



# Detecting Marijuana-Impaired Drivers: A Lesson In History

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In 1975 reggae musician Peter Tosh penned the lyrics “legalize it,” referring to marijuana. Since then, 23 states have done just that and have enacted laws permitting the medical use of marijuana. Four states and Washington, D.C., have gone even further by enacting laws legalizing the recreational use of marijuana. These numbers are expected to continue to grow. As many as 10 states are expected to attempt to “become green” and have ballot measures proposing marijuana legalization in the 2016 election year.[1]



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Marijuana, known by many names such as pot, reefer, weed and grass is derived from the cannabis sativa plant which contains over 480 natural components. The part of the plant which is best known for its psychotropic effects is delta-9-tetrahydrocannabinol (Delta 9-THC).[2]

Studies have shown that the recent legalization efforts have brought with them dramatic increases in the use of marijuana nationally. Since 2009, more high school seniors admitted to driving after smoking marijuana than driving after drinking alcohol.[3] In 2011, 18.1 million Americans, age 12 years and older, reported using marijuana in the past 30 days.[4] And most dramatically, between 2007 and 2014 there was a 48 percent increase in weekend nighttime drivers who tested positive for THC marijuana use.[5]

Statistics indicate that marijuana-impaired driving arrests should increase dramatically. This is likely caused by both increases in marijuana use and a greater awareness by law enforcement officers. By example, in Washington, recreational marijuana was legalized in 2012 and in that year the state toxicology lab reported that only 19 percent of its toxicological samples tested positive for marijuana. Just three years after marijuana was legalized in Washington that total rose to 33 percent in 2015.

We are now witnessing the evolution of methods of detecting and prosecuting individuals for driving under the influence of marijuana. We can expect to see shifts in the technology used to detect marijuana-impaired drivers and a shift in the manner states criminalize marijuana impaired driving.

An analysis of the evolution of alcohol impaired driving enforcement efforts can help us gain insight into what to expect in the deterrence of marijuana-impaired driving. Law enforcement concerns over alcohol impaired driving dates back internationally to Sept. 10, 1897, when a London cab driver named George Smith crashed his taxi into a building and became the first person to be arrested for drunk driving.[6] In 1910, New York became the first state to enact laws prohibiting drunk driving. These early laws prohibited alcohol impaired driving.

On Dec. 5, 1933, the 21st Amendment was ratified and prohibition was repealed. Concerns then grew over the need to detect alcohol impaired drivers. Just three years later, in 1936, Dr. Harger, an Indiana University professor of toxicology and biochemistry, patented the Drunkometer, a breath testing device used to assist in the detection and prosecution of DWI by determining the amount of an individual's blood alcohol concentrations (BAC).[7] This began the evolution of laws that prohibited DWI based on a person's BAC. These early breath testing devices were developed to be used in the field by law enforcement officers to detect whether an individual was driving while intoxicated by alcohol.

Fast forward to today, law enforcement continues to develop and use screening tests, except now those are being developed to detect driving while impaired by marijuana offenders and government continues to develop laws to make it easier to prosecute offenders based on blood concentration, except now it seeks to measure levels of marijuana in addition to alcohol.

Following its use, marijuana is metabolized to a variety of inactive chemicals, one of them being known as carboxy THC, a metabolite which remains in the body long after marijuana's affects are gone and cannot be used as a marker for marijuana impairment. Delta-9-, the psychotropic part of the plant dissipates quickly from the blood so it is important for law enforcement to detect its use promptly. A method of detection growing in its use is oral fluid testing which offers noninvasive sample collection and can be quickly and simply done by police officers in the field.

One oral fluid testing device now becoming popular for use by law enforcement is the DrugTest 5000, manufactured by Dräger. The DrugTest 5000 consists of a test cassette with an oral fluid collector and an analyzer. Oral fluid is collected by wiping the collector in the mouth and then placing it into the analyzer. Results are available within eight minutes. The results are qualitative not quantitative. Confirmation tests are required to protect against false positives and to provide quantitative results. False positives are a concern when using oral fluid detection devices because they rely on immunoassay testing.[8] Just as the legalization of alcohol in 1933 led to the development and use of breath testing devices, the legalization of marijuana is leading to increased use of oral fluid collection devices.

The legalization of marijuana is leading to a desire to simplify the prosecution of drivers impaired by marijuana. After the legalization of alcohol there was a development of laws that prohibited operating a motor vehicle with certain BAC. To address marijuana impaired driving, many states have developed an interest in identifying an impairment standard for marijuana that is the equivalent to the 0.08 BAC now used to prosecute alcohol-impaired drivers. The science however is clear: it is not possible to identify a valid impairment standard for marijuana equivalent to the 0.08 g/dl limit for alcohol.[9]

Detecting THC in the blood doesn't necessarily correlate to impairment. Most government research finds no science that can draw connections between a specific amount of THC in the blood and a specific degree of impairment. This has made many states reluctant to adopt per se limits for THC. Despite the research many states have enacted per se statutes. The most common level is set at 5 nanograms per milliliter. However "nearly all marijuana users test below 5 ng/ml of active THC in blood only a few hours after their last use." [10] It is anticipated that because of this many states will move towards enacting a zero-tolerance policy such as that suggested by the [U.S. Department of Transportation](#) and currently in use in Michigan.

George Bernard Shaw once wrote, “If history repeats itself, and the unexpected always happens, how incapable Man must be of learning from experience.” We can learn from experience. As we witness the evolution of methods of detecting and prosecuting individuals for driving under the influence of marijuana we can learn from history and expect to see shifts in the technology used to detect marijuana-impaired drivers and a shift in the manner states criminalize such driving.

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[2] “Learn About Marijuana Factsheet,” Alcohol and Drug Abuse Institute, University of Washington, June 2011.

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[5] “Results of the 2013-2014 National roadside Survey of Alcohol and drug Use by Drivers” United States Department of Transportation, [National Highway Traffic Safety Administration](#), Traffic Safety Facts, Research Note February 2015.

[6] History.com Staff, “Londoner George Smith gets caught driving drunk,” History.com, A+E Networks, 2009, March 21, 2016.

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[9] Huestis, Marilyn A., “Marijuana Use is a Serious Highway Safety Threat:

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[10] Id.

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