

Drug-Impaired Driving in Australia

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 Australia?

The number of fatally injured Australian drivers that tested positive for drugs in 2004 was captured in a culpability study with toxicology results from sub-groups of drivers in three Australian states.⁶ Results showed that:

- 13.5% of fatally injured drivers tested positive for cannabis;

- 4.1% tested positive for stimulants;
- 4.9% tested positive for opioids; and,
- 4.1% tested positive for benzodiazepines.



Among the general population, a roadside survey of 781 drivers was conducted in Queensland and 3.5% of drivers tested positive for at least one drug, as compared to 0.8% who tested positive for alcohol. The most commonly detected drugs included cannabis, which was found in 1.7% of all drivers, and amphetamines in 1.4% of all drivers.⁷

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

Results from fatality data⁸ and roadside surveys⁹ in Australia showed that male drivers were more likely to test positive for cannabis, ecstasy, and amphetamines. Female drivers were more likely to test positive for benzodiazepines. Overall, males were more likely to test positive for drugs.

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 Drummer et al. 2004; the sample consisted of 3,398 fatally injured drivers from three Australian states (Victoria, New South Wales, and Western Australia).

⁷ Davey et al. 2007; the roadside survey sample included the oral fluid samples of 781 drivers

⁸ Caldicott et al. 2007

⁹ Davey et al. 2007; Davey & Freeman 2009,

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

In fatal crashes, the highest prevalence of illicit drugs was detected in drivers aged 25 to 39 (34.5%) and 17 to 24 (28.6%) and the lowest prevalence of illicit drugs was detected in those aged 60 and older (0.6%) and 50 to 59 (10.3%). Furthermore, cannabis was more prevalent in fatally injured younger drivers, and the prevalence of prescription drugs detected in fatal crashes increased with age.¹⁰



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

Research on fatally injured drivers in Australia indicated that nighttime drivers were more likely to test positive for drugs as compared to daytime drivers. Furthermore, the prevalence of drugs detected in drivers was similar between weekdays and weekends.¹¹

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.¹² 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.¹³

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.¹⁴



¹⁰ Palamara et al. 2014

¹¹ Palamara et al. 2014

¹² TIRF Young & New Driver Resource Centre, 2016

¹³ Adalf et al. 2003; Lewis et al. 2005;

¹⁴ Fisher et al. 2006; Albery et al. 2000; Duff & Rowland 2006

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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