

# Cannabis and Driving

## Cannabis and the Law

- **It is illegal to drive impaired, regardless of the source of impairment.**<sup>1</sup>
- The federal government has passed new legislation, the *Impaired Driving Act*, which introduces three new offences for driving under the influence of drugs and establishes legal limits for blood delta-9-tetrahydrocannabinol (THC) limits. Individuals are prohibited from driving within two hours of being over the legal limits.<sup>2</sup>

Offence	Blood THC Level	Federal Penalty
1. Driving under the influence of cannabis	2ng* or more but less than 5ng of THC per 1ml* of blood	Maximum \$1,000 fine
2. Driving under the influence of cannabis	5ng or more of THC per 1ml of blood	Mandatory minimum \$1,000 fine – 120 days imprisonment
3. Driving under the influence of cannabis combined with alcohol	50mg* of alcohol per 100 ml blood and 2.5ng or more of THC per 1ml of blood	

\*ng = nanogram \*ml = millilitre \*mg = milligram

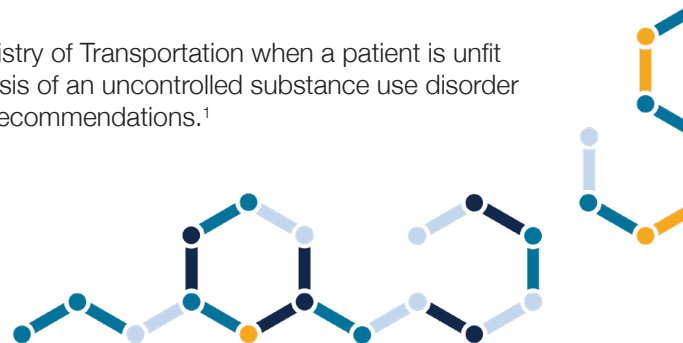
- The updated law also authorizes police forces to use an approved roadside saliva test if there is reasonable suspicion that a driver is under the influence of drugs. The saliva test kit can detect the presence of both THC and cocaine.
- Police officers with grounds to believe a drug impaired driving offence was committed may demand a blood sample to determine the driver's blood THC (or other drug) levels.
- Young (21 and under), novice (G1, G2, M1, M2), and commercial drivers are subject to a zero-tolerance policy. If a roadside saliva test detects the presence of THC, they may face immediate consequences including license suspensions.
- All drivers who are found to be impaired may face immediate penalties such as licence suspensions, vehicle impoundments, and monetary penalties. If convicted in court, the driver may face fines or jail time.

### Considerations for Medical Cannabis Users

- It is illegal to drive when impaired by cannabis regardless of whether the driver is authorized to use it for medical purposes. It remains the individual's responsibility to ensure that they are not impaired while driving.
- Individuals will not be subject to Ontario's zero tolerance drug requirements for young, novice, and commercial drivers if a police officer is satisfied that they are legally authorized to use cannabis for medical purposes.

## Physician Responsibilities

- According to the CPSO's *Cannabis for Medical Purposes* policy statement, physicians must warn patients that they may become impaired while using cannabis for medical purposes.<sup>3</sup>
- The CMA's *Driver's Guide* (9th Edition), suggests that physicians recommend a minimum amount of time to wait before driving after cannabis use (either medical or recreational).<sup>4</sup>
- Physicians are also reminded of their responsibility to report to the Ministry of Transportation when a patient is unfit to drive. This includes when a patient has or appears to have a diagnosis of an uncontrolled substance use disorder (excluding caffeine and nicotine) and is non-compliant with treatment recommendations.<sup>1</sup>



## Risks of Cannabis Use and Driving

### • Cannabis use causes acute impairment of the psychomotor and cognitive functions required for driving.

- A review by Ramaekers *et al* established a dose-related relationship between THC consumption and impairment of cognition, psychomotor function, and actual driving performance.<sup>5</sup>
- A review by Hartman *et al* found that significant driving impairment occurs when blood THC levels reach 2-5 ng/ml. Occasional cannabis users, who have not built a tolerance to THC, reportedly experienced greater impairment than daily users.<sup>6</sup>
- Research has pointed to evidence that psychomotor function is most impaired during acute intoxication, but impairment can persist in daily users for up to 30 days, even after cessation of use.<sup>7,8</sup>

### • Cannabis impairment increases the risk of involvement in motor vehicle accidents.

- Combined results from numerous research studies and a recent systematic review from Els *et al* show a 1.3-4-fold increase in motor vehicle accident risk after cannabis use.<sup>9, 10, 11, 12</sup>

**Delta-9-tetrahydrocannabinol (THC) and Cannabidiol (CBD) are two of the main components of the cannabis plant.**

- THC is the primary psychoactive compound in cannabis. It is responsible for both the “high” and the impairments associated with cannabis use.<sup>13</sup>
- CBD, which is commonly isolated for therapeutic uses, does not produce psychoactive or intoxicating effects.<sup>14</sup>
- The effects of each individual cannabis product may depend on the specific THC-to-CBD ratio.<sup>14</sup> It remains unclear as to whether the presence of CBD can diminish or exacerbate the effects of THC.<sup>15, 16</sup>

### • Combining cannabis with alcohol can substantially increase levels of impairment.

- Ramaekers *et al* concluded that combining THC and alcohol, even at low doses, can produce severe driving impairment and sharply increase the risk of driver's accident culpability.<sup>5</sup>
- Downey *et al* found that levels of THC detected in blood are higher when THC is consumed with alcohol, and that driving performance is more impaired when THC and alcohol are combined compared to either THC or alcohol alone.<sup>17</sup>

## Cannabis Consumption and Driving: How Long to Wait?

- There is no definitive evidence for a one-size fits all recommendation for a safe amount of time to wait before driving after consuming cannabis.
- Impairment levels can vary greatly across individuals and circumstance based on a range of factors including:<sup>5, 11, 18</sup>
  - time since consumption
  - THC levels in the cannabis product consumed
  - delivery method (smoked, ingested, nasobuccal, topical, etc.)
  - personal use patterns (frequency of use, deep inhalation or breath-holding of smoked cannabis, etc.)
  - individual metabolism of THC
- Effects of impairment, including attention, concentration, and decision-making deficits, can last up to 24 hours, and even longer for those who consume cannabis frequently (five or more times per week).<sup>7, 8, 19, 20</sup>



## Cannabis Consumption and Driving: How Long to Wait? CONTINUED.

### Medical Cannabis: Preliminary Guidance

- Preliminary guidance published in 2014, including the CFPC's *Authorizing Dried Cannabis for Chronic Pain or Anxiety*<sup>21</sup>, and Kahan *et al's Prescribing Smoked Cannabis for Chronic Noncancer pain*<sup>22</sup>, cite Level II evidence<sup>11</sup> to suggest that physicians instruct patients who are consuming cannabis for medical purposes to refrain from driving for:

- **4 (four) hours after inhalation**
- **6 (six) hours after oral ingestion**
- **8 (eight) hours or more after inhalation or oral ingestion if the patient experiences a psychoactive high**

- The wait times above are largely based on a review that differentiates the medical cannabis user from the recreational user. Patients prescribed cannabis for medical purposes are instructed to consume individualized doses of cannabis to achieve symptom relief rather than to achieve a subjective high.<sup>11</sup>

### Recreational Cannabis: Recent Guidance

- Recent guidelines published in anticipation of recreational cannabis legalization, including Fischer *et al's* widely endorsed *Lower-Risk Cannabis Use Guidelines*, instruct individuals who consume cannabis to **wait before driving** for:

**at least 6 (six) hours.**

- This wait time may need to be longer, depending on the user and the product consumed.<sup>23</sup>



1. Highway Traffic Act, 1991, R.S.O. 1991. C. H8.
2. Bill C-46, An Act to amend the Criminal Code (offences relating to conveyances) and to make consequential amendments to other Acts, 1st Sess, 42nd Leg, Canada, 2018.
3. College of Physicians and Surgeons of Ontario. Policy Statement: Cannabis for Medical Purposes. Toronto, ON: College of Physicians and Surgeons of Ontario; 2019 [cited Mar 4 2019].
4. Canadian Medical Association. Determining Medical Fitness to Operate Motor Vehicles: CMA Driver's Guide, 9th Ed. Ottawa, ON: Canadian Medical Association; 2017 [cited Sep 17 2018].
5. Ramaekers JG, Berghaus G, van Laar M, Drummer OH. Dose related risk of motor vehicle crashes after cannabis use. *Drug and Alcohol Dependence*. 2004;73:109-119.
6. Hartman RL, Huestis MA. Cannabis effects on driving skills. *Clin Chem*. 2013;59:478-92.
7. Broyd SJ, Van Hell HH, Beale C, Solowij N. Acute and chronic effects of cannabinoids on human cognition—a systematic review. *Biol Psychiatry*. 2016; 79(7):557–567.
8. Karschner EL, Swortwood MJ, Hirvonen J, Goodwin RS, Bosker WM, Ramaekers JG et al. Extended plasma cannabinoid excretion in chronic frequent cannabis smokers during sustained abstinence and correlation with psychomotor performance. *Drug Testing and Analysis*. 2016; 8(7): 682–9.
9. Rogeberg O, Elvic R. The effects of cannabis intoxication on motor vehicle collision revisited and re-vised. *Addiction*. 2016;111(8):134-1359.
10. Asbridge M, Mann R, Cusimano MD, Trayling C, Roerecke M, Tallon JM, et al. Cannabis and traffic collision risk: findings from a case-crossover study of injured drivers presenting to emergency departments. *Int Public Health*. 2014; 59(2):395-404. Neavyn MJ, Blohm E, Babu KM. Medical Marijuana and Driving: A Review. *Medical Toxicology*. 2014;10:269-279.
11. Neavyn MJ, Blohm E, Babu KM. Medical Marijuana and Driving: A Review. *Medical Toxicology*. 2014;10:269-279.
12. Els C, Jackson TD, Tsuyuki RT et al. Impact of cannabis use on road traffic collisions and safety at work: systematic review and meta-analysis. *Canadian Journal of Addiction*. 2019; 10(1): 8-15.
13. Health Canada. About cannabis. Ottawa, ON: Health Canada; 2018 [cited Sep 25 2018].
14. Canadian Pharmacists Association. Cannabis Monograph. Toronto, ON: Canadian Pharmacists Association; 2018.
15. Health Canada. Information For Health Care Professionals: Cannabis (marihuana, marijuana, and the cannabinoids). Ottawa, ON: Health Canada; 2013 [cited Oct 3 2019]
16. Arkell TR, Lintzeris N, Kevin RC et al. Cannabidiol (CBD) content in vaporized cannabis does not prevent tetrahydrocannabinol (THC)-induced impairment of driving and cognition. *Psychopharmacology*. 2019; 326: 2713.
17. Downey LA, King R, Papafotiou K, Ogden E, Boorman M, Stough C. The effects of cannabis and alcohol on simulated driving: Influences of dose and experience. *Accid Anal Prev*. 2013; 50: 879-886.
18. Canadian Society of Forensic Sciences Drugs and Driving Committee. Report on Drug Screening Equipment – Oral Fluid. Ottawa, ON: Canadian Society of Forensic Science; 2018 [cited Oct 23 2018].
19. Health Canada. Health Effects of Cannabis. Ottawa ON; 2017 [Accessed 17 Sep 2018].
20. Leirer VO, Yesavage JA, Morow DG. Marijuana carry-over effects on aircraft pilot performance. *Aviat. Space Environ. Med*. 1991; 62: 221–227.
21. College of Family Physicians of Canada. Authorizing Dried Cannabis for Chronic Pain or Anxiety: Preliminary Guidance from the College of Family Physicians of Canada. Mississauga, ON: College of Family Physicians of Canada; 2014 [cited Sep 19 2018].
22. Kahan M, Srivastava A, Spithoff S, Bromley L. Prescribing smoked cannabis for chronic noncancer pain. *Canadian Family Physician*. 2014;60:1083-1090.
23. Fischer B, Russell C, Sabioni P, van den Brink W, Le Foll B, Hall W, et al. Lower-Risk Cannabis Use Guidelines: A Comprehensive Update of Evidence and Recommendations. *Public Health Policy*. 2017;107(8):e1-e12.

