

# Marijuana-Impaired Driving

## More people are driving impaired

In 2019, 14.8 million U.S. drivers, approximately 6.5% of the driving population, reported driving under the influence of marijuana in the last 30 days

The NTSB found that marijuana was most frequently detected in combination with alcohol and other drugs (polydrug impairment)

## Perceptions about marijuana-impaired driving

63% of drivers between the ages of 19 and 24 believe that driving under the influence of marijuana is dangerous, while 100% believe driving under the influence of alcohol is dangerous.

68% of Virginians who used marijuana in the last 3 months claimed that marijuana makes people safer drivers.

One in four 12th graders in Washington state said they drove with someone who had used marijuana and 1 in 6 admitted to driving after using marijuana.

## Despite perceptions, marijuana does impair

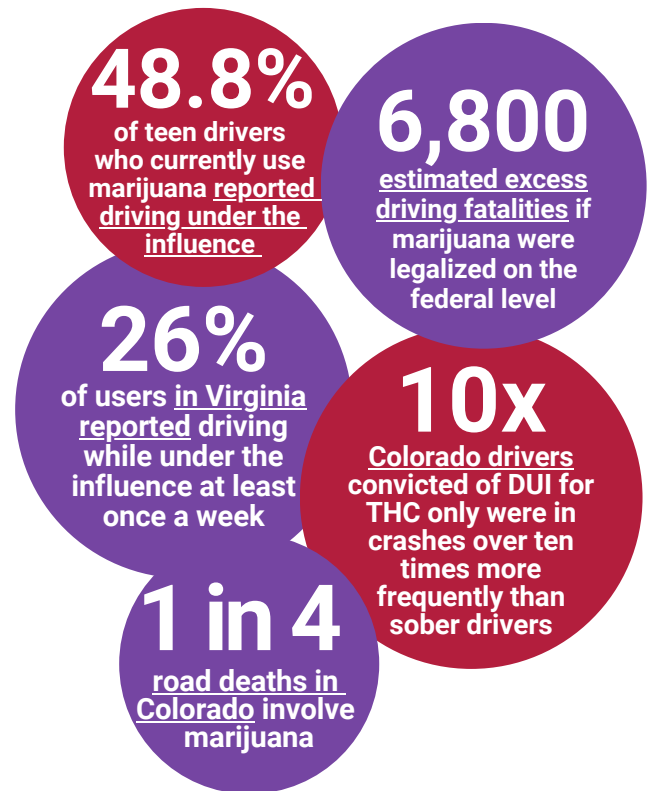
In controlled experiments, researchers found that marijuana use impairs:

Memory, learning, perception, motor coordination, divided attention, reaction time and tracking, cognitive performance, decision making, and impulse control.

## THC-involved driving fatalities are skyrocketing



**Colorado**  
138% increase since legalization



## There is a patchwork of state laws for THC-impaired driving

- 12 states have zero-tolerance laws
- 5 states have non-zero per se limits
- Colorado is the only state with a permissible inference law
- The remaining states have driving under the influence laws
- Statutory definitions of DUI vary from “impaired to the slightest degree” to “incapable of safe driving”

## Enforcement is difficult, but possible

Because THC affects the body and brain differently than alcohol, tools that work well to enforce drunk driving do not work well for drugs like THC. Alcohol is the only drug with a proven correlation between crash risk and blood levels. Enforcement of drugged driving (and many drunk driving cases as well) rely upon trained officers who observe, document, and testify to symptoms of impaired driving.

## Driving under the influence of marijuana is a problem

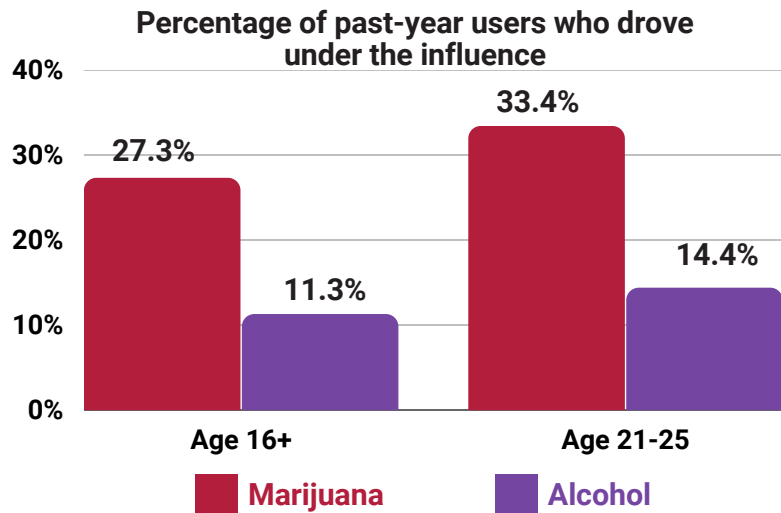
Driving under the influence of drugs is a growing issue that threatens the lives of users, their passengers, other motorists, roadside workers, and pedestrians. Because of safer cars, higher rates of seatbelt use, better law enforcement, and various anti-drunk driving campaigns, NHTSA reported a consistently declining traffic death rate for several decades. That decline reversed beginning in 2014, alongside the first marijuana dispensaries opening in Colorado.

In 2019, 14.8 million U.S. residents admitted to driving under the influence of marijuana in the last 30 days, up from 12 million in 2018. This represents 6.5% of the driving population. Perhaps more alarmingly, 48.8% of teen drivers who currently use marijuana reported driving under the influence. Colorado drivers convicted of DUI for THC only in 2018 and 2019 were in crashes over ten times more frequently than sober drivers.

Based on the increased fatality rate of the first four states to commercialize the sale of recreational marijuana compared to states that had no legalization or commercialization of either medical or recreational marijuana, researchers estimate that nationwide legalization would be associated with 6,800 excess roadway deaths annually.

Multiple analyses have reported that the presence of THC, the psychoactive component in marijuana, doubles the likelihood of a driver being involved in a crash. But chronic marijuana users test positive for THC long after acute impairment and crash risk subsides. The inclusion of low-risk THC-positive drivers in the study pool lowers the numerically-reported crash risk of all studies based on simply THC presence.

A 2022 report from the NTSB noted that marijuana is the second most commonly detected substance after alcohol in arrests for impairment and crashes—it is more often detected than stimulants, sedatives, and prescription drugs. As with alcohol, THC impairment gets worse as dose increases, helping explain why those convicted of DUI for THC in Colorado were in crashes over ten times more often than sober drivers.



## Polydrug impaired drivers are the most dangerous

On average, drivers impaired by multiple drugs, also known as polydrug impairment, are more dangerous than drunk drivers. Drivers on a high dose of THC are more dangerous than those on a low dose of alcohol. Road deaths are increasing as drug use increases.

Those on a high dose of THC can be more impaired than those on a low dose of alcohol and vice versa. The NTSB found that alcohol was often detected alone, but marijuana was most frequently detected in combination with alcohol and other drugs.

## Driving under the influence: perception versus reality

Perceptions of the dangers behind THC-impaired driving are misaligned with the reality:

- 94% of drivers believed driving after drinking enough alcohol was very or extremely dangerous, while only 65% of drivers felt driving within an hour of using marijuana was very or extremely dangerous.
- Of respondents between the ages of 19 and 24, only 63.1% believed that driving under the influence of marijuana was extremely or very dangerous, but 100% of respondents in that age group said that driving while over the legal limit for alcohol is extremely or very dangerous.
- A 2022 Virginia survey found that 68% of people who used marijuana in the last 3 months claimed that marijuana actually makes people safer drivers.
- AAA's 2021 Traffic Safety Culture Index found that drivers were 10 times more likely to "regularly" drive after using marijuana than after being over the legal limit of alcohol.

Between 1991 and 2022, the percentage of 12th graders who said there is great risk associated with using marijuana regularly declined from 78.6% to 27.6%. This downward trend related to use has coincided with an increase in THC-impaired driving. If a driver assumes a substance is not intoxicating or dangerous, they will be more likely to drive after having used it—some misinformed users may think driving after using marijuana is no different than driving after consuming a drink with caffeine.

### Despite perception, marijuana impairs many of the skills needed to drive safely:

In controlled experiments, researchers found that marijuana use impairs:

- Memory
- Learning
- Perception
- Motor coordination
- Attention (divided attention)
- Motor performance (reaction time and tracking)
- Cognitive performance
- Decision making
- Impulse control

Real-world crash data, from a study that focused only on the outcomes in states that experimented with legalization, reinforces this: "Traffic fatalities increase by 2.2 per billion miles driven after [cannabis commercialization], which may account for as many as 1,400 traffic fatalities annually."

## The current landscape of impaired driving laws

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The National Safety Council, DUID Victim Voices, and the Governors Highway Safety Association have all expressed concerns about the ineffectiveness of non-zero per se laws for marijuana.

## Consequences

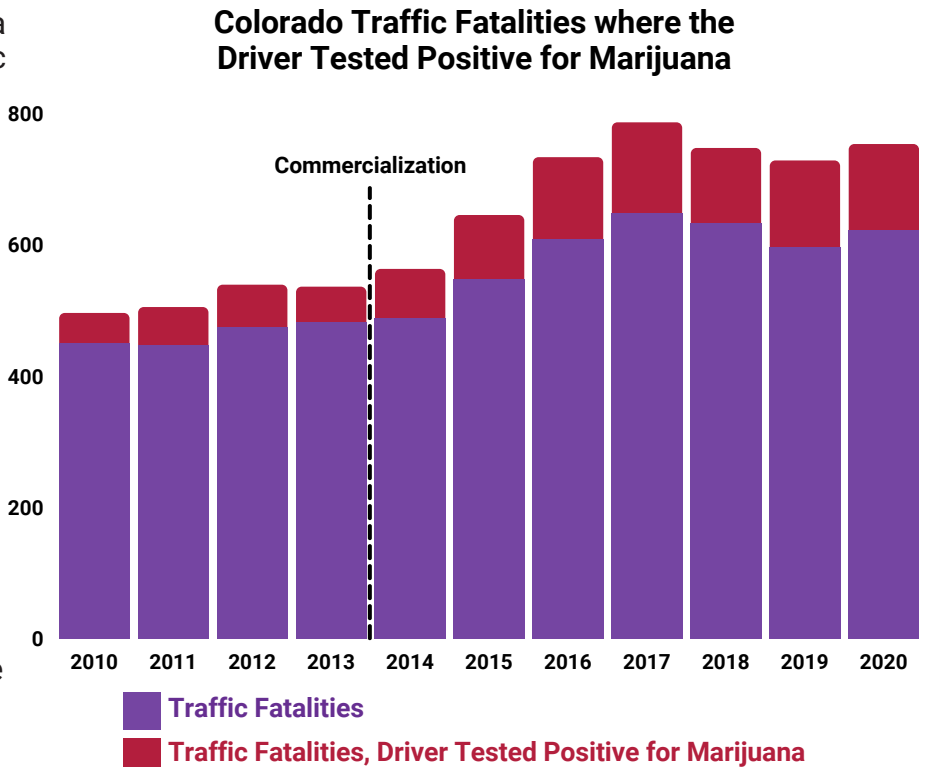
Marijuana-impaired driving has led to an increase in traffic crashes and fatalities in “legal” states

- The mean BAC of drivers convicted of drunk driving in Colorado in 2019 was .16 gm/dL, which **corresponds with a crash risk 29.5 times higher than a sober driver**.
  - 24% of those drivers were involved in crashes, compared with 10% of drivers convicted of THC impairment. So, drivers convicted of THC impairment were 42% as dangerous as drivers convicted of drunk driving, yielding a crash risk estimate of 12.3 times greater than a sober driver, up from 8.4 in 2018.
- THC has been implicated in 1 in 4 road deaths in Colorado

- Since recreational marijuana was legalized in 2013, traffic deaths where drivers tested positive for marijuana increased 138% while all Colorado traffic deaths increased 29%.

- In Michigan, among fatal crashes where THC was tested, the proportion of positive tests for cannabinoids more than tripled, from 6.7% in 2004 to 23.4% in 2017.

- One in four 12th graders in Washington state said they drove with someone who had used marijuana and one in six admitted to driving after using marijuana.



## Enforcement Issues

Alcohol is the only drug with a proven correlation between crash risk and blood levels, that supports a BAC .08 per se level. Non-zero drug per se limits like 5 ng/mL for THC are not scientifically accepted. Zero-tolerance per se laws can be useful but only for illegal drugs.

However, all states have an alternative way to enforce DUI laws that does not rely on per se levels. They convict drivers based on documented impairment observations. Drunk drivers who refuse breath or blood testing are routinely convicted based on impairment observations.

Most drugged driving convictions are based on impairment observations, rather than on per se levels. Drugged driving impairment symptoms are more subtle than drunk driving symptoms, requiring more officer training to ensure proper convictions. Beyond training on Standard Field Sobriety Tests, officers may receive Advanced Roadside Impaired Driving Enforcement training. Drug Recognition Experts (DREs) have the best training available. DREs identify drug impairment and can also identify which drug or drugs likely caused the observed impairment. Unfortunately, many jurisdictions lack enough DRE-trained officers to deal with an increasing drugged driving problem.

## Policy Recommendations

- Driving under the influence of drugs should be defined as “impaired.” Since the outward symptoms of drug impairment are less overt than alcohol’s symptoms, definitions like “incapable of safe driving” raise an unreasonably high bar to convict. Over half of the states use a lower bar than “incapable of safe driving.” The rest are split between “incapable of safe driving” and no statutory definition.
- Non-zero drug per se limits or inference levels are scientifically invalid, have been shown not to work, and should be avoided. Zero-tolerance drug laws can be effective when the drugs identified in the law are illegal but are otherwise subject to valid criticism. Otherwise, it is best to rely on properly defined DUI laws and well-trained officers. If that is found to be inadequate, states may consider a permissible inference of impairment if any level of an impairing substance is found in blood or oral fluid. Unlike a per se law, a permissible inference conviction requires both a positive drug test as well as evidence of impairment.
- Law enforcement departments should train more officers as Drug Recognition Experts. All officers with DUI enforcement duties should be proficient in Standardized Field Sobriety Tests at a minimum, and preferably trained in Advanced Roadside Impaired Driving Enforcement (ARIDE). All jurisdictions should have an adequate number of Drug Recognition Experts available, as determined by local experts.
- States should include education about THC-impaired driving in their driving schools. States should devote at least as much time training new drivers on the dangers of drugged driving as they do on drunk driving.
- Marijuana products should include warning labels about impairment and remind individuals not to drive under the influence of THC.
- States should adopt open container laws for marijuana, as many have done for alcohol.
- States should collect more data about the presence of THC in car crashes that result in fatal or serious injuries. States should collect and publish data on the causes and consequences of impaired driving as a function of the substance identified that caused the observed impairment. States cannot wisely deal with their drugged driving problem if they don’t know what it is.
- States should launch education campaigns about the harms of drug-impaired driving.