5 Manifestations of Methamphetamine Poisoning

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1. Central Nervous System

Methamphetamine is a CNS stimulant, and its chronic abuse continues to be a significant problem in the US and worldwide. There are numerous manifestations of methamphetamine neurotoxicity in the CNS, including psychomotor impairments as well as mental illnesses. The most common cognitive impairments with chronic use are those of episodic memory, executive function, language skills, visuoconstructional abilities, and information processing. Chronic users also display impairments in fine motor skills.

- psychomotor decline, cognitive impairments, fine motor impairments
- mental illness
- decline in episodic memory, executive function, and language skills
- decline in visuoconstructional abilities
- information processing deficits
2. Motor deficits

Motor deficits in methamphetamine users typically do not involve alterations in gross motor skills but impaired gait as well as increased risk of Parkinson disease may arise. Other motor impairments include stereotypic behavior, choreoathetoid movements, and dyskinesias that in some cases can persist for a long time after the cessation of methamphetamine use.

- impaired gait
- increased risk of Parkinson disease
- stereotypic behavior ("punding")
- choreoathetoid movements
- dyskinesias
3. Negative physical effects

At higher doses, fever, sweating, headache, blurred vision, dizziness, stomach cramps, muscle fatigue and cramps, chest pains, shaking, dehydration, nausea, and vomiting can occur. Very high doses induce a variety of negative effects such as hyperthermia; hypertension; cardiac arrhythmia; seizures; cerebral hemorrhage; ischemic infarct; renal failure; rhabdomyolysis; and wakefulness to the point of collapse and temporary blindness, coma, or death.
4. Withdrawal symptoms

Cognitive impairments, disturbed sleep or insomnia, depression, and anxiety as well as intense drug craving are the most prominent symptoms of withdrawal; depression and anxiety can lead to suicidal thoughts.

- prompt relapse
- cognitive impairments
- disturbed sleep or insomnia
- depression and anxiety
- intense drug craving
5. Chronic Use

- anxiety and depression
- methamphetamine-induced psychosis\(^2,3\)
- delusions of parasitosis (e.g., bugs crawling on or inside the skin)
- underlying psychosis or schizophrenia

Chronic methamphetamine abuse, particularly at high doses, has a variety of cardiovascular, gastrointestinal, and neurological physiological effects, which include cerebral vasculitis as well as intracerebral, subarachnoid, or intracranial hemorrhage. Behavioral consequences of chronic use include dependence, cognitive impairment, anxiety or depression, violent behavior, insomnia, stereotypy, and psychosis.
For more on this topic, see the Psychiatric Times article, “Neurobiology and Clinical Manifestations of Methamphetamine Neurotoxicity,” on which this slideshow was based.

References

