

Methamphetamine — Effects on Human Performance and Behavior

REFERENCE: Logan BK: Methamphetamine — Effects on human performance and behavior; *Forensic Sci Rev* 14:133–151; 2002.

ABSTRACT: Methamphetamine is a popular recreational drug that has also had some historical use as a therapeutic agent. Its effect profile is complex, with stimulant, alerting effects during acute low-dose administration, progressively more disorienting effects on cognition, reasoning, and psychomotor ability with increased dosing and duration of use, and a depressant-like profile during withdrawal, often compounded by delusions and psychotic episodes, especially after high-dose or chronic use. This manuscript reviews the synthetic, structural, and analytical chemistry of the drug; the pharmacology of its central and peripheral effects; its pharmacokinetics following various routes of administration and dosage regimens; and its pharmacodynamics in both acute and chronic administration and therapeutic and recreational doses, noting in particular its effects on judgment, decision making, risk-taking, cognition and psychomotor performance, and violence. Finally, the review considers the issue of how these various effects can impact driving ability and can contribute to impairment. From the material reviewed it is concluded that the use of methamphetamine in anything other than low-dose, therapeutic administration with medical oversight raises the likelihood of some impairment of performance in complex psychomotor tasks such as driving.

KEY WORDS: Driving, forensic toxicology, human performance, impairment, methamphetamine.
