



D4RS Position paper on driving under the influence of Cannabis

Preamble

In places where commercialisation of cannabis was allowed, cannabis related driving accidents and deaths increased. D4RS calls for an improved legislation and tougher enforcement on driving under the influence of drugs and alcohol.

- Cannabis-related driving is common.
- Cannabis results in impaired driving (especially in people who consumed cannabis just before driving).
- Co-ingestion of alcohol results in a higher risk of road traffic accident.
- There is currently no mention in Maltese law of any increase in penalty with regards to co-ingestion of drugs with alcohol.
- There is currently no mention in Maltese law of any drug level that is deemed acceptable with regards drug use in driving (including cannabis).
- There is currently no difference in the Maltese law between cannabis-impaired driving and a cannabis-positive driver.
- There is currently no available Road-side test for cannabis (or other drugs, excluding alcohol).
- Recent studies conducted in the United States are showing an increase in road traffic fatalities from cannabis use since commercialisation started in some US states.

What is Cannabis/Marijuana?

Cannabis is a drug that comes from the plant *Cannabis sativa*. The active chemical, delta-9 tetrahydrocannabinol, (THC) is found in the resin that covers the flowering tops and upper leaves in the female plant. It is the THC that gives the user the alteration in mood and the feeling of a 'high'. Cannabis is referred to as a 'depressant' drug in that it affects the central nervous system, slowing down the messages between the brain and the body.

Cannabis sativa plants come in a variety of concentration of THC.

Over the last 5 decades, increasing THC concentrations have been observed in products available in many countries. In the 1970s, the THC concentration in cannabis found in England and in the Netherlands was less than 3%. Current varieties contain on average 16%

in England and 20% in the Netherlands while new cannabis preparation techniques have led to products containing THC levels of up to 40 percent¹.

How common is cannabis-related driving?

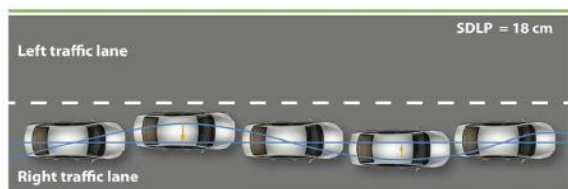
A standardised survey in 13 countries in the European Union in 2007– 2009 found THC in 1.3 % of a sample of the general driving population, although in individual countries the results ranged from 0 to 6 %.²

The US National Highway Traffic Safety Administration (NHTSA) National Roadside Survey of Alcohol and Drug Use by Drivers in 2013–2014, using different methods, found that 12.6 % of weekend night-time drivers tested positive for THC³.

Does cannabis use result in impaired driving?

Cannabis use results in impaired judgment, poor motor coordination and reaction time and studies have found a direct relationship between the level of THC in the blood and impaired driving ability.⁴⁻⁶

Blood THC levels collected from occasional smokers during driving in laboratory-controlled simulator test (8.2 and 13.1ng/ml) resulted in a Standard deviation of lateral position (SDLP) equivalent to 0.05% and 0.08% blood alcohol concentration (BAC), with these being the most common alcohol driving limits globally. Blood samples were collected between 0.5 to 1.3hr post inhalation of low (THC 2.9%) and high (6.7%)-THC vaporized cannabis over 10 minutes.⁶

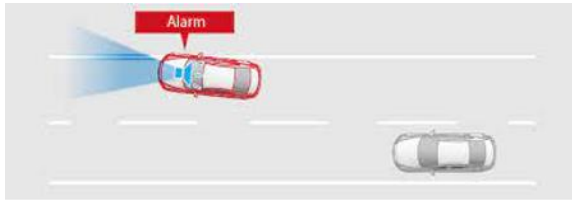


SDLP or “weaving”

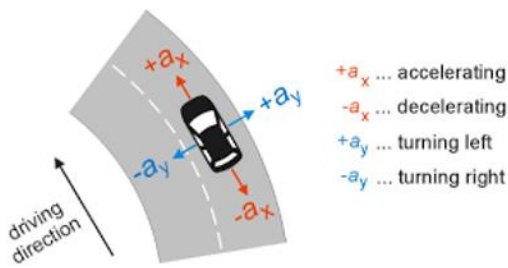
SDLP, also known as the “weaving” of the car is the measured distance from the centre of the lane that a driver drifts. It is important to note that SDLP is not directly validated to predict crash risk but is an objective measure of the continuous behaviour during driving.

Does co-ingestion of alcohol and cannabis have an effect on driving?

Combining alcohol with cannabis resulted in an additive effect on SDLP in this laboratory-controlled study. Whilst cannabis was associated with an increase in SDLP, alcohol also affected lane departures/minute and maximum lateral acceleration.⁶



Lane departure is defined as the edge of vehicle crossing a lane boundary per minute allowed for normalization across drive events.



Lateral acceleration is the acceleration created when a vehicle corners that tends to push a vehicle sideways.

Of note, blood THC levels were measured just after driving in a laboratory-controlled environment. Blood THC concentration declines quickly especially in the first hour post inhalation, resulting in lower THC concentrations than during driving. Also, THC levels peak just prior to finishing inhalation, with inhalational variability resulting in THC concentration variability.⁶

Interestingly this study was performed on occasional cannabis users and it is well known that frequent cannabis smokers demonstrate tolerance to some acute cannabis intoxication effects, but tolerance did not compensate for all effects.^{7,8}

Whilst some studies tend to show a direct correlation between high THC concentration and car crash risk, indicating recent use of cannabis, low THC concentrations do not appear to support this relationship and no scientifically supported clear cut-off concentration is available at present.⁹

Is there a relationship between increased availability of cannabis and road traffic accidents and deaths?

In Colorado since recreational cannabis was legalised in 2013, traffic deaths in which drivers tested positive for cannabis increased 109 percent while all Colorado traffic deaths increased

31 percent. Traffic deaths involving drivers who tested positive for cannabis more than doubled from 55 in 2013 to 115 people killed in 2018. Also, the percentage of all Colorado traffic deaths that were cannabis-related increased from 15 percent in 2013 to 23 percent in 2018.¹⁰

Another study conducted in Washington state in the year after recreational cannabis was legalised showed that the percentage of THC-positive drivers in fatal crashes approximately doubled.¹¹

Whilst trends in motor vehicle crash fatalities involving alcohol remained stable in the United states (US) between 2000 and 2018, the percentage of fatalities involving cannabis and alcohol increased from 9% in 2000 to 21.5% in 2018 and 4.8% in 2000 to 10.3% in 2018, respectively.¹²

What does the current laws of Malta have to say about driving under the influence of cannabis?

Motor Vehicles (Driving licences) Regulations S.L.65.18

Driving licences shall not be issued to or renewed for applicants or drivers who are dependent on psychotropic substances or who are not dependent on such substances but regularly abuse them, whatever category of licence is requested.

12. Regular use:

(a) Group 1:

Driving licences shall not be issued to, or renewed for, applicants or drivers who regularly use psychotropic substances, in whatever form, which can hamper the ability to drive safely where the quantities absorbed are such as to have an adverse effect on driving. This shall apply to all other medicinal products or combinations of medicinal products which affect the ability to drive.

(b) Group 2:

The competent medical authority shall give due consideration to the additional risks and dangers involved in the driving of vehicles covered by the definitions of this group

If the current legislation regarding cannabis goes through in its present format, will cannabis still qualify as being a drug of abuse, and will users be allowed to drive according to this law?

Traffic regulation Ordinance Cap. 65

For the purpose of this Ordinance, "drug" includes any intoxicant other than alcohol;

15A.

(1) No person shall drive or attempt to drive or be in charge of a motor vehicle or other vehicle on a road or other public place if he is unfit to drive through drink or drugs.

2) For the purposes of this article, a person shall be deemed to be unfit to drive if his ability to drive properly is for the time being impaired.

Whilst the rest of the article deals with alcohol concentrations (breath, blood and urine), no further mention of any test for any other “drug” or intoxicant is mentioned.

Currently 15H. puts Alcohol and ‘drugs’ on the same level with regards penalties with a fine of (€1,800) for first conviction or imprisonment not exceeding six months, or to both. In the case of a second or subsequent conviction, to a fine of not less than (€3,000) or to imprisonment not exceeding one year, or to both such fine and imprisonment.

There is currently no mention of any increase in penalty with regards to co-ingestion of drugs with alcohol.

There is currently no mention of any drug level that is deemed acceptable with regards drug use in driving (including cannabis).

There is currently no difference in the Maltese law between cannabis-impaired driving and a cannabis-positive driver.

What do other countries’ legislation say with regards driving under the influence of cannabis offence?

In Australia and many European Union countries, the THC concentration used to define a cannabis-related driving offence has been set between 1 and 2 ng/ml of THC in blood (ng/ml).¹³

In a few European countries penalties increase with increasing blood concentrations of THC (e.g. the Netherlands and Norway).

In the UK, a 2ng/ml level was adopted, reflecting a zero-tolerance approach to driving under the influence.

In some US states in which recreational cannabis use is legal, a concentration of 5 ng/ml has been defined as evidence of impairment.¹⁴

The 5 ng/ml concentration adopted in some US states has also been criticised. It has been characterised as not sufficiently evidence-based and its adoption could lead to substantial numbers of drivers identified as behaviourally impaired by police officers being ‘exonerated’ by the blood test. In Colorado, the 5 ng/ml concentration adopted was the concentration at which jurors could infer impairment, rather than being a strict limit.^{13,14}

Of note, THC concentrations in the blood rapidly decrease especially in the first hour post inhalation.

What are the regulatory options for addressing cannabis-impaired driving?

The policies to reduce cannabis-impaired driving have often been modelled on those that have proven effective in reducing alcohol-impaired driving over the past 40 years.¹⁴

Therefore, they have included: roadside testing of probable cannabis-related impairment, using either

- (a) a test of behavioural impairment (also known as a field Sobriety test) or
- (b) an oral fluid test administered by a police officer at the roadside;

What is an oral fluid test (also known as an Approved Drug Screening Equipment (ADSE))?

An approved drug screening equipment checks saliva for illicit drugs.

Most tests would usually check for cannabis and cocaine, although some kits have a wider spectrum of drug detection. It can be applied at the roadside and involves taking a sample of saliva that checks for the presence (but not the amount) of such drug. If the test is positive, the driver would need a proper THC level in urine or a THC blood level in most EU jurisdictions.



For drivers who fail the roadside test (because the **oral fluid test** is positive or the police officer assesses the driver to be impaired), **confirmation of the commission of an offence by a test to measure blood THC concentration is then required.**

Defining drug-impaired driving by law, based on a specified level of THC in the blood, urine or oral fluid is currently absent from Maltese laws.

In Australia since July 2021, if THC is found in the blood along with alcohol that is above the prescribed limit, it carries a worse offence.¹⁵

Conclusion:

Doctors for road safety believe that commercialisation and increased availability of cannabis will likely lead to increased traffic accidents and deaths as recent studies have shown abroad. D4RS calls on the government to improve legislation with regards driving under the influence of drugs (including cannabis), especially when these are taken with alcohol. D4RS also calls for increased training and presence of enforcement officers on Maltese roads, together with the procurement of roadside tests for drug testing where needed.

References

1. Lafaye, Karila, Blecha et al; 2017 Cannabis, cannabinoids, and health Dialogues Clin Neurosci. 2017 Sep; 19(3): 309–316
2. EMCDDA (2014), Drug use, impaired driving and traffic accidents, second edition, EMCDDA Insights 16, Publications Office of the European Union, Luxembourg
3. Compton, R. (2017a), Marijuana-impaired driving: a report to Congress, National Highway Safety Transport Administration, Washington, DC, available at <https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812440-marijuana-impaired-driving-report-to-congress.pdf>
4. Lenné MG, Dietze PM, Triggs TJ, Walmsley S, Murphy B, Redman JR. The effects of cannabis and alcohol on simulated arterial driving: Influences of driving experience and task demand. *Accid Anal Prev.* 2010;42(3):859-866.doi:10.1016/j.aap.2009.04.021
5. Hartman RL, Huestis MA. Cannabis effects on driving skills. *Clin Chem.* 2013;59(3):478-492. doi:10.1373/clinchem.2012.194381
6. Hartman RL, Brown TL, Milavetz G, et al. Cannabis effects on driving lateral control with and without alcohol. *Drug Alcohol Depend.* 2015;154:25-37. doi:10.1016/j.drugalcdep.2015.06.015
7. Ramaekers JG, Berghaus G, van Laar M, Drummer OH. Dose related risk of motor vehicle crashes after cannabis use. *Drug Alcohol Depend.* 2004;73(2):109-119.
8. Downey LA, King R, Papafotiou K, Swann P, Ogden E, Boorman M, Stough C. The effects of cannabis and alcohol on simulated driving: Influences of dose and experience. *Accid Anal Prev.* 2013 Jan;50:879-86. doi: 10.1016/j.aap.2012.07.016. Epub 2012 Aug 4. PMID: 22871272.
9. Preuss UW, Huestis MA, Schneider M, Hermann D, Lutz B, Hasan A, Kambeitz J, Wong JWM, Hoch E. Cannabis Use and Car Crashes: A Review. *Front Psychiatry.* 2021 May 28;12:643315. doi: 10.3389/fpsy.2021.643315. PMID: 34122176; PMCID: PMC8195290.
10. Rocky Mountain High Intensity Drug Trafficking Area program. The Legalization of Marijuana in Colorado: The Impact: Volume 6, September 2019. *Mo Med.* 2019;116(6):450.

11. B. Tefft, L. Arnold & J. Grabowski, "Prevalence of Marijuana Involvement in Fatal Crashes: Washington", 2010-2014 (Washington, DC: AAA Foundation for Traffic Safety, 2016)
12. Marlene C. Lira, Timothy C. Heeren, Magdalena Buczek, Jason G. Blanchette, Rosanna Smart, Rosalie Liccardo Pacula, and Timothy S. Naimi, 2021: Trends in Cannabis Involvement and Risk of Alcohol Involvement in Motor Vehicle Crash Fatalities in the United States, 2000–2018 American Journal of Public Health 111, 1976_1985, <https://doi.org/10.2105/AJPH.2021.306466>
13. European Monitoring Centre for Drugs and Drug Addiction and Canadian Centre on Substance Use and Addiction (2018), Cannabis and driving: questions and answers for policymaking, Publications Office of the European Union, Luxembourg
14. Compton, R. (2017a), Marijuana-impaired driving: a report to Congress, National Highway Safety Transport Administration, Washington, DC, available at <https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812440-marijuana-impaired-driving-report-to-congress.pdf>
15. <https://www.police.wa.gov.au/Traffic/Offences/Drink-and-Drug-Driving>