

Drug Involved Fatal Motor Vehicle Crashes in California by Travel Mode, 2015-2019

California strives for a transportation system that fosters health and safety. The safety of all travel modes can be compromised by drug use. This brief describes drug testing and drug involvement among drivers, pedestrians, and cyclists involved in California fatal motor vehicle crashes (MVCs), with a focus on change between 2015 and 2019. The information presented in this brief is intended to guide efforts to prevent fatal MVCs that involve drugs.

Methods: The California Highway Patrol reports fatal MVCs to the National Highway Traffic Safety Administration's Fatality Analysis Reporting System (FARS). FARS data were analyzed for this brief and include toxicology results from coroners, medical examiners, or police investigations, when available. In this brief, "drug involvement" is defined as having one or more positive drug test result(s). When there are no drug test results available, officer judgement as recorded on the police report is used. Drug involvement does not necessarily mean the individual is impaired during the MVC or is at fault. For the purpose of this data brief, we have only included individuals tested for drugs who were involved in a fatal MVC and died within one hour of the crash. See Table 1 for counts/frequencies for all variables described in this brief.

Drug Testing in Fatal MVCs – Variation by Travel Mode between 2015 and 2019

In 2019, there were 3,427 fatal MVCs on California roadways. These fatal MVCs involved 5,162 drivers, 1,069 pedestrians, and 148 cyclists.¹ The percentage of those tested for drugs by travel mode between 2015 and 2019 is described below. The data below describe the overall numbers of individuals tested for drugs. Data on individuals tested who had positive drug test results are presented in the next section.

Of the 5,162 **drivers** involved in fatal MVCs in 2019, 1,389 of them died within one hour of the crash and 1,268 were tested for drugs. Of the 4,679 drivers involved in fatal MVCs in 2015, 1,309 of them died within one hour of the crash and 1,177 of them were tested for drugs. The percentages of drivers who died within one hour of the crash and were tested for drugs in 2015 and 2019 were 90% and 91%, respectively.

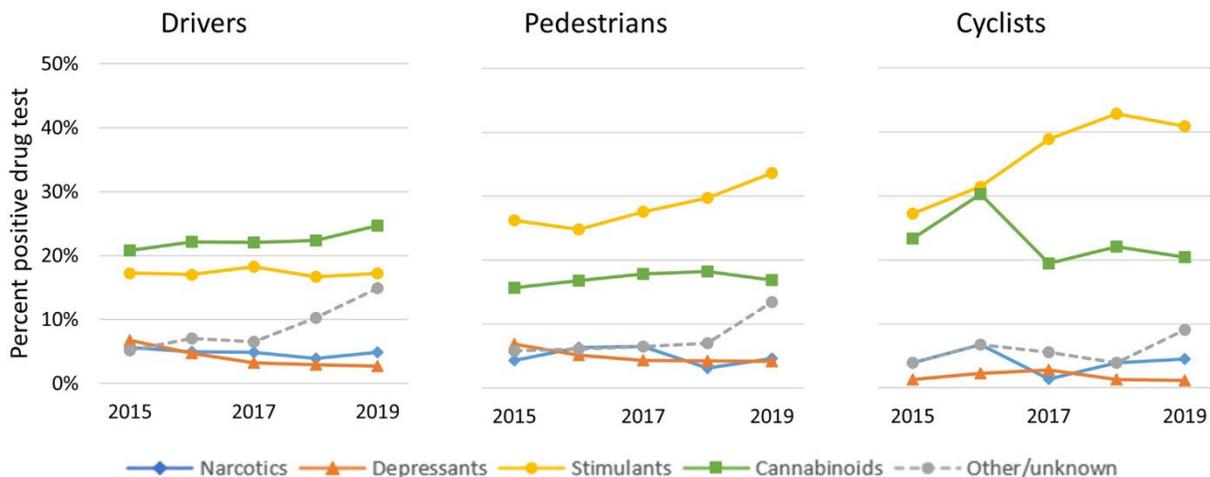
Of the 1,069 **pedestrians** involved in fatal MVCs in 2019, 684 of them died within one hour of the crash and 604 of them were tested for drugs. Of the 871 pedestrians involved in fatal MVCs in 2015, 511 of them died within one hour of the crash and 466 of them were tested for drugs. The percentages of pedestrians who died within one hour of the crash and were tested for drugs in 2015 and 2019 were 91% and 88%, respectively.

Of the 148 **cyclists** involved in fatal MVCs in 2019, 95 of them died within one hour of the crash and 88 of them were tested for drugs. Of the 140 cyclists involved in fatal MVCs in 2015, 85 of them died within one hour of the crash and 77 of them were tested for drugs. The percentages of cyclists who died within one hour of the crash and were tested for drugs in 2015 and 2019 were 91% and 93%, respectively.

In sum, the percentage of drug tests administered remained stable from 2015 to 2019 for all travel modes.

Drug Involvement² in Fatal MVCs – Variation by Travel Mode, 2015-2019

Figure 1: Drug types detected among parties involved in a California fatal motor vehicle collision who died within one hour and were tested for drugs, 2015-2019 by travel mode.



- From 2015 to 2019, percentages of positive drug tests for cannabinoids and stimulants remained higher than all other drugs for all three travel modes, although positive tests for cannabinoids were highest among drivers, whereas positive tests for stimulants were highest for pedestrians and cyclists.
 - Efforts designed to prevent drug related fatal MVCs may benefit from a focus on preventing cannabinoid and stimulant use particularly.
- Positive tests for depressants, narcotics, and other/unknown drugs remained low from 2015 to 2019 across all travel modes, although positive tests for other/unknown drugs increased from approximately 2018 to 2019 across all travel modes.
- Even though use of cannabis for recreational purposes was legalized in California in 2016, positive drug tests for cannabinoids did not increase substantially from 2016-2019 across any of the three travel modalities.
 - Despite a lack of increase over time, impairment from cannabis use may contribute to fatal MVCs, particularly among drivers.
- The percent of positive tests for stimulants generally increased from 2016 to 2019 among pedestrians and cyclists. This increase was especially striking among cyclists.
 - It is possible that pedestrians and cyclists do not recognize that they are putting themselves at risk of fatal MVCs through stimulant use specifically. Prevention efforts designed to educate the public on this risk may be useful.

Conclusions

A substantial number of drivers, pedestrians, and cyclists who were involved in fatal MVCs and died within one hour of the crash were tested for possible drug use in California between 2015 and 2019. Overall, the percentage of drug tests administered remained stable over that time period. Percentages of those individuals who tested positive for drug use varied based on the type of drug, with positive tests from cannabinoids and stimulants being highest across all travel modes.

Drivers, cyclists, and pedestrians place themselves at risk when they are impaired from drug use. Although substance involvement does not equal impairment or fault, these findings highlight the role that drug involvement may play in fatal MVCs. Drug prevention efforts are necessary to reduce fatal MVCs among drivers, pedestrians, and cyclists. The National Highway Traffic Safety Administration (NHTSA) describes strategies to prevent impaired driving and raise awareness regarding cyclist and pedestrian safety on its webpage focused on [Drug-Impaired Driving](#)³ and its fact sheet on [Bicyclist and Pedestrian Safety](#).⁴

Table 1: Number of drug-tested parties involved in a California fatal motor vehicle crash who died within one hour from 2015-2019 by travel mode and drug type detected. A single party may test positive for more than one drug type (up to three).

	2015	2016	2017	2018*	2019*
Drivers Involved in Fatal MVC	4,679	5,293	5,443	5,273	5,162
Died Within One Hour	1,309	1,505	1,549	1,464	1,389
Tested for Drugs	1,177	1,398	1,396	1,374	1,268
Positive for Narcotics	66	69	68	54	62
Positive for Depressants	79	66	45	40	34
Positive for Stimulants	203	238	255	229	218
Positive for Cannabinoids	245	310	308	307	313
Positive for Other/Unknown Drugs	61	98	91	141	189
Pedestrians Involved in Fatal MVC	871	1,012	995	1,033	1,069
Died Within One Hour	511	590	632	665	684
Tested for Drugs	466	524	555	616	604
Positive for Narcotics	20	33	36	19	28
Positive for Depressants	32	27	24	26	25
Positive for Stimulants	122	130	153	183	203
Positive for Cannabinoids	73	88	99	112	102
Positive for Other/Unknown Drugs	27	32	36	43	81
Cyclists Involved in Fatal MVC	140	156	151	173	148
Died Within One Hour	85	99	83	88	95
Tested for Drugs	77	89	72	77	88
Positive for Narcotics	3	6	1	3	4
Positive for Depressants	1	2	2	1	1
Positive for Stimulants	21	28	28	33	36
Positive for Cannabinoids	18	27	14	17	18
Positive for Other/Unknown Drugs	3	6	4	3	8

* In 2018, FARS data were changed to allow reporting of an unlimited number of drug test results. For this brief, 2018-2019 data were limited to the first three drug test results listed for each party to match the 2015-2017 data.

Endnotes

¹ Drivers include persons operating a motor vehicle in transport, including motorcycles and commercial vehicles. Pedestrians include persons outside transport devices, including those pushing vehicles or being carried by another pedestrian. Pedestrians exclude persons in/on buildings (n=43 from 2015 to 2019) or in/on personal conveyances such as scooters, skateboards, Segway-style devices, and wheelchairs (n=175 from 2015 to 2019). Cyclists include persons travelling on a non-motorized unicycle, bicycle, or tricycle. Cyclists include all operators and passengers, including persons being pulled by a cycle (e.g., in a wagon or bike trailer).

² For a complete list of specific drugs included in each drug type, see page 686 of the National Highway Traffic Safety Administration's *2019 FARS/CRSS Coding and Validation Manual*. (DOT HS 813 010). Accessed June 2022 from <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813010>.

³ <https://www.nhtsa.gov/risky-driving/drug-impaired-driving>, accessed September 7, 2022.

⁴ https://www.nhtsa.gov/sites/nhtsa.gov/files/documents/14046-pedestrian_bicyclist_safety_resources_030519_v2_tag.pdf, accessed September 7, 2022.

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Source Files: National Highway Traffic Safety Administration
Fatality Analysis Reporting System (FARS)
2015-2019 Final Files. Data retrieved June 2022
from <https://www.nhtsa.gov/node/97996/251>.

