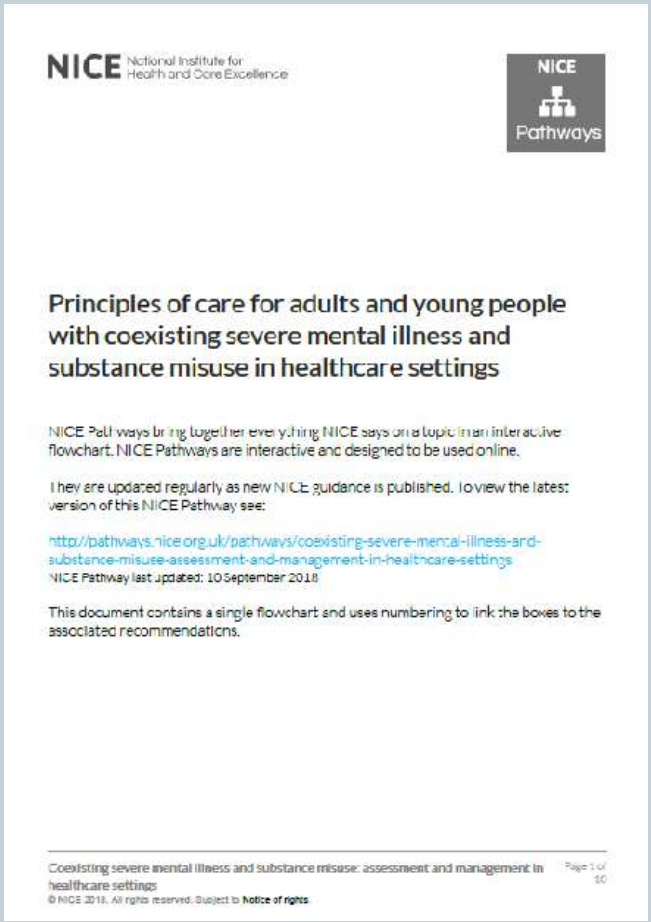
Your responsibility

Guidelines

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Nice Guidelines



NICE National Institute for Health and Care Excellence

NICE Pathways

Principles of care for adults and young people with coexisting severe mental illness and substance misuse in healthcare settings

NICE Pathways bring together everything NICE says on a topic in an interactive flowchart. NICE Pathways are interactive and designed to be used online.

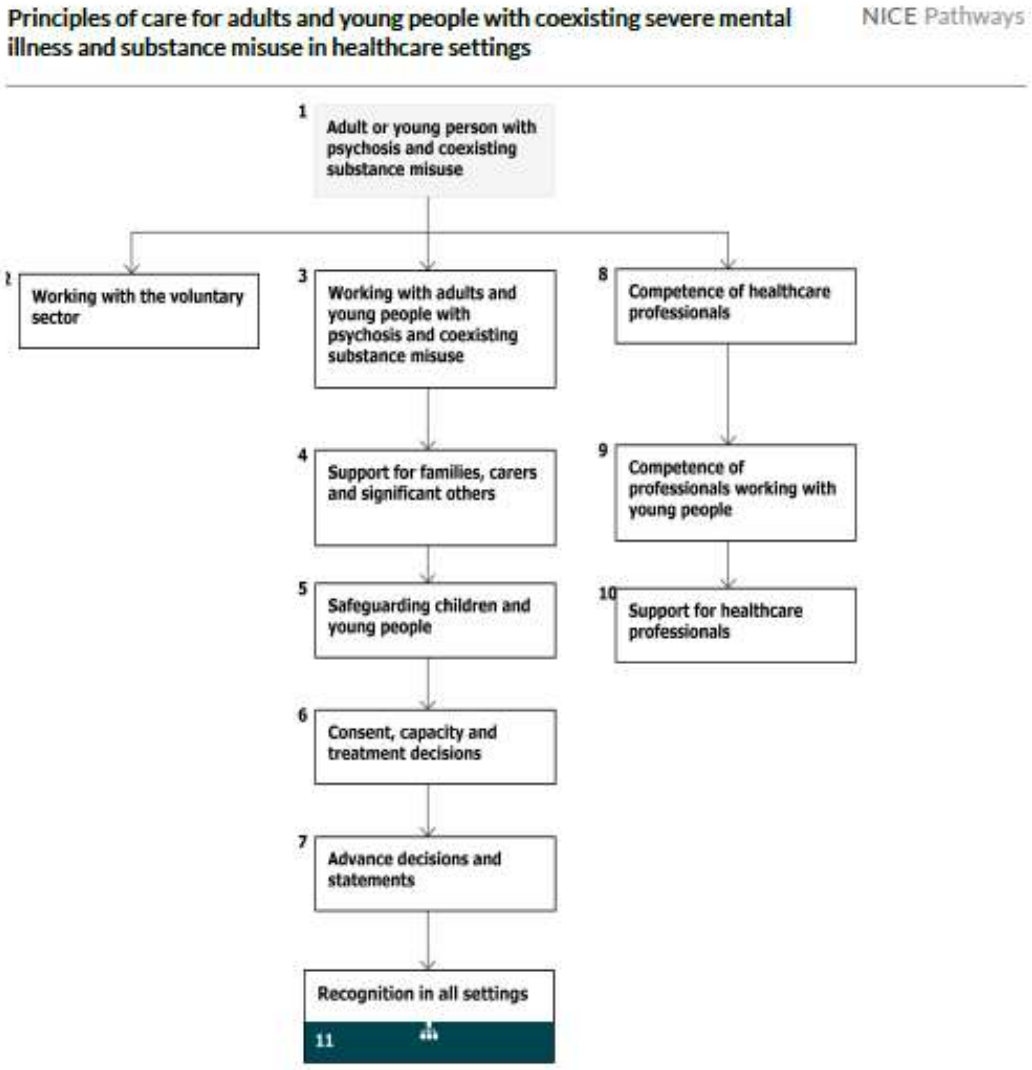
They are updated regularly as new NICE guidance is published. To view the latest version of this NICE Pathway see:

http://pathways.nice.org.uk/pathways/coexisting-severe-mental-illness-and-substance-misuse-assessment-and-management-in-healthcare-settings
NICE Pathway last updated: 10 September 2018

This document contains a single flowchart and uses numbering to link the boxes to the associated recommendations.

Principles of care for adults and young people with coexisting severe mental illness and substance misuse in healthcare settings

Principles of care for adults and young people with coexisting severe mental illness and substance misuse in healthcare settings



Raising complaints

- Medical Director
- PALs Team (Patient Advice & Liaison Service)
- Chief Executive
- Clinical Effectiveness Lead
- Parliamentary & Health Service Ombudsman
- Care Quality Commission

Principles of care for adults and young people with coexisting severe mental illness and substance misuse in healthcare settings

- **Raising complaints**
- Medical Director
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- Chief Executive
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Principles of care for adults and young people with coexisting severe mental illness and substance misuse in healthcare settings

1) Working with the voluntary sector

Healthcare professionals in primary care and secondary care mental health services, and in specialist substance misuse services, should:

- work collaboratively with voluntary sector organisations that provide help and support for adults and young people with psychosis and coexisting substance misuse
- ensure that advocates from such organisations are included in the care planning and care programming process wherever possible and agreed by the person
- develop agreed protocols for routine and crisis care.

Principles of care for adults and young people with coexisting severe mental illness and substance misuse in healthcare settings

2) Working with adults and young people with psychosis and coexisting substance misuse

Take time to engage the person from the start, and build a respectful, trusting, non-judgemental relationship in an atmosphere of hope and optimism.

Be direct in your communications and use a flexible and motivational approach.

Take into account that:

- stigma and discrimination are associated with both conditions
- some people will try to conceal either one or both of their conditions
- many people with psychosis and coexisting substance misuse fear being detained or imprisoned, being given psychiatric medication forcibly or having their children taken into care, and some fear that they may be 'mad'.

Ensure that discussions take place in settings in which confidentiality, privacy and dignity can be maintained.

Avoid clinical language without adequate explanation.

Provide independent interpreters if needed.

Aim to preserve continuity of care and minimise changes of key workers.

3) Race and culture

Ensure competence in engaging, assessing, and negotiating with service users from diverse cultural and ethnic backgrounds, and their families, carers or significant others.

Work with local black and minority ethnic organisations and groups. Offer them information and training about how to recognise psychosis with coexisting substance misuse and access treatment and care locally.

Providing information

- Offer:
- written and verbal information about the nature and treatment of both conditions. This should include NICE's information for the public, which explains the guidance on coexisting severe mental illness (psychosis) and substance misuse: assessment and management in healthcare settings and contains a list or organisations that can provide more information.
- information and advice about the risks associated with substance misuse and the negative impact that it can have on psychosis.

4) Support for families, carers and significant others

Encourage families, carers or significant others to be involved in the person's treatment and care. When families, carers or significant others live or are in close contact with the person, offer family intervention (see NICE's recommendations on psychosis and schizophrenia).

When families, carers or significant others are involved in supporting the person, discuss with them any concerns about the impact of these conditions on them and on other family members.

Offer families, carers or significant others a carer's assessment of their caring, physical, social, and mental health needs and develop a care plan if needs are identified.

Offer written and verbal information to families, carers or significant others about:

- psychosis and substance misuse, including how they can help to support the person
- local family or carer support groups and voluntary organisations; help them to access these.

8) Competence of healthcare professionals

Healthcare professionals working within secondary care mental health services should:

- ensure they are competent in the recognition, treatment and care of adults and young people with psychosis and coexisting substance misuse
- consider having supervision, advice, consultation and/or training from specialists in substance misuse services.

Healthcare professionals in substance misuse services should be competent to:

- recognise the signs and symptoms of psychosis
- undertake a mental health needs and risk assessment sufficient to know how and when to refer to secondary care mental health services.

9) Competence of professionals working with young people

Professionals in Tier 1 should be competent to recognise early signs of psychosis and substance misuse in young people.

Healthcare professionals in Tier 3 CAMHS and Tier 4 CAMHS, and in early intervention in psychosis services, should be competent in the management of psychosis and substance misuse in young people.

9) Competence of professionals working with young people

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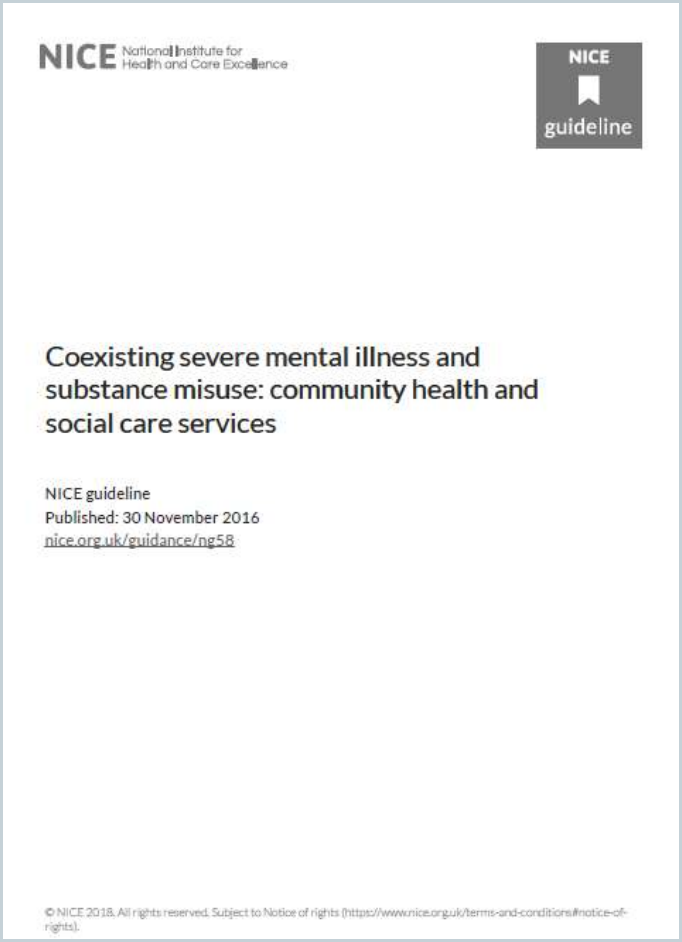
Nice Guidelines



Coexisting severe mental illness and substance misuse: community care and social care services

(November 2016)

Coexisting severe mental illness and substance misuse: community care and social care services.

People with dual diagnosis almost always have multiple needs – often with physical health and social issues as well as their dual mental health and substance problem. They are often unemployed or struggling to hold onto a job. They may be in debt, homeless or poorly housed. They could even be in an abusive relationship.

To add to their woes, they are also more likely to be stereotyped and stigmatised. They are often regarded as unreliable, feckless, difficult to engage, aggressive or abusive.

As a result, they tend to get shunted around the various services they need support from with no-one wanting to take responsibility for them. This can all too easily lead to a downward spiral and sooner or later a crisis – perhaps forcing them into A&E, or on the streets. They may even find themselves in the magistrate's court.

This is why our NICE guideline is so desperately needed. The committee and I have pored through exhaustive literature reviews on what works best, conducted consultations on the issues and solutions, and received specialist input from front-line experts.

Coexisting severe mental illness and substance misuse: community care and social care services

We have made several recommendations that I think could have a real impact, but I wanted to take this opportunity to highlight two main messages…

First, there has to be much wider recognition that this group of people, despite their complexities, have as much right to dedicated care and support as anyone else. They should not be turned away or left to flounder. Every effort should be made to help them benefit from the services they so badly need. Crucial to this is a non-judgmental, empathetic approach and the building up of mutual respect and trust.

And secondly, good communication is key! Staff working in mental health, substance misuse, primary care, social care, housing, employment, benefits, criminal justice and the voluntary sector need to have strong leadership to ensure that they are all working together as best they can. We recommend that this can be best achieved by having a dedicated care coordinators.

Professor Alan Maryon-Davis, chair of the guideline committee

Psycho Pharmaceuticals


Antidepressants
Pfizer
Zoloft
100 mg
Vnr 57 53 57
Förvaras utom syn- och räckhåll för barn.
Förvaras vid högst 30°C.
Läs bipacksedeln före användning.

Antidepressant Pharmacotherapy

- **Selective serotonin reuptake inhibitors (SSRIs):**
- **Citalopram** (Celexa)
- **Escitalopram** (Lexapro, Cipralex)
- **Paroxetine** (Paxil, Seroxat)
- **Fluoxetine** (Prozac)
- **Fluvoxamine** (Luvox)
- **Sertraline** (Zoloft, Lustral)

- **Norepinephrine reuptake inhibitors:**
- **Atomoxetine** (Strattera)
- **Reboxetine** (Edronax)
- **Viloxazine** (Vivalan)

Antidepressant Pharmacotherapy

- **Serotonin–norepinephrine reuptake inhibitors:**
- **Desvenlafaxine** (Pristiq)
- **Duloxetine** (Cymbalta)
- **Milnacipran** (Ixel, Savella)
- **Venlafaxine** (Effexor)

- **Serotonin antagonist and reuptake inhibitors** (SARIs)
- **Etoperidone** (Axiomin, Etonin)
- **Nefazodone** (Serzone, Nefadar)
- **Trazodone** (Desyrel)

- **Norepinephrine-dopamine reuptake inhibitors:**
- **Bupropion** (Wellbutrin, Zyban)

Antidepressant Pharmacotherapy

- **Tricyclic antidepressants**
- (block the reuptake of norepinephrine and serotonin).
- **Amitriptyline** (Elavil, Endep)
- **Clomipramine** (Anafranil)
- **Doxepin** (Adapin, Sinequan)
- **Imipramine** (Tofranil)
- **Trimipramine** (Surmontil)
- **Desipramine** (Norpramin)
- **Nortriptyline** (Pamelor, Aventyl, Noritren)
- **Protriptyline** (Vivactil)

Antidepressant Pharmacotherapy

- **Monoamine oxidase inhibitor:**
- (MAOIs) inhibit the enzyme monoamine oxidase, which breaks down the neurotransmitters dopamine, serotonin, and norepinephrine. As there are potentially fatal interactions between irreversible MAOIs and certain foods (particularly those containing tyramine),
- **Isocarboxazid** (Marplan)
- **Phenelzine** (Nardil)
- **Selegiline** (Eldepryl, Emsam)
- **Tranylcypromine** (Parnate)
- **Moclobemide** (Aurorix, Manerix)
- **Pirlindole** (Pirazidol)

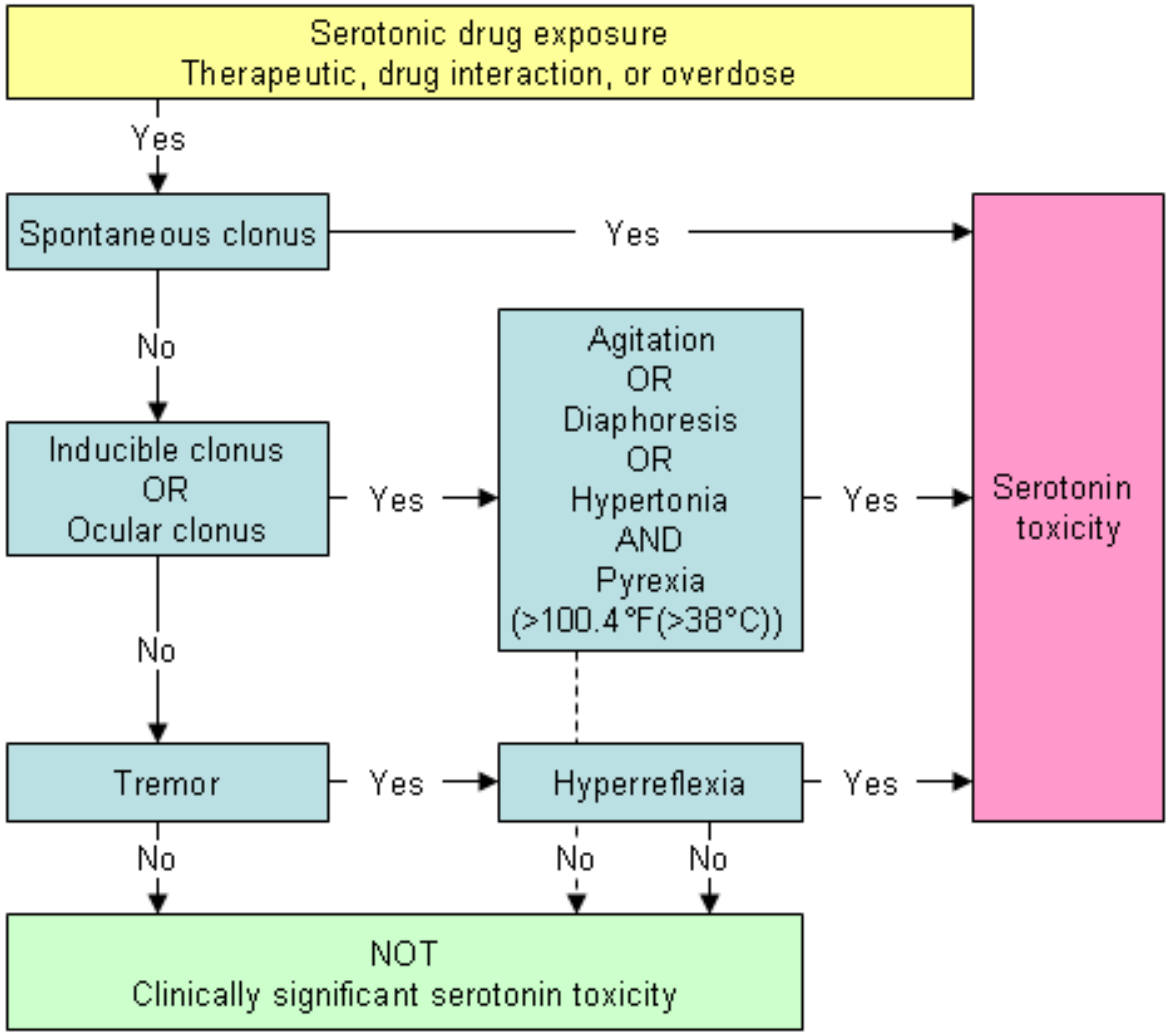
Antidepressant Contraindications

- **Serotonin syndrome**
- Serotonin syndrome is an uncommon, but potentially serious, set of side effects linked to SSRIs.
- Serotonin syndrome occurs when the levels of a chemical in your brain called serotonin become too high. It's usually triggered when you take an SSRI in combination with another medication (or substance) that also raises serotonin levels, such as another antidepressant or St John's wort.
- Symptoms of serotonin syndrome can include:
- confusion
- agitation
- muscle twitching
- sweating
- shivering
- diarrhoea
- Symptoms of severe serotonin syndrome include:
- a very high temperature (fever)
- seizures (fits)
- irregular heartbeat (arrhythmia)
- loss of consciousness

Antidepressant Contraindications

- **Serotonin Shock Syndrome**
- Co ingestion of any of the following:
- Antidepressants: Monoamine oxidase inhibitors (MAOIs), TCAs, SSRIs, SNRIs, bupropion, nefazodone, trazodone, mirtazapine
- Opioids: tramadol, pethidine, fentanyl, pentazocine, buprenorphine, oxycodone, hydrocodone
- Stimulants: MDMA, MDA, diethylpropion, amphetamine, sibutramine, methylphenidate, methamphetamine, cocaine dextromethorphan
- Psychedelics: 5-Methoxy-diisopropyltryptamine, LSD
- Herbs: St John's Wort, Syrian rue, Panax ginseng, Nutmeg, Yohimbe
- Others: tryptophan, L-Dopa, valproate, buspirone, lithium, linezolid, dextromethorphan, 5-hydroxytryptophan, chlorpheniramine, risperidone, olanzapine, ondansetron, granisetron, metoclopramide, ritonavir

Antidepressant Contraindications

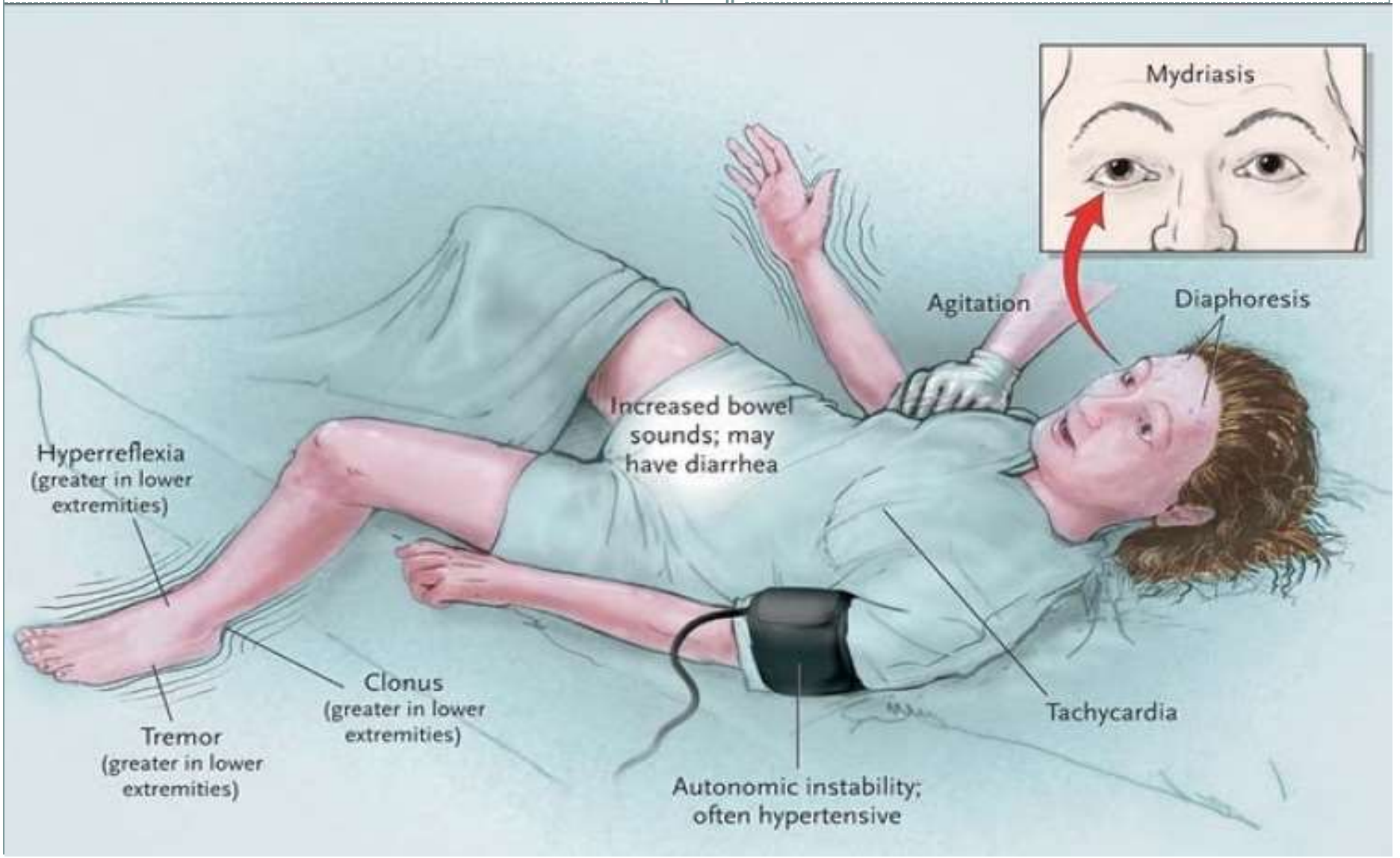


Diaphoretic is the state of perspiring profusely, or something that has the power to cause increased perspiration.

Hypertonia is a condition marked by an abnormal increase in muscle tension and a reduced ability of a muscle to stretch.

Pyrexia (fever) means the elevation of body temperature above the normal range.

Antidepressant Contraindications



Antidepressant Contraindications

- **Medical conditions**
- SSRIs may not be suitable if you have any of the following conditions:
- bipolar disorder and you're in a manic phase (a period of extremely excitable mood), although they can be useful for depressive phases
- a bleeding disorder, such as haemophilia
- type 1 diabetes or type 2 diabetes
- epilepsy – SSRIs should only be taken if your epilepsy is well controlled, and they should be stopped if your epilepsy gets worse
- narrow angle glaucoma
- serious kidney, liver or heart problems

Antidepressant Contraindications

- **Pregnancy**
- As a precaution, SSRIs aren't usually recommended during pregnancy, particularly during the first three months (the first trimester). This is because there may be a risk to the baby.
- However, exceptions can be made if the risk posed by depression (or another mental health condition) outweighs the potential risks of treatment.

- Possible risks of taking SSRIs during pregnancy include:
- loss of the pregnancy
- birth defects affecting the baby's heart (congenital heart disease)
- the baby being born with a rare condition called persistent pulmonary hypertension in the newborn (PPHN), which causes breathing and circulation problems

Antidepressant Contraindications

- **Interactions with other medications**
- SSRIs can react unpredictably with certain other medications (known as "interacting"), potentially increasing the risk of side effects such as bleeding or a problem known as "serotonin syndrome".
- Some of the medications that can interact with some SSRIs include:
- **non-steroidal anti-inflammatory drugs (NSAIDs)** – a common type of painkiller that includes ibuprofen, diclofenac or naproxen
- **antiplatelets** – a type of medication used to prevent blood clots, such as low-dose aspirin and clopidogrel
- **theophylline** – a medication used to treat asthma
- **clozapine and pimozide** – medications used to treat schizophrenia and psychosis
- **lithium** – a medication used to treat severe depression and bipolar disorder
- **triptans** – a type of medication, such as naratriptan, sumatriptan and zolmitriptan, used to treat migraines
- **other antidepressants** – including tricyclic antidepressants (TCAs), monoamine oxidase inhibitors (MAOIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs)

Antidepressant Contraindications

- **Interactions with food and drink**
- Alcohol isn't usually recommended if you're taking an SSRI, because it can increase any drowsiness you may experience and can make feelings of depression worse.
- The SSRI, fluvoxamine, is also known to enhance the effects of caffeine, so people who drink large amounts of caffeine may experience unpleasant symptoms such as palpitations, feeling sick, restlessness and insomnia.
- You should therefore avoid drinking large amounts of caffeinated drinks, such as tea, coffee, energy drinks and cola, while taking fluvoxamine.

Antidepressant Contraindications

- **Stopping SSRIs**
- You shouldn't suddenly stop taking SSRIs, even if you feel better. Stopping suddenly can lead to withdrawal symptoms such as:
- stomach upsets
- flu-like symptoms
- anxiety
- dizziness
- sensations in the body that feel like electric shocks
- seizures (fits)
- If your GP or mental health specialist decides to stop your course of SSRIs, they'll reduce the dose gradually over a few weeks

Antidepressant Contraindications

- **Hyponatraemia**
- Elderly people who take SSRIs may experience a severe fall in sodium (salt) levels known as hyponatremia. This may lead to a build-up of fluid inside the body's cells, which can be potentially dangerous.
- This side effect occurs because SSRIs can block the effects of a hormone that helps to regulate levels of sodium and fluid in the body. Elderly people are vulnerable because fluid levels become more difficult for the body to regulate.
- Mild hyponatremia can cause symptoms similar to depression or side effects of SSRIs, such as:
- feeling sick
- headache
- muscle pain
- reduced appetite
- confusion
- feeling listless and tired
- disorientation
- agitation
- psychosis
- seizures (fits)

Antidepressant Contraindications

- **Sympathomimetic toxicity**
- Concurrent use of amphetamine-related substances and non-selective MAOIs results in severe hypertension.
- Acute elevations in blood pressure have also been noted after co-ingestion of methylphenidate and a tricyclic antidepressant.
- This interaction has the potential to occur with other antidepressants that enhance noradrenergic activity, including moclobemide, tricyclic antidepressants and venlafaxine.

- **Changes in metabolism**
- Amphetamines, methamphetamine and MDMA are metabolised in the liver by a range of enzymes, one of which is cytochrome P450 2D6 (CYP2D6).
- Many antidepressants inhibit this enzyme and thus may have the potential to increase the blood levels of the psychostimulant and alter toxicity profiles.
- Antidepressants which may inhibit CYP2D6 include paroxetine and fluoxetine and to a lesser extent sertraline.

Specific problems associated with the co- indigestion of antidepressants and illicit drugs

- **Cannabis:**
- Cannabis increases the risk of sedation with some antidepressants.
- Some antidepressants can cause rapid heart beat (especially tricyclics). Cannabis can make this worse.

- **Stimulant Drugs:**
- Increases risk of arrhythmias with tricyclics.
- Increases risk of high blood pressure with MAOIs.

- **Alcohol:**
- Increases risk of sedation with some antidepressants.
- Increases toxicity in overdose with tricyclics.

Antipsychotics

Antipsychotic Pharmacotherapy

- **First-generation antipsychotics**
- **Haloperidol** (Haldol, Serenace)
- **Droperidol** (Droleptan, Inapsine)
- **Chlorpromazine** (Thorazine, Largactil)
- **Fluphenazine** (Prolixin) – Available in decanoate (long-acting) form
- **Perphenazine** (Trilafon)
- **Prochlorperazine** (Compazine)
- **Thioridazine** (Mellaril)
- **Trifluoperazine** (Stelazine)
- **Mesoridazine** (Serentil)
- **Periciazine**
- **Promazine**
- **Triflupromazine** (Vesprin)
- **Levomepromazine** (Nozinan)
- **Promethazine** (Phenergan)
- **Pimozide** (Orap)
- **Cyamemazine** (Tercian)

- **Second-generation antipsychotics (**Atypical)
- **Clozapine** (Clozaril)
- **Olanzapine** (Zyprexa
- **Risperidone** (Risperdal)
- **Quetiapine** (Seroquel)
- **Ziprasidone** (Geodon)
- **Amisulpride** (Solian)
- **Asenapine** (Saphris)
- **Paliperidone** (Invega)
- **Iloperidone** (Fanapt, Fanapta)
- **Zotepine** (Nipolept, Losizopilon, Lodopin, Setous)
- **Sertindole** (Serdolect)
- **Lurasidone** (Latuda)

- **Third-generation antipsychotics**
  Aripiprazole (Abilify)

Antipsychotic Contraindications

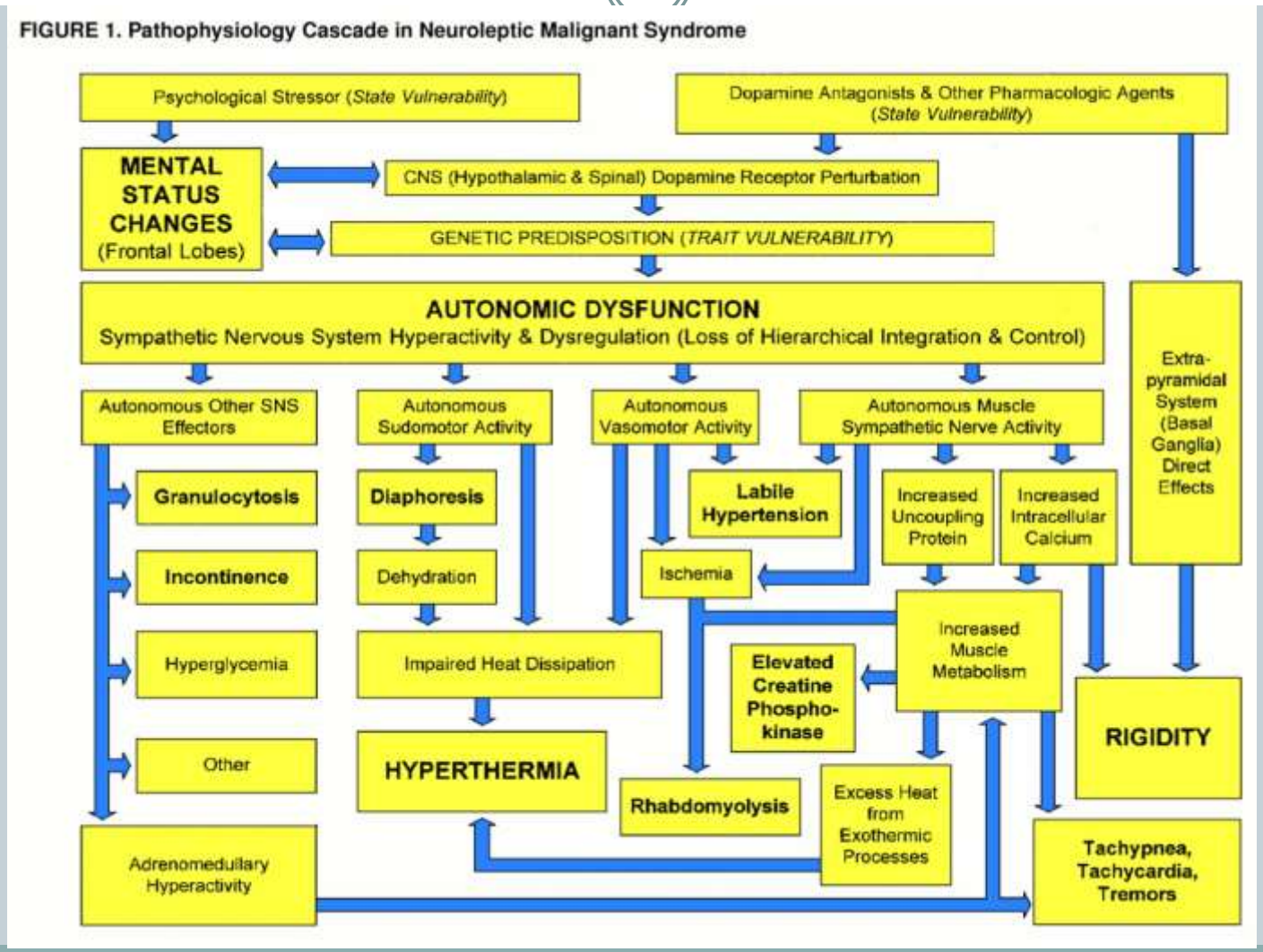
- The long-term use of antipsychotics is associated with side effects such as involuntary movement disorders, gynecomastia, and metabolic syndrome. They are also associated with increased mortality in elderly people with dementia.

- **Common adverse effects of antipsychotics include**
- Sedation (particularly common with asenapine, clozapine, olanzapine, quetiapine, chlorpromazine and zotepine)
- Headaches
- Dizziness
- Diarrhoea
- Anxiety
- Extrapyramidal side effects (particularly common with first-generation antipsychotics), which include:
- Akathisia — an often distressing sense of inner restlessness.
- Dystonia- Parkinsonism
- Tremor
- Hyperprolactinaemia (rare for those treated with clozapine, quetiapine and aripiprazole[6][17]), which can cause:

Antipsychotic Contraindications

- Gynaecomastia- Sexual dysfunction (in both sexes)-
- Osteoporosis
- Orthostatic hypotension
- Weight gain (particularly prominent with clozapine, olanzapine, quetiapine and zotepine)
- Anticholinergic side-effects (common for olanzapine, clozapine; less likely on risperidone) such as:
- Blurred vision
- Constipation- Dry mouth (although hypersalivation may also occur)
- Reduced perspiration
- Tardive dyskinesia appears to be more frequent with high-potency first-generation antipsychotics, such as haloperidol, and tends to appear after chronic and not acute treatment.
- It is characterised by slow (hence the *tardive*) repetitive, involuntary and purposeless movements, most often of the face, lips, legs, or torso, which tend to resist treatment and are frequently irreversible. The rate of appearance of TD is about 5% per year of use of antipsychotic drug (whatever the drug used).
- Neuroleptic malignant syndrome a potentially fatal condition characterised by:
- Autonomic instability, which can manifest with tachycardia, nausea, vomiting, diaphoresis, etc.- Hyperthermia — elevated body temperature.- Mental status change (confusion, hallucinations, coma, etc.)- Muscle rigidity.

Neuroleptic Malignant Syndrome



Specific problems associated with the co- indigestion of antipsychotics and illicit drugs

- Antipsychotics can reduce the high from street drugs
- If you take ecstasy you may be more likely to develop movement disorders associated with first generation antipsychotics.
- You may be more likely to experience tachycardia (fast heart beat), arrhythmias (abnormal heart rhythm), sedation and weight gain.
- **Cannabis:**
- Reduces the amount of olanzapine & clozapine in your body
- Can increase weight gain
- **Opioids:**
- Increases risk of sedation
- Risperidone may precipitate methadone withdrawal
- **Stimulant Drugs:**
- Increases risk of arrhythmias (heart rhythm disturbances).
- Risperidone may reduce the high feeling experienced with cocaine
- **Alcohol:**
- Increases risk of sedation
- Increases risk of low blood pressure with olanzapine

Clozapine

- **Not a first-line choice due to side effects but seen to be effective in the treatment of treatment-resistant schizophrenia**
- Hypersalivation – (sialorrhea)
- Anticholinergic activity
- Myocarditis Myocarditis or inflammatory cardiomyopathy is inflammation of heart muscle (myocardium).*
- Tachychardia
- Weight gain and diabetes
- Agranulocytosis
- Postural / orthostatic potension (dizziness)
- Constipation
- Seizures

- Symptoms associated with myocarditis are varied, and relate either to the actual inflammation of the myocardium, or the weakness of the heart muscle that is secondary to the inflammation:
- Chest pain (often described as "stabbing" in character)
- Congestive heart failure (leading to edema, breathlessness and hepatic congestion)
- Palpitations (due to arrhythmias)
- Sudden death (in young adults, myocarditis causes up to 20% of all cases of sudden death)
- Fever

Anticholinergic side effects

- **Eyes:**
- Mydriasis (pupil dilation)
- Dry Eye (no lacrimation)
- Increases intra-ocular pressure (bad for glaucoma)
- **Digestive tract:**
- Decreased saliva production (dry mouth)
- Decreased stomach acid production (good for peptic ulcers)
- Decreased peristalsis (constipation; good for diarrhea)
- **Other effects:**
- Increased heart rate (good for cardiac insufficiency)
- Bronchodilation (good for asthmatics)
- Urinary retention (good for benign prostatic hyperplasia; large prostate)
- Again, all these are sympathetic-like effects from acetylcholine not being able to stimulate the muscarinic receptor in the parasympathetic fibers.
- **Anticholinergic Order of Sensitivity**
- Secretory (saliva, sweat, stomach acid)
- Eye
- Heart
- GI Motility

Mood Stabilisers

Mood Stabilisers, Pharmacotherapy

- **Lithium is sold under various brand names, including:**
- Cibalith
- Carbolith
- Duralith
- Eskalith
- Lithane
- Lithobid
- Lithonate

- **Acute Toxicity**
- Diarrhoea
- Dizziness
- Nausea
- Stomach pains
- Vomiting
- Weakness

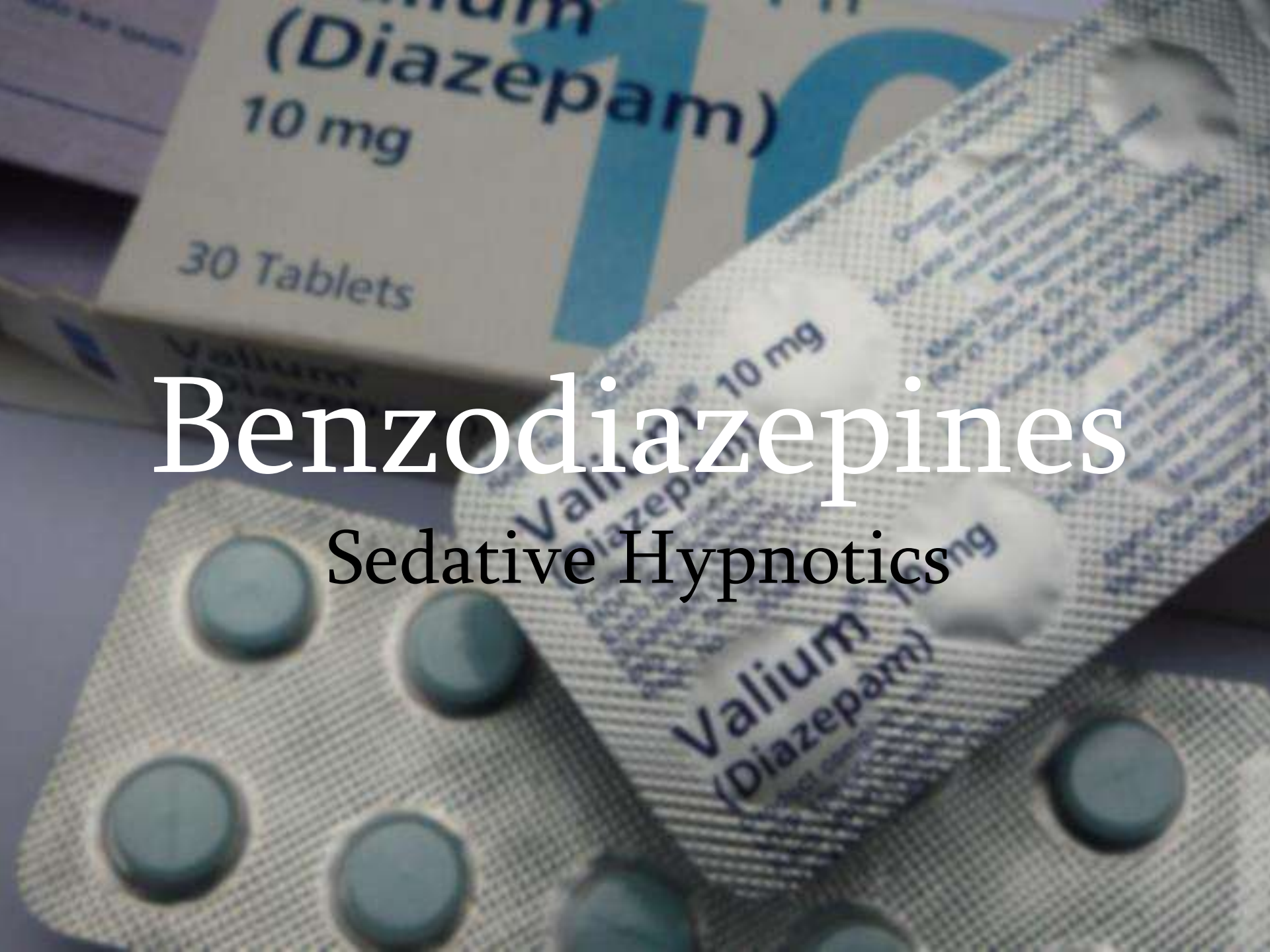
- **Anticonvulsants (not all approved for the treatment of Bipolar Disorder)**
- **Valproic acid** (Depakine),
- **Divalproex sodium** (Depakote),
- **Sodium Valproate** (Depacon, Epilim) – **Lamotrigine** (Lamictal)
- **Carbamazepine** (Tegretol)
- **Oxcarbazepine** (Trileptal) –
- **Topiramate** (Topamax)
- **Riluzole** (Rilutek)
- **Gabapentin** (Neurontin)

Mood Stabilisers, Pharmacotherapy

- **Side effects from anticonvulsants can include:**
- fatigue
- headache
- weight gain
- nausea
- abdominal pain
- decreased sexual desire
- fever
- confusion
- vision problems
- abnormal bruising or bleeding

Specific problems associated with the co- indigestion of Mood stabilisers and illicit drugs

- **Alcohol:**
- Alcohol interactions with bipolar disorder medications often result in dizziness, memory impairment, confusion, poor judgement, and may also increase the risk for falls and injury which can be dangerous when driving or operating machinery.
- Alcohol and bipolar medication like certain anti-anxiety medications can result in depressed breathing and should never be mixed.
- **Ecstasy** (and alcohol) can cause dehydration. Dehydration can precipitate lithium toxicity.
- **Opioids**
- Carbamazepine reduces the amount of methadone in your body



Benzodiazepines

Sedative Hypnotics

Benzodiazepine Pharmacotherapy

- **Alprazolam** (Xanax)
- **Chlordiazepoxide** (Librium)
- **Clorazepate** (Tranxene)
- **Diazepam** (Valium)
- **Flurazepam** (Dalmane)
- **Oxazepam** (Serax)
- **Temazepam** (Restoril)
- **Triazolam** (Halcion, Hypam, and Trilam)
- **Midazolam** (Versed)

Benzodiazepine Complications

- Benzodiazepines can be associated with overdoses and fatal consequences when combined with alcohol, other sedatives, or illicit drugs. While it is rare that an overdose of benzodiazepines by itself would be fatal, when combined with other drugs that depress the central nervous system, the risk greatly increases. Examples of other drugs that may be additive to the central nervous system depression if combined with benzodiazepine include:
- Phenothiazines
- Opiates
- Barbiturates
- MAO inhibitors
- Antidepressants
- Alcohol
- Illicit Drugs

Benzodiazepine Complications

- **Other complications include:**
- hypotension
- cardiac arrhythmias
- slow heart rate
- apnea
- respiratory depression
- nausea/vomiting
- blurred vision or double vision
- skin rash

Benzodiazepine Complications

- The most common side effects from taking benzodiazepine are drowsiness and tiredness, and they are most marked within the first few hours after large doses.
- Other complaints of this type include dizziness, headache, blurred vision, and feelings of unsteadiness. The elderly are particularly sensitive to tranquilizers and may become unsteady on their feet or even mentally confused.
- Alertness, coordination, performance at skilled work, mental activities, and memory can all be impaired. Patients should be warned about this, and advised not to drive or operate machinery, at least initially until the effects of the benzodiazepine can be assessed and the dosage adjusted if necessary.
- People taking tranquilizers or hypnotics should not also drink alcoholic beverages. Other drugs whose effects may be enhanced include anti-histamines (such as for hay fever), painkillers, and antidepressants. Cigarette smoking may lessen the effect of some benzodiazepines.

Specific problems associated with the co- indigestion of Benzodiazepines and illicit drugs

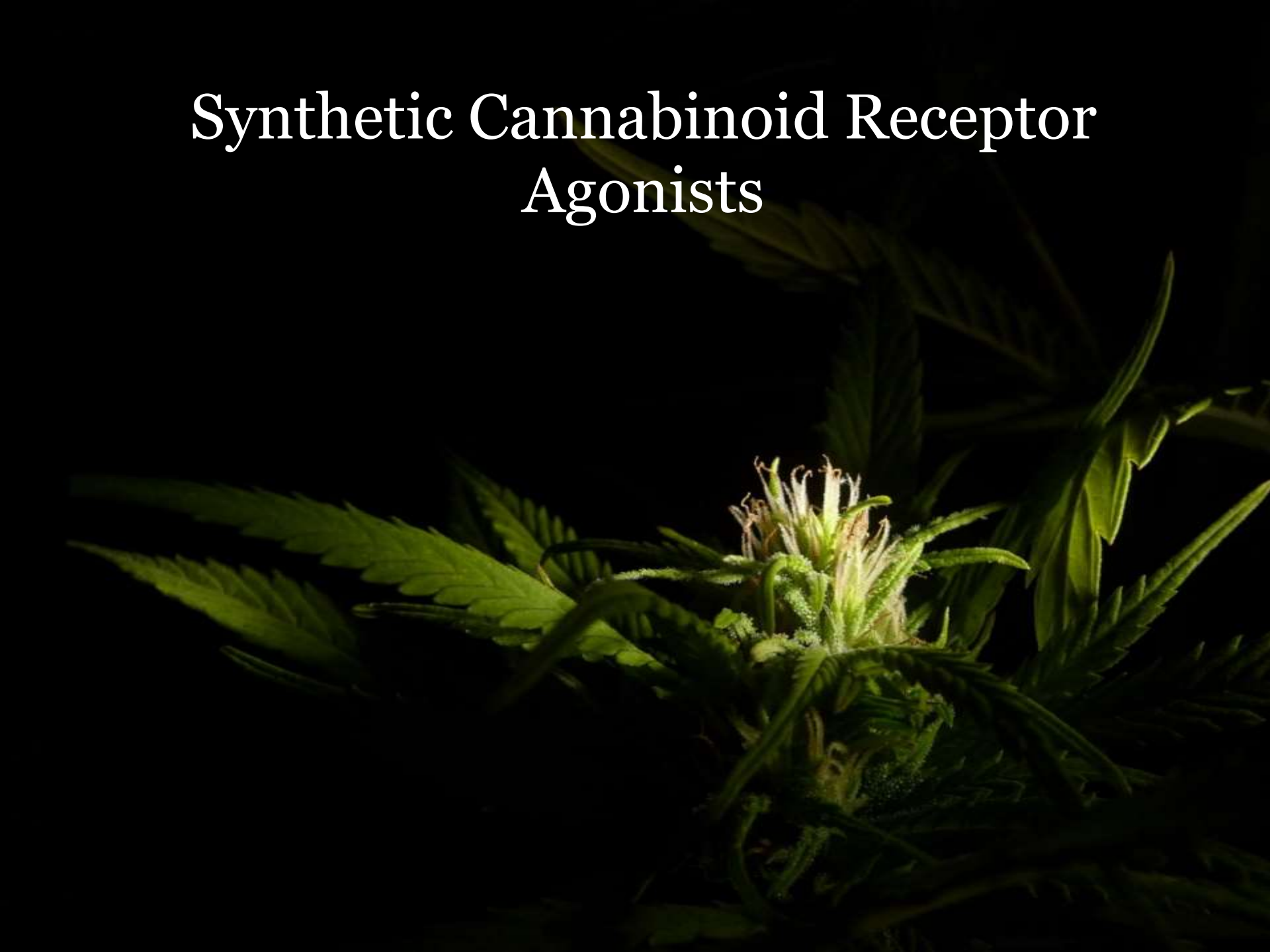
- **Cannabis:**
- Increases risk of sedation

- **Opioids:**
- Increases risk of sedation & respiratory depression
- Accidental overdose possible

- **Stimulant Drugs:**
- Increases risk of over-sedation with high doses of cocaine

- **Alcohol:**
- Increases risk of sedation & reduction in respiratory rate
- Benzodiazepine abuse possible

Synthetic Cannabinoid Receptor Agonists



SCRAs (Spice)

- **Synthetic Cannabinoids-history**
- John W. Huffman, Clemson University
- 1984-2010. Huffman proposed that cannot cannabinoid receptors in the body offered potential avenues for pharmaceutical interventions
- he created 450 synthetic cannabinoid structures / chemicals to aid in research of multiple sclerosis, Aids, and chemotherapy
- other researchers synthesised similar compounds and there are many compounds that have been designed
- In 2004 'Spice' This way into the market - Chemical sprayed onto natural materials
- 2008 other 'brands' were put out on the market. K2 for example.
- 2009 to 2010-first reports of poisons reported in emergency settings
- These products typically act on cannabinoid receptor agonists (CB1 & CB2)
- Most of them are 5-45 times more potent than THC
- Synthetic Cannabinoid Receptor Agonists (SCRAs) is now a term used in medicine
- Negative URI Marijuana test; specific testing available for some chemicals
- SCRAs are increasingly being sold in plain plastic packets by street dealers. It is not yet clear whether this represents a more lasting trend and whether SCRAs will be sold on the illicit market (and if so how).

SCRAs (Spice)

- Although SCRAs produce effects that have similarities to those produced by THC, they are not the same. SCRAs may have other biological actions, which may explain some of the differences in severity and features of toxicity between SCRAs and natural cannabis.
- Some SCRA compounds incorporate indole-derived moieties, which are structurally similar to serotonin and may be associated with particularly high levels of activation of serotonin receptors.
- It has been suggested that at high doses some SCRA compounds may also possess monoamine oxidase and 5-HT reuptake inhibitory properties, which may increase the risk of serotonin syndrome. (For more information on the serotonin syndrome see NEPTUNE, *Guidance on the Clinical Management of Acute and Chronic Harms of Club Drugs and Novel Psychoactive Substances*, p. 147.)
- In contrast to natural cannabis, SCRAs do not contain cannabidiol (CBD), a chemical which moderates the effects of THC and may possess anxiolytic, antipsychotic and anti-craving properties.
- It has been reported that, in comparison with natural cannabis, SCRAs are characterised by quicker onset of effects, significantly shorter duration of action, worse hangover effects and more intense visual hallucinations, paranoid feelings and behavioural disturbances.
- Most SCRAs are more potent than natural cannabis, and some have long half-lives. There are differences between the various SCRAs, with some having significantly greater potency than others. Products containing SCRAs can range from those with potency similar to natural cannabis to those that are up to 100–800 times more potent than natural cannabis typically is.

SCRAs (Spice)

- **Symptoms of acute toxicity**
- The literature on the adverse effects of SCRAs remains limited, but the following adverse effects linked to the use of the drugs have been reported.
- ***Neurological, cognitive and psychiatric effects***
- Anxiety, irritability and psychosis-like effects
- Inappropriate or uncontrolled laughter, anger, sadness, flat affect, depression and suicidal thoughts, excitability, agitation, combativeness, aggressiveness, thought disorganisation, panic attacks, paranoid thinking, delusions and auditory and visual hallucinations, changes in perception, acute psychosis
- Reduced levels of consciousness; coma
- Numbness, tingling, light-headedness, dizziness, pallor, tinnitus, diaphoresis, tremor, somnolence, syncope, unresponsiveness, nystagmus and convulsions
- Short-term memory and cognitive deficits, confusion, sedation and somnolence, thought blocking, nonsensical speech, amnesia, increased focus on internal unrest
- ***Cardiovascular effects***
- Tachycardia, hypertension, hypotension, hypokalaemia, chest pain and palpitations, myocardial ischaemia, myocardial infarction, ischaemic strokes
- Neuromuscular and musculoskeletal effects
- Hypertonia, myoclonus, myalgia, rhabdomyolysis

SCRAs (Spice)

- ***Renal effects***
- Acute kidney injury

- ***Other effects***
- Hyperglycaemia, hypoglycaemia, acidosis, respiratory acidosis, cold extremities, dry mouth, dyspnoea, mydriasis, vomiting, loss of sight and speech

- ***Serotonin syndrome***
- In addition, SCRAs have been linked to the serotonin syndrome. For more information on serotonin syndrome see NEPTUNE, *Guidance on the Clinical Management of Acute and Chronic Harms of Club Drugs and Novel Psychoactive Substances*, p. 147.

- ***Pyschosis***
- Psychotic symptoms appear to occur relatively frequently following SCRA consumption. More research is needed, but this may be linked to the high potency of the drugs and the fact that, unlike natural cannabis, SCRAs do not contain cannabidiol (CBD), a chemical which appears to possess antipsychotic properties.

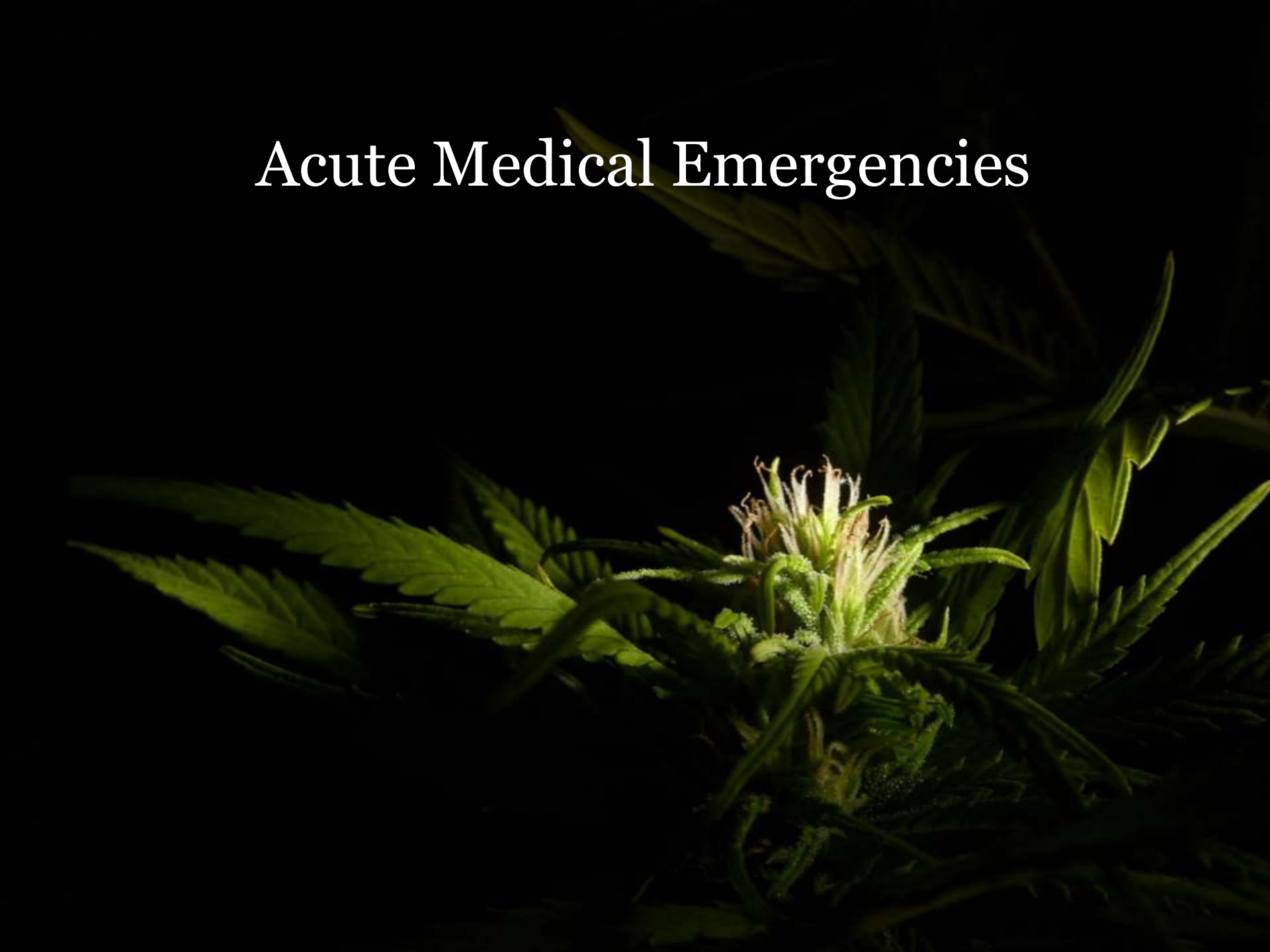
SCRAs (Spice)

- ***Pyschosis***
- It has been suggested that SCRA users are more likely than people who use natural cannabis to experience hallucinations and delusions.
- In comparison with psychotic episodes associated with the use of natural cannabis, psychotic episodes associated with SCRAs occur more frequently, are more severe and are linked to greater agitation.
- There are reports of SCRA-associated acute transient psychosis, as well as reports that some individuals may experience psychosis that persists for weeks after the acute intoxication, or even longer.
- Psychosis has been reported in otherwise healthy people; however, there is particular concern about the risk of SCRAs precipitating psychosis in vulnerable individuals, including those with a current or previous history of psychosis.

SCRAs (Spice)

- **Harm reduction advice for SCRA users**
- There is no safe way to use synthetic cannabinoid receptor agonists (e.g. 'Spice').
- SCRAs are not the same thing as natural cannabis.
- SCRAs appear to be stronger than natural cannabis and more unpredictable.
- SCRAs usually vary from batch to batch, so different packets can produce different effects, even if the packaging looks the same.
- Different SCRA compounds have different strengths and potency, with some significantly stronger than others.
- If you are going to use an SCRA, start with small doses. Consider a quantity no larger than a match head.
- Wait before the effects have gone before smoking some more.
- Synthetic cannabinoids should not be taken on their own, but always with a 'mixer' (e.g. tobacco or dried herbs).
- SCRAs should not be used together with natural cannabis.
- You should avoid smoking synthetic cannabinoid products through pipes or 'bongs', as it can increase the risk of an overdose or bad reaction.
- Regular use of SCRAs can lead to dependence (addiction) and withdrawal.
- SCRAs can cause severe harms. If you experience a sustained period of fast heart rate or chest pains, call an ambulance.
- SCRAs can increase anxiety or paranoia. Only use them in an environment where you feel safe and with people you trust. If you suffer from anxiety or mental health problems, avoid using them.
- Avoid mixing SCRAs with other drugs, medicines and alcohol.
- Do not drive or operate machinery under the influence of SCRAs.

Acute Medical Emergencies



Acute medical emergencies - Examples

- 78% of visits to A&E are made by males
- 75% are in the 12-29 year old age group

- **Cases reported in the Journal of Medicine:**
- 19 yo F jerking motions after smoking 'Bayou Blaster'.
- Paramedics arrived she was alert, agitated and required physical restraint. She would not speak to paramedics but kept repeating 'is this real'. The urine blood screen was negative. She had BP 153/84, P 116, RR 18, she was hyperreflexic, expressed depression and suicidal ideations and was transferred to a mental health ward.
- *(Normal blood pressure at or below 120 over 80 (120/80).*
- *Most adults have a resting heart rate of 60-100 beats per minute (bpm). athletes may have a resting heart rate of 40-60 bpm or lower.*
- *Having a raised systolic blood pressure but normal or low diastolic blood pressure is called Isolated Systolic Hypertension (ISH) and carries an increased risk of developing heart attacks or strokes and should be treated.*

Acute medical emergencies - Examples

- **Cases reported in the Journal of Medicine:**
- Cases reported in the Journal of Medicine:
- 17 yo M smoked 'Humbolt Gold'; he was agitated, running in traffic, he attempted to break the car window with his head (that his parents were transporting him in). P 134, BP 144/68, flushed skin, dilated pupils, hyperreflexia,. He seemed to be responding to internal stimuli presenting in inappropriate laughter alternating with silence. He reported being various dreams that he could not get out of Tox screen was negative for THC

- 19 yo male. His mother heard him screaming and he seemed to be hallucinating. He was agitated, swinging his fists around. He had smoked K2 20 minutes earlier. He was combative with the ambulance crew, P 220. Tox screen was negative for THC

Acute medical emergencies - Examples

- **Cases reported in the Journal of Medicine:**
- Middle-aged man called police reporting that people had entered his home and were shooting him with laser beams and tasers
- Used 'synthetic cocaine' labelled 'white horse' x 1 week
- A&E: hyperactive, inattentive, paranoid, visual & auditory hallucinations
- Admitted to psych unit x 3 days, treated with haloperidol

- 40 yo M. Switched from cocaine to NPS. Snorted and injected. Urine and serum detected MDPV
- Aggressive, delusional, naked and running outside, violent, dilated pupils, HR 164, BP 131/72, Given 2mg lorazepam IM with no effect, 5 min in A&E: HR dropped, cardiac arrest, T (rectal) 105.4 F, BP 70/32, HR 91
- Rhabdomyolysis, coagulopathy, anoxic brain injury
- Died