

CANNABIS & DRIVING

International Council on Alcohol, Drugs & Traffic Safety

5: Policy & Legislative Issues



How do jurisdictions address driving under the influence of cannabis?

It depends on the road safety objectives of the jurisdiction.

Driving under the influence of alcohol defined by a specified (per se) blood alcohol concentration (BAC) in many jurisdictions, even though not all drivers will be impaired at this level. Other offences, such as dangerous driving, fatigued driving or distracted driving, are less clearly defined. Determinations are left to the judgement of road safety authorities, experts, and the judicial system. Cannabis-impaired driving may be defined using either approach.

Understandably, law enforcement and road safety agencies would like to have a numerical concentration (per se) limit for tetrahydrocannabinol (THC) that is analogous to a BAC limit for alcohol. THC concentrations in the body, however, do not accurately reflect the magnitude of cannabis-related impairment (see [ICADTS Cannabis Recent Epidemiological Evidence](#) and [ICADTS Cannabis-Impaired Driving Detection & Toxicology](#)). Jurisdictions which give a priority to protecting drivers' rights are generally reluctant to establish a per se limit because it is difficult to defend. Jurisdictions which place a greater emphasis on protecting the safety of the broader population have in some cases defined per se limits which they consider sufficiently evidence-based for their purposes. Policymakers will need to interpret the available scientific evidence in the context of their local societal and cultural values to decide how to balance these competing risks.



Jurisdictions may use toxicological or behavioural tests, or a combination of both (see [ICADTS Cannabis-Impaired Driving Detection & Toxicology](#)) to identify cannabis-impaired drivers. Extant per se limits for cannabis generally relate to THC concentrations in blood, with thresholds ranging from .5-5 ng/mL. Taking and testing blood is invasive and often requires justification (e.g., prima facie evidence of driver impairment). It also requires special training for those tasked with taking blood and for these reasons it is rarely done at the roadside. The severity of the offence (e.g., administrative, minor or major criminal, felony) may also affect testing procedures. Some countries have introduced graduated offences that impose:

- a lower penalty for low concentrations of THC;
- a higher penalty for a defined blood/oral fluid (OF) THC concentration; and/or,
- even greater penalties for higher THC concentrations or clear evidence of impaired driving.

As with alcohol, some countries impose per se restrictions on drug-impaired driving according to specific driver categories (novice or young drivers, heavy truck drivers). The severity of the offence may be reflected in the classification and in the severity of punishment (i.e., administrative offences, minor to more serious criminal offences, fines or prison sentences).

What about medical cannabis?

Medical cannabis consumers should not be subject to THC *zero-tolerance* laws that make it illegal to drive with any detectable level of THC, as is the case with some other types of impairing medications, but they should still be subject to impaired driving laws.

A different limit or threshold should be considered for medical cannabis consumers when drivers can provide evidence their cannabis use is legal and prescribed.¹ It would be desirable to have ways for police to identify medical consumers for enforcement purposes. As with other medicines, a medical exemption does not protect drivers from impaired driving offences. Legislation regarding medical exemptions requires consideration of both the road safety context and regulatory protocols specific to the jurisdiction. Policymakers should be aware that legislation concerning medical cannabis use may influence limits for cannabis-impaired driving in the broader population.^{2,3,4}

Few studies have directly assessed the effects of medical cannabis use on driving. Some evidence suggests cannabis has few effects on driving ability when used therapeutically under medical supervision.⁵ This may be due to symptom improvement, a reduction in the use of other impairing medications, or reflect different patterns of use (e.g., frequency of use, type of product used, amount used) when compared with non-medical cannabis use.

In the Netherlands, medical use of cannabis is assigned to category II (not safe for driving). Medical consumers who are chronic, daily consumers, should not drive during the first two weeks; occasional consumers, should not drive in the first 15h after intake. The legal limit of 3.0 µg/L THC in blood also applies to medical cannabis (<https://www.rijveiligmetmedicijnen.nl/medicijnen/medicijn/778/>). For more information, see the [Medical Cannabis & Novel Psychoactive Substances](#) fact sheet.



Legislation regarding medical exemptions requires consideration of both the road safety context and regulatory protocols specific to the jurisdiction.

Should cannabis be treated like alcohol?

It may depend on the legal status of cannabis. It is more challenging to determine cannabis-related impairment than alcohol-related impairment.

As of 2022, the following countries have legalized cannabis for recreational use: Canada, Georgia, Malta, Mexico, South Africa, Uruguay, as well as other countries. In the United States, cannabis is legal in 19 states, 2 territories, and the District of Columbia. Many more jurisdictions have legalized medical cannabis. These trends are likely to continue. In jurisdictions where cannabis is still illicit, zero-tolerance laws may prohibit drivers from having any amount of cannabis in their system. This may be considered reasonable because it is illegal to consume cannabis under any circumstances. In jurisdictions where cannabis consumption is legal, however, zero-tolerance laws are less defensible because individuals who can legally consume cannabis may test positive for THC long after they last used cannabis, and when they are no longer impaired.

Alcohol is legal in most jurisdictions and for this reason, drivers are generally allowed to have some amount of alcohol in their system, although drivers exhibiting signs of impairment may still be charged with a driving offence below per se levels. How much constitutes some (i.e., the per se limit) depends on the level of risk that jurisdictions are prepared to accept. In most countries, this is a BAC of .05. In some countries it is lower (.02) and in some it is higher (.08), and some countries may further require retrograde extrapolation to determine BAC at the actual time of driving. Blood alcohol concentrations accurately reflect the amount of alcohol consumed, and therefore the level of impairment at the population level because increasing BACs increase impairment. Despite variations in impairment at similar BACs between subjects, BAC limits are effective and accepted in society. THC concentrations, on the other hand, do not accurately reflect the amount of cannabis consumed or the level of impairment. Due to the complexity of THC pharmacokinetics, a simple back-calculation of THC concentration in blood to determine the level at the time of the driving event is not feasible at this time. It is therefore much harder to establish impairment per se limits for cannabis than for alcohol. This issue is discussed in more in detail in the [ICADTS Cannabis-Impaired Driving Detection & Toxicology](#) fact sheet.

In some countries such as Norway, the per se limits of cannabis detection aim to approximately parallel those for alcohol impairment.⁶ This eliminates the requirement for an individual evaluation of impairment of each driver, which is time-consuming and expensive. It also ensures more consistent handling of alcohol and cannabis-impaired driving cases. Most countries, however, retain a binary distinction between having committed an offence or not. Combinations of different drugs are also treated differently between countries. France and the Netherlands have established stronger punishments for driving after consuming a combination of different drugs and alcohol. Defined limits for individual substances are lowered for combinations. In Norway, an individual evaluation of the degree of impairment is conducted, based on all the detected drugs and observation of driver behaviour.

Do laws relating to the presence of cannabis in drivers deter drug impaired driving and are they sufficient to change behaviour?

It is unclear whether cannabis *zero-tolerance* laws deter drug-impaired driving, although similar laws for alcohol have been effective. Some countries further specify different BAC levels for passenger vehicle drivers, heavy truck drivers, bus drivers and young drivers.

The aims of these laws include general and specific deterrence. Laws only deter drivers when they are actively enforced. In Australia, large-scale roadside drug testing for the presence of THC in oral fluid is used to detect and deter impaired drivers, with the goal of improving road safety. A positive test results in a punishment for the driver which is a specific deterrent. These aims affect police policy and operational philosophy.

Responses to drug-impaired driving may need to differ between first and repeat offenders, even though many first offenders may have driven impaired many times before detection. In practice, distinguishing the risk posed by drivers, and thereby their punishment, should be based on a validated risk assessment. Repeat offenders may have an underlying substance use problem that requires a targeted healthcare intervention. More research of the effectiveness of targeted responses is required, and better collaboration between the justice and healthcare systems is needed to adequately assess and reduce risk.

Most countries still consider punishment as the main form of deterrence (e.g., a fine or suspension of licence). Per se and zero-tolerance limits require less police training and are often considered simpler to enforce. As mentioned above, however zero-tolerance laws are inappropriate in the case of medical cannabis use. It has been difficult to measure the effects of enforcing per se limits on the prevalence of drug-impaired driving and rates of recidivism. Evidence that punishment is an effective deterrent is sparse. Prison sentences have not been found to consistently reduce the prevalence of impaired driving.^{7,8}

Countries that have successfully reduced drink driving in the community appear to share two key program components. Enforcement is one of the key strategies for effective change, with celerity and certainty of consequences more important than their severity. Longer-term change requires increasing cultural disapproval of drug-impaired driving that supports individual behaviour change. This approach has yet to be explored and evaluated for cannabis-impaired driving.

What tools are needed to enforce such laws and how efficient/effective are they?

Enforcement requires accurate and reliable technology to measure the presence of cannabis and/or behavioural assessment tests.

Whatever legislative approach is applied to cannabis use and driving, it must be enforceable and actively enforced. Enforcement requires accurate and reliable technology to detect the presence of cannabis in drivers, similar to the use of breathalyzers to detect alcohol. Alternatively, it requires a capacity to conduct behavioural assessments, such as the Drug Recognition Expert program in the United States and Canada. Testing devices must be available in sufficient quality and quantity to enforcement agencies. This requires the road safety field to develop affordable fit-for-purpose technology.⁹

For policymakers, cost-effective testing and sample analysis are essential given finite resources. Policymakers must consider cost-benefits of behavioural testing measures (e.g., Drug Recognition Expert program), blood concentration assessments, and oral fluid sampling, and their possible combinations. A commonly reported practice in some countries is to test first for alcohol and only test for other drugs if the alcohol test is negative or below specified BAC levels because this provides sufficient evidence for a conviction. This might not reveal if the driver has an underlying substance use problem; information that is highly relevant in assessing the risk of recidivism. Such an approach also precludes the collection of accurate data about drug use among drivers. Some consistency across jurisdictions in the tools used, and results recorded, would make it easier to pool data from several countries and produce more robust research on cannabis and drug-impaired driving.

More information about the penalties for drug-impaired driving across countries and the different types of tools and technologies used to detect drug-impaired driving by police services is available at:

<https://druggeddriving.tirf.ca/module/laws-penalties/#5>

<https://druggeddriving.tirf.ca/wp-content/uploads/2018/10/DIDLC-Tools-Technologies-Factsheet-8.pdf>

https://www.emcdda.europa.eu/publications/topic-overviews/legal-approaches-to-drugs-and-driving/html_en

References

1. Perkins, D., Brophy, H., McGregor, I.S., O'Brien, P., Quilter, J., McNamara, L., Sarris, J., Stevenson, M., Gleeson, P., Sinclair, J., Dietze, P. (2021). Medicinal cannabis and driving: the intersection of health and road safety policy. *International Journal of Drug Policy* 97:103307. doi: 10.1016/j.drugpo.2021.103307.
2. Gruber, S.A., et al., The Grass Might Be Greener: Medical Marijuana Patients Exhibit Altered Brain Activity and Improved Executive Function after 3 Months of Treatment. *Front Pharmacol*, 2017. 8: p. 983.
3. Gruber, S.A., et al., Splendor in the Grass? A Pilot Study Assessing the Impact of Medical Marijuana on Executive Function. *Front Pharmacol*, 2016. 7: p. 355.
4. Olla, P., et al., Short-term effects of cannabis consumption on cognitive performance in medical cannabis patients. *Appl Neuropsychol Adult*, 2019: p. 1-11.
5. Celius, E. G., & Vila, C. (2018). The influence of THC: CBD oromucosal spray on driving ability in patients with multiple sclerosis related spasticity. *Brain and Behavior*, 8(5), e00962.
6. Vindenes, V., Jordbru, D., Knapskog, A. B., Kvan, E., Mathisrud, G., Slørdal, L., & Mørland, J. (2012). Impairment based legislative limits for driving under the influence of non-alcohol drugs in Norway. *Forensic Science International*, 219(1-3), 1-11.
7. Gendreau, P., Cullen, F. T., & Goggin, C. (1999). The effects of prison sentences on recidivism. Ottawa: Solicitor General Canada..
8. Rahman, S., & Weatherburn, D. (2021). Does prison deter drunk-drivers? *Journal of Quantitative Criminology*, 37(4), 979-1001.
9. Arkell, T.R., A.C. Hayley, and L.A. Downey, Managing the high: developing legislation and detection methods for cannabis impairment. *Nature Reviews Neuroscience*, 2021. 22(9): p. 584.



About ICADTS

The **International Council on Alcohol, Drugs & Traffic Safety (ICADTS)** is an independent not-for-profit body whose only goal is to reduce mortality and morbidity brought about by misuse of alcohol and drugs by operators of vehicles in all modes of transport.

To accomplish this goal, the Council sponsors international and regional conferences to collect, disseminate and share essential information among professionals in the fields of law, medicine, public health, economics, law enforcement, public information and education, human factors and public policy.

Acknowledgements

Special thanks to ICADTS Drugged Driving Work Group Co-Chairs: Jan Ramaekers, [Maastricht University](#) (Netherlands) Robyn D. Robertson, [Traffic Injury Research Foundation](#) (Canada) & Thomas Arkell, [Swinburne University](#) (Australia) and the Members who contributed their expertise.

Australia

Jeremy Davey | University of the Sunshine Coast

Iain McGregor | University of Sydney

Luke Downey | Swinburne University

Wayne Hall | University of Queensland

Belgium

Alain Verstraete | Ghent University

Canada

Christine Wickens | Centre for Addiction and Mental Health, Canada

Jeff Brubacher | University of British Columbia

Sarah Simmons | Traffic Injury Research Foundation

Germany

Anja Knoche | Federal Highway Research Institute (BASt)

Ireland

Denis Cusack | Medical Bureau of Road Safety, University College Dublin & Senior Coroner

Netherlands

Eef Theunissen | Maastricht University

Norway

Hallvard Gjerde | Oslo University Hospital

Vigdis Vindenes | Oslo University Hospital

Portugal

Brendan Hughes | European Monitoring Centre for Drugs and Drug Addiction

Spain

F. Javier Alvarez | University of Valladolid

Switzerland

Marc Augsburger | University of Lausanne

USA

Christine Moore | 9-Delta Analytical LLC

Marilyn Huestis | Huestis & Smith Toxicology, LLC

Randy Atkins | National Highway Traffic Safety Administration

Tara Kelley-Baker | National Highway Traffic Safety Administration

Richard P. Compton | Traffic Safety Research LLC

Ryan Smith | National Transportation Safety Board

Staci Hoff | Washington Traffic Safety Commission

Eduardo Romano | Pacific Institute for Research & Evaluation

For more information visit
www.icadtsinternational.com

Email: admin@icadtsinternational.com

