

# Cannabis Training for Law Enforcement and Green Lab



**Extract-ED**

Jefferson City, MO

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# Purpose

The purpose of a green lab is to provide the student with a hands-on experience with an individual who has used a known amount of cannabis. Often, officers encounter drivers who have used cannabis and must administer psychophysical tests to determine if the subject is impaired. Unlike alcohol, officers receive little training to determine if a subject is under the influence of a drug. The trend of legalizing cannabis is continuing, increasing the likelihood officers will contact drivers who have used cannabis. Our goal is to allow officers to administer psychophysical tests on volunteers who have consumed cannabis. We will then review the officer's observations of the volunteers and discuss if the user was impaired by cannabis use.

## Where are we now?

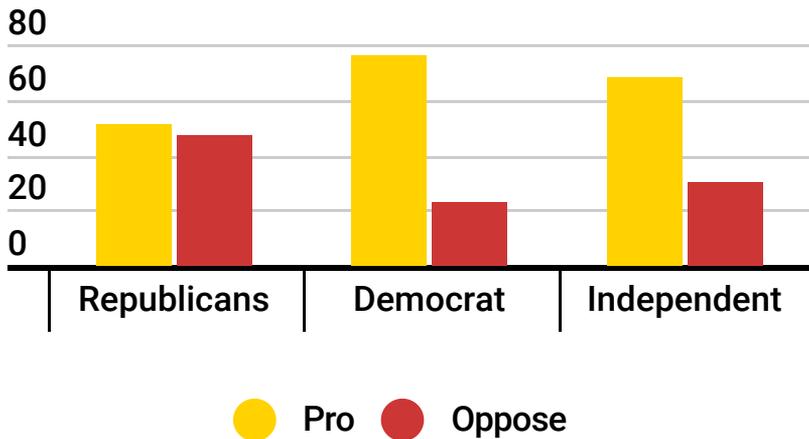
Heavy regulation of marijuana and its restriction began in the United States in 1906 and continued toward prohibition into the 1920s. Most states had labeled marijuana a drug by the mid-1930s, which led to the first national regulation, known as the Marijuana Tax Act of 1937. This act did not outlaw marijuana itself, however, it placed heavy restrictions on the use, sale, and cultivation of marijuana. Medical use was still allowed under this act.

The Marijuana Tax Act was challenged in 1969 by Timothy Leary, *Leary. v. United States*. Leary was arrested for the possession of marijuana in violation of this act. Leary's argument was based on the idea that the Marijuana Tax Act was unconstitutional as it required self-incrimination, violating the fifth amendment. The Supreme Court agreed, thus Leary's conviction was overturned.

Initially, this was counted as a win for the marijuana industry, though it was short-lived. The United States Government responded by passing and signing into law the Controlled Substance Act in 1970. This act created five schedules of drugs. Drugs are placed into these schedules based on their abuse potential and medical use. The Drug Enforcement Agency (DEA) and the Food and Drug Administration (FDA) are responsible for scheduling drugs, though some drugs have been scheduled by congress. Marijuana was classified as a Schedule I drug, along with heroin, dimethyltryptamine (DMT), lysergic acid diethylamide (LSD), methylenedioxymethamphetamine (ecstasy), and cathinone (Khat).

The public perception of marijuana has shifted over time. In 1996, California became the first state to legalize marijuana for medical use by passing proposition 215. This trend led to the legalization of marijuana for recreational use in Washington and Colorado in 2012.

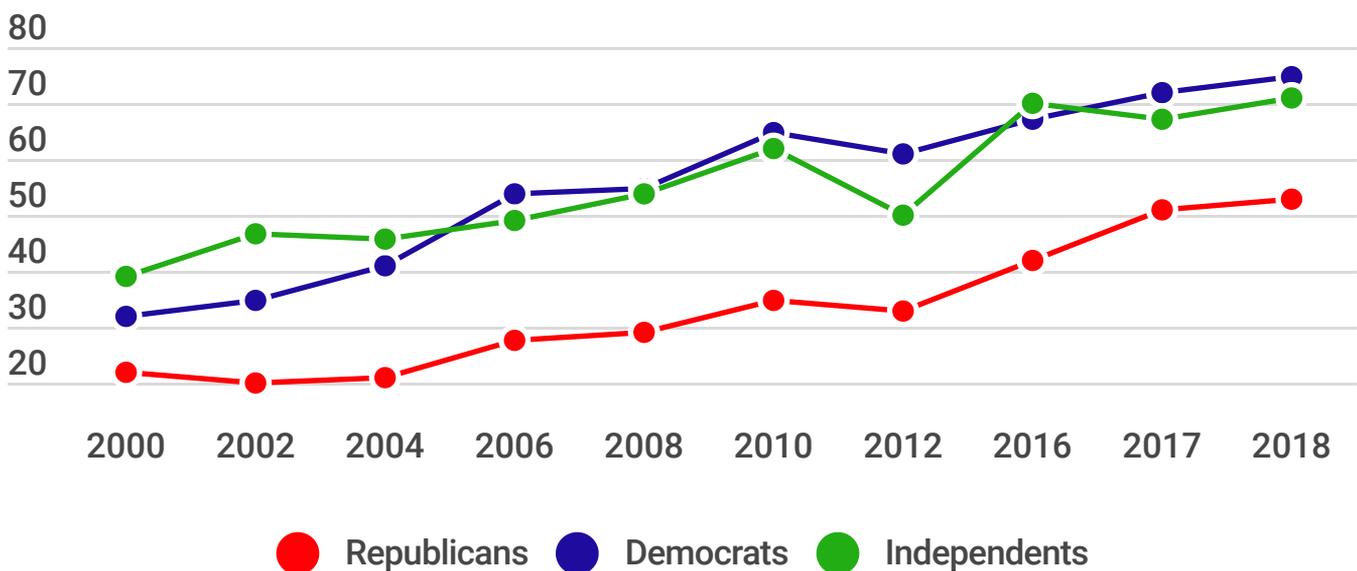
## Who supports legalization?



Political Identification Groups-Support/Oppose Legalization-Gallup (Figure 1)

Though marijuana remains a Schedule I controlled substance federally, states continue legalization, using various methods, including constitutional amendments. Typically, decriminalization is a state's first step towards legalization, followed by medical marijuana, then the legalization of recreational marijuana for adult use. However, South Dakota became the first state to skip this traditional process when it legalized marijuana for medical and recreational use on the same ballot in 2020.

It cannot be denied that marijuana is headed towards full legalization, even federally. Historically, legalization has been labeled a topic only supported by the left; however, recent Gallup polls show the support for legalization is penetrating both sides of the aisle.



Political Identification Groups and Support for Legalization in 2018-Gallup (Figure 2)



# What's next?

Law enforcement and marijuana users have historically been on opposing sides. One side enforces the laws that have been passed, and the other breaks them, right? Before the flood of states legalizing marijuana, also known as the "Green Rush," this may have been a true statement. However, due to the legalization of marijuana, we have spun this traditional way of thinking on its head. Now, law enforcement who are sworn to uphold the law find themselves protecting citizens' rights to purchase, possess, cultivate, and use marijuana. Marijuana advocates and law enforcement have found themselves in an anomalous scenario, where working together may be the future. With the complexity of some medical and recreational marijuana laws and marijuana remaining a controlled substance federally, both cannabis advocates and law enforcement are caught trying to navigate a grey area of legal vs. illegal. As we move forward and legalization continues, our education on marijuana laws, increasing our knowledge about marijuana in general and building better relationships between historically opposing sides become ever more important. These relationships will be vital for law enforcement to succeed in this time of transition.

# Traffic Safety and Cannabis

As legalization continues, it can be safely assumed that cannabis use will likely increase. Recent surveys show that approximately 55 million people currently use cannabis in the United States, and over 45% of Americans have tried it at some point. What does this mean? The likelihood of officers contacting a driver who has used cannabis recently is increasing. According to a National Roadside Survey (NRS) conducted in 2013-2014 by the National Highway Traffic Safety Administration (NHTSA), marijuana showed the largest increase in drivers, compared to other drugs. An NRS conducted in 2007 showed 8.6% of weekend nighttime drivers tested positive, compared to 12.6% in 2013-2014. Cannabis consumption can impair the user's cognitive and psychomotor abilities, though this can differ from consumer to consumer based on several factors, including method of consumption (e.g., combustions vs. infused products) and chronic vs. novice users. Naturally, it concerns law enforcement and the general public if the consumers are operating a vehicle while impaired. Law enforcement officers receive training on detecting and apprehending impaired drivers during their basic training; however, most of that training revolves around alcohol. Historically, alcohol has been the main cause of impaired driving across the United States. Though alcohol impairment is still a concern, the number of weekend nighttime drivers testing positive for a BrAC  $>.08$  has decreased to 1.5%. As cannabis use increases, it's imperative officers receive further training on how to differentiate between use and impairment.

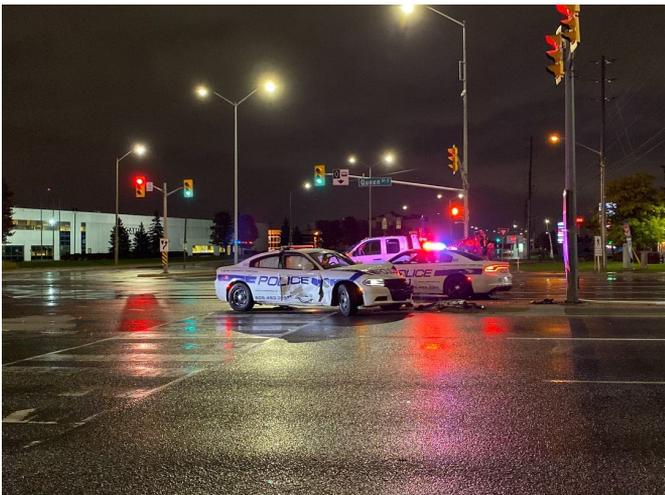
## Roadside Surveys

1. Ask drivers about their cannabis and other drug use.
2. Request biological samples to test recent cannabis use.

There are a few important things to note about the increase in drivers testing positive for THC. First, though there is no monitoring that compares the increase to states that have legalized cannabis, it can be assumed that more people are consuming for legal medical and recreational use. Also, the number of drivers testing positive for THC has remained fairly stable since 2015. Second, the mere presence of THC in the blood or saliva does not directly indicate impairment. Cannabis contains many cannabinoids, though two are more popular than others. Delta-9-Tetrahydrocannabinol (THC) and Cannabidiol (CBD) are all but household names. CBD produces no psychoactive effects on the user and is used for mainly medicinal reasons. THC, however, can produce impairing effects on the user.

# How should we detect cannabis impairment?

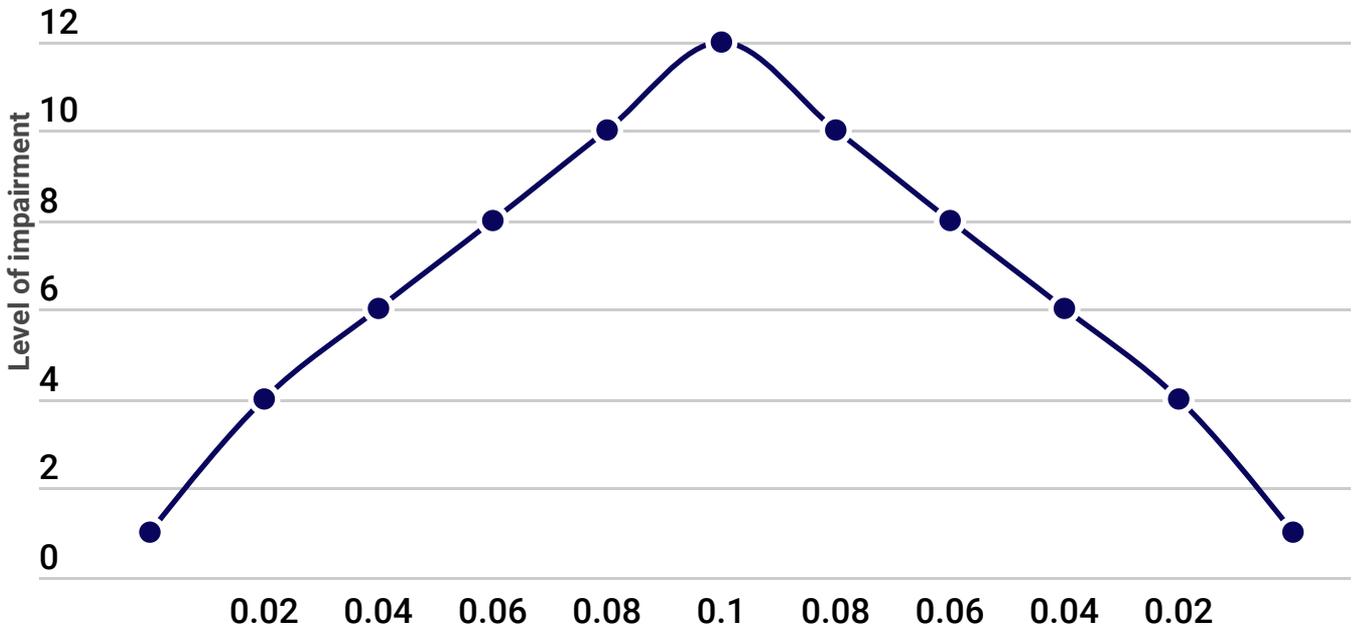
There are a few suggestions on how to approach cannabis impairment. The first, and most popular, is roadside oral fluid testing. Oral fluid testing can detect drivers who have used cannabis recently, though there are several downsides to this method. First, oral fluid testing detects use, not impairment. For most states, impairment is an element that must be met in order for a driver to be considered DWI/DUID. Oral fluid devices can be respectfully compared to a Preliminary Breath Test (PBT), which officers use to help detect alcohol.



PBTs appear to be better at assisting officers with detecting alcohol impairment compared to any current oral fluid device with detecting cannabis impairment. With alcohol, scientific studies have concluded that alcohol impairment begins around 0.05 and increases with higher BrACs. PBTs give officers a readout of the driver's BrAC, which help them in the decision making process. Oral fluid testing currently only shows a positive reading for THC or other drugs. Oral fluid devices do have cutoff limits for detection. These vary per device but seem to range from 5 ng/ml to 25 ng/ml of THC. Lastly, even if the driver tests positive for THC on an oral fluid device, they are still requested to give a sample of their blood.

Second, lawmakers want to treat cannabis similar to alcohol and set limits on THC in a driver's blood. It is important to understand that cannabis and alcohol are not eliminated from the body the same. In fact, alcohol is a unique drug when compared to most other drugs. When alcohol is consumed, it is absorbed into the body, mainly through the small intestine. As a person consumes alcohol, their blood alcohol concentration (BAC) and impairment rise together. The more alcohol the person consumes, the more impaired they become. Once the person stops drinking, their BAC will peak, then begin to fall. As the consumer's BAC falls, their impairment level drops as well.

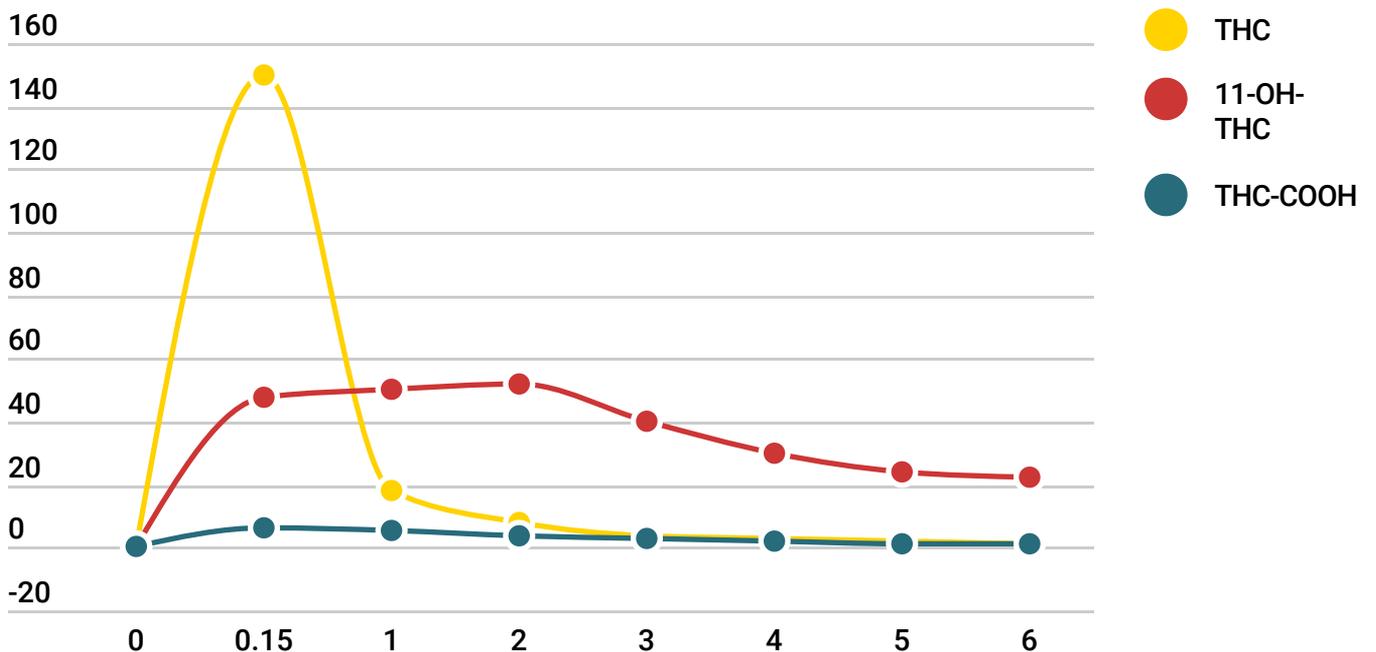
## Alcohol



(Figure 3)

● Impairment Level

THC and most other drugs do not follow this method of elimination. When marijuana is smoked, THC levels immediately rise and become detectable in blood within seconds. The peak concentrations of THC happen within 15 minutes, then begin to drop rapidly. The body begins to metabolize THC into 11-OH-THC (sometimes referred to as hydroxy-THC). This metabolite is psychoactive and will reach its peak concentrations within 45-90 minutes. A non-psychoactive metabolite, THC-COOH (sometimes referred to as carboxy-THC), begins to rise immediately but plateaus after approximately 1 hour before it begins a slow decline in concentration.



Average course of THC and its metabolites for a group of 6 volunteers after smoking (drawn from data in Huestis et al. 1992a) (Figure 4)

Though there is an allure to creating a statutory limit on THC in the blood, there are a number of issues that cannot be ignored.



## Zero Tolerance

This option seems most appealing but is not reasonable as marijuana legalization continues. THC is fat-soluble, meaning it can be stored in fat cells and released back into the blood over time. There is no clear answer on what causes the THC

to be released into the blood and over what time period this happens. Using a zero-tolerance approach could lead to convictions of chronic marijuana users who have residual THC in their blood but are not impaired.

## Per se Limits

There is a strong push for a Per se Limit. This would make enforcement easier for law enforcement. Though it would make impaired driving enforcement easier for law enforcement, there are concerns. Again, THC can be released in the consumer's blood over a period of time. Some states/countries have implemented Per se Limits that range from 1-5ng/ml. The major issue with this approach is there is no scientific evidence that correlates a relationship between THC concentrations in blood and a consumer's degree of impairment.



Is there an answer to the problem? Yes, and the beauty of it is its simplicity. Officers need to use their observations, the performance of SFSTs, and additional field tests to detect impairment. Using these tests, and dismissing the stigma of marijuana use itself, provide the most valuable indicators of marijuana impairment.

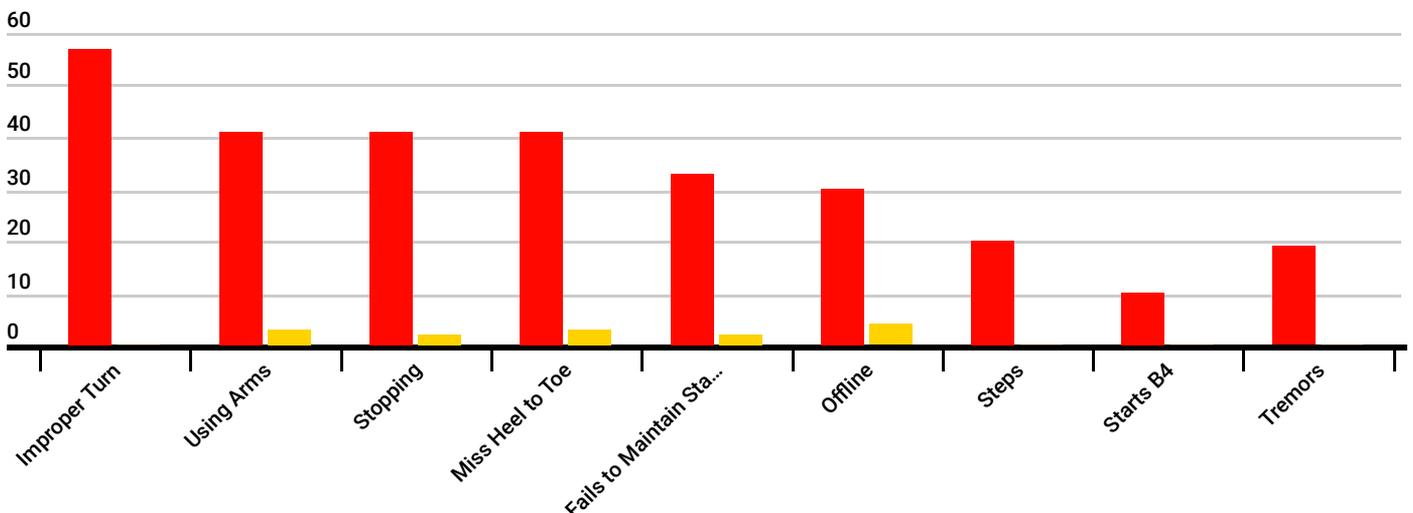


# Detecting the impaired.

The Drug Recognition Expert (DRE) Examination Characteristics of Cannabis Impairment Study, also known as the 302 Study, evaluated 302 cannabis DRE cases. These cases were originally "called" cannabis-only cases by DRE examiners and were later confirmed to be cannabis-only cases via toxicological examinations. The 302 cannabis-only cases were then compared to 302 controls with similar demographics. The purpose of this study was to determine the most reliable Drug Evaluation and Classification Program (DECP) procedures that could identify cannabis impairment. The examinations reviewed in this study were blood pressure, heart rate, pupil size the Walk and Turn Test (WAT), the One Leg Stand Test (OLS), the Modified Romberg Balance Test (MRB), the Finger to Nose Test (FTN), and the Lack of Convergence Test (LOC). The WAT and OLS Test are taught in basic police training academies. The FTN, MRB, LOC, and pupil size are taught and discussed in Advanced Roadside Impaired Driving Enforcement (ARIDE) training, which is widely available to officers across the nation. We will discuss the tests officers receive training on up to and including ARIDE training. Only a small percentage of officers are DREs and receive training on blood pressure pulse and additional tests to detect impairment.



## Walk and Turn Test



Clues of impairment during the WAT, cases/control  
(drawn from data in 302 study) (Figure5)

● Cases ● Controls

# Clues of Impairment

1. Cannot maintain stance
2. Starts before instructed
3. Stops while walking
4. Misses heel to toe
5. Steps offline
6. Uses arms for balance
7. Improper turn
8. Incorrect number of steps

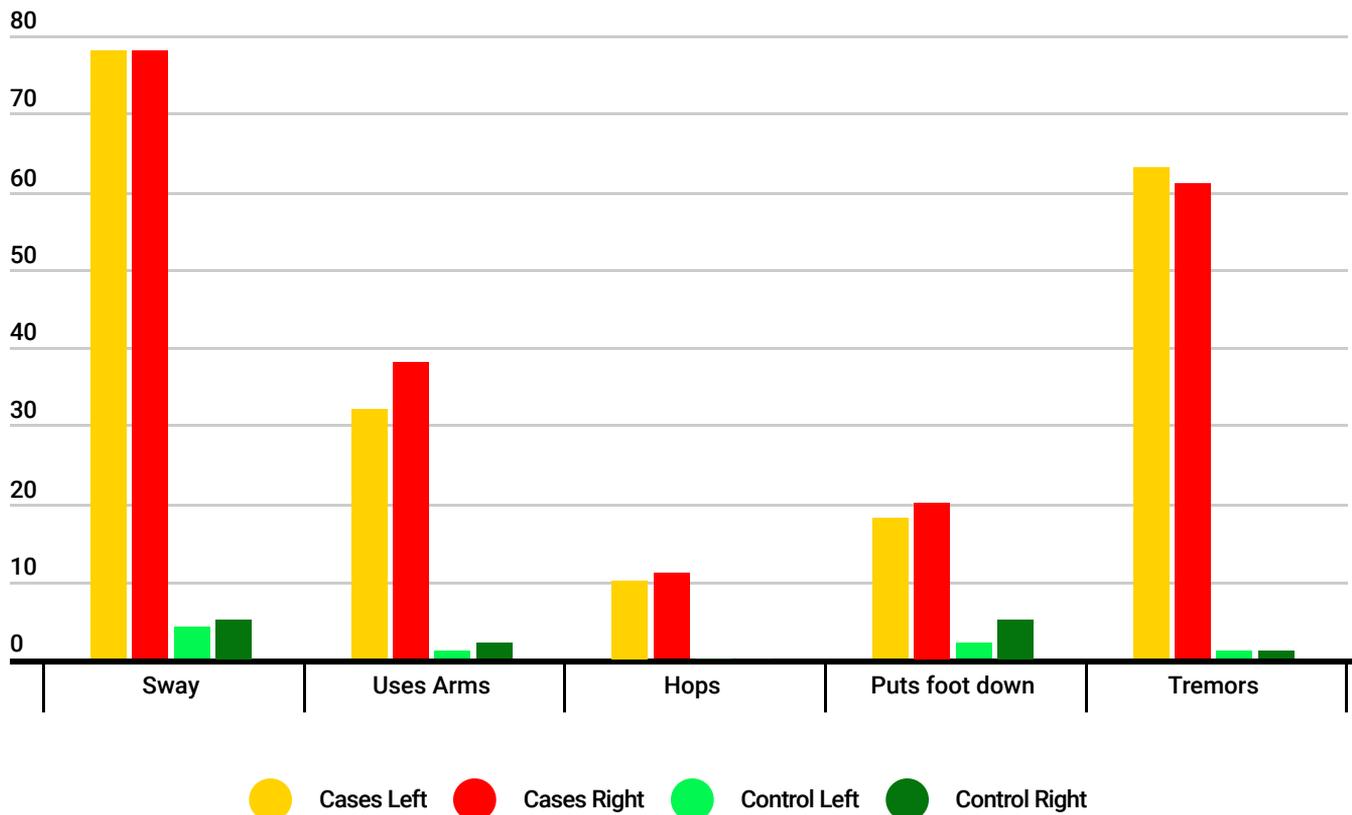
The clue observed most during this test was an improper turn, which was detected in 57.3% of cases and 0 in controls. Other common observed clues were using arms for balance, stopping while walking, and missing heel to toe. An observation, not a scorable clue, documented during this test was leg tremors. This observation was documented in 17% of cases. There are eight clues possible during this test. The median range for clues during this test was 3 (0-8) for cases and 0 (0-2) for controls.

## One Leg Stand Test

The median number of clues observed during this test was 1 for cases and 0 for controls. The clue observed most during this test swaying. Fewer than 20% of cases had 0 clues, while >90% of controls had 0 clues.

### Clues of Impairment

1. Puts foot down
2. Uses arms for balance
3. Sways
4. Hops



Clues of impairment during the OLS, cases/control  
(drawn from data in 302 study) (Figure6)

# Modified Romberg Balance Test

This test does not have standardized clues of impairment like the WAT and OLS. This test simply provides observations and indicators of impairment by examining a person's internal time estimation and balance. During the 302 study, only 4% of cases estimated 30 seconds in a 30 second time period, while 29% of controls were able to do so. Cases estimated 30 seconds, +/- 5 seconds, 50.7% of the time, while 83.1% of controls were able to do so. Swaying was documented in 78.5% of cases and 11% in controls. Eyelid tremors were observed in 57.9% of cases, and 28.1% of cases displayed eyelid and body tremors.

## Finger to Nose Test

This test involves the subject tilting their head back, with their eyes closed, and touching the tip of their nose with the tip of their finger when requested. There are a total of 6 attempts to touch their nose. A "miss" was counted if the subject unsuccessfully touched the tip of their nose or touched the tip of their nose with the pad of their index finger. On average, cases missed 5 out of 6 attempts, while controls missed 0. Eyelid and body tremors were recorded in 23.8% of cases and 0 controls. Eyelid tremors were documented in 39.7% of cases.

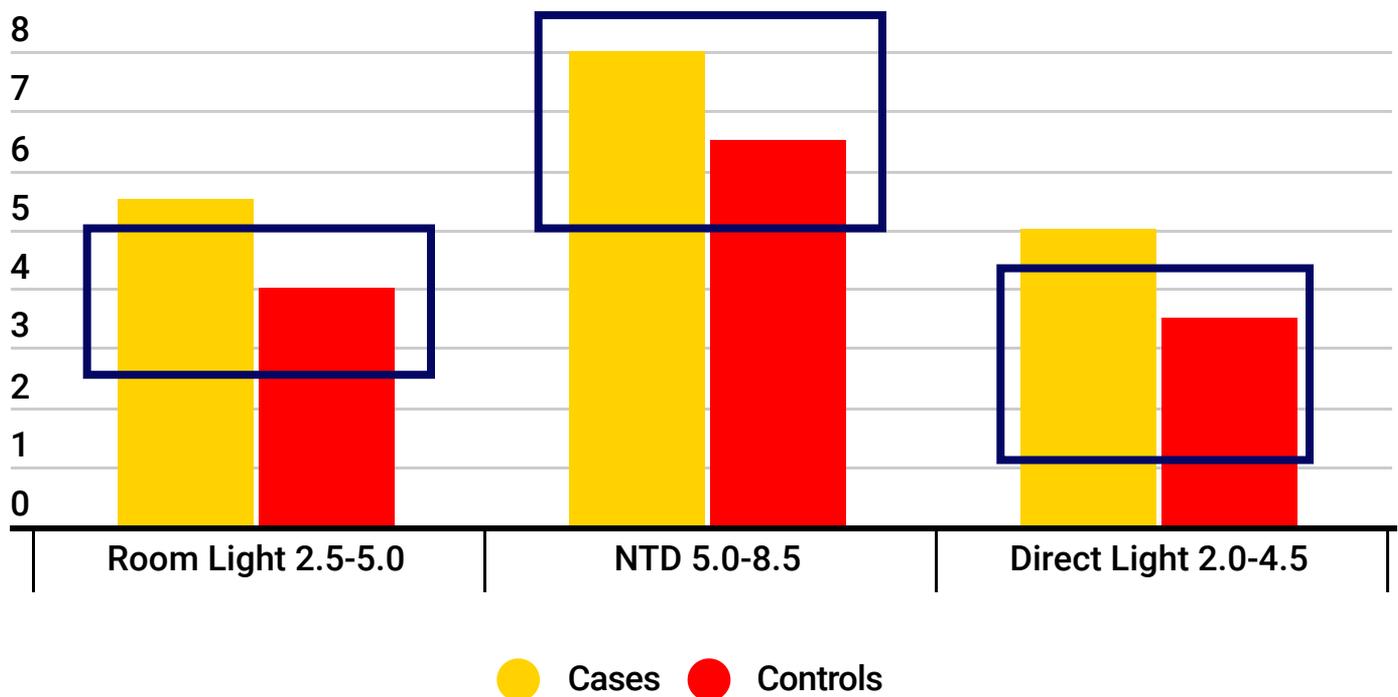
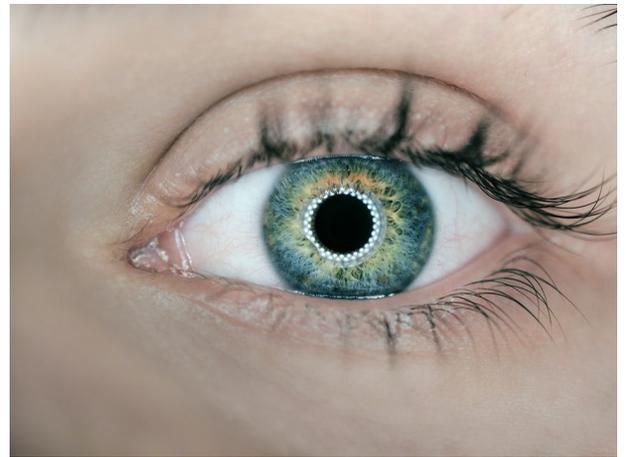
## Lack of Convergence Test

Lack of Convergence is the inability of a person's eyes to converge, or "cross," as the person attempts to focus on a stimulus as it is pushed slowly toward the bridge of his or her nose. Lack of convergence occurred in 78.8% of cases and only 10.9% of controls.



# Pupil Size

The DECP uses average ranges for pupil size in various lighting conditions to help determine drug intoxication. The average ranges are considered 2.5-5.0 mm in room light, 5.0-8.5 mm in near-total darkness, and 2.0-4.5 in direct light. When compared to controls, cases pupils were significantly more dilated in every lighting condition.



Pupil size in various lighting conditions cases/controls  
(drawn from data in 302 study) (Figure6)

## Conclusion

As legalization continues, being in contact with cannabis consumers will become more common. Officers should have some observable indicators of impairment prior to moving forward with field sobriety tests. Though it's unreasonable to assume officers will be able to administer each assessment on every driver suspected of using cannabis, these tests are reliable in detecting cannabis impairment when administered correctly and when using additional observations. Positive THC concentrations or other metabolites in a consumer's blood are not a practical approach in determining cannabis impairment. Because of this, officers should receive additional training on cannabis impairment detection using live cannabis consumers.

# Contact



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