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From: roadsafetystrategy@infrastructure.gov.au on behalf of Office of Road Safety <roadsafetystrategy@infrastructure.gov.au>
Sent: Tuesday, 23 March 2021 5:24 PM
To: RoadSafetyStrategy
Subject: National Road Safety Strategy 2021-30 - have your say submission - Michael White [SEC=OFFICIAL]
Attachments: m-white-nrss2021-30-submission.docx

Submitted on Tue, 2021-03-23 17:21

Submitted values are:

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Which area/s of the draft Strategy are you commenting on (select all that apply):

Risky road use

What is your primary area of interest in road safety?

Enforcement of drug driving

What road safety issues are the most important to address?

The draft strategy covers many important issues. I believe that the two most important are speeding and distraction by mobile devices.

What do you believe are the strengths of this draft Strategy?

The encouragement of buy-in from many sectors.

The understanding that speeding needs to be covered under many headings.

Is there anything important that you think is missing from this draft Strategy?

My particular interest is in the moral credibility of the strategy. With respect to drug driving, I believe that road safety has been prostituted to the war-on-drugs. This is most clearly manifested in Australia's per se drug-driving laws. It can also be seen in the biased membership of the Drug Driving Working Group. Radical changes are needed.

Do you give permission for your submission to be published on this website following the end of the consultation period?

Yes

THE INJUSTICE OF AUSTRALIA'S CANNABIS-PRESENCE DRIVING OFFENCES

Submission in relation to the development of Australia's National Road Safety Strategy 2021-30

Abstract

The purpose of this this submission is to demonstrate the injustice of Australia's cannabis-presence (*per se*) driving offences. The scientific evidence shows that the majority of penalised cannabis-positive drivers are not impaired. Australia's roadside drug testing (RDT) programs are therefore so badly targeted as to be morally indefensible.

The scientific evidence

Introduction

In the context of drug-driving enforcement in Australia, the use of cannabis by a driver is determined toxicologically through the detection of delta-9-tetrahydrocannabinol (THC) in oral fluid or blood. Australian drivers commit a zero-tolerance cannabis-presence driving offence if they are detected by the traffic police with any trace of THC in a body fluid. No direct behavioral evidence of impairment is required, because the presence of THC is taken to be indicative of impairment. Two types of scientific evidence will be discussed that clearly show that the detection of THC in oral fluid or blood is a very poor indicator of impairment. The first compares the cannabis-impairment window with the THC-detection window. The second explores the relationship between the concentration of THC and the level of impairment.

The cannabis-impairment window

Many experimental (laboratory, driving-simulator and on-road) studies of the short-term (acute) effects of cannabis on the impairment of driving-related skills have provided evidence about the duration of impairment. However it was not until earlier this year that two systematic reviews of those studies were published (Eadie *et al.*, 2021 and McCartney *et al.*, 2021).

Eadie *et al.* (2021) reviewed studies of the duration of impairment (the 'impairment window') for *medicinal* users of cannabis. They summarised their findings as follows: "Impairment following cannabis inhalation lasts less than or equal to **4 hours** in medical cannabis patients, independent of their dosing regimen (e.g., daily, intermittent, or infrequent). Impairment is THC-dose dependent. Acute impairment was found to be statistically significant in the following domains: immediate and delayed verbal recall; processing speed; task switching; visual attention; fine motor coordination; and working memory."

McCartney *et al.* (2021) reviewed studies of the impairment window for *recreational* users of cannabis. They estimated that the maximum duration of impairment from the acute use of cannabis is **5 hours** for lighter use and **7 hours** for heavier use. In their Abstract, they also noted that regular cannabis users were less impaired than occasional users, that some skill domains were more likely to be affected than others, and that the strength of impairment was THC-dose dependant.

So, the best current scientific evidence indicates that the impairment window for the medicinal use of cannabis, estimated at 4 hours by Eadie *et al.* (2021), is shorter than for the recreational use, estimated at 5 to 7 hours by McCartney *et al.* (2021).

The THC-detection window

Let us now consider the THC-detection window in relation to the enforcement of cannabis-presence driving offences. This is not a simple matter, because the window depends on many factors, the main one of which is the THC cut-off threshold adopted by the jurisdiction. Australia's RDT operations are described as 'zero tolerance', which effectively means that a driver has committed an offence if detected with any level of THC above the limit-of-detection (LOD) of the drug-testing equipment. However, at least some Australian jurisdictions have adopted above-zero THC cut-off thresholds, which they are reluctant to discuss in public. Obviously, a higher THC threshold will result in a shorter THC-detection window. For any jurisdiction that actually adopted a strict 'zero-tolerance' threshold, drivers (and especially if they were heavy users of cannabis) could test positive to THC for many days after last using cannabis (e.g., Odell *et al.*, 2015). Rather than attempting to review any relevant scientific literature, let us see what some Australian road-safety authorities have said about the THC-detection window.

A recent South Australian road-safety TV advertisement involves a young man who is charged by the traffic police for a cannabis-presence driving offence while on his way to work after having smoked marijuana the night before. The advertisement proudly announces that a cannabis-using driver can get caught by the police "long after the high is gone - in fact, for 24 hours after smoking marijuana". A recent Victorian road-safety TV advertisement presents much the same message. In New South Wales (NSW), the Transport Department used to advise that "Cannabis can typically be detected in saliva ... for up to 12 hours after use" (Lawrence & Zhou, 2017). However, the advised 12-hour THC-detection window was criticised in the NSW courts for being unrealistically short and therefore potentially misleading (Lawrence & Zhou, 2017). Consequently, the NSW government is no longer prepared to give any advice on the THC-detection window. For the purpose of this submission, let us assume that the THC-detection window is 24 hours. A driver is, of course, more likely to test positive earlier in the 24-hour period.

Comparing the windows for cannabis-impairment and THC-detection

The evidence provided above shows that the impairing effects of cannabis can last for up to 4, 5 or 7 hours, depending on how it was used, and that THC can probably be detected in oral fluid or blood for up to 24 hours after using cannabis. Because the THC-detection window is much longer than the cannabis-impairment window, a large percentage of drivers who are charged with cannabis-presence driving offences would not have been impaired at the time of their arrest. That percentage is not easy to estimate, but for the purpose of this submission it is taken to be 50%.

Relationship between THC concentration and level of impairment

There is a second reason why a large proportion of those drivers who have been charged with cannabis-presence driving offences were not actually impaired at the time of their arrest. It is that the relationship between the concentration of THC in a body fluid and the degree of impairment is vanishingly weak, such that some drivers with very small concentrations of THC

are impaired, while others with very high concentrations are completely unimpaired. That point can be illustrated using the results of a study by Arkell *et al.* (2021).

The experiment by Arkell *et al.* (2021) was specifically designed to assess the scientific validity of cannabis-presence (*per se*) driving laws. It investigated the relationship between THC concentrations in oral fluid and blood, and levels of impairment. Some Australian road-safety authorities have claimed that the relationship is so strong that every person who is above the THC threshold must be impaired. In contrast, Arkell *et al.* concluded that “There appears to be a poor and inconsistent relationship between magnitude of impairment and THC concentrations in biological samples, meaning that *per se* limits cannot reliably discriminate between impaired and unimpaired drivers” (Abstract). One of their particular findings was that, while all of their subjects exceeded a conventionally-accepted *per se* THC limit of 5 ng/ml in whole blood soon after using cannabis, 46% of them were nevertheless judged to be *not* impaired when assessed on a well-accepted measure of impairment. A second finding may also be of interest: In the case of alcohol, someone who was six times over the legal BAC limit of 0.05 would be severely impaired, and possibly not even able to stand up. However, in the case of cannabis, where a possible *per se* THC limit could be 10.0 ng/ml in oral fluid, Arkell *et al.* (figure 1) reported that one of their subjects was completely unimpaired at about 50 times that limit (500 ng/ml) and another at about 75 times the limit (750 ng/ml).

Studies such as that by Arkell *et al.* (2021) clearly show that not all cannabis users are impaired by their use of cannabis - not even when their blood-THC levels peak soon after use. In one respect the situation for cannabis users is much the same for alcohol users: the drug can be used responsibly without having impairing effects. The proportion of THC-positive drivers who are not impaired in the first few hours after use is not easy to estimate, but for the purpose of this submission it is taken to be 40% (a little lower than the 46% reported by Arkell *et al.*, 2021).

Summary of evidence

There are two reasons why THC-positive drivers may not be impaired. The first relates to the lack of correspondence between the cannabis-impairment and THC-detection windows. For the purpose of this submission, it has been estimated that 50% of THC-positive drivers are apprehended outside their impairment window, and are therefore not impaired. The remaining 50% of drivers who are apprehended within their impairment window are not necessarily all impaired. The reason is that the relationship between the concentration of THC in a body fluid and the level of impairment is very weak. For the purpose of this submission, it has been estimated that 40% of cannabis users are not impaired even in the few hours immediately after using cannabis. It is therefore estimated that, overall, 70% of the drivers who have been charged with cannabis-presence driving offences were not actually impaired at the time that the police arrested them.

Three recommendations

The information and arguments provided above lead me to the purpose of this submission, which is to make three recommendations to anyone who is involved in the development of the drug-driving components of *Australia's National Road Safety Strategy 2021-30* (and especially to the members of the National Drug Driving Working Group).

The first recommendation is that the relevant people ask themselves this moral question: *What is the maximum percentage of THC-positive drivers who are not impaired that a road-safety authority should be prepared to inappropriately penalise in the attempt to appropriately penalise those THC-positive drivers who are actually impaired?*

It is possible, for example, that one might believe it is morally acceptable to unjustly penalise 10% of unimpaired THC-positive drivers in order to justly penalise the remaining 90% of impaired THC-positive drivers.

I urge the people who should be answering this question to not side-step it by entertaining either of the following two weasel arguments.

The first is that a *per se* cannabis-driving offence, by definition, comprises the mere presence of cannabis, such that the question of impairment is irrelevant. That argument denies the underlying justification for *per se* drug-driving offences, which is that the toxicological evidence *takes the place of* behavioural evidence of impairment. Without an assumed causal link between toxicology and impairment, a *per se* offence is groundless. So, it would be disingenuous to pretend that the offence comprises the mere presence of cannabis, when the offence actually comprises the presence of cannabis in its implicit role as a proxy for impairment.

The second weasel argument is that the impairment status of individual drivers is irrelevant because the greater good of general deterrence is being served. The moral vacuity of that argument should be self-evident: innocent (unimpaired) drivers should not be punished in the service of a greater good. In other words, the end of general deterrence cannot justify the means of arbitrary punishment (especially given the complete lack of any direct evidence that Australia's RDT programs actually reduce crash numbers).

The second recommendation is that the relevant people, having considered the facts and arguments presented in this submission, undertake their own calculation of the percentage of THC-positive drivers who have been charged with cannabis-presence driving offences without actually being impaired at the time that the police arrested them. (My estimate was 70%).

The third recommendation is that the relevant people compare the percentages estimated in relation to the first two recommendations. If it is concluded that more THC-positive drivers are unjustly penalised than is morally acceptable, then you should try to influence the developers of the *National Road Safety Strategy 2021-30* to radically change the Nation's approach to the enforcement of cannabis-driving offences. An obvious improvement would be to require behavioral evidence of impairment in addition to toxicological evidence that cannabis had been used.

A first step in the right direction might be to set aside cannabis-presence driving offences for registered users of medicinal cannabis (unless they are judged to be impaired on the grounds of behavioral evidence).

References

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