



### **K7 Driving Under the Influence of Methamphetamine: Comparison of Driving Behavior and Impairment Symptoms in Subjects Arrested for Driving While Intoxicated (DWI)**

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The goal of this presentation is to review driving behaviors and impairment symptoms in a series of sixty drivers suspected of driving under the influence of methamphetamine.

This presentation will impact the forensic community and/or humanity by assisting with the toxicological interpretation of cases by comparing common signs, symptoms, observations and driving behavior in drivers suspected of driving under the influence of methamphetamine.

In drug impaired driving cases, a toxicologist usually requires information from a variety of sources before they provide an opinion regarding possible impairment. Information in the police report, such as the reason for the stop, performance on the standardized field sobriety tests and other observations made by law enforcement or witnesses at the scene can be of interpretive value. A series of sixty drivers who used methamphetamine and were subsequently arrested for driving under the influence of drugs (DUID) are presented.

Methamphetamine is a central nervous system stimulant that can produce wide-ranging effects, depending on the dose and phase of use. At high doses methamphetamine has the potential to impair skills that are important for safe driving. Quantitative blood drug results are valuable from a toxicological standpoint but must be interpreted within the context of the case. Low concentrations of the drug in the later phase of drug use (down-side) can produce effects that are detrimental to safe driving. Multiple drug use, tolerance, dependence, and withdrawal effects of the drug make interpretation of these cases challenging.

In this series of 60 drivers arrested for DWI, quantitative blood methamphetamine concentrations were reviewed, together with the reason for the stop, signs, symptoms, performance on standardized field sobriety tests, and other observations. Cases involving only methamphetamine were compared with methamphetamine in combination with other drugs. Mean, median and mode blood methamphetamine concentrations were 0.3, 0.2 and 0.1 mg/L (n=60) respectively. Amphetamine was detected in blood samples in 42 of the cases and reported quantitatively in 28. Concentration ranges for methamphetamine and amphetamine were 0.01-3.20 and 0.02-0.26 mg/L respectively. The reason for the stop, performance on field sobriety tests and roadside observations were compared for different sub-sets of data that were organized by concentration and drugs present. The most common reasons for the traffic stop were a crash (n=18), equipment violation (n=13), erratic driving (n=9) and notification by dispatch (n=8). The performance on standardized field sobriety tests were evaluated in terms of the number of clues, together with other observations, the most common of which were bloodshot eyes and impaired balance and coordination. Individual cases are presented to illustrate some of the common interpretive challenges including tolerance, withdrawal and the phase of drug use within the context of quantitative drug toxicology.

#### **Methamphetamine, Impaired, Driving**