

# Drug-Impaired Driving in Canada

## 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.<sup>1</sup>



## 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: cannabis<sup>2</sup>, central nervous system (CNS) depressants, central nervous system (CNS) stimulants, hallucinogens, dissociative anesthetics, narcotic analgesics, and inhalants.



<sup>1</sup> Holmes et al. 2014

<sup>2</sup> 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 studies<sup>3</sup>. 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 drug<sup>4</sup>.

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.<sup>5</sup>

## How widespread is the drug-impaired driving problem in Canada?

The number of fatally injured drivers in Canada that test positive for drugs each year is collected and reported in the Traffic Injury Research Foundation's (TIRF) National Fatality Database. This database includes crash reports, medical examiner and coroners' data on persons fatally injured in motor vehicle collisions in all jurisdictions across Canada since 1987. On average, high percentages (80%) of fatally injured

drivers in TIRF's National Fatality Database are consistently tested for drugs. Furthermore, there are only slight variations in the types of drugs that are tested for in each jurisdiction and the data are collected directly from the medical examiner and coroner's office, thus increasing the accuracy of the results. It should be noted that the data from the National Fatality Database demonstrates the prevalence of drugs in fatality injured drivers and does not imply causality, as the presence of drugs in the bodies of drivers contributes to the resulting crash to an unestablished degree.



In 2013, for example, 82.9% of fatally injured drivers were tested for drugs; among those tested, 44.5% were positive for drugs.<sup>6</sup> Among these fatally injured drivers who were positive for drugs:

- 49.1% tested positive for cannabis;
- 35.8% for CNS depressants;
- 26.9% for CNS stimulants;
- 1.0% for hallucinogens;
- 2.1% for dissociative anesthetics; and,
- 20.4% for narcotic analgesics.

In comparison, 87.2% of fatally injured drivers were tested for alcohol in 2013; among those

<sup>3</sup> Verstraete & Legrand 2014

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

<sup>5</sup> Compton & Berning 2015

<sup>6</sup> Brown et al. 2017

tested, 31.6% tested positive for alcohol. Therefore, more fatally injured drivers tested positive for drugs than for alcohol in 2013.

In the general population, the prevalence of drugs and driving can also be measured via roadside surveys. A recent roadside survey in British Columbia<sup>7</sup> of 2,840 drivers showed that drugs were detected in 7.2% of drivers tested<sup>8</sup>. This included:

- 4.5% of drivers tested positive for THC;
- 2.3% tested positive for cocaine;
- <1% tested positive for amphetamines;
- <1% tested positive for benzodiazepines; and,
- 1.2% tested positive for opiates.

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

Results from the Alcohol and Drug-Crash Problem in Canada: 2013 prepared by TIRF<sup>9</sup> for the Canadian Council of Motor Transport Administrators (CCMTA) revealed a sex difference with respect to specific drug type, such that males were more likely to test positive for illegal substances such as cannabis and CNS stimulants. Overall, males and females were equally as likely to test positive for drugs.<sup>10</sup>



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

According to the results from the Alcohol and Drug-Crash Problem in Canada: 2013 prepared by TIRF for CCMTA, the fatality data showed a positive test for drugs was more prevalent in younger drivers (under the age of 35) in comparison to those older than age 35. With respect to drug type, cannabis was more prevalent among young drivers, while older drivers were more likely to test positive for CNS depressants.<sup>11</sup>

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

According to TIRF's 2013 fatality data<sup>12</sup>, on weekdays 43.3% of fatally injured drivers tested positive for drugs compared to 47.2% of those drivers who died in weekend crashes.

### **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.<sup>13</sup> 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.<sup>14</sup>

<sup>7</sup> Beirness & Beasley 2010

<sup>8</sup> A random sample of drivers was collected from five cities in British Columbia, carried out between the hours of 9pm and 3am, Wednesday to Saturday nights.

<sup>9</sup> Brown et al. 2017

<sup>10</sup> Brown et al. 2015

<sup>11</sup> TIRF National Fatality Database, 2013

<sup>12</sup> Brown et al. 2017 in press

<sup>13</sup> TIRF Young & New Driver Resource Centre, 2016

<sup>14</sup> Adalf et al. 2003; Lewis et al. 2005;

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.<sup>15</sup>



## 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.<sup>16</sup> 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.<sup>17</sup>

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.<sup>18</sup>

Specific concern in relation to marijuana impaired driving was measured most recently in a public opinion poll by State Farm Canada. Results indicated that 80% of respondents were concerned about drivers under the influence of cannabis. In addition, 3 out of 4 respondents did not believe that police had the tools and resources to identify cannabis-impaired drivers.<sup>19</sup>

The State Farm Canada public opinion poll also revealed that three-quarters of Canadians were worried about drivers impaired by prescription drugs, and those aged 16-25 and 55+ years were most likely to associate driving under the influence of prescription drugs with their respective age group.

<sup>15</sup> Fisher et al. 2006; Albery et al. 2000; Duff & Rowland 2006

<sup>16</sup> TIRF 2015. The Road Safety Monitor 2015: Drinking and Driving in Canada

<sup>17</sup> Traffic Safety Culture Index 2015; Antov et al. 2012

<sup>18</sup> Jonah 2013

<sup>19</sup> State Farm 2017

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

The public opinion survey by CCMTA also inquired about knowledge of the impairing effects of alcohol and drugs on driving ability. A majority (90%) of the respondents reported that alcohol would impair driving ability in comparison to 68% of respondents that indicated cannabis would

impair driving ability. Just over half (55%) indicated that prescription drugs would have an impact on driving ability. Young drivers (aged 16 to 19) were less likely to report that cannabis impaired driving ability, and those aged 35 and older were less likely to agree that prescription medications could impair driving. Furthermore, female drivers generally reported higher levels of agreement regarding the impairing effects of drugs as compared to males.<sup>20</sup>

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



Canadian youth (aged 14 to 19) reported that, in general, cannabis-impaired driving was safer than alcohol-impaired driving.<sup>21</sup> Furthermore, a

<sup>20</sup> Jonah 2013

<sup>21</sup> Porath-Waller et al. 2013

<sup>22</sup> Patton et al. 2001

<sup>23</sup> McKiernan et al. 2017

survey of 5,173 Manitoba high school students indicated that while only 3.8% of students thought it was acceptable to drink and drive, 19.4% of male students and 15.9% of female students felt it was acceptable to use cannabis and drive.<sup>22</sup> In a recent study, the perceptions on cannabis of Canadian youth (aged 14-19) were examined. Participants indicated that they felt that cannabis impaired driving was “safer” or less dangerous than alcohol-impaired driving, and that they were against getting in a car with a drunk driver, but may take a ride from a driver who had smoke cannabis depending on who it was and how much they had smoked.<sup>23</sup>

## 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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