

# UC Berkeley

## Fact Sheet

### Title

2019 SafeTREC Traffic Safety Facts: Motorcycle Safety

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## TRAFFIC SAFETY FACTS

# Motorcycle Safety

—Katherine L. Chen, Bor-Wen Tsai, Garrett Fortin, and Jill F. Cooper—

### INTRODUCTION

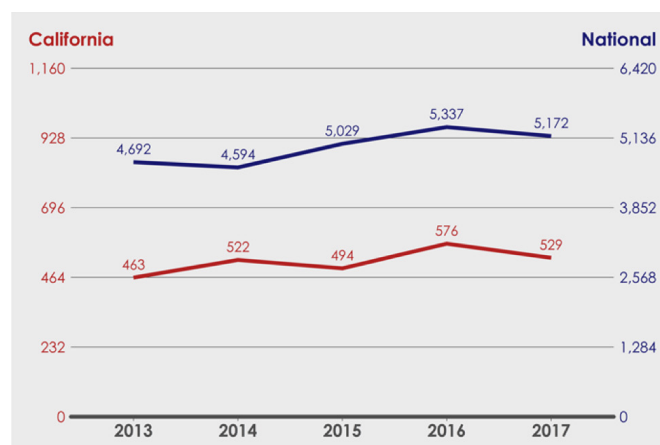
Collisions involving motorcycles are a major traffic safety concern in the United States. Motorcycle riders comprise a disproportionate share of all injured and killed vehicle occupants. In 2016, motorcycle riders were 28 times more likely than passenger car occupants to be fatally injured in a traffic collision, per vehicle miles traveled. The primary countermeasures used to address this problem have included motorcycle helmet laws and other helmet-oriented programs, rider training and licensing programs, vehicle enhancements, including anti-lock braking technology, rider conspicuity programs, campaigns to increase other road users' awareness of motorcycles, and campaigns to reduce impaired riding.

### CALIFORNIA FACTS

#### CALIFORNIA DATA

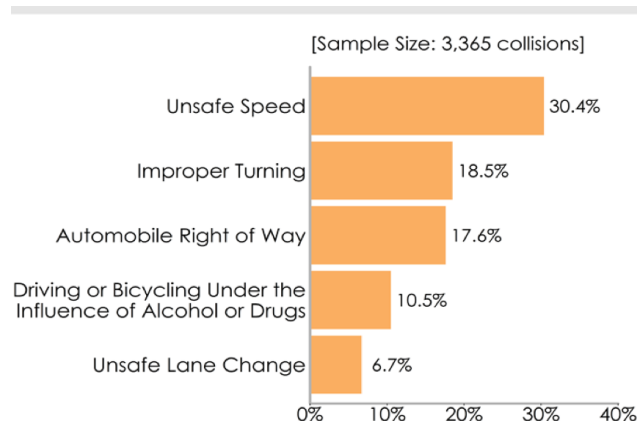
- Motorcycling is popular in California, and the state records the second most motorcycle fatalities in the nation. From 2013 to 2017, there has been a 14.3 percent increase in motorcycle fatalities from 463 to 529.
- Of all motorcyclist fatalities in 2017, 7.8 percent of motorcycle riders were not wearing helmets. This is the highest percentage of unhelmeted fatalities since 2009 when it was 11.7 percent.
- Los Angeles, San Diego, Orange, Riverside, and San Bernardino counties in Southern California, along with Sacramento and Alameda counties in Northern California, have the highest number of fatal and serious injuries among motorcyclists.
- The rural counties of Alpine, Sierra, and Inyo have the highest rates of fatal and serious injuries per 100K population by county.
- Unsafe speed (30.4 percent), followed by improper turning (18.5 percent), and right-of-way violations by automobiles (17.6 percent) were the most frequent primary collision factor for fatal and serious injury motorcyclist collisions.
- Broadside collisions were the most frequent crash type at 26.2 percent of motorcycle collisions, followed by overturned collisions, at 19.2 percent, and hit object, at 17.0 percent, rear-end.

Motorcycle Fatality Trends, Nationwide and California, 2013-2017



Source: FARS 2013-2016, FARS ARF 2017

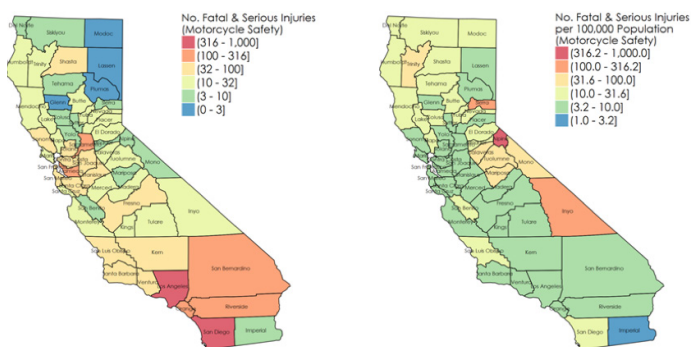
Top Five Primary Collision Factors for Motorcycle Fatal and Serious Injury Collisions, 2017



Source: Provisional SWITRS 2017

- The number of injured riders is markedly higher between 3pm and 6pm, with 24.7 percent of fatal and serious injuries occurring in this period.
- Fatal and serious injuries were highest on Saturday and Sunday, followed by Friday. These three days accounted for 52.9 percent of motorcycle fatal and serious injuries.
- The vast majority (91.4 percent) of fatal and serious motorcycle collision victims were males. The age category with the greatest number of victims, men or women, is ages 25 to 34, comprising 29.6 percent of all victims.
- Race was not reported for 27.4 percent of the motorcycle fatalities. Of the 384 fatalities with a known race, 84.4 percent (or 324) were white.
- Nearly two-thirds (64.7 percent) of motorcycle fatal and serious injuries occurred in urban areas compared to 35.2 percent on rural roads. Only about 15.9 percent of travel took place on rural roads.
- Over one-third (39.7 percent) of all motorcycle fatalities occurred on non-interstate principal arterials. The next most common locations for motorcycle fatalities were non-interstate minor arterials, comprising 25.9 percent of fatalities.

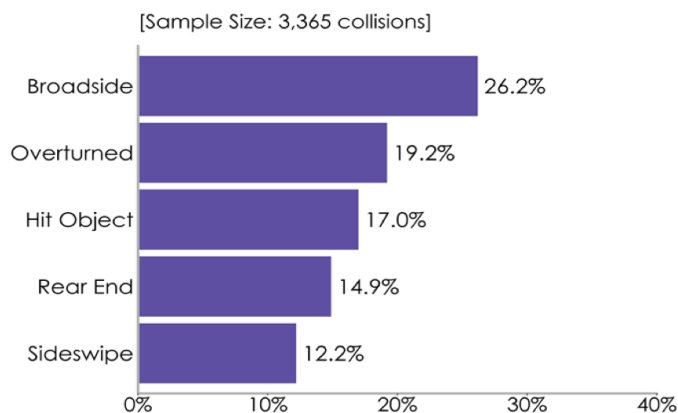
### Motorcycle Fatal and Serious Injury Number and Rate per 100K Population by County, 2017



(a) Number of Fatal and Serious Injuries (b) Number of Fatal and Serious Injuries per 100,000 Population

Source: FARS ARF 2017; Provisional SWITRS 2017; California Department of Finance 2018

### Top Five Crash Types for Motorcycle Fatal and Serious Injury Victims, California, 2017



Source: Provisional SWITRS 2017

### Top Five Crash Types for Motorcycle Fatal and Serious Injury Victims, California, 2017

	MON	TUE	WED	THU	FRI	SAT	SUN	TOTAL
Midnight-3AM	17	8	16	6	22	47	49	165 [4.8%]
3-6AM	16	18	18	16	22	13	15	118 [3.4%]
6-9AM	37	59	56	47	47	19	24	289 [8.4%]
9AM-Noon	40	49	42	53	53	114	97	448 [13.0%]
Noon-3PM	62	43	45	51	90	138	140	569 [16.5%]
3-6PM	97	121	108	94	156	140	136	852 [24.7%]
6-9PM	94	83	86	75	111	89	103	641 [18.6%]
9PM-Midnight	41	47	37	44	71	60	49	349 [10.1%]
Unknown	0	2	4	1	0	3	2	12 [0.3%]
TOTAL	404 [11.7%]	430 [12.5%]	412 [12.0%]	387 [11.2%]	572 [16.6%]	623 [18.1%]	615 [17.9%]	3,443 [100.0%]

FSI Num+% 0 1-16 17-42 43-53 54-94 95-156

Source: Provisional SWITRS 2017

### REFERENCES

- National Center for Statistics and Analysis. (2018, February). Motorcycles: 2016 data (Updated, Traffic Safety Facts. Report No. DOT HS 812 492). Washington, DC: National Highway Traffic Safety Administration.
- National Center for Statistics and Analysis. (2018, August). Motorcycles Helmet Use in 2017 - Overall Results (Traffic Safety Facts. Report No. DOT HS 812 512). Washington, DC: National Highway Traffic Safety Administration.
- State Traffic Safety Information (STSI). Traffic Safety Performance (Core Outcome) Measures For California. Washington, DC: National Highway Traffic Safety Administration. <https://cdan.nhtsa.gov/STSI.htm>
- California Department of Transportation. (2018, November). California Public Road Data 2017.