Cannabis & Driving FAQs

CCSA - CCLAT

The recently proposed decriminalization[1] of cannabis in Canada has raised concerns about drug-impaired driving and increased risks of motor vehicle collisions. ***Cannabis & Driving FAQs*** *(Frequently Asked Questions) was prepared by Patricia Begin, Director, Policy and Research, Canadian Centre on Substance Abuse (CCSA), Florence Kellner, Professor, Department of Sociology and Anthropology, Carleton University, and Irene Smolik, Ph.D. candidate, Department of Sociology and Anthropology, Carleton University. It is intended to provide current, objective information to guide the discussion on the decriminalization of cannabis for personal, non-medical use in Canada and the public policy issues relating to driving under the influence of cannabis.[2]*

Does the proposed legislation make cannabis possession legal?

- Under the proposals set out in Bill C-38, possession of cannabis will remain illegal while the criminal court processes and criminal penalties will be replaced with fines for possession of small amounts of cannabis.
  - Possession of 15 grams or less of cannabis will be punishable by a fine of $150 for an adult and $100 for a person under the age of 18.
  - Possession of one gram or less of cannabis resin (hashish) will be subject to a fine of $300 for an adult and $200 for a person under the age of 18.
  - In cases of possession of 15 grams or less of cannabis or one gram or less of hashish where aggravating factors exist such as driving a car, the fines are $400 for an adult and $250 for a person under the age of 18.

Will driving under the influence of cannabis (DUIC) be decriminalized?

- Driving while impaired from a legal or illegal drug, including alcohol, will remain a crime. The *Criminal Code* of Canada stipulates that it is a criminal offence to operate a motor vehicle while impaired by alcohol or a drug. The penalties for impaired driving include
  - A fine of not less than $600 and a minimum one-year licence suspension for a first offence of driving while impaired.
  - Imprisonment not exceeding 10 years for impaired driving causing bodily harm.
  - The possibility of life imprisonment for impaired driving causing death.

Will the proposed changes in the law regarding cannabis possession be likely to have a strong influence on the incidence of driving under the influence of cannabis?

- The proposed changes in cannabis legislation will reduce the penalties for cannabis possession, but they will not make cannabis legal and cannabis possession will still be subject to sanctions, albeit in many cases penalties will be limited to a fine.
- The experience of the US states that enacted similar so-called "decriminalization" measures in the 1970s indicates that these changes will have little or no impact on cannabis use.[3.] The reductions in penalties for cannabis possession similarly had little or no impact on rates of use or levels of cannabis problems in Australia.[4]
- Any change in Canadian law should be subject to systematic evaluation of its impact on cannabis use and indicators of cannabis-related harm, as well as impacts on criminal justice practices and costs.[5]

To what extent is cannabis actually involved in road collisions?

- In various places around the world, from 4% to 12% of drivers killed or injured in motor vehicle collisions were found to have cannabis in their systems. In about 80% of cases, where cannabis was identified, alcohol was also found. [6,7]
- In a Quebec study of the contribution of alcohol and other drugs among 354 fatally injured drivers (cases) between April 1999 and November 2001, blood and urine analyses found the presence of [8]
    - Alcohol in 35% of cases (124/354).
    - Cannabis in 19.5% of cases (69/354).
    - Drugs other than alcohol in 30.2% of cases (107/354).
    - Alcohol in 41.1% of all drugs cases (44/107).

- An examination of blood samples, driver records and crash records of 227 fatally injured drivers in British Columbia showed [9]
    - 37% involved alcohol only.
    - 11% involved alcohol and drugs.
    - 9% involved drugs only.

  The two most frequently found drugs were
    - 48% alcohol.
    - 13% THC (the main psychoactive ingredient in cannabis) or its metabolites.

To what extent does cannabis contribute to road collisions?

- This question can be addressed in part through the results of culpability studies, which involve an analysis of data from official records on drivers who died or were seriously injured in motor vehicle crashes and for whom blood tests were conducted for the presence of substances.[10,11,12,13]
- In such studies, drivers are divided into groups – those whose blood sample tests are positive for alcohol and other drugs and those who are drug-free. Drivers are further divided according to those who were judged to be at fault (culpable), and those judged to be not at fault.
- The drug-positive and drug-free cases are compared in terms of their odds of being culpable for the collision.
    - Rates of fault or culpability for the collision were similar when drivers were compared according to the presence or the absence of cannabis alone.
    - Those with both cannabis and alcohol in their systems were substantially more likely to have been designated to be at fault in the collision, even when low amounts of both substances were found.[14,15,16]

How does cannabis affect the ability to drive a motor vehicle?

- Experimental investigations of cannabis use and driving behaviours have been conducted in the laboratory using elaborate simulations of driving designed to record and measure participants' driving performance under placebo (no dose), low cannabis dose and high cannabis dose conditions.[17,18,19,20,21] A direct relationship between dose and decreased performance has been established through experimental investigations.
    - With low doses of cannabis, differences from driving performance under placebo conditions were small and insignificant.
    - Low experimental doses are thought to be lower than doses ingested by experienced users in real-life situations.
    - In general, the higher the cannabis dose, the greater the changes in driving performance.
    - Changes-for-the-worse under cannabis conditions are not as reliable or as extensive as are changes with increasing doses of alcohol.
- With higher doses of cannabis, participants in experiments behaved more conservatively than under placebo conditions.
    - They drove more slowly, but reacted more quickly to changes in traffic signals.
    - They left greater headway, or space between themselves and the car in front of them.
    - They were less likely to take the opportunity to pass the car in front of them.
    - They tended to weave, or leave the centre of the lane, suggesting that there may be some difficulty negotiating curves in the road in real-life situations.

- Subjects exhibited impaired driving ability in a study of the effects of low and moderate doses of cannabis on "road tracking" and "car following" in normal traffic conditions.[22]

After a person has used cannabis, how long-lasting are its effects on driving?

- For doses similar to those that satisfy regular cannabis users, the effects of cannabis on driving performance during experiments lasted from two to four hours.
- Indications of cannabis use may be detected in blood or urine a month or more following ingestion.[23,24]

What is the prevalence of driving under the influence of cannabis in Canada?

- Despite the fact that the incidence of alcohol and driving has decreased over the years, alcohol remains the substance of greatest concern. In recent years, driving under the influence of drugs has been identified as a growing problem by law enforcement.
- In *Canada's Alcohol and Other Drugs Survey* (1994), the last general population drug use prevalence survey conducted in Canada, 7% of the sample aged 15 years and older used cannabis during the previous 12 months.
    - Among cannabis users who held a driver's licence, 40% reported driving a car within two hours of having used cannabis.
- Data from the 2002 Nova Scotia Student Drug Use Survey of students in Grades 7, 9, 10 and 12 indicated that [25]
    - About 26% of students with a driver's licence had driven within one hour of using cannabis.
    - About 15% of students with a driver's licence had driven within one hour of having two or more drinks of alcohol.
    - About 23% of students had driven with an alcohol-impaired driver.
- The 2001 Ontario Student Drug Use Survey of students in Grades 7 to 13 revealed that[26]
    - 20% of students with a driver's licence had driven within one hour of using cannabis.
    - 15% reported driving after drinking.
    - About 30% reported being a passenger in a vehicle driven by a driver who had been drinking.
- Although the 2001 substance use survey of Manitoba high school students did not report on DUIC prevalence, it found that students tended not to condone drinking and driving. However,
    - 26% of male and 13% of female students stated that it was acceptable to use cannabis and drive. [27]

What are the characteristics of individuals who drive under the influence of cannabis?

- A study of Ontario adults found that among the population of drivers 18 years and older, driving under the influence of cannabis is rare (1.9%). However, among cannabis users who possess a driver's licence,[28]
    - 23% reported DUIC.
    - Male cannabis users were four times more likely than females to report DUIC.
    - Cannabis users with a university degree were *less* likely and those who had not completed high school were *more* likely to report DUIC.
    - 47% of those who reported DUIC also reported driving after drinking.
- A 21-year longitudinal study of New Zealand-born children examined their frequency of cannabis use, the association between their use and risk of motor vehicle collisions (during the period 18-21 years), and the behaviours and characteristics of cannabis-using drivers:[29]
    - Heavy cannabis users (i.e., use of cannabis on more than 50 occasions in a one-year period) had traffic collisions that were 1.6 times higher than those of non-users.

  Comparing cannabis users to non-users, the research found that cannabis users
    - Are more likely to be male.
    - Are more prone to drink and drive and engage in other risky/illegal driving practices, such as exceeding the speed limit, street racing, driving without a seat belt, etc.
    - Tend to hold favourable attitudes toward risky/illegal driving behaviour.

  The study concluded that
    - There is an elevated risk of traffic collisions among heavy cannabis users.
    - However, the increased risk of involvement in traffic collisions among heavy cannabis users is related to their willingness to engage in risky/illegal behaviour, including cannabis use, rather than to the effects of cannabis on driver performance.

Can a driver be tested for cannabis at roadside in the same way as alcohol is usually tested?

- There is no breath test for cannabis.
- Due to chemical and pharmacokinetic differences between cannabis and ethanol, alcohol cannot be used as a model for relating the concentrations of THC and its metabolites in the blood, urine, or saliva to a measurable level of impairment.[30,31]

Are there other ways to identify cannabis-related impairment at roadside?

- Identification of drug impairment can be realized through implementing a protocol of systematic evaluation. An internationally recognized program is the Drug Recognition Expert (DRE) program, which trains and supports police officers in identifying and verifying drugged driving, and in obtaining a conviction.[32]
    - Drug Recognition Experts are certified police officers who have completed 80 hours of course work, passed three examinations, and completed a minimum of 12 actual drugged driver evaluations within six months following the course, under the supervision of a DRE instructor.[33]
    - The drug recognition protocol takes effect when an alcohol breath test is administered and its findings are inconsistent with observable driving impairment.
    - In the case of a suspected cannabis-impaired driver, an officer looks for signs in the driver, including whether he/she appears relaxed, confused, has poor divided attention, slowed reaction times, displays poor memory, seems to process information poorly, shows poor coordination, has reddening of the whites of the eyes, dilated pupils in normal or bright lighting conditions and/or has elevated pulse and blood pressure.[34]
- The DRE protocol is considered reliable.
    - A recent study concluded that officers make a correct determination by evaluating data collected through the DRE protocol 95% of the time. Officers' evaluations were verified by toxicology reports.[35]
- The first Canadian course of the DRE program was held in British Columbia in 1995.
    - British Columbia and Manitoba are the only provinces in Canada with instructors qualified to teach the course.[36]
    - The DRE program has been adopted in 36 states in the US and in Australia, Britain, Norway and Sweden.
- The Canadian Association of Chiefs of Police, in partnership with Solicitor General Canada, initiated the first national DRE training course in 2003. There are now DRE-trained peace officers in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec and Nova Scotia.
- Canada's renewed Drug Strategy, announced May 27, 2003, includes funding to expand DRE training for Canadian police officers.

Endnotes

[1] See Bill C-38, An Act to amend the *Contraventions Act* and the *Controlled Drugs and Substances Act* (First Reading, May 27, 2003).
[2] Cannabis is a tobacco-like greenish or brownish material consisting of the dried flowering, fruiting tops and leaves of the cannabis plant, *Cannabis sativa*. Hashish or cannabis resin is the dried brown or black resinous secretion of the flowering tops of the cannabis plant. Delta-9-tetrahydrocannabinol (THC) is the principal psychoactive ingredient in cannabis.
[3] E. Single (1989) "The Impact of Marijuana Decriminalization: An Update", *Journal of Public Health Policy* 10(4): 456-466.
[4] E. Single, P. Christie and R. Ali (Summer, 2000) "The impact of cannabis decriminalisation in Australia and the United States", *Journal of Public Health Policy* 21(2):157-186.
[5] Canadian Centre on Substance Abuse. Cannabis Control in Canada: Options Regarding Possession (1998) CCSA National Working Group on Addictions Policy, www.ccsa.ca/docs/canfinal12.htm.
[6] Cimbura, G., Luca, D.M., Bennett, R.C., Donelson, A.C. (1990) "Incidence and Toxicological Aspects of Cannabis and Ethanol Detected in 1,394 Fatally Injured Drivers and Pedestrians in Ontario (1982-1984)", *Journal of Forensic Sciences,* JFSCA, 35 (5):1035 – 1041.
[7] Chesher, G.B. (2003) *Cannabis and road safety: An outline of the research studies to examine the effects of cannabis on driving skills and on actual driving performance,* www.druglibrary.org/schaffer/MISC/driving/driving2.htm. 6/20/03
[8] Dussault, C., Brault, M., Bouchard, J., Lemire, A. M. (2002) "The Contribution of Alcohol and Other Drugs Among Fatally Injured Drivers in Quebec: Some Preliminary Results", in Mayhew, D. R., C. Dussault (eds.) *Proceedings of the 16th International Conference on Alcohol, Drugs, and Traffic Safety*, pp 423-430. Quebec. Societe de l'assurance automobile du Quebec.
[9] Cited in Marshall, M., Mercer, B. (2002) *Estimating the Presence of Alcohol and Drug Impairment in Traffic Crashes and their Costs to Canadians: A Discussion Paper*. Applied Research and Evaluation. University of British Columbia, www.area.ubc.ca.
[10] Drummer, O. H. (2003) "Drugs and accident risk in fatally-injured drivers". *Marijuana and traffic deaths: A study from Australia.* South Melbourne, Australia, www.taima.org/en/driving.htm. 4/3/2003
[11] Chesher 2003.
[12] Sexton, B. F., R.J. Tunbridge, N. Brook-Carter (TRL Limited), P. J. Jackson (DETR), K. Wright (University of Birmingham), M. M. Stark (St. George's Hospital Medical School) and K Englehart (Principal Police Surgeon) (2000). *The influence of cannabis on driving.* TRL Limited. TRL Report 477.
[13] Walsh *et al.* 2000.
[14] Chesher 2003.
[15] Ramaekers, J.G. (2001) "A review of epidemiological and experimental studies on marijuana and driver impairment". Experimental Psychopharmacology Unit. Brain and Behavior Institute. Maastricht University. j.ramaekers@psychology.unimaas.nl.
[16] Sexton *et al.* 2000.
[17] Ramaekers 2001.
[18] Berghaus, G., N. Scheer, and P. Schmidt (1995) "Effects of cannabis on psychomotor skills and driving performance---a meta-analysis of experimental studies", in Kloeden, C.N. and A.J. Mclean (eds.) *Alcohol, drugs and traffic safety: proceedings of the 13th International Conference on Alcohol, Drugs and Traffic Safety.* Adelaide. Pp. 403-409.
[19] European Monitoring Centre for Drugs and Drug Addiction (1999) *Literature Review on the Relation between Drug Use, Impaired Driving and Traffic Accidents.* (CT.97.EP.14) Lisbon: EMCDDA.
[20] Chesher 2003.
[21] Sexton *et al.* 2000.
[22] Raemakers, J. G., Robbe, H. W.J., O'Hanlon, J. F. (2000) "Marijuana, Alcohol and Actual Driving Performance". *Hum. Psychopharmacol. Clin. Exp.* 15:551-558.
[23] Robbe, H. (1994) *Influence of Marijuana on Driving.* University of Limburg, Maastricht. The Netherlands: Institute for Human Psychopharmacology.
[24] Chesher 2003.
[25] *Nova Scotia Student Drug Use 2002 Highlights Report,* www.gov.ns.ca/heal/downloads/2002_NSDrugHighlights.pdf
[26] Centre for Mental Health and Addiction (2003) "Kids, Drugs and Cars: Alcohol, Cannabis, and Driving Among Ontario Students". *Media Release,* www.camh.net/press_releases/kids_drugs_cars0303.html.
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[28] Walsh G., Mann, R. (1999) "On the High Road: Driving Under the Influence of Cannabis in Ontario", *Canadian Journal of Public Health*, 90 (4):260-263.
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[30] Anonymous. Consensus Report (1985) "Drug concentrations and driving impairment". Consensus Development Panel. JAMA 254:2618-2621.
[31] Huestis, M. A. (2002) "Cannabis (Marijuana) – Effects on Human Behaviour and Performance". *Forensic Science Review*. 14:15.
[32] Smith, J., Hayes, C.E., Yolton, R.L., Rutledge, D.A., and Citek, Karl (2002) "Drug Recognition Expert: evaluations made using limited data". *Forensic Science International.* 130:167-173.

[33] A detailed description of course content, as well as tests and measures employed in a DRE procedure can be found on a number of internet sites. The DRE program was developed by the Los Angeles Police Department. It remains active in promoting and evaluating the program: www.cityofla.org/LAPD/traffic/dre/william2.htm. 4/3/2003.
[34] State of New Mexico (2003) "Drug-Impaired Driving Fact Sheet". http://sld.state.nm.us/drug/DIDpage2.htm 14/07/2003.
[35] Smith, et al. 2002.
[36] Vancouver Police Department (2003) "Drug Recognition Expert". City of Vancouver. www.city.vancouver.bc.ca/police/opServDiv/traffic/dre.html.

The Canadian Centre on Substance Abuse (CCSA), Canada's national addiction agency, was established in 1988 by an Act of Parliament. The CCSA provides a national focus for efforts to reduce health, social and economic harm associated with substance abuse and addictions.

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