# DRUGS OF ABUSE AND FATAL AUTOMOBILE ACCIDENTS

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**Summary:** Routine drug testing of traffic fatalities has shown that about 21% of all victims have controlled, illegal substances in their body at the time of the incident. Although we cannot establish a relationship between drug levels and impairment of driving ability, the presence of these drugs in the body is per se evidence of an illegal act. This, with the potential that these drugs have for impairing driving ability, should justify administrative revocation of the driver's license. Current law exists in most states for such action.

Since 1984 the Coroner's Office of San Bernardino County has been performing complete drug screens on all individuals who die of traffic related fatalities in the county within a 24 hour period of time of the incident. These include infants, children and the elderly, as well as the teenager, young and middle-aged adults. This paper is based upon these studies and does suggest some possible actions for future consideration. This particular study was based on a survey of such fatalities, from January 1, 1985 through July 30, 1987, and includes 796 fatalities. The breakdown is shown in the accompanying Tables I and II. Overall 21% of the traffic fatalities during this period of time had illicit, controlled drugs of abuse in their body at the time of the traffic incident. These drugs include methamphetamine, cocaine, cannabinoids, PCP and morphine (heroin). Although not included in the tables, a review of the traffic fatalities for the first 6 months of 1989, which include 228 traffic fatalities, shows that 18% of individuals killed in traffic incidents had controlled, illicit drugs of abuse in their body at the time of the incident.

In the 1985 to 1987 study, methamphetamine along with amphetamine and ephedrine was detected sixty-two times, cocaine thirty times, cannabinoids six times, PCP eleven times and morphine six times. There does appear to be a significant change in pattern of use based on our 1989 statistics. Methamphetamine was detected twenty-seven times, cocaine five times, cannabinoids eleven times, PCP one time and morphine (heroin) five times. It should be noted that in many cases there was multiple drug abuse as well as combined drug and alcohol use.

For comparison interest, Table III shows the number of times that drugs, other than the illicit drugs, were detected. It should be noted that the most common detection was that of acetaminophen. Salicylates was moderately common but the group of drugs, ephedrine, pseudoephedrine and phenylpropanolamine was relatively high. Since these drugs are accessible by purchase over the counter or by prescription, these were not classified as drugs of abuse for the purposes of this study, although since they do have effects similar to methamphetamine and cocaine, and since many of these cases had these drugs present in relatively large quantities, considerably larger than would be expected for therapeutic purposes, one wonders if these were used at least in part as drugs of abuse. The other drugs as noted in Table III were found relatively infrequently and in relatively low, usually therapeutic concentrations.

These observations are in contrast to previously published studies (2, 3, 4, 5,

6, and 7) of detection of drugs in victims of traffic accidents, in which most of the drugs of abuse as noted in this study were detected infrequently or not at all, and that the more common drugs of abuse in those studies included marijuana as well as over the counter or prescription sedative tranquilizer type drugs. Whether this reflects a regional difference or a changing pattern of drug abuse related to an increasing use of drugs of abuse is unknown.

Resources did not permit correlation studies between responsibility for the accident and drug levels and, therefore, one cannot reach conclusions based upon the presence of drugs and a traffic fatality based on this study. Certainly, the relatively large numbers of individuals with these particular drugs of abuse does suggest the possibility of a cause and effect relationship and certainly suggests the necessity for further studies.

In 1976 a conference sponsored by the National Institute of Drug Abuse (1) reached a general consensus that definitive recommendations based on hard scientific data were simply not available to be used as the basis for legislative or administrative responses for prevention. A new conference again sponsored by the National Institute of Drug Abuse (8) in 1983 again reviewed the problems addressed in the 1976 conference and again reached the conclusion that although drugs were potentially of major significance in driving impairment, we had not yet reached a scientific basis for taking corrective action. The conference, however, did note that most drugs that affect the central nervous system have a potential for impairing driving ability.

Most if not all state laws permit an officer to request a specimen, blood, breath or alcohol, for the determination of the presence of alcohol and/or drugs of the driver that the officer has probable cause to stop for driving in an impaired fashion, if the officer has a reasonable presumption that the individual may be driving under the influence of some substance. These laws have been upheld by state and federal supreme courts. It is suggested that when an individual is stopped by an officer for probable cause for suspicion of driving under the influence of alcohol and/or drugs, that a sample be obtained on which a complete drug screen, including alcohol be routinely performed. State laws would have to be modified to permit the selection of preferably blood or blood and urine for such testing since drug screens cannot routinely be done on breath analysis. If the subsequent analysis reveals the presence of a controlled illegal substance, this is per se evidence of that individual having committed an illegal act. Depending on the state and the circumstances, this may be a felony or a misdemeanor. Since these drugs are taken for the specific psychoactive effect, the effect upon the central nervous system, an effect that has the potential for impairing driving ability and certainly had never been shown to improve driving ability, we have the basis for administrative action for revocation of the drivers license. There are laws in most states that permit such administrative review for medical conditions that have the potential of impairing an individuals driving ability. It is not necessary under these government codes to demonstrate that the individual's ability to safely drive an automobile was in fact impaired by this medical condition, only that the potential does exist. Such conditions include senility, psychotic or severe neurotic behavior, epilepsy, diabetes mellitus Type I insulin-dependent where the individual is susceptible to potential diabetic coma reactions or insulin reactions as well as a whole host of other medical conditions.

Although revocation of a driver's license may not constitute a major deterrent to drug abuse, if the individual's name was also published in the newspaper and if this were a professional person, a community leader, a political leader or other well known individual in the community, the potential for deterrence for the casual drug user becomes more real.

Revocation of the license would not preclude further legal proceedings, such as prosecution for driving under the influence, in those cases, in which a reasonable case could be established, that the drugs in fact did play a role in the impaired driving pattern of this individual. Unless and until we can establish more definitive scientific studies that would relate drug levels to impaired driving ability, such legal prosecution would require the testimony of experts, specifically experienced or trained in the interpretation of drug abuse and the effects upon the individual's driving ability taken together with the observations of the arresting officer.

**BIBLIOGRAPHY**


1) Willette, R. E. Ed., Research Monograph 11, National Institute on Drug Abuse, Rockville, MD, 1977

2) Cimbura, G., Lucas, D.M., Bennett, R.C., Warren, R.A., and Simpson, H.M. "Incidence and Toxicological Aspects of Drugs Detected in 484 Fatally injuries Drivers and Pedestrians in Ontario" Journal of Forensic Sciences, 1982, Oct; 27(4)855-76

3) Owens, S.M., McBay, A.J., and Cook, C.E. "The Use of Marihuana, Ethanol and Other Drugs Among Drivers Killed in Single Vehicle Crashes" J. Forensic Sci. 1983 Apr; 28(2) pp. 372-9

4) Crouch, D.J., Peat, M.A., Chinn, D.M., and Finkle, B.S. "Drugs and Driving: A Systemic Analytic Approach" J. Forensic Sci., 1983 Oct; 28(4) pp. 945-956

5) Mason, A.P. and McBay, A.J., "Ethanol, Marijuana and Other Drug Use in 600 Drivers Killed in Single-Vehicle Crashes in North Carolina", 1978-1981, J. Forensic Sci., 1984 Oct; 29(4) pp. 987-1026

6) Wechsler, H., Rohman, J., Kotch, J.B., and Idelson, R.K. "Alcohol and Other Drug Use and Automobile Safety: A Survey of Boston-Area TeenAgers", J.Sch Health 1984 May; 54(5); pp. 201-3

7) Williams, A.F., Peat, M.A., Crouch, D.J., Wells, J.K., and Finkle, B.S., "Drugs in Fatally Injured Young Male Drivers", Public Health Rep. 1985 Jan-Feb; 100(1); pp. 19-25

8) Consensus Development Panel, "Drug Concentrations and Driving Impairment", JAMA Nov. 8, 1985; 254(18), pp. 2618-21

# TRAFFIC FATALITIES
San Bernardino County, Ca
1985,1986, 1987 (Thru July)

## TOTALS

### Number of Cases by Categories

| | |
|---|---|
| Auto/Truck Driver | 364 |
| Passenger | 201 |
| Motorcycle Driver | 105 |
| Pedestrian | 110 |
| Bicycle Riders | 16 |
| Total | 796 |

### Total Positives

| | | | | |
|---|---|---|---|---|
| Alcohol Only | 251 | 31% | } | 41% |
| Alcohol and Abuse drugs | 80 | 10% | | |
| Abuse Drugs only | 86 | 11% | } | 21% |
| Total | 417 | 52% | | |

Abuse Drugs: (This survey)
Methamphetamine, Amphetamine, Phencyclidine, Cocaine, Morphine, Cannabinoids

Table 1

## TRAFFIC FATALITIES
San Bernardino County, Ca
1985,1986, 1987 (Thru July)

### Positives by Categories

| | | | | |
|---|---|---|---|---|
| **Auto/Truck Drivers** | | | | |
| Alcohol Only | 132 | 36% | } | 45% |
| Alcohol and Abuse Drugs | 34 | 9% | } | 22% |
| Abuse Drugs Only | 47 | 13% | | |
| **Passengers** | | | | |
| Alcohol Only | 45 | 22% | } | 32% |
| Alcohol and Abuse Drugs | 21 | 10% | } | 18% |
| Abuse Drugs Only | 16 | 8% | | |
| **Motorcycle Drivers** | | | | |
| Alcohol Only | 26 | 25% | } | 42% |
| Alcohol and Abuse Drugs | 18 | 17% | } | 34% |
| Abuse Drugs Only | 18 | 17% | | |
| **Pedestrians** | | | | |
| Alcohol Only | 42 | 38% | } | 44% |
| Alcohol and Abuse Drugs | 7 | 6% | } | 10% |
| Abuse Drugs Only | 4 | 4% | | |
| **Bicycle Riders** | | | | |
| Alcohol Only | 6 | | | |
| Alcohol and Abuse Drugs | 0 | | | |
| Abuse Drugs Only | 1 | | | |

Table 2

## TRAFFIC FATALITIES
San Bernardino County, Ca
1985,1986, 1987 (Thru July)

### OTHER DRUGS ONLY

| | | | |
|---|---|---|---|
| Acetaminophen * | 29 | Propranolol | 1 |
| Salicylates ** | 9 | Codeine | 5 |
| Ephedrine, Pseudoephedrine, Phenylpropanolamine | 21 | Meprobamate ** | 3 |
| | | Diphenhydramine | 3 |
| Butalbital * | 1 | Imipramine, Desipramine | 3 |
| Phenobarbital * | 3 | | |
| Phenytoin * | 4 | Chlordiazepoxide & Metabolites | 2 |
| Theophylline * | 3 | Propoxyphene & Metabolites | 1 |
| Amitriptyline, Nortriptyline | 5 | Metaprolol * | 2 |
| Diazepam & Metabolites | 9 | Methadone & Metabolites | 1 |

* Routine Limit of Detection 1 mg/L
** Routine Limit of Detection 5 mg/L
All other Drugs Limit of Detection 0.1 mg/L

Table 3