

Medical Consequences of Methamphetamine Use

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Methamphetamine

- Class of drugs called sympathomimetics
- Activate the sympathetic nervous system (“fight or flight”)
- Triggers release of epinephrine, norepinephrine and dopamine
 - ↑ heart rate, BP, bronchial airway tone, carbohydrate metabolism

Amphetamines

- Amphetamines used extensively during WWII as psychostimulants to keep soldiers and pilots awake
- Current FDA-approved uses:
 - ADHD
 - Obesity
 - Narcolepsy

Dosage

- Rx amphetamines such as Adderall typically prescribed at dosages of 5-60 mg/day
- Methamphetamine use by addicts typically in range of 250-500 mg/day and can escalate to a several grams over a 3-4 day “run”
 - (also tends to be of questionable purity because of being made in individual labs)

Medical/Health Effects

- When taken as prescribed:
 - Loss of appetite (22%)
 - Insomnia (17%)
 - Abdominal pain (14%)
 - Emotional lability (laughing one minute, crying the next) (9%)
 - Nervousness (6%)

Medical/Health Effects

- When used *illicitly*, common effects of intoxication are:
 - Euphoria
 - Increased energy/self-confidence
 - Insomnia
 - Restlessness/need to be busy
 - Irritability
 - Heightened sense of sexuality
 - Tremors

Medical/Health Effects

Respiratory effects:

- Increased respirations
- Pulmonary edema (lungs fill with fluid instead of air)
- Pulmonary hypertension (sudden abnormally high BP in artery between heart and lungs)
- Decreased lung capacity, particularly when smoked

Medical/Health Effects

- Cardiovascular effects:
 - Increased heart rate
 - Increased blood pressure
 - Tachycardia – abnormally rapid heartbeat, causing palpitations, lightheadedness, may lead to
 - Arrhythmias – irregular heartbeat

Acute Intoxication or Overdose

- Severe dehydration
- Severe hyperthermia
- Convulsions
- Rhabdomyolysis (too much myoglobin being filtered by the kidneys) → acute renal failure
- Stroke (blood clot breaks off and clogs artery in the brain)
- Myocardial infarction (blood clot blocks a coronary artery, preventing blood flow through the heart muscle)

Long-term/Chronic Use

- Severe weight loss/anorexia
- Severe dermatological problems
- Lowered seizure threshold
- Uncontrollable rage/violent behavior
- Numerous neurological/psychiatric consequences presented by next speaker

Infectious Diseases

- Meth users at risk for infection/transmission of infectious disease due to both injection use and sexual risk behaviors.
- Heterosexual African-American men in Los Angeles County who use methamphetamine nearly 3 times as likely to be HIV+ as non-meth users (Wohl et al., 2002).

Infectious Disease

- MSM meth users have high rates of HIV, syphilis, and gonorrhea (Shoptaw, Peck, Reback, & Rotheram-Fuller, 2003).
- Some evidence that suggests that the HIV virus replicates and mutates faster in an environment where meth is present (Ahmad, 2002).

References

- Shoptaw S, Peck J, Reback CJ, Rotheram-Fuller E. (2003). Psychiatric and substance dependence comorbidities, sexually transmitted diseases, and risk behaviors among methamphetamine-dependent gay and bisexual men seeking outpatient drug abuse treatment. Journal of Psychoactive Drugs, 35 Suppl 1:161-8.
- Wohl AR, Johnson DF, Lu S, Jordan W, Beall G, Currier J, Simon PA. (2002). HIV risk behaviors among African American men in Los Angeles County who self-identify as heterosexual. Journal of Acquired Immune Deficiency Syndrome, 31(3):354-60.

References

- Ahmad, K. (2002). Addictive drug increases HIV replication and mutation. The Lancet Infectious Diseases, 2(8): 456.

For More Information or Treatment Referrals

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