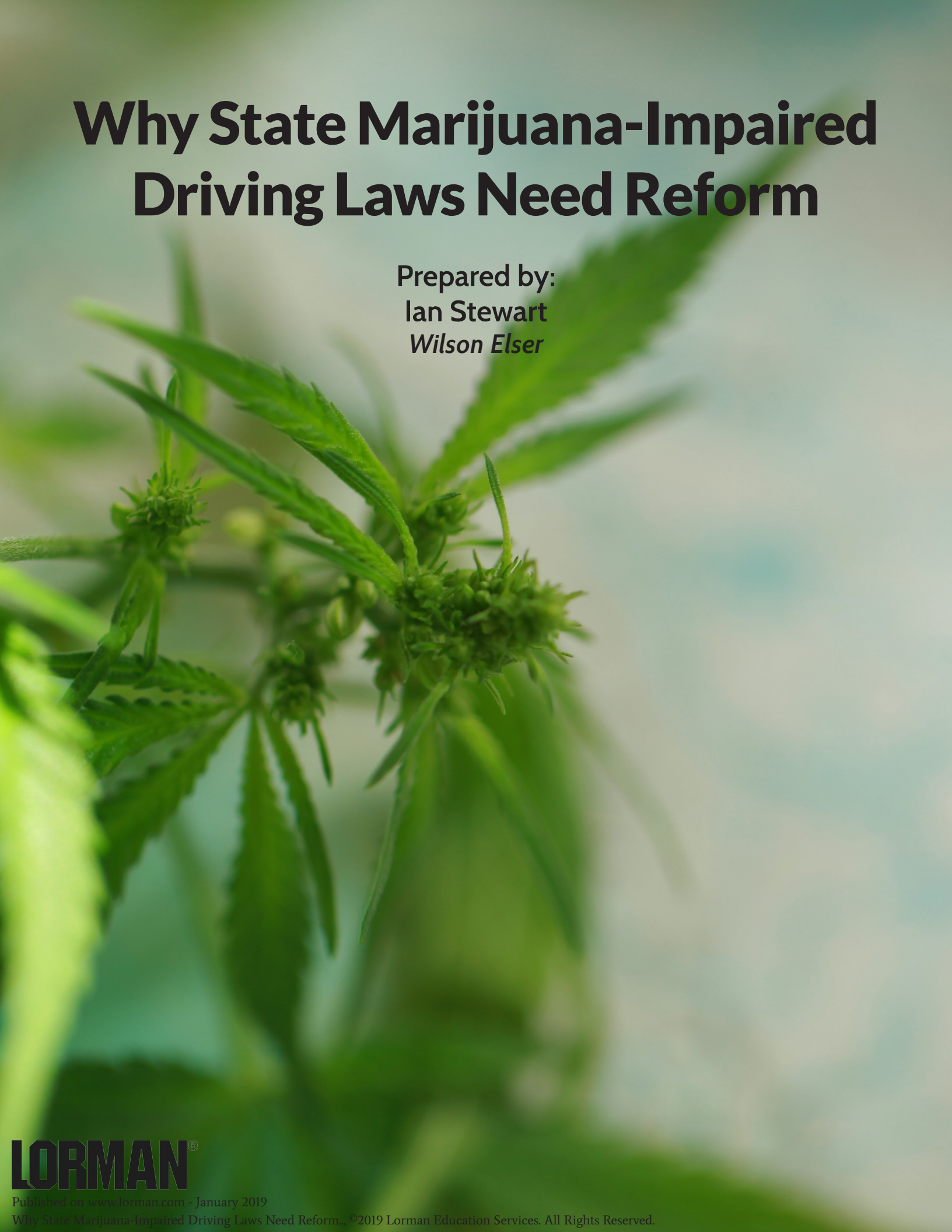

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Why State Marijuana-Impaired Driving Laws Need Reform

*Article by **Ian A. Stewart** – **9/17/18***

The expanding legalization of cannabis may be sending a message to drivers that marijuana is not as dangerous as previously thought. As noted in its July 2017 report to Congress, the National Highway Traffic Safety Administration (NHTSA) cautions that this changing perception is likely impacting personal choices regarding marijuana use, and that "as more people choose to use marijuana, it is likely more people will drive impaired by marijuana." This is borne out by recent studies that show an increasing national trend in marijuana use with a decreasing trend in alcohol use.

The number of marijuana-impaired drivers on the road will continue to increase with greater access to retail recreational cannabis and a new generation of "pot cafés" and other on-site cannabis consumption venues on the horizon in adult-use states. It is therefore critical for policy makers, insurance companies and the public to understand the risks associated with marijuana-impaired driving and the limitations in the ability of new technology to detect and prevent drugged driving.

Following is a discussion of the current scientific limitations on measuring cannabis impairment and the challenge of developing accurate and reliable roadside detection technologies. Also discussed is what research shows on the behavioral effect of marijuana on drivers, as well as the relative crash risks from marijuana-impaired driving, drunk driving and mixed alcohol/drug use. We comment on NHTSA's conclusion that currently there are no evidence-based methods to test for marijuana impairment or to differentiate the cause of driving

impairment between alcohol and marijuana. We also elaborate on state driving laws and the lack of evidence that *per se* THC limits have a scientific basis. Finally, we discuss NHTSA's recommendation that before an evidence-based solution can be developed for measuring marijuana-impaired driving, additional training, data collection and research is needed.

The Body Metabolizes Alcohol and THC Very Differently

Alcohol is readily absorbed into the bloodstream and declines at an approximately constant rate. THC concentration, however, drops rapidly at first, followed by a slower decline as lower THC levels are reached. As described in the NHTSA report, "THC is eliminated at a rate proportional to the current concentration with exponential decay." In other words, elimination occurs most rapidly when higher concentrations are present and slows down when less of the drug is present.

THC Concentration and Impairment Are Not Closely Related

Unlike alcohol consumption, where impairment closely correlates with blood alcohol concentration (BAC), the level of THC in the blood and the degree of impairment are not closely related. Peak impairment does not occur when THC concentration in the blood is at or near peak levels. In fact, studies suggest that peak impairment may occur up to 90 minutes after smoking, by which time the THC level has declined by more than 80 percent. As emphasized in the NHTSA report, peak THC level can occur at the time low impairment is measured, and high impairment may be measured when the THC level is low. In addition, a low THC level can result from recent use with some impairment, or it

can result from environmental exposure or from chronic use with no recent ingestion and no impairment.

The Complex Pharmacology of Cannabis Is Not Well Understood

This difficult situation is further complicated by the complexity of cannabis. With alcohol, one ingests the identical ethanol molecule whether it's consumed in beer, wine or whisky. Cannabis, however, includes a wide variability of strains that contain dozens of cannabinoids with complex pharmacology and differing potencies and psychoactive effects that also differ depending on the method of ingestion. Most research has been based on the subject smoking cannabis; very little research has been performed on subjects ingesting edibles or using other forms of absorption such as transdermal patches or sublingual tinctures. Even the research performed to date on smoking cannabis often does not measure concentration of THC in the blood. This situation leaves the scientific community largely in the dark as to the specific causal relationship between the plant's pharmacology and impairment in the user.

Drunk Driving versus Drugged Driving

Decades of research and experience confirm that alcohol causes aggressive driving with common behaviors that include higher driving speeds, greater lane variability, lane departures and closer following distances. It is common knowledge that drunk drivers typically drive faster and take greater risks. Studies on marijuana-impaired driving, on the other hand, show that marijuana-impaired drivers typically drive slower, follow other cars at greater distances and take fewer risks than when sober. This does not mean that marijuana-impaired drivers are as safe as sober drivers, of course, because marijuana use

impairs psychomotor skills, causes divided attention, and impairs lane tracking and cognitive functions. Alcohol also causes impairment in these executive functions, but alcohol causes different driving behaviors in the drunk driver compared with the drugged driver.

The relative dangers of marijuana-impaired driving compared with drunk driving are supported by empirical evidence. Studies performed on the crash risk associated with marijuana use are somewhat variable, but overall show relatively low risk estimates – or in a few cases, no risk – associated with marijuana use when compared with alcohol or mixed drug/alcohol impairment.

NHTSA's Crash Risk Study

For example, NHTSA's 2016 "Crash Risk" Study, the first large-scale study in the United States to include drugs other than alcohol, concluded that there was no increased risk of crash involvement found over sober/drug-free drivers, and that there was no difference in crash risk for drivers that had consumed both marijuana and alcohol beyond the risk attributable to alcohol alone.

DRUID Study

The large-scale European DRUID Study resulted in considerable national variability of crash risk results, with an average of 1.39 times that of drug-free drivers. This result was not considered statistically significant.

Meta-Analyses

Two recent meta-analyses, which each looked at separate groups of nine studies, found an overall pooled risk estimate of 2.66 times and 1.92 times that of drug-free drivers, respectively.

Based on the NHTSA study, the DRUID Study and the meta-analyses, it appears that the typical average increased risk of crash involvement for drivers using marijuana is up to approximately 2 times that of drug-free drivers. This compares with an increased crash risk for drunk drivers that is 5 times that of sober drivers with a BAC of 0.10, and 22 times that of sober drivers with a BAC of 0.20 (not to mention a 23-times increase in crash risk from texting while driving).

Crash Risk from Mixed Marijuana and Alcohol Impairment

The crash risk associated with the combined use of alcohol and marijuana also has been difficult to determine because of variable results from different studies. Columbia University's 2013 study showed a 23-times increase in crash risk for mixed alcohol and drug use generally, though cannabis was noted to have the least risk of the drugs studied. In a 2014 study published in the *Journal of Studies on Alcohol and Drugs*, mixed alcohol and marijuana use was not found to significantly increase crash risk beyond alcohol impairment alone. The study found that while mixed alcohol and drug use (other than marijuana) did increase crash risk to some extent, alcohol was the primary cause of crash risk. It warns:

"The lower contribution of drugs other than alcohol to crash risk relative to that of alcohol suggests caution in focusing too much on drugged driving, potentially diverting scarce resources from curbing drunk driving."

In sum, there is no compelling evidence based on a large study that marijuana use significantly increases the crash risk over alcohol impairment alone. There is consensus in the scientific community, however, that more study is needed.

Impaired Driving Detection Process

Blood testing remains the gold standard for testing the presence of alcohol and drugs in impaired driving cases. This invasive procedure, however, typically requires a search warrant that results in delay and less probative test results. In *Missouri v McNeely,* 133 S.Ct. 1552 (2013), the U.S. Supreme Court held that warrantless blood tests of alcohol concentration are not generally allowed. Warrantless breath alcohol tests are generally permissible as they are less intrusive than blood tests. See *Birchfield v. North Dakota,* 136 S.Ct. 2160 (2016).

Oral fluid testing devices are being developed, but also may require a search warrant depending on the jurisdiction. This method is minimally invasive and has been shown to be effective in detecting the presence of THC. NHTSA has concluded that devices that collect oral fluid for laboratory testing appear reliable for testing recent drug use. Roadside point-of-arrest technology, however, is still evolving and has not been shown to be completely accurate and reliable to date. Roadside oral fluid testing devices include the Alere DDS®2 Mobile Test System, which tests for five commonly abused drugs, and the Dräger DrugTest® 5000. These new devices may be used by law enforcement to provide a preliminary indication of whether a laboratory test is likely to yield a positive result for THC.

Feasibility of Developing an Impairment Standard

There currently exists no objective chemical test for marijuana impairment. As previously discussed, THC does not correlate well with impairment in any event. Very high levels of THC do indicate recent consumption, but NHTSA has pointed out that in a real-life scenario, it is unlikely that a police officer would encounter a suspect and obtain a

sample of blood or oral fluid close enough to the time of consumption for high THC levels to be detected. Even if a blood test shows only low THC levels, the individual may have been quite impaired when the blood was taken. Impairment may be observed for two to three hours after smoking, whereas by one hour after smoking, peak THC levels have declined by 80 percent to 90 percent.

Without a chemical test, the alternative is to develop a subjective psychomotor, behavioral or cognitive test – something similar to the classic roadside field sobriety tests for alcohol intoxication. Available research, however, does not support the development of such tests that would be practical and feasible for law enforcement at this time. Indeed, NHTSA boldly concludes that "there are currently no evidence-based methods to detect marijuana-impaired driving." It explains that "current knowledge about the effects of marijuana on driving is insufficient to allow specification of a simple measure of driving impairment outside of controlled conditions."

Similarly, NHTSA concludes that there are no evidence-based methods to differentiate the cause of driving impairment between alcohol and marijuana. "These efforts will take a number of years and a successful outcome cannot be guaranteed at this time."

Current State Laws Relating to Marijuana-Impaired Driving

It is illegal in all states to drive while impaired by alcohol or other drugs. The statutes, which have been in place for decades, require evidence that the drug *caused* the impairment. There is great variability between the states as to what constitutes "driving under the influence" (DUI). Many states have "*per se*" laws that make it illegal to drive with more than a specific concentration of the drug in the blood

or urine. For example, a number of states have adopted a *per se* limit of 2 ng/mL or 5 ng/mL for THC, and others have a zero-tolerance *per se*limit whereby any level of THC results in a violation. Only three states (California, New York and Hawaii) have a separate "driving under the influence of drugs" (DUID) statute. In all remaining states, it is a violation of the DUI law to drive under the influence of alcohol, drugs, or a combination of alcohol and drugs.

State *Per Se* THC Limits Are Not Based on Scientific Evidence

Given the poor association between the level of THC and impairment, one can see the problem with enforcement of cannabis impairment under state driving laws, all of which require the state to prove the drug caused the impairment. The NHTSA report comments on this problem, and particularly criticizes the basis of state *per se* driving laws, concluding that the "*per se* limit appears to have been based on something other than scientific evidence."

The report further explains:

"The adoption of a 5 ng/mL *per se* law for THC would appear to result in the exclusion of a large number of drivers who law enforcement officers believed to be impaired by marijuana but whose blood THC concentrations will fall below this artificial *per se* threshold during the minimum 1 to 2 or more hours it will take to collect a blood sample following a stop, investigation and arrest."

No Easy Solution

Unfortunately, there is no easy solution to the lack of an impairment standard and the conflict between current state driving laws and the determination of causation by cannabis impairment. At this time,

NHTSA can only recommend increased use of effective methods to train law enforcement personnel, continued research on the development of an impairment standard, and better data collection by the states on the prevalence and effects of marijuana-impaired driving. Though all states currently participate in various levels of NHTSA courses that teach impaired-driving detection, there are only about 8,000 certified Drug Recognition Experts, the highest certification level. This number must increase to meet the challenges ahead.

Without an objective impairment standard, only those who have reached a point of demonstrating poor driving are likely to be prosecuted and convicted. This may result in many impaired drivers escaping detection, subjecting innocent drivers to increased dangers on the roadways. Until a reliable marijuana-impairment standard is developed, relevant stakeholders must continue to be educated on the unique toxicology of cannabis and how it differs from alcohol, as well as the lack of any scientific basis for state driving laws that rely on THC limits, which do not closely correlate with impairment. The public should not hold out false hope for a panacea in the form of new technology that detects and prevents marijuana-impaired driving because that technology, too, is largely premised on detecting immaterial THC levels.

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