

Drugs and driving: the Finnish perspective

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ABSTRACT

Drugs can cause behavioural impairment of the driver's ability to operate safely. That impairment of driving ability can be documented, and biological fluids can be tested for drugs. Most countries have legislation that covers driving under the influence of alcohol and/or drugs. Some countries have introduced zero-tolerance laws (per se laws), which prohibit the operation of a motor vehicle while an illicit drug or its metabolite is present in the body, whether or not impairment is manifested. There is growing interest in using saliva (oral fluid) in preliminary roadside testing. Legislation in the state of Victoria, Australia, already allows the use of oral fluid for evidentiary testing in the case of cannabis and methamphetamine. Nevertheless, blood testing will probably remain the most common form of evidentiary testing.

It has been estimated that the prevalence of illicit drug use among the general driving population in Europe is in the range of 1-5 per cent, while the prevalence of licit drugs, such as benzodiazepines, affecting driving performance is higher: 5-10 per cent. Epidemiological research is often carried out on offenders and drivers involved in collisions. Among drivers suspected of driving under the influence of drugs, there is a high percentage of licit and/or illicit drug use, as the statistics for Finland in the present article show. The drugs of most concern are amphetamine and amphetamine-type substances, cocaine, cannabis, opiates and benzodiazepines and other sedative-hypnotics. The handling of drugs and driving cases are presented, and a summary of areas for further study are provided.

Keywords: drugs and driving; driving under the influence; behavioural tests of impairment; epidemiology

Background

While it is well known that driving performance is impaired by alcohol even in low dosages [1], many other drugs are linked to impairment. The effects of drugs other than alcohol on driving ability are more complex, and there are a number of substances with potential effects. Further, drug/drug, drug/alcohol and drug/subject interactions are to be considered. Drugs of special concern are benzodiazepines and related drugs, opioids, amphetamine, cocaine and other stimulant drugs, cannabis, antidepressants and antihistamines [2, 3].

The number of fatal traffic accidents and traffic accidents involving alcohol has decreased very markedly in Western countries over the past decades. Although the number of cars in the traffic flow has increased, significant progress has been made in reducing the number of impaired driving accidents in the industrialized world [4]. Alcohol has been a major traffic safety problem worldwide. However, alarmingly, the problem of drugs and driving is rapidly growing. In Finland, the number of road traffic accidents involving intoxicants other than alcohol has risen sharply [5]. Thus, more effective countermeasures are needed. Most countries have introduced legislation to prohibit driving under the influence of alcohol and/or drugs.

The legislative basis for drugs and driving cases

In the past 10 years, many countries have changed their legislation and procedures in order to address the problem of driving under the influence of drugs. In most European countries, drugs and driving regulations are part of general legislation on drunken driving or impaired driving.

Zero-tolerance law ("per se" law) and impairment law

Countries use two types of legislation: zero-tolerance law and impairment law, or a combination of both. The presence of drugs in the blood while driving is prohibited by zero-tolerance law. Following the analytical approach, the detection of drugs through chemical testing is sufficient for prosecution, whereas the impairment approach requires documenting the impairment of the behaviour of the driver. Under impairment law, it is the impairment because of drug use that is prohibited. Impairment law too involves testing biological fluids to determine whether a driver is under the influence of drugs. By documenting behavioural impairment and drug concentrations in the blood, the driver's ability to safely operate the vehicle can be estimated.

Belgium, Finland, France, Germany and Sweden apply zero-tolerance law for drugs and driving. The legislation varies from country to country. In Belgium and Germany, the analytical thresholds for specific drugs are set out in the law.* Only a few drugs—namely, amphetamine, methylenedioxymethamphetamine (MDMA), 3,4-methylenedioxyethylamphetamine (MDEA), *N*-methyl-1-(3,4-methylenedioxyphenyl)-2-butanamine (MBDB), tetrahydrocannabinol, cocaine and its metabolite benzoylecgonine, and morphine—are included in the zero-tolerance legislation of those countries. In Finland and Sweden, all controlled substances, including medicinal drugs such as benzodiazepines, fall within the scope of zero-tolerance drug laws if the driver does not have prescription for them.

*These cut-off, or threshold, levels are introduced for practical purposes, because any analytical procedure will always cause background "noise". In interpreting the results from blood testing in drugs and driving cases under a zero-tolerance law, measured drug concentrations below those cut-off levels are disregarded, and the results are considered negative.

A third type of legislation, establishing legal limits for blood drug concentrations, similar to existing laws on blood alcohol levels, is not currently feasible, because establishing such limits cannot easily be done, given current knowledge.

The situation in Finland

In February 2003, zero-tolerance legislation on illicit drugs and driving was introduced in Finland. The law contains a schedule of drugs including the drugs listed in the United Nations conventions on narcotic drugs and psychotropic substances (Finland's Narcotics Act (No. 1289/93) of 17 December 1993 and chapter 50 of the Penal Code of Finland). Drugs that have a potentially harmful effect on driving ability have warning labels on their package (Circular No. 1758/81 of the National Board of Health).

The zero-tolerance law is applied if controlled drugs or their active metabolites are found in the blood; it is not applied if the driver has a right to use the controlled substance (for example, if he or she has a prescription).

Before the implementation of the zero-tolerance law, the police had difficulty proving in the court impairment of driving ability. Thus, a significant portion of drugs and driving cases may have previously gone undetected in Finland. That was the main reason for the Government's introduction of zero-tolerance legislation for drugs that are hazardous or potentially hazardous to traffic safety.

However, at the same time, the impairment law remains in the background of legislation. A driver will be convicted for driving while intoxicated if it can be proved that his or her driving ability was impaired by the use of drugs. That applies to any substance. A driver will be convicted for consuming any drug, including medicinal drugs, if it can be proved that he or she was intoxicated to the point of being a threat to traffic safety (Penal Code, chapter 23).

Impairment must be proved in court. Symptoms of drug use must be documented by a police officer and by means of a clinical sobriety test, also known as a clinical performance test, conducted by a physician. Impairment must be proved also when prosecuting a driver for severe drunken driving due to drugs, that is, when the driver was so intoxicated that he or she presented a serious threat to traffic safety. To obtain a conviction for severe drunken driving attributable to the use of zero-tolerance drugs, there must be proof of impairment in addition to the detection of drugs in the blood. The statutory limit for a drinking and driving offence in Finland is 0.50 per thousand (w/w). The limit for severe drunken driving is 1.2 per thousand. The corresponding breath alcohol control limits are 0.22 mg/l and 0.44 mg/l (Law No. 655/1994 amending chapter 23 of the Penal Code).

Handling of drugs and driving cases in Finland

Police

In order to identify persons driving under the influence of drugs or alcohol, Finnish police are authorized by law to submit drivers to a preliminary test, a

breath test or an oral fluid drug test on site, even where no suspicion exists. Devices for on-site testing for alcohol and drugs have the same position under national law. The main reasons for using screening tests are random checks, impaired or dangerous driving, road traffic accidents or information from a bystander.

The police officer who arrests the driver also provides evidence of impairment. To demonstrate impairment caused by drugs, the police use a standardized field sobriety observation sheet (see annex I). All external symptoms of drug use are documented.

Physician and health-care unit

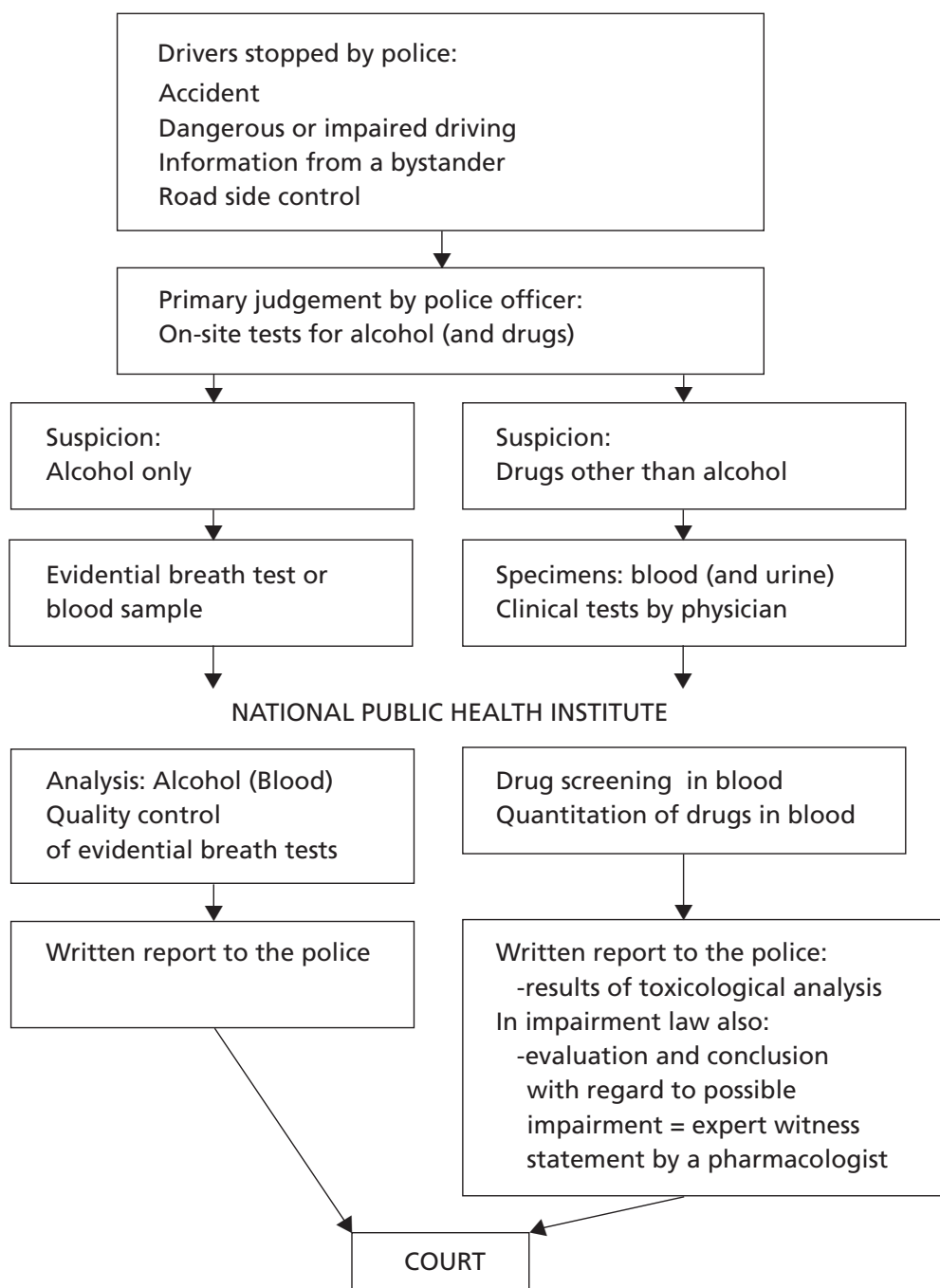
A clinical field sobriety test (see annex II) is performed by a physician at the request of the police. When the screening test is positive or when drug-induced impairment of driving-related skills is suspected, samples are taken as evidence that drugs were present in the body fluids at the time of driving. If necessary, a blood sample can be taken, even against the driver's will (according to the law on coercive means). It is recommended that both blood and urine samples be taken in cases where driving under the influence of drugs is suspected.

Laboratory

In cases where a person is suspected of driving under the influence of alcohol and/or drugs, the alcohol and drug analysis is carried out by the National Public Health Institute (KTL) of Finland. Drug analysis is performed at the request of the police. Qualitative drug screening of blood and urine is carried out, and the concentrations of substances found in the blood are measured in order to assess their possible effects on driving ability.

The written laboratory report to the police includes the results of the toxicological analysis. When zero-tolerance drugs are detected, only the test report of the toxicological analysis (qualitative and quantitative) is needed. Under impairment legislation, a pharmacological evaluation and conclusion with regard to possible impairment is also required (see figure I). The evaluation is done individually, taking into account the general characteristics of the drug, the purpose of its use, the concentration of the drug in the blood and whether drug use was acute or chronic, whenever that information can be objectively assessed, that is, using the concentration ratio of the parent drug to the metabolite.

Figure I. Handling of cases involving persons suspected of driving under the influence of drugs and/or alcohol in Finland



Prosecution

In practice, a driver under the influence of drugs is liable to prosecution if the presence of a zero-tolerance drug in his or her blood can be measured or if a significant amount of a prescribed drug or other substance can be measured, impairment of performance has been demonstrated and the drug is considered to have a possible causative role.

Courts

For illicit drugs and controlled medicines, zero-tolerance law is applied. For other substances, driver impairment must be proved in court. That proof is based on (a) the documentation by the police officer of external signs of drug use; (b) a clinical sobriety test performed by a physician; and (c) the laboratory report, including a pharmacological evaluation based on the test results.

External symptoms of drug use

Traditionally, police have apprehended impaired drivers by watching for signs of erratic driving. Signs of impairment are grounds for the police officer's initial suspicion (see figure I). In some countries, physicians perform the clinical tests for impairment. The observation and the documentation of external signs of drug use are an important step in the prosecution process, especially under impairment legislation. The observation sheet, in addition to the laboratory report, the physician's clinical performance test report and other possible police reports, is presented in court to show that driving ability was impaired.

Drug use may be difficult to detect. When there is no smell of alcohol, or when the preliminary on-site alcohol screening is negative, the police officer might not suspect other substances are the cause of erratic driving. In the United States of America, a drug recognition expert (DRE) system was developed for use by police officers performing traffic control. The DRE programme consists of 12 steps [6], including the opinion of a DRE on the drug class present. Several evaluations show that the decisions of the DRE are quite consistent with toxicological test findings [7, 8]. In 1997, the Homburg/Saar University and the Bundesanstalt für Straßenwesen in Germany modified the United States DRE system, adapting it to European requirements. The German police officer training programme and observation sheet were further modified for use in Finland.

On-site tests for preliminary roadside screening

The conclusion of the European Roadside Testing Assessment (ROSITA 1) project [2] was that there was a need for roadside tests, that is, preliminary tests allowing police officers to take immediate on-site measures. However, biological specimens are needed for confirmation from laboratory analysis. Roadside drug tests increase police confidence when preventing persons from driving under the influence of drugs, withdrawing driving licences and ordering drivers to give blood samples for laboratory tests. Roadside tests can thus save time and facilitate the law enforcement process. Those involved in the ROSITA project noted that drivers suspected of using drugs were impressed by on-site test results and often confessed when confronted with a positive test result, sometimes in the wake of their denial of any drug use before finding out the test result. In addition, roadside tests and public awareness of the use of such tests may have a preventive effect, because the tests increase the risk that persons who use drugs and drive will be caught [2].

On-site tests are preliminary tests based mostly, if not exclusively, on immunological methods and can give false positive results. Thus, laboratory confirmation of on-site test results, preferably using gas chromatographic–mass spectrometric methods (GC-MS), is therefore required.

While blood is considered to be the best body fluid for confirmation analysis because the presence of drugs in blood corresponds best with recent drug use and impairment, oral fluid is considered to be the best specimen for on-site drug testing. Advantages include ease of sample collection, minimal opportunity for sample adulteration or substitution and possible indications of recent drug use by the person tested. Furthermore, saliva sampling on the road is generally well accepted by the subjects, much better than urine sampling. In some countries, urine is used as a specimen for roadside testing, but adequate facilities, such as a sanitary van, are needed. In some countries participating in the ROSITA 1 project, urine sampling at the roadside was considered unacceptable [2].

However, the reliability, the sensitivity and the user-friendliness of oral fluid devices still need to be improved [9]. Projects are under way to develop devices that are more suitable to that purpose. Roadside tests are useful under both impairment and zero-tolerance legislation.

An ongoing collaborative study (ROSITA 2), which involves partners from Europe and the United States, tests commercially available oral fluid devices and evaluates their suitability and their reliability for on-site drug testing. There are plans to continue collaborative studies in this field because of the importance of the issue of drugs and driving.

Laboratory methods for detecting drugs in urine, blood and oral fluid in Finland

In the daily laboratory praxis, substances hazardous or potentially hazardous to traffic safety are screened by analysing whole blood samples using immunological methods as well as GC-MS and are further confirmed by means of separate GC-MS methods. Finnish legislation stipulates that the drugs must be detected in the blood.

Immunological screening includes illicit drugs (cocaine, cannabis, amphetamine, methamphetamine and opioids) and benzodiazepines. Immunological screening devices and methods for urine specimens are developed by commercial companies. When those devices are used with blood specimens, the sample preparation step must be modified [10, 11]. The analytical protocol used in Finland involves two comprehensive semi-quantitative/quantitative screenings: a method combining GC-MS and gas chromatography-electron capture detection [12] screens for a total of 51 compounds including, for example, 12 benzodiazepines, 3 cannabinoids, 8 opioids, cocaine, 13 anti-depressants, 5 anti-psychotics and 2 anti-epileptics, as well as carisoprodol, meprobamate, orphenadrine, tizanidine, zaleplon, zolpidem and zopiclone. Another GC-MS method screens for amphetamine, methamphetamine and various designer drugs, such as MDMA, MDEA, methylenedioxyamphetamine (MDA), MBDB and

3,4-methylenedioxyphenyl-2-butanamine (BDB) [13, 14]. Furthermore, all samples are tested for buprenorphine, which is increasingly abused in Finland.

Oral fluid: comparison of on-site test results with results of gas chromatography-mass spectrometry

There are about 10 oral fluid drug testing devices available on the market. They were submitted for preliminary evaluation as part of the ROSITA 2 project. Noticeable differences were found in the reliability of the various testing devices. The European ROSITA project evaluations of the on-site oral fluid testing devices were compared with the results of GC-MS analysis of oral fluid. The results of the ROSITA 2 project are expected to be available in 2006. The preliminary results of one device, tested in Finland, are presented in the table.

Preliminary test results of an on-site testing device tested in Finland as part of the ROSITA 2 project					
Analyte	Cannabis	Amphetamines	Cocaine	Opiates	Benzodiazepines
True positive (TP)	18	125	2	4	28
False positive (FP)	7	2	2	-	1
False negative (FN)	8	4	1	1	9
True negative (TN)	115	18	144	144	30
Total^a	148	149	149	149	68
	<i>Percentage</i>				
Sensitivity: TP/(TP+FN)	69.2	96.9	66.7	80.0	75.7
Specificity: TN/(TN+FP)	94.3	90.0	98.6	100.0	96.8
Accuracy: (TP+TN)/(TP+TN+FN+FP)	89.9	96.0	98.0	99.3	85.3

Source: The data were presented at the meeting on the ROSITA 2 project held in Santiago de Compostela, Spain, on 24 and 25 May 2004. The project is ongoing.

^aOne tetrahydrocannabinol positive screening test could not be confirmed because of the limited sample amount of whole blood (no saliva was available). In addition, the test was opiate- and amphetamine-positive, both confirmed positive by gas chromatography-mass spectrometry.

Comparison of laboratory confirmation results for oral fluid versus those for blood and urine

Drug concentration in oral fluid reflects free, unbound drug concentration in blood plasma. High saliva-to-plasma (S/P) ratios are advantageous for saliva testing, increasing the reliability of the tests. The S/P ratio has been noted to be high for basic drugs such as opiates (6-MAM S/P=6 and codeine S/P = 1.3) [15, 16], as well as for amphetamines (S/P=2.8) [17]. Also, cocaine concentrations in oral fluid are at easily measurable levels. In contrast, the S/P ratio of benzodiazepines (S/P = 0.3) and cannabis are not so favourable. Therefore, the

recommended cut-offs for confirmation of benzodiazepines in oral fluid are low—generally lower than existing on-site testing devices can reach.

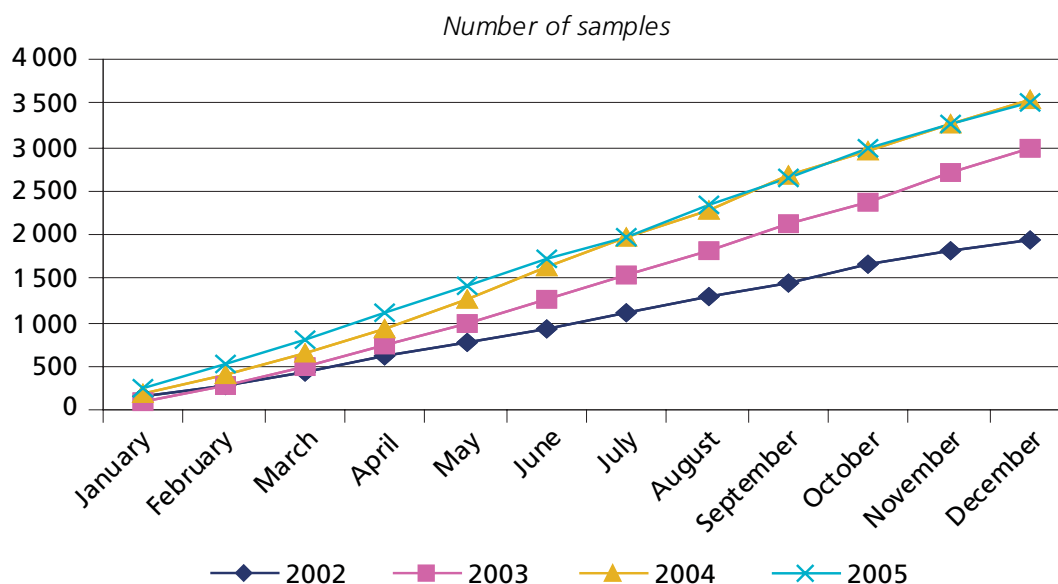
The ROSITA 1 project, which compared drug concentrations in various body fluids, found that, for amphetamines and cocaine, there is a close correlation among the measurable concentrations in urine, oral fluid and blood [2]. Opiate concentrations tend to be higher in oral fluids than in blood. After heroin use, the metabolite 6-acetylmorphine was often detected in oral fluid, although it was not detectable in blood. For benzodiazepines, rapid urine tests gave moderately good results, but the sensitivity of oral fluid tests needs to be improved. For cannabinoid on-site tests, oral fluid devices were not sensitive enough, and urine could test positive several weeks after use. Cannabis use is detected in oral fluid mainly because of oral cavity residues after smoking [18].

Thus, in practice, amphetamine can be easily detected in oral fluid using on-site tests, but there are difficulties in detecting cannabis and benzodiazepines.

Drugs and driving: trends in Finland

The number of blood samples sent to laboratories for analysis increased by about 60 per cent in the year following the introduction in February 2003 of the zero-tolerance law in Finland (see figure II). Based on the noticeable increase in the number of samples and on comments from police officers, it is clear that the police are satisfied with the zero-tolerance law. That is mainly a result of the fact that, when illicit drugs are found in the blood, the police do not need to prove in court that drug-induced driving impairment occurred; confirmation of the presence of an illicit drug in the blood is enough for prosecution for drugs and driving under current drunk driving legislation [19].

Figure II. Blood samples sent to laboratories for analysis in Finland, 2002-2005



Note: The zero-tolerance law was introduced in Finland in February 2003.

The drugs most commonly found are benzodiazepines, which are often taken together with illicit drugs. Since the late 1990s, in about 70-80 per cent of benzodiazepine cases, other illicit drugs, mainly amphetamine and/or cannabis, are simultaneously found. Also since the late 1990s, benzodiazepines have been found in about 70 per cent of investigated cases and illicit drugs, mainly amphetamine and/or cannabis, in 60 per cent (see figure III). In 2004, illicit drugs were simultaneously found in 79 per cent of benzodiazepine cases (see figure IV).

Figure III. Proportion of total investigated cases of drugs and driving in Finland in which any drugs, benzodiazepines and illicit drugs other than benzodiazepines were found, 1992-2004

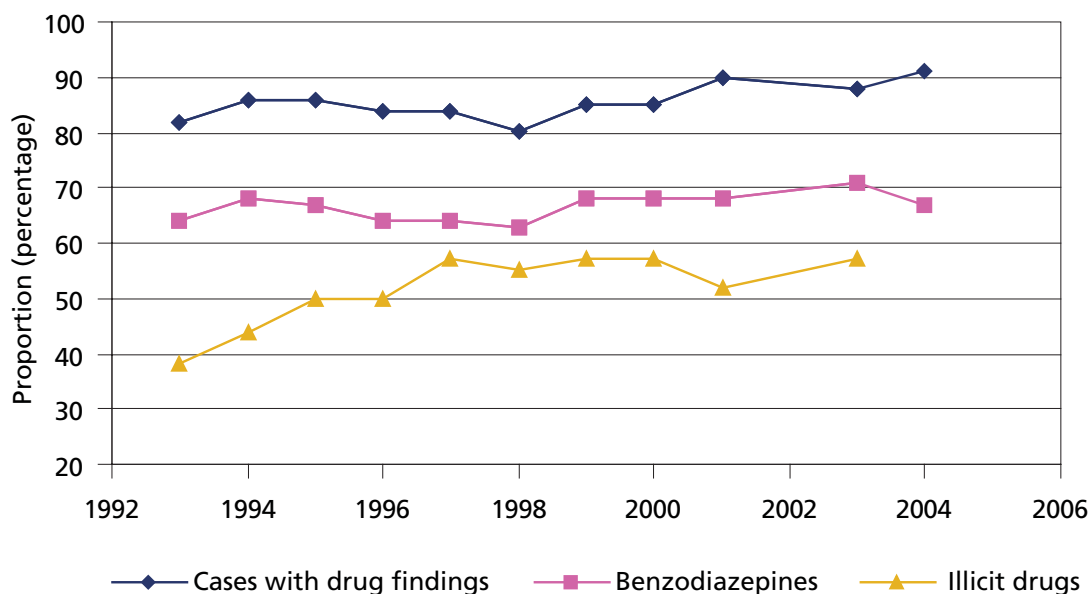
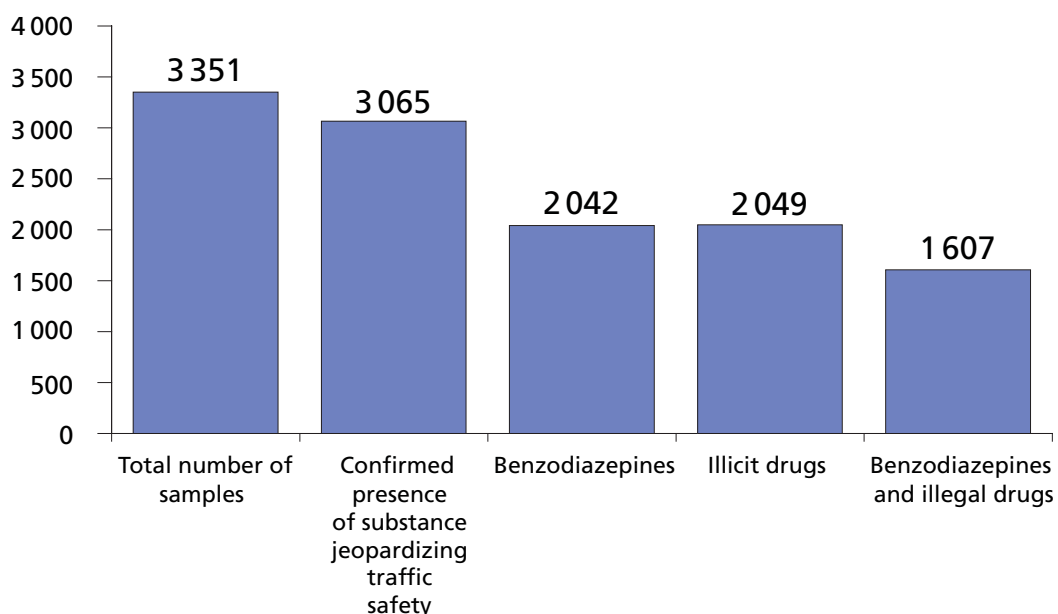


Figure IV. Investigated cases of drugs and driving in Finland in which benzodiazepines, illicit drugs and a combination of both were found, 2004



Diazepam, oxazepam and alprazolam were the benzodiazepines most often found (see figure V). Phenazepam is a new benzodiazepine derivative found on illicit drug markets in Finland. It is not found in the schedules of the international drug control conventions, nor is it registered for use as a medicinal drug in Finland. Therefore, the use and the sale of phenazepam in Finland cannot be controlled. In a neighbouring country, the Russian Federation, phenazepam is therapeutically used as a benzodiazepine for the treatment of anxiety and insomnia. It is comparable with lorazepam in terms of the strength of its action. In 2003, there were 20 positive phenazepam findings in suspected drugs and driving cases in Finland. The impairment law is the only legislative means by which driving under the influence of drugs such as phenazepam, which are not controlled at the national or international level, can be tackled.

Flunitrazepam, which is commonly abused and which is encountered in drugs and driving cases in other countries, is not available for medical use in Finland. However, as flunitrazepam is under international control, any drugs and driving cases in which that substance is involved would be dealt with under the zero-tolerance law.

Figure V. Relative occurrence of benzodiazepines and non-benzodiazepine sedative-hypnotics, 2003

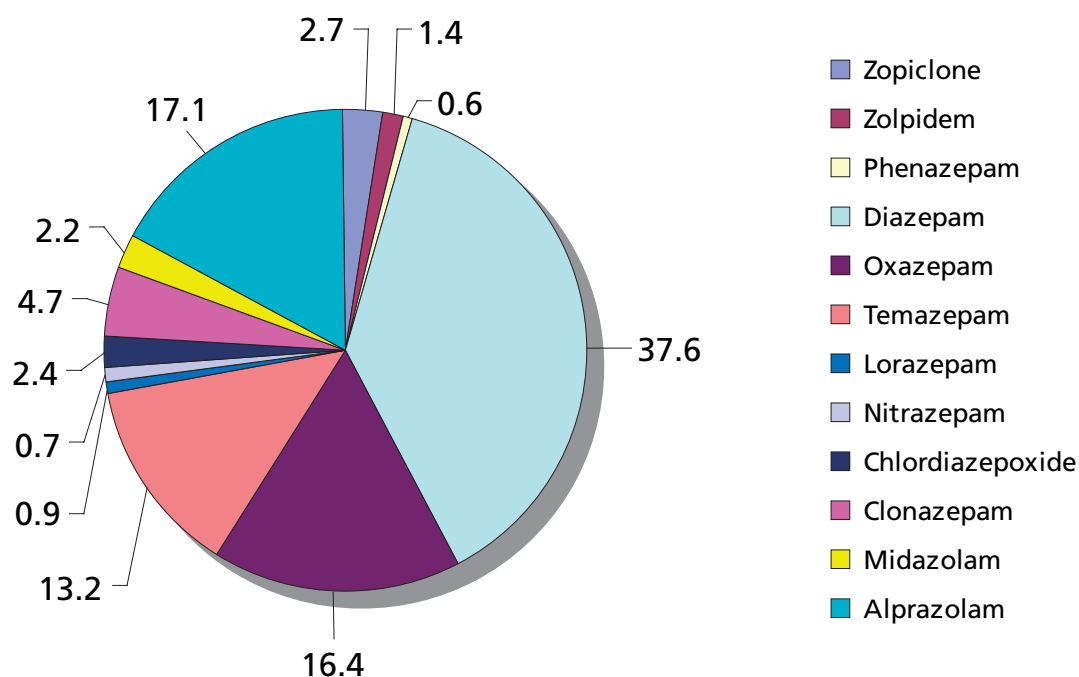
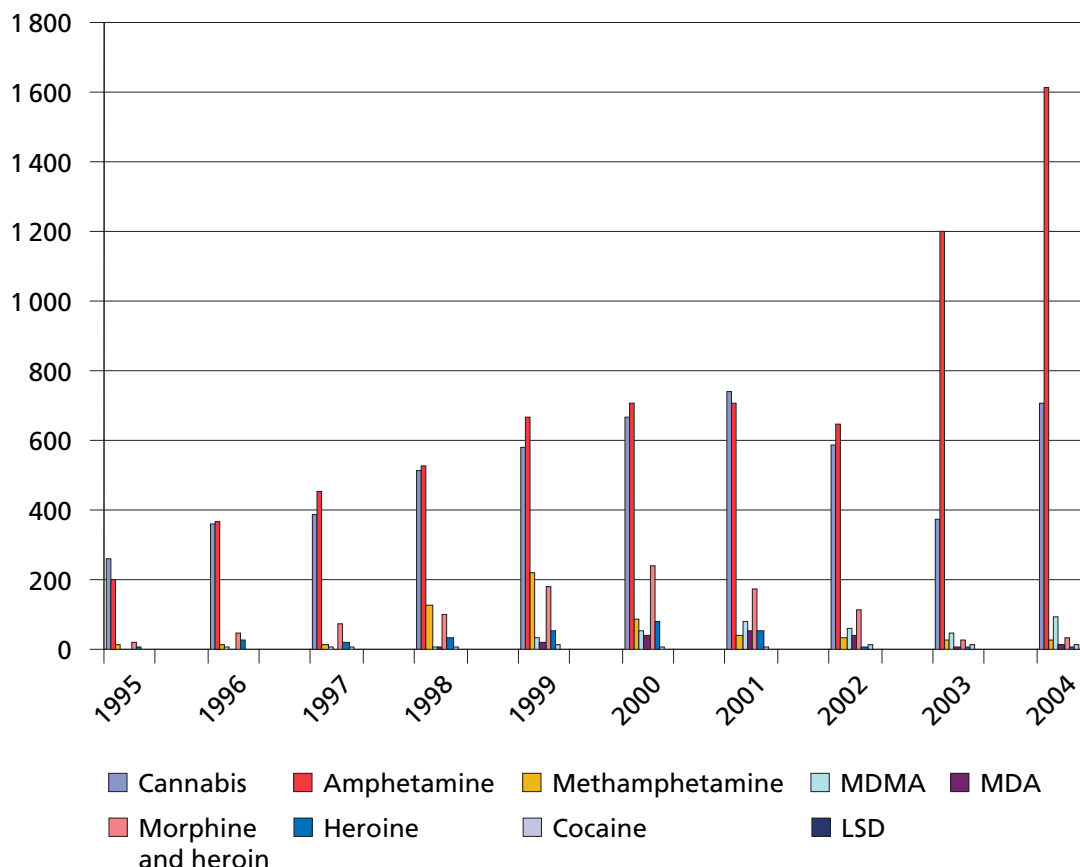


Figure VI summarizes the detection of non-medicinal illicit drugs over the 10-year period 1995-2004 in cases involving driving under the influence of drugs. The most common non-medicinal illicit drugs found were amphetamine and cannabis. Methamphetamine was often found around 1999. After that, it almost disappeared. A marked increase could be seen in the number of amphetamine cases after the introduction of the zero-tolerance law (in 2003). The simultaneous

use of alcohol, benzodiazepines and illicit drugs has been common in Finland for several years [20].

Figure VI. Occurrence of illicit drugs in drugs and driving cases in Finland, 1995-2004



Conclusions

About 20,000 drivers are convicted annually for driving under the influence of alcohol in Finland. The zero-tolerance law for driving under the influence of drugs has sharply increased the number of such cases that have been prosecuted. Under that new legislation, the medicinal use of a drug under the supervision of a physician has been put into a category separate from illicit drug use. After introducing the zero-tolerance law, the authorities have had better means with which to prosecute a person who has driven while under the influence of drugs.

Drugs and driving is included in the European Union Action Plan to Combat Drugs. It has also become an important issue for United States drug policy. There are a number of planned or ongoing international collaborative studies in the field of drugs and driving involving partners from several countries and sites.

To enhance the impact of those studies and to enable best practices to be identified in the field of police control and training, there must be an exchange of information at the international level. Also, the focus of those studies might

need to be extended from illicit drugs to a range of medicines whose use by drivers might increase the risk of accidents. Because medicines are used by a larger percentage of the population than are illicit drugs, their impact might be great. To better understand the problem of drugs and driving, experiments and epidemiological studies are needed. Diverse and unpredictable patterns of drug use increase the difficulty of assessing the problem. The combined use of illicit drugs, medicines and alcohol often results in significant impairment.

Although the effects on performance of drivers in cases involving both illicit drug use and medicinal drug use are very similar, the user groups are different, and more attention needs to be given to that aspect when developing countermeasures.

Another problem is that statistics collected in different countries on the prevalence of drug use in road accidents are too fragmentary and not comparable. Statistics do not, at present, give a sufficiently detailed picture of the situation and do not permit the identification and the evaluation of the most effective countermeasures.

Finally, in contrast to the case with alcohol, establishing a concentration-effect relationship for drugs is much more complex. Thus, concentration levels above which driving should be prohibited are still difficult to establish. At present, legislators are presented with two options: the zero-tolerance option, as applied in a number of countries, such as Belgium, Finland, Germany and Sweden; or the evaluation of the deterioration of driving ability under the influence of drugs (impairment) by specially trained police officers, or by medical doctors where required. Once reliable on-site devices have been developed, a zero-tolerance law can make effective roadside control possible.

Research efforts to develop practical and reliable detection equipment for the roadside testing of drugs and medicines should therefore continue. That equipment is needed for carrying out daily control and epidemiological surveys on the road. The use of oral fluid offers potential for those types of study.

The issue of driving under the influence of drugs is a complex one, cutting across a number of fields and areas of expertise. In addition to concrete scientific-technical aspects such as the further development of reliable on-site testing devices and protocols, the research agenda extends to other areas such as epidemiological studies and studies on the impact of various types of legislation, in order to identify best practices, standardize procedures and develop and introduce countermeasures.

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Annex I

STANDARDIZED FIELD SOBRIETY
OBSERVATION SHEET

Date

Concerns R-report nr.		Laboratory sample nr (filled out by KTL)	
Surname and initial names		Social security nr.	
OBSERVATIONS REGARDING WAY OF DRIVING, WEATHER AND ROADWAY			
Way of driving			
<input type="checkbox"/> No own observations	<input type="checkbox"/> Secure	<input type="checkbox"/> Unsteady	<input type="checkbox"/> Inappropriate speed
<input type="checkbox"/> Violation of way of priority			
<input type="checkbox"/> Winding, deviation from straight line up to _____ meters.			
Number of deviations: _____ on a _____ meters of observation			
<input type="checkbox"/> Other attentions			
Control of devices of vehicle			
<input type="checkbox"/> Driving with low revolutions	<input type="checkbox"/> Insecure use of gears	<input type="checkbox"/> Roaring of motor	
<input type="checkbox"/> Other			
Fault and defects of vehicle			
<input type="checkbox"/> No <input type="checkbox"/> Yes, what?			
Weather and lighting			
<input type="checkbox"/> Rain	<input type="checkbox"/> Hard wind / storm	<input type="checkbox"/> Snow / sleet	<input type="checkbox"/> Fog
<input type="checkbox"/> Daylight	<input type="checkbox"/> Dusk	<input type="checkbox"/> Dark	
Roadway			
<input type="checkbox"/> Good	<input type="checkbox"/> Poor	<input type="checkbox"/> Construction on way	<input type="checkbox"/> Good lighting
<input type="checkbox"/> Poor lighting	<input type="checkbox"/> Dry	<input type="checkbox"/> Wet	<input type="checkbox"/> Icy / snowy
OBSERVATIONS DURING STOPPING AND CONFRONTING			
Reactivity		Physical deviations	
<input type="checkbox"/> Normal	<input type="checkbox"/> Slow	<input type="checkbox"/> Very slow	<input type="checkbox"/> None
<input type="checkbox"/> Sweating	<input type="checkbox"/> Tremor	<input type="checkbox"/> Vomiting	<input type="checkbox"/> Restlessness
Appearance		Speaks Finnish or Swedish	
<input type="checkbox"/> Neat	<input type="checkbox"/> Shabby	<input type="checkbox"/> Filthy	<input type="checkbox"/> Yes
<input type="checkbox"/> No	<input type="checkbox"/> Faltering		
Speech			
<input type="checkbox"/> Clear	<input type="checkbox"/> Sputtering	<input type="checkbox"/> Thick	<input type="checkbox"/> Lispering
Communication, sense of time and place			
<input type="checkbox"/> Clear sense of time and place	<input type="checkbox"/> Drowsy	<input type="checkbox"/> Wakes up	<input type="checkbox"/> Deep sleep / unconscious
<input type="checkbox"/> Altered			
Behaviour			
<input type="checkbox"/> At ease, behaved	<input type="checkbox"/> Agitated	<input type="checkbox"/> Aggressive	<input type="checkbox"/> Mute
<input type="checkbox"/> Frivolous	<input type="checkbox"/> Uninterested	<input type="checkbox"/> Defiant	<input type="checkbox"/> Weepy
Rising out of vehicle		Walking	
<input type="checkbox"/> Normal	<input type="checkbox"/> Balance disturbed	<input type="checkbox"/> Has to lean on vehicle	<input type="checkbox"/> Secure
<input type="checkbox"/> Dragging	<input type="checkbox"/> Wobbly	<input type="checkbox"/> Balance disturbed	
Smell of alcohol		Alcometer test	
<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes: time _____ %	<input type="checkbox"/> No
		<input type="checkbox"/> Cannot be done	<input type="checkbox"/> Refused
Positive on site tests			
Cozart Time	<input type="checkbox"/> Amphetamine	<input type="checkbox"/> Opiates	<input type="checkbox"/> Benzodiazepines
<input type="checkbox"/> Cocaine	<input type="checkbox"/> THC		
Drugwipe Time	<input type="checkbox"/> Amphetamine	<input type="checkbox"/> Opiates	<input type="checkbox"/> Benzodiazepines
<input type="checkbox"/> Cocaine	<input type="checkbox"/> THC		
Other, what?	<input type="checkbox"/> Amphetamine	<input type="checkbox"/> Opiates	<input type="checkbox"/> Benzodiazepines
<input type="checkbox"/> Cocaine	<input type="checkbox"/> THC		
Eyes			
<input type="checkbox"/> Nothing abnormal	<input type="checkbox"/> Conjunctivas reddish	<input type="checkbox"/> Watery / gleaming	<input type="checkbox"/> Restless
Pupils			Nystagmus
<input type="checkbox"/> Normal	<input type="checkbox"/> Dilated	<input type="checkbox"/> Contracted	<input type="checkbox"/> Jerky movement
Reaction to light	<input type="checkbox"/> Slow	<input type="checkbox"/> Fast	<input type="checkbox"/> No jerking observed
Right about _____ mm	Left about _____ mm		
Lighting conditions on test site			
<input type="checkbox"/> Daylight	<input type="checkbox"/> Dusk	<input type="checkbox"/> Night, streetlights	<input type="checkbox"/> Night, indoor
<input type="checkbox"/> Other, what?			
Conspicuous behaviour			
<input type="checkbox"/> Did not change during evaluation		<input type="checkbox"/> Increased during evaluation	<input type="checkbox"/> Decreased during evaluation
Test started: time _____	Test ended _____	The ability of the driver	
		<input type="checkbox"/> Is not impaired	<input type="checkbox"/> Is impaired
		<input type="checkbox"/> Is considerably impaired	
Further information: like other observations, confiscated substances, pills, paraphernalia etc.			
Time and place		Signature and name of observer	

Annex II

Draft translation of physician's impairment evaluation

Table 2

Inquirer of the examination

Examination place

Name of the subject **Social security number**

Proving of identity proved by the police other

The reason for examination drunken driving other felony other Wanted examination blood sample urine sample clinical examination

Diseases
 According to none yes What? no answer Blood pressure/..... mmHg Pulse/min
 Observed symptoms none yes What?

Observed injuries none yes What? Liquid treatment of the injured no yes What, how much?

Drugs and medication. Has the subject used these before or after the incident? What, when, how much? Injection marks no yes
 According to none yes regularly yes occasionally no answer
 The subject

On-site test saliva urine neg. pos. What? Alcohol breath testo/oo

Clinical examination
 Weight kg weighed given Height cm measured given
 Body structure normal slim obese

Examinations, observations normal slightly deviating clearly deviating (underline the observation)

Consciousness numb, sleepy, almost unconscious

Aware of the date and time, memory

Walking straight forward

Full turn while walking

Romberg's test with eyes closed

Finger to finger test

Pulling oneself together observed

Behaviour uninhibited, aggressive, angry, talkative, arrogant, unresponsive, limp, absentminded

Speech inarticulate, spluttering, thick, faltering

Train of thought illogical, jumpy, muddled

Mood euphoric, irritated, distressed, varying, restless, upset, bored

Size of the pupils strongly dilated, pointed

Pupils' reaction to light slowed down, non-reacting

Nystagmus strong after following the object spinning induced

Other unusual findings sweating, spasms, chills, dry mouth, running nose, tremor, watering or bloodshot eyes

Other observation:

Samples* The skin was cleaned with water other. What?

Blood sample/..... at 2 tubes according to the instructions other

Urine sample/..... at under supervision yes no quality of urine normal unusual How?
 Urine test slip glucose no yes keto compounds no yes

Signature** Clarification of name and job position

Evaluation of the degree of the functional disorder (the total degree of errors)

1. Functional disorders were not observed were observed examinations were not carried out, because.....

2. The degree of the functional disorder is in the limits of normal variation deviates from the normal state and is at least mild of medium strength

3. To my knowledge these functional disorders/errors have been caused by
 drugs and/or medication and/or alcohol decease injury I can't evaluate

This I affirm by my honour and conscience

Date Signature

Clarification of name and job position

*Personal data and sampling time is written on the sample tubes. **The signature of the person who took the samples, if not the same as the signature of this form.