

DRUG-IMPAIRED DRIVING

A NATIONAL THREAT TO PUBLIC HEALTH AND PUBLIC SAFETY

Drug-impaired driving is a threat to public health and public safety on par with the better-known problem of alcohol-impaired driving. Many drugs—both illegal and legal—have impairing effects including, adversely impacting coordination, reaction time, tracking, judgement, attention, and perception.^[1-2] Impairment resulting from drug use can vary from person to person based on tolerance as well as drug-to-drug and drug-to-alcohol interactions.

Drugged driving is always dangerous, costly, and potentially lethal.

Like other forms of impaired driving, drug-impaired driving contributes to motor vehicle crashes resulting in injuries and deaths on the nation's roads. This translates to significant economic costs, and personal costs to families directly impacted by drugged driving.

How prevalent is drugged driving?

National estimates of drug-impaired driving come from several sources: studies of self-reported data as well as toxicology results of impaired drivers and seriously and fatally injured crash victims.

- In 2019, an estimated 13.6 million drivers aged 16 and older in the U.S. self-reported driving under the influence of illicit drugs, including cannabis, in the past year.^[3] Notably, the highest prevalence of drug-impaired driving was among young drivers aged 21-25 (13%), followed by the youngest drivers aged 16-20 (9%).
- The National Roadside Survey, last conducted in 2013-2014, found that, among weekend nighttime drivers, 22.5% were positive for drugs other than alcohol.^[4]
- Among fatally injured drivers in the U.S. tested for drugs, nearly one third (30.7%) were positive for one or more drugs in 2017.^[5]

The incidence of drug-impaired driving has increased during the COVID-19 pandemic.

- During the early months of the pandemic, driving patterns changed. Although people made fewer trips, drivers engaged in riskier behaviors, including driving under the influence of drugs.^[6] The result is that while the total number of crash fatalities declined, the fatality rate *increased*.
- A 2019-2020 NHTSA-funded study found a significant increase in the prevalence of drugs detected in blood among seriously and fatally injured drivers, from 50.8% before the pandemic to 64.7% and 61.4%, during the two pandemic periods.^[6-8] See Table 1.
- More drivers tested positive for active THC than alcohol during the pandemic in Study Period 1.
- The proportion of drivers that tested positive for opioids nearly doubled from before the pandemic (7.5%) to during the pandemic in Study Period 1 (13.9%) and Study Period 2 (13.4%).
- The proportion of drivers that tested positive for two or more categories of drugs increased from 17.6% before the pandemic to 25.3% during the pandemic in Study Period 1 and 24.7% in Study Period 2.

Table 1. Seriously and fatally injured drivers positive for drug category

Drug Category	Before Pandemic (N=1,157)		During Pandemic Study Period 1 (N=699)		During Pandemic Study Period 2 (N=640)	
	n	%	n	%	n	%
Alcohol	252	21.8	198	28.3 ^A	187	29.2 ^A
Cannabinoids†	241	20.8	227	32.7 ^A	167	26.1 ^{A,B}
Stimulants	106	9.2	64	9.2	69	10.8
Sedatives	93	8.0	61	8.7	50	7.8
Opioids	87	7.5	97	13.9 ^A	86	13.4 ^A
Antidepressants	26	2.2	3	0.4 ^A	6	0.9
Over-the-Counter	25	2.2	10	1.4	8	1.3
Other Drugs	17	1.5	15	2.1	22	3.4 ^A
At Least 1 Category	588	50.8	452	64.7 ^A	394	61.6 ^A
Multiple Categories	204	17.6	177	25.3 ^A	158	24.7 ^A

† Active THC (Δ -9-THC or 11-OH-THC)

^A Significantly different from "Before" period, p<0.5

^B Significantly different than "During 1" period, p<.05

During 1 = 03/17/20 - 07/18/20

During 2 = 07/19/20 - 09/30/20

Polysubstance use is common.

The consumption of two or more impairing substances is of significant concern because it can lead to an increase in impairment and relative crash risk. The increase can be additive or, in some instances, multiplicative or synergistic. For example, the European Union Driving Under the Influence of Drugs, Alcohol and Medicines (DRUID) study found the use of multiple drugs can produce a “highly increased crash risk” and the combination of alcohol and drugs can produce an “extremely increased crash risk” whereby an individual is up to 200 times more likely to be involved in a crash.^[9]

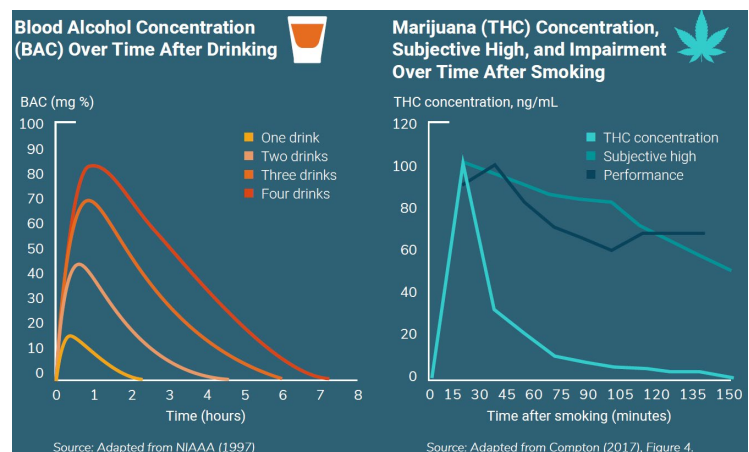
A growing body of research shows how common polysubstance use is among impaired drivers, and seriously and fatally injured drivers.

- Significant percentages of adults aged 18 and older have reported using other drugs while driving under the influence of alcohol, including inhalants (70.3%), cocaine (68.9%), and hallucinogens (63.7%).^[10] More than half (53.4%) of the adults who reported driving under the influence of marijuana also used methamphetamine.
- Data from Washington, one of the first states to legalize recreational cannabis, revealed that between 2008 and 2016, 44% of drivers involved in fatal crashes tested positive for two or more substances.^[11] Alcohol and cannabis were the most common combination of substances detected.
- Of all the enforcement evaluations performed by Drug Recognition Experts (DREs) in 2019, about 42% concluded driver impairment was the result of polydrug use.^[12]
- A study of drivers arrested for impairment in Miami, Florida showed 40% were positive for one or more drug, and half of these drivers had a blood alcohol concentration (BAC) at or above 0.08 g/dL.^[13] Overall, 39% of drivers with a BAC \geq 0.08 g/dL were drug-positive. Among the drivers who were alcohol-free, 78% were positive for one or more drug.
- A national study of fatally injured drivers who were positive for drugs in 2017 showed over a third (34.6%) had a BAC at or above 0.08 g/dL.^[5]
- An oral fluid pilot study in Dane County, Wisconsin, found that approximately 40% of drivers with a BAC > 0.10g/dL also screened positive for one or more drug categories in both oral fluid and blood.^[14]

Unlike alcohol, there are no impairment thresholds for drugs.

Alcohol impairment tracks closely with blood alcohol concentration: as alcohol is consumed, an individual’s BAC increases and so does impairment.^[15] See Figure 1. A clear standard now exists for alcohol use among drivers: it is illegal to drive with a BAC of 0.08 g/dL or more in every state.¹ However, there will never be an equivalent impairment threshold for *any other substance*, including cannabis,^[16-17] because drug levels do not consistently correlate with specific levels of impairment. For example, when an individual smokes cannabis, THC concentration in blood peaks quickly and begins to drop very soon after; however, impairment is longer lasting.^[15] See Figure 1.

Figure 1. Source: GHSA and Responsibility.org, 2018



¹ In Utah, the BAC limit is 0.05 g/dL.

Drug testing technology is currently underused in impaired driving enforcement.

An arrest for driving under the influence (DUI) is made only if there is probable cause. Officers establish probable cause based upon the totality of the circumstances, documenting dangerous driving behaviors, administering a Standardized Field Sobriety Test (SFST), and/or administering a preliminary breath test for alcohol. It has been said that DUI is the only crime for which an investigation stops after obtaining a minimum amount of evidence. This is because when an illegal BAC of 0.08 g/dL is detected in an impaired driving suspect, no other biological testing is typically done. Arrestees who test below the legal limit for alcohol are also rarely tested for drugs. As a result, we do not know the full scale of the prevalence of impairing drugs on our nation's roads and how frequently people engage in drugged driving behavior.

Some states have improved and expanded their drug testing. For example, in July 2019, the Colorado Bureau of Investigation began offering toxicology analysis of blood samples from DUI investigations received from law enforcement agencies for both alcohol and a 14-drug panel.^[18] This testing required special funding authorized by the state legislature. However, many states continue to test only a small percentage of drivers for drugs, including those involved in fatal crashes.

Reliable oral fluid drug testing technology can be used at the roadside to screen DUI suspects for drugs in addition to the preliminary alcohol breath tests that are currently used. Several countries (e.g., Australia, Canada, Spain) and a growing number of states (e.g., AL, IN, MI) are implementing roadside drug testing programs to identify and remove drug-impaired drivers from the roads. The use of oral fluid testing for evidentiary purposes is also being explored as sample collection is less invasive than a blood draw and can be collected proximal to the time of a traffic stop. Unlike oral fluid screening which produces preliminary results, an evidential sample would be submitted to a forensic laboratory for confirmation testing. The state of Michigan recently completed a statewide pilot program demonstrating the feasibility of collecting oral fluid samples for preliminary screening to support impaired driving investigations. The Michigan State Police concluded that oral fluid testing is “accurate for purposes of preliminary roadside testing.”^[19]

Importantly, funding for both law enforcement officer training and equipment, as well as laboratory equipment and analyses must be national priorities. Recommendations for toxicological investigation of impaired driving cases and motor vehicle crashes have been published by the National Safety Council's Alcohol, Drugs and Impairment Division.^[20]

Drug testing is not just a tool necessary for impaired driving investigations, but it can also be used to impact state and national drug policies. As more states move towards the commercial legalization of cannabis (and potentially other drugs), states should collect baseline data on drug-impaired driving, beginning with testing fatally and seriously injured drivers for drugs.

Clear, accurate, and balanced public messaging on drugged driving is needed.

Targeted, culturally relevant education messaging is needed to inform the public, and in particular, young drivers, on the dangers of drugged driving. “Don't drink and drive” is a public safety message that is near-universally accepted. We need an equivalent, clear message of “Don't drug and drive” with the explicit knowledge that all efforts to identify and reduce drug-impaired driving support and complement—and do not compete with—efforts to reduce alcohol-impaired driving. In recent years, several state highway safety offices have launched drugged driving messaging campaigns including Colorado (e.g., “*Drive High, Get A DUI*” in 2014^[21] and “*Uncomfortable High*” in 2020^[22]). NHTSA launched the first national drug-impaired driving education campaign, “*If You Feel Different, You Drive Different*” in 2019^[23] which is part of impaired driving mobilizations. While these efforts are a step in the right direction, future public awareness campaigns should continue to target common misperceptions related to drug-impaired driving and be coupled with high-visibility enforcement.

References

- [1] National Institute on Drug Abuse. (2019, December 31). Drugged Driving Drug Facts. <https://www.drugabuse.gov/publications/drugfacts/drugged-driving>
- [2] Couper, F. J., & Logan, B. K. (2014, Revised). Drugs and Human Performance Fact Sheets. DOT HS 809 725. Washington, DC: National Highway Traffic Safety Administration. <https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/809725-drugshumanperformfs.pdf>
- [3] Center for Behavioral Health Statistics and Quality. (2020). Results from the 2019 National Survey on Drug Use and Health: Detailed tables. Rockville, MD: Substance Abuse and Mental Health Services Administration. Retrieved from <https://www.samhsa.gov/data/>
- [4] Berning, A., Compton, R., & Wochinger, K. (2015, February). Results of the 2013–2014 National Roadside Survey of alcohol and drug use by drivers. (Traffic Safety Facts Research Note. Report No. DOT HS 812 118). Washington, DC: National Highway Traffic Safety Administration.
- [5] Azagba, S., Latham, K., Shan, L., & Qeadan, F. (2019). Positive drug test trends in fatally-injured drivers in the United States from 2007 to 2017. *Substance Abuse Treatment, Prevention, and Policy*, 14(43). <https://doi.org/10.1186/s13011-019-0228-z>
- [6] National Center for Statistics and Analysis. (2020, October). Early estimate of motor vehicle traffic fatalities for the first half (Jan–Jun) of 2020 (Crash Stats Brief Statistical Summary. Report No. DOT HS 813 004). Washington, DC: National Highway Traffic Safety Administration. <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813004>
- [7] Thomas, F. D., Berning, A., Darrah, J., Graham, L., Blomberg, R., Griggs, C., Crandall, M., Schulman, C., Kozar, R., Neavyn, M., Cunningham, K., Ehsani, J., Fell, J., Whitehill, J., Babu, K., Lai, J., and Rayner, M. (2020, October). *Drug and alcohol prevalence in seriously and fatally injured road users before and during the COVID-19 public health emergency* (Report No. DOT HS 813 018). National Highway Traffic Safety Administration.
- [8] Office of Behavioral Safety Research. (2021, January). Update to special reports on traffic safety During the COVID-19 public health emergency: Third quarter data. (Report No. DOT HS 813 069). National Highway Traffic Safety Administration
- [9] Schulze, H., Schumacher, M., Urmeew, R., et al. (2012). *DRUID Final Report: Work Performed, Main Results and Recommendations*. Bergisch Gladbach, Federal Republic of Germany: Federal Highway Research Institute (BAST).
- [10] Yockey, A., Vidourek, R., & King, K. (2020). Drugged driving among US adults: Results from the 2016–2018 national survey on drug use and health. *Journal of Safety Research*, 75, 8-13. <https://doi.org/10.1016/j.jsr.2020.10.006>
- [11] Grondel, D., Hoff, S., & Doane, D. (2018). *Marijuana Use, Alcohol Use, and Driving in Washington State: Emerging Issues with Poly-Drug Use on Washington Roadways*. Olympia: Washington Traffic Safety Commission. https://wtsc.wa.gov/wp-content/uploads/2018/04/Marijuana-and-Alcohol-Involvement-in-Fatal-Crashes-in-WA_FINAL.pdf
- [12] International Association of Chiefs of Police (IACP). (2020). *Drug Evaluation and Classification Program: 2019 Annual Report*. Alexandria, VA: Author. <https://www.theiacp.org/sites/default/files/2020-04/2019%20DECP%20Annual%20Report.pdf>
- [13] Logan, B. K., Mohr, A. L., & Talpins, S. K. (2014). Detection and prevalence of drug use in arrested drivers using the Dräger Drug Test 5000 and Affiniton DrugWipe oral fluid drug screening devices. *Journal of Analytical Toxicology*, 38(7), 444–450. <https://doi.org/10.1093/jat/bku050>
- [14] Edwards, L., Smith, K., & Savage, T. (2017). Drugged driving in Wisconsin: Oral fluid versus blood. *Journal of Analytical Toxicology*, 41(6), 523-529. <https://doi.org/10.1093/jat/bkx051>
- [15] Governors Highway Safety Association and Foundation for Advancing Alcohol Responsibility. (2018). *Drug-Impaired Driving: Marijuana and Opioids Raise Critical Issues for States*. Washington, DC: GHSA. <https://www.ghsa.org/resources/DUID18>
- [16] Wood, E. C., & DuPont, R. L. (2020). Cannabis-impaired driving: evidence and the role of toxicology testing. In: K. Finn (Ed.), *Cannabis in Medicine: An Evidence-Based Approach* (pp. 493-513). Cham, Switzerland: Springer Nature Switzerland AG.
- [17] DuPont, R. L., Holmes, E. A., Talpins, S. K., & Walsh, J. M. (2018). Marijuana-impaired driving: a path through the controversies. In K. A. Sabet & K. C. Winters (Eds.), *Contemporary Health Issues on Marijuana* (pp. 183-218). New York, NY: Oxford University Press.
- [18] Colorado Department of Transportation. (2020). Colorado Impaired Driving Newsletter. <https://us17.campaign-archive.com/?u=8c19b56d089ffb41f61475b71&id=7e46389639>
- [19] Michigan State Police. (2021, January). Oral Fluid Roadside Analysis Pilot Program – Phase II. Pursuant to the reporting requirements of Public Act 243 of 2016, prepared for submission to the Senate Judiciary and Public Safety Committee and the House Judiciary Committee. https://www.michigan.gov/documents/msp/PHASE_II_Oral_Fluid_Report_713339_7.pdf
- [20] Logan, B. K., D’Orazio, A. L., Mohr, A., Limoges, J. F., Miles, A. K., Scarnec, C. E., Kerrigan, S., Liddicoat, L. J., Scott, K. S., & Huestis, M. A. (2018). Recommendations for toxicological investigation of drug-impaired driving and motor vehicle fatalities – 2017 update. *Journal of analytical toxicology*, 42(2), 63–68. <https://doi.org/10.1093/jat/bkx082>
- [21] Lee, J. (2014, March 10). Colorado airs ‘Drive High, Get a DUI’ marijuana ads. *USA Today*. <https://www.usatoday.com/story/news/nation-now/2014/03/10/colorado-marijuana-driving-high-ads/6252513/>
- [22] Colorado Department of Transportation. (2020, September 14). CDOT launches new marijuana-impaired driving campaign created by Coloradans. <https://www.codot.gov/news/2020/september-2020/marijuanaimpaireddrivingnews>
- [23] National Highway Traffic Safety Administration and Ad Council. (2019, April 30). NHTSA and the Ad Council launch new campaign to combat marijuana-impaired driving: “If You Feel Different, You Drive Different” <https://www.multivu.com/players/English/8535351-ad-council-nhtsa-drug-impaired-driving-prevention/>; <https://www.nhtsa.gov/campaign/if-you-feel-different-you-drive-different-drive-high-get-dui>



This document was developed by the Institute for Behavior and Health, Inc. (IBH) in preparation for a virtual event co-hosted by IBH and The Heritage Foundation on February 24, 2021, “[The Problem of Driving Under the Influence of Drugs: The Views of Four Former Drug Czars](#).” For more on the Institute for Behavior and Health, visit www.IBHinc.org and www.StopDruggedDriving.org. For more on The Heritage Foundation, visit www.heritage.org

Additional Resources

- AAA Foundation for Traffic Safety: www.aaafoundation.org
- DUID Victim Voices: www.duidvictimvoices.org
- Foundation for Advancing Alcohol Responsibility: www.Responsibility.org
- Governors Highway Safety Association: www.ghsa.org
- National Highway Traffic Safety Administration: www.nhtsa.gov/risky-driving/drug-impaired-driving
- Smart Approaches to Marijuana: www.learnaboutsam.org
- We Save Lives: www.wesavelives.org