

ADDICTION

HALLUCINOGEN
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- Tryptamines – Psilocin in *psilocybe* mushrooms; Ayahuasca
- Lysergic acid – LSD – synthesized from alkaloids of *ergot* fungus
(discovered in 1930s by Albert Hofmann, at first used as a freely accessible drug. Tested in 1950-60s for military potential military use and consequently made illicit in 70s)
- Phenylalkylamines – Mescaline in Peyote
- All these are alkaloids found naturally in some plants
- All are serotonin agonists although precise way of function is not completely understood



effects

- **Physiological**
- they are safe as their effect is caused by very small doses that do not threaten physical health (e.g. orally administered LSD on blotters of paper that has 50-150 micrograms of the substance)
- Short term effect include dizziness, weakness, tremors, nausea, blurred vision
- LSD influences sympathetic system - increased hearth rate, slight fever
- **Psychological**
- All psychedelic drug changes perception and cognition
- Massively context and expectancy dependent effects. Right mental set and environmental setting is absolutely crucial – have positive and supportive background (trip sitters) and have a positive mood
- Merges consciousness and subconsciousness – hidden and suppressed hopes, fears, moods,... are magnified

effects

- **Positive effects**
- mental and physical stimulation, mood lift
- sensory enhancement (taste, smell, visuals, etc), closed- and open-eye visuals, including trails, colour shifts, brightening, etc., feelings of flying
- Profound life-changing spiritual experiences or personal revelations
- therapeutic psychological reflection – can help even to treat addictions
- feeling of oceanic connectedness to the universe; blurring of boundaries between self and other
- **Negative**
- anxiety, paranoia, fear, and panic – most hallucinogens can produce schizophrenia like states of mind
- dissolved sense of self
- delusions, delusional thinking, unwanted or unexpected life-changing spiritual experiences or personal revelations
- insomnia
- unwanted and overwhelming feelings
- Flashbacks

addiction

- No addiction as hallucinogens do not have any effect on dopamine levels in reward circuits (except for MDMA, cannabis, ketamine)
- No physical dependency
- No withdrawal symptoms
- But hallucinogens users are often multi-drug users and thus are sometimes addicted to other drugs
- No deaths report because of overdose
- Overdose may happened and had destructive effect on psyche – hallucination flashbacks returning the whole life
- No physiological or psychological addiction and dependency
- Short-term tolerance – e.g. three LSD papers taken within a week have no effect

Risk factors

- Hallucinogens are rarely drug of the first choice
- Average age of the first intake is higher (above 20) – except for MDMA that is about 16.
- Data about problems associated with taking hallucinogens are often data on MDMA only - typically problems resulting from substance impurities, combination with other substances (alcohol), dehydration
- High association with personality disorders – antisocial, paranoid, histrionic, schizoid (in this order) and potential link with psychosis
- Link with suicidality, common accidents while on trip
- Because of the polydrug use, it is hard to attribute the negative effect to specifically to hallucinogens
- Since the prevalence of use is very low, hallucinogens are often listed together with „hard“ illicit drugs which spreads unnecessary bad reputation

- Positive use of these substances are promising for use in therapy – PTSD, depression, addictions

Illicit drugs with hallucination properties

- Cannabis
- MDMA
- Dissociative anaesthetics - ketamine



KETAMINE

- dissociative anaesthetic with analgesic and amnestic properties (dissociative = produce feelings of detachment from the self and the environment)
- Used for medical (especially emergency, surgery, pain management) and veterinary purposes since 60s. Sometimes used as unofficial antidepressant and anti-asthma. As a drug used since 80s.
- Used as a pill, liquid, powder, solution in injections
- Effects are very similar to other hallucinogens
- Extra psychological effect – tantra-like sexual feeling; passivity; lethargy
- Extra physiological effect – relaxes muscles (especially of rectum)

Addiction and risks

- Ketamine can be addictive – confirmed also from animal studies
- Overdose has been reported (ketamine does not have known overdose reversal agent)
- Withdrawal symptoms include anxiety attacks, palpitations, shaking
- Most risk comes from the setting – danger of accidents, injuries
- Spreading of transmitted diseases
- Risk of rape and use in sexual slavery
- Ketamine is usually found at the same places as MDMA