



Canadian Centre
on Substance Abuse
Centre canadien de lutte
contre les toxicomanies

Partnership. Knowledge. Change.
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Drug-Impaired Driving in Canada Educator Toolkit

Drugs, Driving and Youth Highlights

Why does this matter?

Studies have found that the drug-impaired driving problem has become comparable to alcohol-impaired driving. In Canada, there has been an increase in the number of drivers who test positive for substances other than alcohol: a 2010 roadside survey in British Columbia of 2,840 randomly selected vehicles found that 7.2% of drivers tested positive for drugs and 9.9% had alcohol in their system (Beirness & Beasley, 2011). In the roadside survey, the most frequently detected drugs were depressants (35.6%), followed by cannabis (25.8%) and stimulants (19%) (Beirness & Beasley, 2011). One area of particular concern is the prevalence of drugged driving among young drivers.

What did we do?

To address the issue of drug-impaired driving among youth, CCSA developed a series of reports that reviewed the current scientific evidence on the effects of various classes of drugs on driving behaviour. These reports also noted the implications for young drivers. These reports focused on stimulants, opioids, sedatives and cannabis, and the effects these drugs have on the body and the corresponding effects on driving. These categories of drugs were selected as they represent the most commonly used substances by youth.

This document summarizes the findings from the reports, which can be viewed at the links below:

- [Opioids, Driving and Implications for Youth](#)
- [Sedatives, Driving and Implications for Youth](#)
- [Stimulants, Driving and Implications for Youth](#)
- [Cannabis, Driving and Implications for Youth](#)

What is drug-impaired driving?

In recent years, the use of drugs by drivers has come to public attention as a major contributor to serious crashes in Canada. Impaired driving is an offence under the [Criminal Code](#) of Canada and includes impairment by alcohol or any drug, including prescription drugs. The law applies to the operation of any type of motor vehicle (e.g., cars, snowmobiles). Legally, it does not matter if the vehicle is being operated on a public roadway or on private property. Specially trained police officers can demand that drivers suspected of being impaired by drugs submit to a series of behavioural and clinical tests, including providing a sample of blood, breath or oral fluid to determine drug content. Refusing to comply is an offence that carries penalties equivalent to those for alcohol-impaired driving.



How common is drug-impaired driving?

Statistics Canada reported that there were 74,781 impaired-driving incidents in 2014, of which 2,500 were known to involve drugs (Boyce, 2015). A series of random surveys of nighttime drivers in British Columbia conducted between 2008 and 2010 found that among drivers aged 16–24:

- 1.1% were positive for opioids;
- 3.6% tested positive for cocaine, amphetamine or methamphetamine; and
- 6.4% were positive for cannabis.

Data from the 2012 Canadian Alcohol and Drug Use Monitoring Survey (CADUMS) reveal that 2.6% of drivers in Canada admitted driving within two hours of using cannabis at least once in the previous 12 months (Health Canada, 2013). Overall, among all drivers killed in motor vehicle crashes in Canada between 2000 and 2010 (Beirness, Beasley, & Boase, 2013):

- 5.5% tested positive for opioids;
- 8.5% tested positive for stimulants;
- 11.2% tested positive for sedatives; and
- 16.4% tested positive for cannabis.

What is the issue?

A growing body of evidence suggests that using drugs negatively affects driving performance and increases crash risk. Young people continue to be the largest group of drivers who die in crashes and test positive for alcohol or drugs. Among young drivers in Canada, driving after using cannabis is more prevalent than driving after drinking. Additionally, after alcohol, cannabis is the most commonly detected substance among drivers who die in traffic crashes in Canada. Among fatally injured drivers aged 16–24 who died between 2000 and 2010 in motor vehicle crashes:

- 1.1% tested positive for opioids;
- 4.1% tested positive for sedatives;
- 8.8% tested positive for stimulants; and
- 25.8% tested positive for cannabis.

Detecting Drug-Impaired Drivers

Unlike alcohol, most drugs cannot be detected by a breath test. The [Drug Evaluation and Classification \(DEC\) program](#) is used to train law enforcement officers to recognize and evaluate behaviours and other psychological indicators that are associated with seven categories of drugs. This information, together with a urine, oral fluid or blood test, can provide enough evidence for drug-impaired driving charges to be laid.

Oral Fluid

[Screening for drugs in samples of oral fluid](#) (saliva) collected at roadside provides a viable means of enhancing the detection of drug use by drivers. The validity of oral fluid drug screening devices has improved to the point where it is reasonable to pursue their use in Canada to detect drug-impaired drivers. However, the introduction of oral fluid screening at roadside will require new legislation, policies and procedures. Oral fluid screening devices are currently only valid for the detection of a limited number of substances and will not eliminate the need for behavioural testing for impairment or the DEC program.



Further studies of traffic crashes reveal that:

- Drivers who test positive for the use of sedatives are two to eight times more likely than alcohol-and drug-free drivers to be involved in a fatal traffic crash (Drummer, 1995; Gjerde et al., 2011); and
- Drivers who test positive for the use of opioids are up to eight times more likely to be involved in a traffic crash (Mura et al., 2003).

What are they?

- **Cannabis**, commonly known as marijuana, refers to the dried leaves and flowering tops of the mature cannabis plant, *Cannabis sativa*. Hashish is the dried, dark brown or black resinous secretion of the cannabis plant. Raw or crude cannabis is typically rolled like a cigarette, known as a joint, and smoked. Cannabis can also be ingested orally or smoked in a pipe or bong.
- **Stimulants**, such as cocaine, are derived from the leaves of the coca plant, which grows in South America, India and regions of Africa and Indonesia. It is a white powder that is typically snorted. Crack cocaine consists of pellets or “rocks” that are smoked in a glass pipe. Methamphetamine is a white powder, but can be chunky crystals that are smoked (“crystal meth”). Amphetamine is also a white, crystalline powder. Prescription amphetamines come as tablets or capsules.
- **Opioids** are a family of drugs that have pain-relieving or analgesic effects. Some opioids occur naturally in opium, a substance collected from the seed pod of opium poppies (e.g., morphine, codeine). Other opioids are prepared from naturally occurring opioids (e.g., heroin, oxycodone), while others are made from chemicals without using a naturally occurring opioid (e.g., fentanyl).
- **Sedatives** are central nervous system depressants, meaning they depress or slow down the body’s functions. These medications are mainly used in the medical treatment of anxiety and insomnia.

The Characteristics of Youth Passengers of Impaired Drivers

Young drivers who are fatally-injured in alcohol-related motor vehicle collisions are often transporting passengers who are of similar age to the drivers. **Passengers can contribute to dangerous situations** by distracting a driver or by promoting risk-taking behaviours such as speeding, following other vehicles too closely or making illegal lane changes, especially if the passengers have consumed alcohol or other drugs. These outcomes suggest that neither drivers nor passengers make safe decisions about using vehicles after substance use.

What is the legal status of these drugs in Canada?

In Canada, stimulants, opioids and sedatives are controlled substances. Their possession and use is legal when they are prescribed by licensed physicians, and are used by the person for whom they are prescribed. Conviction for illegal possession, distribution, selling or importation of these substances results in a criminal record, affecting future options for education, employment and travel.

Cannabis is also a controlled substance in Canada, and it is illegal to possess, grow, distribute, sell and import it. The exception is for those age 18 and over who have a medical document from a physician that authorizes them to purchase dried marijuana from a licensed producer.



How do the drugs affect the body and the brain?

Stimulants

- Cocaine is quickly absorbed into the body, and the immediate and general effects can last up to two hours.
- Methamphetamine has a slower onset with a considerably longer duration—typically four to eight hours. Effects include intense euphoria, feelings of restlessness, agitation, nervousness and paranoia. Methamphetamine is broken down in the body to amphetamine.
- Amphetamine produces effects similar to methamphetamine, but they are less intense. Oral ingestion delays the onset of effects, but prolongs the duration.
- The magnitude of the effects depends on the particular substance used, dose ingested, extent of prior use and manner of use. Combining stimulants with other substances, including alcohol, can increase the detrimental effects on driving performance.
- Drivers who have been using stimulants often display one or more telltale signs of use:
 - Dilated pupils,
 - Body tremors,
 - Restlessness and agitation, and
 - Talkativeness.

Opioids

- Depending on the dose, route of administration and extent of previous exposure, the effects of opioids begin within 15 to 30 minutes and can last several hours.
- Opioids are widely distributed throughout the body, but their primary action is on the brain, specifically the mechanisms responsible for the perception of pain. Opioids cause intestinal tone to increase, slowing the movement of food and causing dehydration.
- Drivers who have been using opioids often display one or more telltale signs of use:
 - Constricted pupils,
 - Little or no reaction to light,
 - Droopy eyelids,
 - Sluggish responses, and
 - Drowsiness.

Sedatives

- Sedative medications act as tranquillizers, producing feelings of relaxation and sleepiness, and can relieve insomnia and severe states of emotional distress.
- Sedatives produce a state of intoxication that includes impaired motor coordination and judgment, slurred speech and lowered inhibitions.
- The use of sedatives in higher doses, or in combination with other drugs or alcohol, can result in confusion, disorientation, amnesia and depression.



- Drivers who have been using sedatives often display one or more telltale signs of use:
 - Distinctive jerkiness in eye movements,
 - Poor motor coordination,
 - Poor balance, and
 - Drowsiness.

Cannabis

- When cannabis is smoked, tetrahydrocannabinol (THC) is rapidly transferred into the blood from the lungs, reaches a peak within minutes of smoking and dissipates slowly over two to four hours. THC blood levels fall as the THC is distributed into the fatty tissues of the body.
- THC blood levels depend on the amount ingested, the concentration of THC in the cannabis, the amount of body fat, the extent of experience with cannabis and the manner in which the drug is used.
- Oral ingestion of cannabis delays the absorption of THC and results in a lower peak THC concentration.
- Telltale signs of cannabis use and driving include:
 - Distinct odour of marijuana in the vehicle,
 - Dilated pupils,
 - Eyelid and leg tremors,
 - Lapses of attention and concentration, and
 - Red eyes.

Drug Per Se Laws

Per se laws provide a threshold whereby it is an offence to operate a vehicle with a certain concentration of alcohol or drugs in the body. [Per se laws for drugs](#) are often seen as a more efficient and effective means of dealing with drug-impaired drivers than the current system, which requires evidence of impairment. There is sufficient evidence to move forward to implement per se drug laws for certain substances as part of a comprehensive approach to drug-impaired driving. The approach would also include enhanced training of police officers in the recognition of the signs and symptoms of drug use, a strong DEC program, and the implementation of roadside oral fluid drug screening.

How do drugs affect driving?

Stimulants

- Drivers who have been using higher doses of stimulants are prone to agitation, inability to focus, reduced ability to divide attention, increased risk-taking, and deficits in balance and coordination.

Opioids

- The driving behaviour of someone who has used opioids can include noticeably slower driving, weaving, poor vehicle control and delayed reactions. Drivers might appear sleepy, have difficulty following instructions and exhibit poor motor coordination. These effects can last for up to four hours following a single administration of the drug.



Sedatives

- Sedatives cause drowsiness and impair motor coordination, which can have a significant impact on the ability to operate a motor vehicle safely. Effects include slowed reaction time, sleepiness, poor psychomotor performance, impaired coordination, reduced ability to divide attention, inattentiveness, increased errors and difficulty following instructions.
- The driving behaviour of someone who has used sedatives can resemble that of a driver impaired by alcohol and can include weaving, poor vehicle control, delayed reactions and risky behaviours.

Cannabis

- Cannabis impairs the cognitive and motor abilities necessary to operate a motor vehicle and doubles the risk of crash involvement. The effects of cannabis can be considerably greater after consuming even a small amount of alcohol.
- Effects of cannabis on driving can be less visible (e.g., reduced ability to divide attention, poor time and space management, and a reduced ability to allocate concentration), compared to the effects of alcohol.



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