

# UC Berkeley

## Fact Sheet

### Title

SafeTRECT Traffic Safety Facts: Motorcycle Safety

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### Authors

Chen, Katherine L.

Tsai, Bor-Wen

Fortin, Garrett

et al.

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## TRAFFIC SAFETY FACTS

# Motorcycle Safety

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

### INTRODUCTION

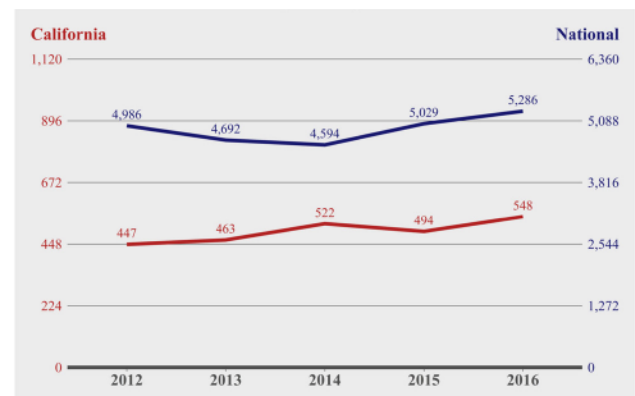
In 2016, there were 5,286 motorcycle riders killed on public roadways in the United States, a 5.1 percent increase from 2015. Motorcyclists are at greater risk of injury during collisions—in 2016, motorcyclists were 28 times more likely than passenger car occupants to be fatally injured in a traffic collision, per vehicle miles traveled. In 2016 only 65.3 percent of U.S. motorcyclists wore helmets. In states with universal helmet laws requiring all riders to wear helmets, the known helmet use rate among fatally injured motorcyclists ranged from 66 percent to 100 percent in 2016, while in states without such laws, the rate was lower, ranging widely from 0 percent to 69 percent. In California, which does have a universal helmet law, the known helmet use rate among fatally injured motorcyclists in 2016 was high (95.3 percent). Estimates maintain that helmets saved 308 lives in California in 2016, and that 10 additional lives could have been saved if all motorcyclists wore helmets.

### CALIFORNIA FACTS

#### CALIFORNIA DATA

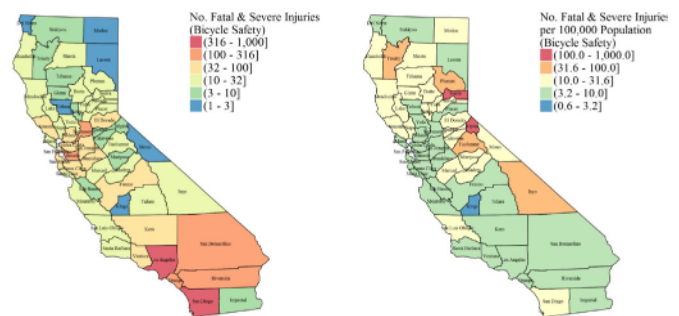
- Motorcycling is popular in California, with more motorcyclists than any other U.S. state. Since 2012, the state has seen a 22.6% increase in motorcycle fatalities from 447 in 2012 to 548 in 2016.
- Among the fatalities in 2016, a total of 25 motorcyclists were not wearing helmets, a 21.9% reduction from 2012.
- Los Angeles, San Diego, Riverside, San Bernardino and Orange Counties in Southern California, along with Sacramento and Alameda Counties in Northern California, have the highest number of fatal and severe injuries among motorcyclists.
- The rural counties of Sierra, Alpine, Trinity, Plumas, Tuolumne and Inyo have the highest rates of fatal and severe injury per 100K population by county.
- The vast majority (92.0%) of fatal and severe motorcycle collision victims were males. Most (50.2%) of the victims, men or women, were ages 15 to 34, while adults between the ages of 35 and 64 comprised 44% of the victims.

Motorcycling Fatality Trends, Nationwide and California, 2012-2016



Source: FARS 2012 - 2015 Final File, 2016 ARF

Motorcycling Fatal & Severe Injury and Fatal & Severe Injury per 100K Population by County, 2016

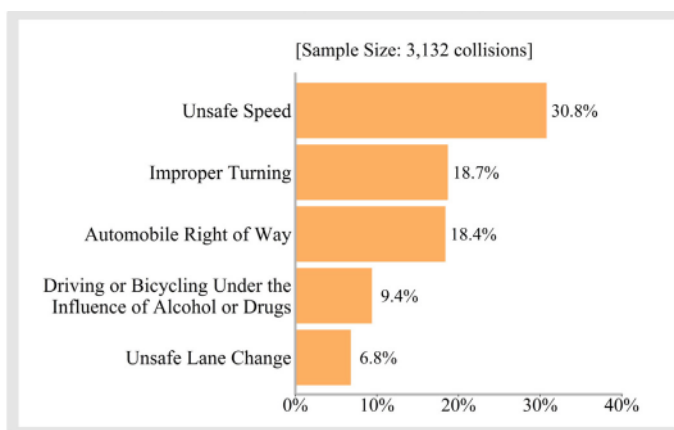


(a) Number of Fatal and Severe Injuries (b) Number of Fatal and Severe Injuries per 100,000 Population  
Source: FARS ARF 2016; Provisional SWTRs 2016; California Department of Finance 2016

**CALIFORNIA DATA** (continued)

- Unsafe speed (30.8% of collisions), followed by improper turning (18.7%) and right-of-way violations by automobiles (18.4%) were the most frequent primary collision factors for fatal and severe motorcyclist collisions.
- Broadside collisions comprised the most frequent crash type (26.4% of motorcycle collisions), followed by overturned (18.1%), hit objects (17.1%), rear-end (14.8%), and sideswipe (13.2).
- The number of injured riders was markedly higher between 3pm and 6pm, with 25.4% of fatalities and severe injuries occurring during this time period.
- Fatalities and severe injuries were highest on Saturday and Sunday, followed by Friday. These three days accounted for 52.6% of motorcycle fatalities and severe injuries.
- Over half (60.4%) of motorcycle fatalities and severe injuries occurred in urban areas compared with 39.6% on rural roads. Only about 16% of travel took place on rural roads.
- A little under half (49.1%) of all motorcycle fatalities occurred on non-interstate principal arterials (high-capacity urban roads). The next most common locations for motorcycle fatalities were non-interstate minor arterials (15.1%) and non-interstate collectors (low-to-moderate-capacity roads which serves to move traffic from residential streets to arterial roads) at 14.6%.

**Top Five Primary Collision Factors, Fatal & Severe Injury Motorcycling Collisions, California, 2016**



Source: Provisional SWITRS 2016

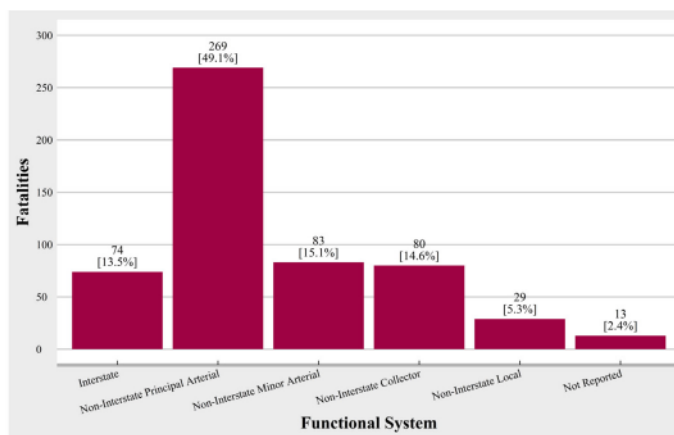
**Time and Day of Week for Motorcycling Fatal & Severe Injury, California, 2016**

	MON	TUE	WED	THU	FRI	SAT	SUN	TOTAL
Midnight-3AM	16	14	18	12	23	35	49	167 [5.2%]
3-6AM	17	5	16	12	25	17	11	103 [3.2%]
6-9AM	36	55	44	67	42	24	21	289 [9.0%]
9AM-Noon	42	32	31	41	53	96	96	391 [12.1%]
Noon-3PM	39	59	59	55	71	122	171	576 [17.8%]
3-6PM	79	113	103	114	160	144	107	820 [25.4%]
6-9PM	57	72	88	87	87	96	91	578 [17.9%]
9PM-Midnight	26	33	43	39	59	56	38	294 [9.1%]
Unknown	1	1	0	3	1	3	2	11 [0.3%]
TOTAL	313 [9.7%]	384 [11.9%]	402 [12.4%]	430 [13.3%]	521 [16.1%]	593 [18.4%]	586 [18.1%]	3,229 [100.0%]

FSI Num+% 0 1-16 17-35 36-55 56-88 89-171

Source: FARS ARF 2016; Provisional SWITRS 2016

**Roadway Type for Motorcycling Fatal Injury, California, 2016**



Source: FARS ARF 2016

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- 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. (2017, June). California Public Road Data 2015.