

Drug-Impaired Driving in Europe

What is the Drug-Impaired Driving Learning Centre (DIDLC)?

The Drug Impaired Driving Learning Centre (DIDLC) is a fully bilingual, web-based educational resource that was developed by the Traffic Injury Research Foundation, in partnership with Desjardins Insurance.

This comprehensive, accessible tool was created to inform the development of an evidence-based drug-impaired driving strategy. It was designed to meet the needs of a wide spectrum of diverse stakeholders who are seeking more information about priority issues.

The objective of the DIDLC is to support the work of governments and road safety partners by sharing current knowledge about research and practice, and increasing awareness about drug-impaired driving. A consolidated base of knowledge is essential to build a common understanding of the drug-impaired driving problem, inform discussion, and achieve progress in reducing it.

The Learning Centre contains several modules that are structured in a question and answer format, similar to other TIRF educational programs. Module topics include:

- magnitude and characteristics of the problem
- effects of drugs on driving
- legislation and penalties
- tools and technologies.

To view more fact sheets, or to get more information about drug-impaired driving, visit <http://druggeddriving.tirf.ca>

What is drug-impaired driving?

Drug-impaired driving is defined as the operation of a motor vehicle while under the influence of any type of psychoactive substance (illegal substances, prescription medication, over-the-counter medication) or a combination of drugs and alcohol that is established or likely to impair abilities required for safe driving.¹



What are the different types of drugs that can impair driving?

Drugs that can impair driving are categorized according to the seven drug categories established by the International Drug Evaluation and Classification Program (DECP). These include: cannabis², central nervous system (CNS) depressants, central nervous system (CNS) stimulants, hallucinogens, dissociative anesthetics, narcotic analgesics, and inhalants.



¹ Holmes et al. 2014

² The term "cannabis" refers to the cannabis plant that contains more than 100 cannabinoids. The primary psychoactive component of cannabis is delta-9-tetrahydrocannabinol, commonly known as THC. THC and its psychoactive metabolite, 11-hydroxy-THC or 11-OH-THC, and primary inactive metabolite, 11-nor-9-carboxy-THC or THC-COOH are frequently measured in biological fluids to document cannabis intake.

How is the drug-impaired driving problem studied?

The two central methods to investigate drug-impaired driving are experimental and epidemiological studies³. Experimental studies examine the effects of specific drugs on driving ability. Within a clinical and controlled setting, individuals are administered an active or placebo drug, followed by tests that assess skills and abilities relevant to driving. Typically, the results of the experimental group are compared to those of a control group. The control group receives a placebo and performs the same tests as the experimental group. This enables researchers to determine if there is significant impairment of driving-related skills experienced as a result of the drug. These test results help researchers to infer the level of risk posed by driving under the influence of a drug⁴.

Epidemiological studies seek to determine the prevalence or magnitude of the drug-impaired driving problem. There are two types of epidemiological studies: culpability studies and case-control studies. Culpability studies compare the at-fault rates of crash-involved, drug-positive drivers to that of crash-involved, drug-negative drivers. Case-control studies compare drug use by crash-involved drivers to drug use by non-crash involved drivers and the crash/driver characteristics are matched as closely as possible.⁵

How widespread is the drug-impaired driving problem in the Europe?

The number of fatally injured drivers in Europe that tested positive for drugs was reported in the Driving under the Influence of Drugs, Alcohol and Medicines (DRUID) project.⁶ It included crash data from 1,118 fatally injured drivers in four countries⁷ from January 2006 to December 2009. Results showed that a combination of alcohol and drugs and/or medication was detected in 4.3%

to 7.9% of fatally injured drivers. Conversely, relatively low concentrations of illegal drugs and medications were detected in fatally injured drivers when alcohol was not present. The prevalence of drug detection in fatally injured drivers from the four countries included:

- 0.0 to 1.8% of fatally injured drivers tested positive for cannabis;
- 0.0 to 2.1% tested positive for illicit amphetamines;
- 0.0 to 5.2% tested positive for benzodiazepines; and,
- 0.6 to 1.5% tested positive for medicinal opioids.



The DRUID roadside survey⁸ measured drug-impaired driving in the general population. The survey was completed in 13 countries⁹ and included samples from over 50,000 drivers. Results showed that illicit drugs were detected in 0.2 to 8.2% of drivers tested. Medicinal drugs were detected in 0.17 to 3.0% of drivers tested. The prevalence of detection for each drug from the thirteen countries was:

³ Verstraete & Legrand 2014

⁴ Berghaus et al. 2007; European Monitoring Centre for Drugs and Drug Addiction 2007; Neale 2004

⁵ Compton & Berning 2015

⁶ DRUID, 2012; Schulze et al. 2012

⁷ Portugal, Finland, Sweden and Norway.

⁸ DRUID 2012;

⁹ Belgium, Hungary, Poland, Czech Republic, Italy, Portugal, Denmark, Lithuania, Sweden, Spain, the Netherlands, Finland, Norway

- 0.0 to 5.9% of drivers tested positive for cannabis;
- 0.0 to 1.45% of drivers tested positive for cocaine;
- 0.14 to 2.73% of drivers tested positive for benzodiazepines; and,
- 0.00 to 0.79% of drivers tested positive for medicinal opioids.

Are there differences between male and female drivers in terms of drug type and frequency of drug-impaired driving?

Results from the DRUID study (fatal crash data & roadside survey)¹⁰ and the IMMORTAL project (roadside survey)¹¹ showed male drivers were more likely to test positive for illegal drugs, including cannabis, cocaine, amphetamines and opioids. Comparatively, medicinal opioids, and benzodiazepines were commonly found among older female drivers. Overall, male drivers were more likely to test positive for drugs than female drivers.



Does the drug type and frequency of drug-impaired driving differ according to age group?

The fatality data from the DRUID study revealed that positive tests for drugs were most prevalent among young and middle-aged drivers.

Cannabis and cocaine were most prevalent among fatally injured drivers aged 18 to 35, and benzodiazepines were prevalent among fatally injured male drivers aged 25 to 49 and fatally injured female drivers aged 35 and older. Results of the DRUID roadside surveys reinforced this relationship, and showed a higher prevalence of illegal drugs in younger drivers, and a higher prevalence of benzodiazepines and medicinal opioids in middle-aged and older drivers.¹² Results of the roadside survey in the IMMORTAL project also confirmed that illegal drugs were more commonly detected in young male drivers, and prescription drugs in older female drivers.¹³

Does the drug type and frequency of drug-impaired driving differ according to the time of day and day of week?

Results of the DRUID study that assessed the prevalence of drugs in fatally injured drivers¹⁴ found a larger percentage of drug positive drivers involved in nighttime crashes as compared to those involved in daytime crashes.¹⁵ However, there was not a significant difference in the number of drug positive fatally injured drivers involved in weekend versus weekday crashes. The DRUID roadside surveys from 13 countries¹⁶ revealed that illicit drugs were detected in a larger percentage of weekend drivers and medicinal drugs were detected in a larger percentage of weekday drivers.¹⁷

¹⁰ Schulze et al. 2012

¹¹ Klemenjak et al. 2005

¹² Schulze et al. 2012

¹³ Klemenjak et al. 2005

¹⁴ For Belgium, Denmark, Finland, Italy, Lithuania, and the Netherlands.

¹⁵ Isalberti et al. 2011

¹⁶ Belgium, the Czech Republic, Denmark, Spain, Italy, Lithuania, Hungary, the Netherlands, Poland, Portugal, Finland, Sweden, and Norway.

¹⁷ Summary of main DRUID results 2012

Are certain types of drivers at higher risk for drug-impaired driving?

Young drivers are identified as a high-risk population for drug-impaired driving. In general, the crash risk of younger drivers is 2-3 times that of adult drivers.¹⁸ This, in combination with their higher rates of drug use makes young drivers a greater concern for drug-impaired driving. Studies from Canada, the United States, Europe and Australia showed that a much larger proportion of young drivers self-report drug-impaired driving, as compared to national percentages.¹⁹

Drug users are also considered a high-risk population as a considerably large percentage of drug users and nightclub/rave attendees in Canada, the United Kingdom and Australia reported drug-impaired driving frequently in the previous year. Of concern, they also reported intention to engage in the behaviour again. In general, permissive attitudes were held by drug users and nightclub/rave attendees towards drug-impaired driving.²⁰



Is there social concern and awareness of drug-impaired driving?

Results of the Road Safety Monitor: 2015, conducted by TIRF, revealed that the majority of Canadian drivers (63.3%) agreed that drug-impaired driving was a very or extremely serious road safety issue. However, 36.7% felt that it was not an issue or only posed a lesser problem for traffic safety. A significantly larger percentage of

female drivers (67.2%) agreed drugged-driving was a very or extremely serious issue as compared to male drivers (58.9%). A larger percentage of drivers aged 65 and older (77%) and drivers between 45 and 64 (63.1%) agreed it was a very or extremely serious issue as compared to younger drivers.²¹ Public opinion surveys in the United States, and Europe reported similar results, such that the majority of respondents agreed that drug-impaired driving was a serious road safety issue.²²

Awareness of laws and penalties related to drug-impaired driving was measured by a public opinion survey conducted by CCMTA. It showed that 85% of Canadians were aware that drug-impaired driving was a criminal offence. However, knowledge of drug-impaired driving laws was greatest among those aged 16 to 19 (92%) and lowest among those aged 65 and older (77%). A larger percentage of men (90%) were aware that drug-impaired driving was an offence in the Criminal Code as compared to women (79%).

In addition, the same survey revealed that a majority of drivers (64%) believed it was very likely that a driver would be stopped and charged for alcohol-impaired driving, but only 39% agreed it was likely that drivers impaired by street drugs would be stopped. Furthermore, 26% indicated that it was likely for drivers to be stopped for cannabis-impaired driving, and only 8% reported it was likely for drivers impaired by prescription drugs.²³

¹⁸ TIRF Young & New Driver Resource Centre, 2016

¹⁹ Adalf et al. 2003; Lewis et al. 2005;

²⁰ Fisher et al. 2006; Albery et al. 2000; Duff & Rowland 2006

²¹ TIRF 2015. The Road Safety Monitor 2015: Drinking and Driving in Canada

²² Traffic Safety Culture Index 2015; Antov et al. 2012

²³ Jonah 2013

Are drivers aware of the impairing effects of drugs on driving abilities?

Public opinion surveys in Europe showed that the majority of the general population believe that the risk associated with driving after drug use was high, and only a small percentage of those who



had previously driven under the influence of drugs thought that drug-impaired driving was risky.²⁴

Do drivers think that drug-impaired driving is a more or less serious problem than alcohol-impaired driving?



Results from the Social Attitudes to Road Traffic Risk in Europe (SARTRE 3) survey showed that respondents rated alcohol-impaired driving as the primary factor in car crashes, and drug-impaired driving as the second most likely causal factor.²⁵

Traffic Injury Research Foundation

The mission of the Traffic Injury Research Foundation (TIRF) is to reduce traffic-related deaths and injuries. TIRF is a national, independent, charitable road safety institute. Since its inception in 1964, TIRF has become internationally recognized for its accomplishments in a wide range of subject areas related to identifying the causes of road crashes and developing programs and policies to address them effectively.

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In partnership with:



²⁴ Antov et al. 2012

²⁵ Cauzard 2004