

## Alcohol and Drug Involvement in California Fatal Motor Vehicle Collisions by Travel Mode, 2017

California strives for a sustainable, equitable, and safe transportation system. Active travel modes, including walking and biking, are integral to achieving sustainability and equity. Alcohol and drugs affect performance for all travel modes, with implications for safety. This brief describes alcohol and drug involvement among drivers, pedestrians, and cyclists involved in fatal motor vehicle collisions (MVCs). The California Highway Patrol reports fatal MVCs to the National Highway Traffic Safety Administration's Fatality Analysis Reporting System (FARS). FARS data were used for this analysis. Fatal MVCs have more complete substance data than nonfatal MVCs because they include toxicology reports from coroners, medical examiners, or police investigations, when available. In this brief, alcohol involvement was defined as a blood alcohol content  $\geq 0.01$  g/dL. Drug involvement was defined as  $\geq 1$  positive drug test result. If no alcohol or drug test results were available, officer judgement as recorded on the police report was used. Alcohol or drug involvement does not necessarily mean the party was impaired during the MVC or was the party at fault.

In 2017, 3,884 people were killed in 3,569 fatal MVCs on California roadways. These fatal MVCs involved 5,443 drivers, 995 pedestrians, and 151 cyclists.<sup>1</sup> Absolute numbers of alcohol or drug involvement in fatal MVCs were greatest among drivers (n=1,572), followed by pedestrians (n=491) and cyclists (n=79) (Table 1). As a proportion of parties with a known alcohol and drug status, however, alcohol or drug involvement was more prevalent among pedestrians (58%) and cyclists (62%) than drivers (33%) (Figure 1).

- Drug only and drug in combination with alcohol involvement was most prevalent among cyclists (36% and 17%, respectively), followed by pedestrians (26% and 14%) then drivers (12% and 8%).
- Alcohol only involvement was most prevalent among pedestrians (18%), followed by drivers (13%), then cyclists (9%).

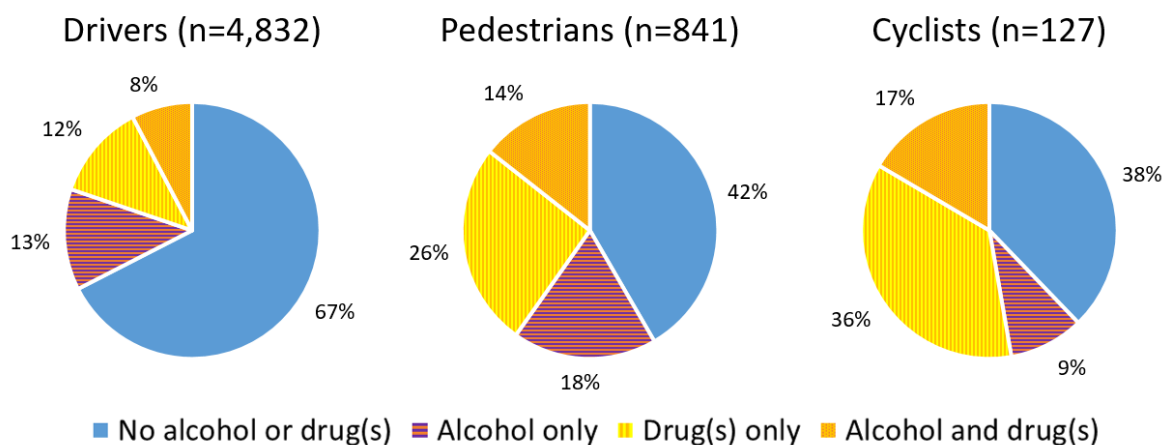


Figure 1: Alcohol and drug involvement among drivers, pedestrians, and cyclists in California fatal motor vehicle collisions, 2017

Over the five years leading up to 2017, the number of parties involved in fatal MVCs increased by 29% for drivers (from 4,222 in 2013 to 5,443 in 2017) and 24% for pedestrians (from 804 to 995) and decreased by 3% for cyclists (from 156 to 151) (Table 1). When stratified by substance involvement, drug-involved parties (alone and in combination with alcohol) increased the most across all travel modes. For pedestrians and cyclists, percent changes were lowest among parties not involved in alcohol or drugs. For drivers, alcohol only-involved parties had the lowest percent change (Figure 2).

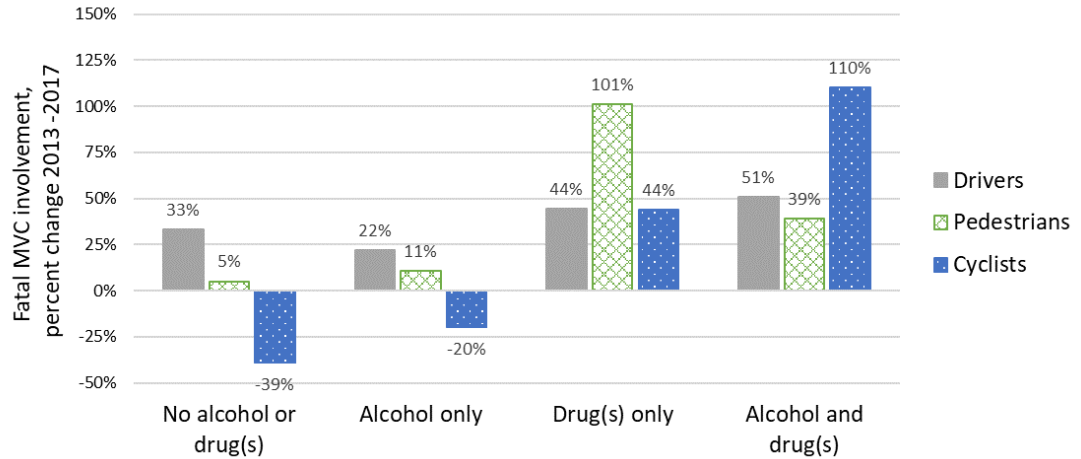


Figure 2: Percent change in parties involved in California fatal motor vehicle collisions from 2013 to 2017 by party type and alcohol and drug involvement.

In 2017, cannabinoids (e.g., marijuana, and THC) and stimulants (e.g., amphetamine and cocaine) were the most common drug types<sup>2</sup> detected among all parties involved in fatal MVCs and tested for drugs (Figure 3, Table 2).

- From 2013 to 2017, cannabinoid prevalence increased from 17% to 22% for drivers, from 12% to 16% for pedestrians, and from 18% to 19% for cyclists. From 2016 to 2017, cannabinoid prevalence remained unchanged for drivers and pedestrians and declined for cyclists.
- From 2013 to 2017, stimulant prevalence increased from 13% to 17% for drivers, from 15% to 27% for pedestrians, and from 15% to 41% for cyclists. From 2016 to 2017, stimulant prevalence remained unchanged for drivers and increased for pedestrians and cyclists.

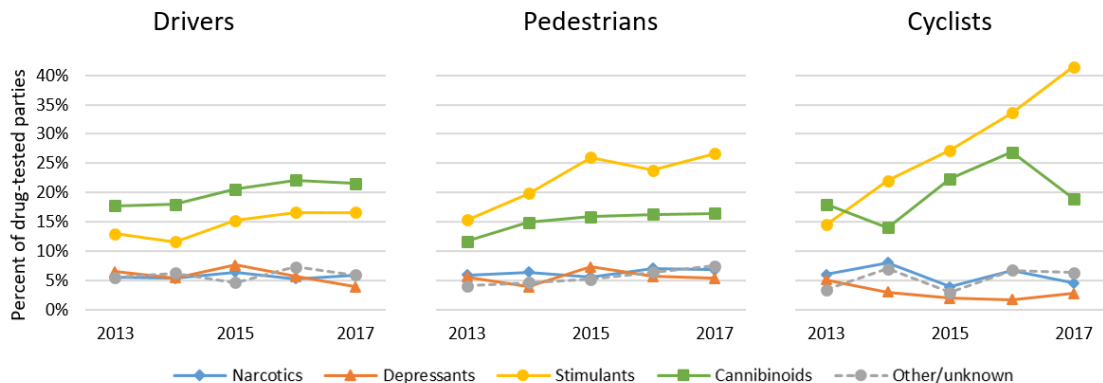


Figure 3: Drug types detected among parties involved in a California fatal motor vehicle collisions who were tested for drugs, 2013-2017.

## Conclusion

Fatal MVC data from FARS are an important source of information for planning and implementing countermeasures to prevent traffic fatalities and serious injuries. Although substance involvement does not equal impairment or fault, these findings highlight the role that alcohol and drug involvement may play in fatal MVCs, especially among pedestrians and cyclists. In 2017, 58% of pedestrians and 62% of cyclists involved in fatal MVCs were alcohol or drug involved, compared to 33% of drivers. From 2013 to 2017, drug involved parties (alone and in combination with alcohol) increased more than substance-free or alcohol-only parties across all travel modes. Stimulants and cannabinoids were the most common drug types detected and both increased in prevalence over the five-year period.

## Supplemental tables

The following tables contain the number of parties involved in fatal MVCs on California roadways per year from 2013 to 2017 by alcohol and drug status (Table 1) and by drug types detected (Table 2).

*Table 1: Number of parties involved in a California fatal motor vehicle collision from 2013-2017 by travel mode and alcohol and drug involvement.*

	2013	2014	2015	2016	2017
<b>Drivers</b>	4,222	4,259	4,679	5,293	5,443
Unknown alcohol or drug status	612	519	501	562	611
Known alcohol and drug status	3,610	3,740	4,178	4,731	4,832
No alcohol or drugs	2,452	2,573	2,873	3,195	3,260
Alcohol only	506	507	499	575	616
Drug only	405	390	526	581	584
Alcohol and drug	247	270	280	380	372
<b>Pedestrians</b>	804	794	871	1,012	995
Unknown alcohol or drug status	138	127	116	162	154
Known alcohol and drug status	666	667	755	850	841
No alcohol or drugs	333	346	329	388	350
Alcohol only	138	104	128	145	153
Drug only	108	129	192	192	217
Alcohol and drug	87	88	106	125	121
<b>Cyclists</b>	156	130	140	156	151
Unknown alcohol or drug status	20	14	20	22	24
Known alcohol and drug status	136	116	120	134	127
No alcohol or drugs	79	66	56	58	48
Alcohol only	15	9	16	11	12
Drug only	32	32	31	51	46
Alcohol and drug	10	9	17	14	21

Table 2: Number of drug-tested parties involved in a California fatal motor vehicle collision from 2013-2017 by travel mode and drug type detected. A single party may test positive for more than one drug type.

	2013	2014	2015	2016	2017
<b>Drivers drug tested</b>	1,776	1,828	1,967	2,266	2,337
Narcotics	98	97	126	119	135
Depressants	115	99	149	128	90
Stimulants	230	212	299	376	387
Cannabinoids	315	329	405	500	504
Other drugs	98	114	91	165	138
<b>Pedestrians drug tested</b>	574	565	662	739	748
Narcotics	34	36	37	52	51
Depressants	32	22	48	42	40
Stimulants	88	112	172	176	199
Cannabinoids	67	84	105	120	123
Other drugs	23	26	34	47	56
<b>Cyclists drug tested</b>	117	100	103	119	111
Narcotics	7	8	4	8	5
Depressants	6	3	2	2	3
Stimulants	17	22	28	40	46
Cannabinoids	21	14	23	32	21
Other drugs	4	7	3	8	7

**Endnotes**

<sup>1</sup> 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=34 from 2013 to 2017) or in/on personal conveyances such as scooters, skateboards, Segway-style devices, and wheelchairs (n=175 from 2013 to 2017). 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).

<sup>2</sup> For a complete list of specific drugs included in each drug type, see page 657 of the National highway Traffic Safety Administration’s 2017 FARS/CRSS Coding and Validation Manual. (DOT HS 812 559). Accessed September 10, 2019 from <https://crashstats.nhtsa.dot.gov/Api/Public/Publication/812559>.

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Funding for the CMOD Project was provided by a grant from the California Office of Traffic Safety, through the National Highway Traffic Safety Administration.

**Source Files:** National Highway Traffic Safety Administration Fatality Analysis Reporting System (FARS) 2012-2017 Final Files. Data retrieved October 2019 from <ftp://ftp.nhtsa.dot.gov/FARS>.

