

# The Incidence of Drugs in Road Accident Fatalities in Great Britain

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## Abstract

Between 1985 and 1987 the Transport Research Laboratory carried out a study to measure the incidence of drugs in road accident fatalities. This showed that the incidence of prescription drugs (5.5%) and drugs of abuse (3%) was relatively low in comparison to alcohol, which was found in 35% of cases.

Much recent evidence, however, has suggested that illicit drug taking in the community as a whole has increased considerably since 1987, but there was little evidence on whether this increase has been reflected in the driving community. The Department of the Environment, Transport and the Regions (DETR) therefore began a new study, in October 1996, to look at the current incidence of drugs in road fatalities.

This three-year study was completed in October 1999 and the results from more than 1100 cases show that illicit drug taking (mainly cannabis) has increased by a factor of five since the earlier study. Over the same period, the incidence of medicinal drugs and alcohol has remained more or less the same.

## Introduction

Between 1985 and 1987 the Transport Research Laboratory carried out a study to measure the incidence of drugs in road accident fatalities. This showed that the incidence of prescription drugs (5.5%) and drugs of abuse (3%) was relatively low in comparison to alcohol, which was found in 35% of cases.

Much recent evidence has suggested that illicit drug taking in Great Britain, in the community, has increased considerably, since 1987. There was little evidence, however, on whether this increase has been reflected in the driving community and general population of road users. The DETR therefore began a new three year study, in October 1996, to look at the current incidence of drugs in road fatalities.

## Methods

Following extensive discussions with the Home Office, Coroner Society and Pathologist's professional bodies in 1995 and early 1996, arrangements were made for the routine drug analysis of body fluid samples from persons killed in road accidents. The main study began in October 1996 and was scheduled to run for a period of 3 years.

The set up of the study required extensive liaison with a variety of organisations and involved contacting each of the 197 Coroners and Procurators Fiscal in Great Britain to seek their permission to contact pathologists who carried out post-mortems on their behalf.

The final study involved 552 pathologists and required the distribution of sample collection kits to 259 different hospital pathology laboratories.

Pathologists were requested to collect urine and blood samples from road accident fatalities according to a strict protocol supplied with the kits. The samples were then sent (postage paid) to the Forensic Science Service at Chepstow, where the urine samples were screened for drugs by immunoassay techniques. The blood samples were retained for confirmation of any drugs detected, as required.

Pathologists were asked to take samples at random from road traffic post mortems. All road users were included in the study sample, including drivers, riders of two-wheeled vehicles (34 of them cyclists), passengers in vehicles and pedestrians. This was to emphasise to pathologists that this should be a random survey of cases and should not be biased towards cases where drugs might be suspected. The inclusion of passengers also provides something of a “quasi-control”.

It has to be recognised, however, that where illicit drugs are concerned it is very difficult, if not impossible, to obtain an ideal control sample from a population of non-accident involved road users.

The sample of road accident fatalities tested represents about 15% of the eligible sample of those aged 16 or over who die within 12 hours. For practical reasons, mainly due to the very high workload of pathologists, it has proved difficult to increase this percentage. All the available evidence, however, indicates that these results present a representative sample of the incidence of drugs amongst the various road user groups.

The distribution of cases that have alcohol above the 80mg limit is almost identical to that found in the national data on blood alcohol levels obtained from coroners, for each of the road user groups. Since the Coroners sample represents 60 % of the national sample of fatalities (with known BAC), it strongly suggests that the sub-sample tested for drugs is representative and unbiased. There is also a wide geographical distribution of cases in the sample, both urban and rural.

## Results

Table 1 gives the percentage of those testing positive for medicinal and illicit drugs by road user groups. The figures for medicinal drugs include those cases where more than one such drug was found; those for illicit drugs are shown separately.

**Table 1: Percentage of various road user groups testing positive for medicinal and illicit drugs**

	% testing positive
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(Number)	Drivers (516)	Riders (268)	Passengers (228)	Pedestrians (126)	Total (1138)
Medicinal Drugs	5.8	6.0	7.0	10.3	6.6
Illicit Drugs: of which	17.4	12.7	26.8	11.1	17.5
Cannabis (incl. multiple use)	12.0	8.6	19.7	4.8	12.0
Amphetamines	1.9	1.1	1.8	3.2	1.8
Opiates	1.2	1.1	1.3	2.4	1.3
Cocaine	0.8	0.4	1.3	0.0	0.7
Methadone	0.4	0.0	0.4	0.0	0.3
Multiple drugs	1.2	1.5	2.2	0.8	1.4
Alcohol (over the legal limit)	20	14	29	31	22

Footnote: it should be noted that the percentage of medicinal drug use in this table includes cases of multiple drug use involving opiates.

The overall percentage of drugs found (24.1%) has shown a high degree of consistency throughout the 3-year study. The distribution between medicinal and illicit drugs has also remained consistent at 5-6% for medicinal and 17-18% for illicit drugs. The variations amongst individual road user groups have inevitably been larger, but general trends have remained very consistent.

It can clearly be seen from Table 1 that there is some variation of both medicinal and illicit drug incidences between the individual road user groups. Thus, for illicit drugs, the incidence is higher in passengers and lower in riders and pedestrians than it is in drivers. These differences largely reflect the differences in cannabis use, which constitutes around three-quarters of illicit drug use for all groups except pedestrians.

The latter group is exceptional in having a relatively low incidence of cannabis use, but a higher incidence of medicinal drugs.

The high incidence of road fatalities that were also over the legal GB drink drive limit of 80mg/100 ml of blood is particularly notable. The incidence in drivers (20%) is consistent with Coroners data from all driver fatalities, as is the higher percentages 29% and 31% in passengers and pedestrians respectively. The overall percentage with measurable alcohol (>9mg/100ml), at 31.6%, has not changed significantly since the previous study, when it was 35%.

Importantly, the overall percentage of drivers found to have taken drugs who were also over the drink drive limit (17%) is not significantly different from that of drivers who were not drug users (21%). Amongst cannabis users alone, this percentage is slightly (24%), but not significantly, higher.

To further clarify the findings, Table 2 gives the incidence of drugs found in each road user group. This table does not separately identify medicinal and illicit use, but in the

total sample only about one third of opiate use has been found to be illicit, whilst consistently approximately 80% of multiple drug use is illicit. Whilst routine analysis for drugs is based on immuno-assay screening of urine samples for the drug groups listed, all positive screenings were confirmed and individual drugs identified in urine and/or blood by GC-MS techniques before preliminary results were published in 1997.

**Table 2: Incidence of drugs by road user groups**

(Number)	Number of drugs found				
	Drivers (516)	Riders (268)	Passengers (228)	Pedestrians (126)	Total (1138)
No drugs	396	218	151	99	864
Cannabis (including Multiple use)	62	23	45	6	136
Amphetamines	10	3	4	4	21
Opiates	19	8	9	8	44
Cocaine	4	1	3	0	8
Methadone	2	0	1	0	3
LSD	0	0	0	0	0
Benzodiazepines	9	4	5	5	23
Tricyclic Anti. Dep.	5	2	2	1	10
Multiple drugs	9	9	8	3	29
<b>Total</b>	<b>516</b>	<b>268</b>	<b>228</b>	<b>126</b>	<b>1138</b>

Table 3 gives an analysis of the incidence of drugs found by age.

It appears clear that cannabis use is confined largely to the under 40s, particularly the under 25s; over 60% is in this age group.

Medicinal drug consumption, perhaps unsurprisingly, is mainly in the over 40s, with the majority of benzodiazepine and anti-depressant use in that age group. Two thirds of the opiate consumption is also within this older age group, reflecting the predominantly medicinal rather than illicit incidence of opiates.

**Table 3: Incidence of drugs by age**

(Age)	Number of drugs found						Total
	16-19	20-24	25-39	40-59	60+	Not known	
No drugs	78	115	312	184	127	48	864
Cannabis (incl. Multiple use)	34	41	39	14	3	5	136

Amphetamines	1	3	7	5	3	2	21
Opiates	1	4	7	12	17	3	44
Cocaine	2	1	5	0	0	0	8
Methadone	0	0	1	0	1	1	3
LSD	0	0	0	0	0	0	0
Benzodiazepines	1	1	2	11	8	0	23
Tricyclic Anti. Dep.	0	2	1	4	3	0	10
Multiple drugs	0	2	7	7	10	3	29
Total	117	169	381	237	172	62	1138

The number of cocaine cases is relatively small, but not insignificant and appears to be predominant in the age group 25-39. There is also evidence that the incidence of cocaine use has been on an upward trend during the period of the survey. Just before the halfway point in the sampling (January 1998 figures), (2), there were 7 cases of cocaine use in combination with other drugs and one individual case. The final figures reported here show that the number of multiple use cases (half with cannabis as the only other drug) has increased to 17 and the number of cases of individual use has increased from 1 to 8. This increase confirms other sociological evidence for a substantial increase in cocaine consumption in the UK within the past 2 years.

Incidence of the other major illicit drug group amphetamines (including ecstasy) appears still to be relatively small, and no cases with LSD have been found.

### **Discussion**

Generally, the results to date indicate that the incidence of medicinal drugs likely to affect driving (tranquillisers, hypnotics and antidepressants) has not changed significantly (remaining at around 6%) since the previous study, carried out between 1985 and 1987.

There has been a very significant increase in the incidence of cannabis in road fatalities (2.6% -12%). However, cannabis remains traceable in the blood stream for up to 4 weeks, after it is taken by regular users, whereas its effect on driving is probably limited to 24 hours at most after it is taken. Incidence in body fluids cannot therefore be directly related to any contributory role in accidents.

The incidence of cocaine, which did not show up at all in the previous survey, appears now to be a relatively small, but increasing problem. There is little evidence of significant use of amphetamines (including ecstasy) and so far no case has been found involving the use of LSD.

There has been a noticeable increase in the number of fatalities, particularly among drivers and riders, who had taken two or more different types of illicit drug. On the other hand, only a few drivers (17%) had taken both an illicit drug and alcohol over the legal limit.

Furthermore, this percentage was not significantly different from those who had taken no drugs at all and were over the limit (21%). This contrasts with the situation in some other countries (notably, the US & Australia) where up to 50% of drug users had also consumed alcohol over the limit.

This is an important finding because if reflected in the average drug driver, it would make impairment due to drugs, rather than alcohol, easier to detect.

These findings open up a number of key issues concerning drugs and driving which will need to be addressed. Our knowledge of the problem is still in its infancy. Although the case for drugs driving being a substantial road safety problem has not yet been demonstrated, the topic undoubtedly represents a substantial political problem which Governments and other organisations concerned with road safety will be required to address.

In light of these findings research is now planned which will tackle the problem on three fronts:

1. Research to assess the incidence of drugs in a 'live' driving population;
2. Research to help us understand the effect that particular drugs such as cannabis have on driving performance;
3. Research to identify suitable, effective roadside screening devices to improve enforcement techniques.

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