

# UC Berkeley

## Fact Sheet

### Title

2020 SafeTREC Traffic Safety Facts: Bicycle Safety

### Permalink

<https://escholarship.org/uc/item/1fr7w3bd>

### Authors

Chen, Katherine L.

Tsai, Bor-Wen

Fortin, Garrett

et al.

### Publication Date

2020-04-01

## TRAFFIC SAFETY FACTS

# Bicycle Safety

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

### INTRODUCTION

Bicycling is becoming more popular across the country for commuting, exercise, and leisure. However, in the event of a traffic crash between a motor vehicle and a bicyclist, the bicyclist is the more vulnerable party and more likely to be injured or killed than a motor vehicle occupant. In 2018, there were 857 bicyclists killed in a traffic crash in the United States. In citing concern about the level of bicycle fatalities, the Governors Highway Safety Association (GHSA) identified key recommendations for improving safety, including collection of better crash data, increased training for law enforcement to understand laws designed to protect bicyclists, partnerships with bicycling and community organizations regarding safety messaging and public education campaigns about infrastructure improvements.

Analyses presented in the bicycling program area include fatal and serious injuries to bicyclists, other cyclists, and passengers on bicycles. Bicycle crashes are defined as crashes where one or more victims is a bicyclist, other cyclist, or bicycling passenger.

### CALIFORNIA FACTS

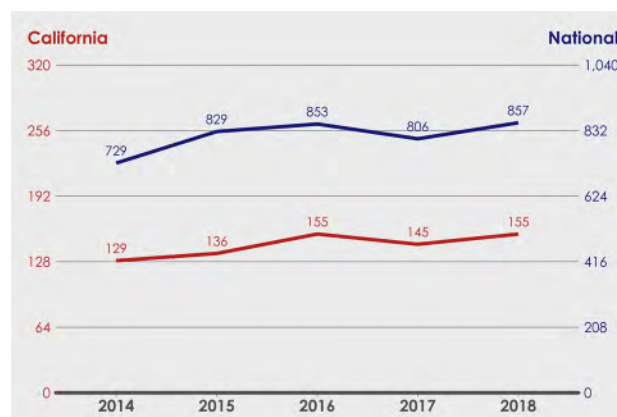
#### NATIONAL DATA

- Bicycling fatalities increased 6.3 percent from 806 in 2017 to 857 in 2018. The 2018 number of bicycling fatalities is the highest since 1990.
- Bicycle fatalities represented 2.3 percent of the total number of traffic fatalities in 2018.
- In 2018, 19.5 percent of cyclists killed in a traffic crash had a BAC of .08 g/dL or higher. Bicycling fatalities in alcohol-impaired driving crashes increased 9.2 percent from 2017 to 2018.

#### CALIFORNIA DATA

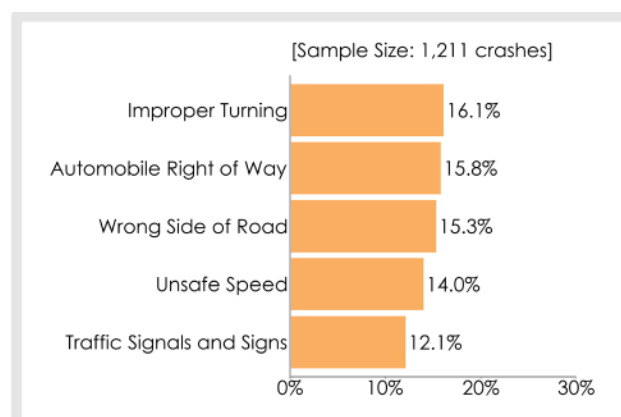
- In California, bicycle fatalities increased 6.9 percent from 145 fatalities in 2017 to 155 fatalities in 2018.
- Bicycle fatalities represented 4.4 percent of the total number of traffic fatalities in 2018 in California.
- In 2018, 16.8 percent of cyclists killed in a traffic crash had a BAC of .08 g/dL or higher.
- Bicyclists are required to follow the California Vehicle Code while riding on California roadways. Unless prohibited, bicyclists are allowed to ride in travel lanes. In the 2019 California Traffic Safety Survey, 80.2 percent of the 1,298 drivers surveyed believed it is legal for bicyclists to ride on roadways when there is not a bicycle lane present, an increase from 73.8 percent in 2018.

#### Bicycling Fatality Trends, Nationwide and California, 2014-2018



Source: FARS 2014-2017, FARS ARF 2018

#### Top Five Primary Crash Factors for Bicycling Fatal and Serious Injury Crashes, California, 2018



Source: Provisional SWITRS 2018

**CALIFORNIA DATA** *(continued)*

**Fatal and Serious Injury Bicycle Crashes by County**

- Bicycle fatal and serious injuries were highest in densely populated areas of the state. Los Angeles County had the highest number of fatal and serious injuries. The counties of San Diego, Orange, Sacramento, San Francisco, Santa Clara, Alameda, Riverside, Contra Costa, and Santa Barbara also had relatively high numbers.
- Rates of bicycle fatal and serious injuries per population were highest in Alpine County, followed by Mono, Marin, and Plumas counties.
- Four counties reported no bicycle fatal or serious injuries: Calaveras, Modoc, Sierra, and Trinity. An additional 18 counties reported three or fewer bicycle fatal and serious injuries.

**Primary Crash Factors of Bicycling Fatal and Serious Injury Crashes**

- Primary crash factors (PCF) varied considerably for bicycling fatal and serious injury crashes. The two top PCFs were improper turning at 16.1 percent and automobile right-of-way at 15.8 percent. Wrong side of road, unsafe speed, and traffic signals and signs were the next three most common PCFs, between 12.1 and 15.3 percent.

**Crash Types for Bicycling Fatal and Serious Injury Crashes**

- Nearly one-third of bicycling fatal and serious injury crashes were broadside (32.2 percent) followed by non-specified "other" crashes (27.1 percent).

**Time and Day of Bicycling Fatal and Serious Injuries**

- The time of day when the highest number of bicycle fatal and serious injury crashes occurred was between 3pm and 9pm on weekdays (30.9 percent) and between 9am and 9pm on weekends (21.3 percent).

**REFERENCES**

- National Center for Statistics and Analysis. (2019). 2018 Fatal Motor Vehicle Crashes: Overview. (Report No. DOT HS 812 826). Washington, DC: National Highway Traffic Safety Administration.
- Chonga, S., Poulosb, R., Olivier, J., Watsona, W.L., Grzebietaa, R. Relative injury severity among vulnerable non-motorised road users: Comparative analysis of injury arising from bicycle-motor vehicle and bicycle-pedestrian collisions. *Accident Analysis and Prevention*. 42 (2010) 290-296
- 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>
- Ewald & Wasserman Research Consultants, LLC. (2019, September). California Traffic Safety Survey 2019 Data Analysis and Comparison with 2010-2018 Survey Data Results. Elk Grove, CA: California Office of Traffic Safety.
- Governors Highway Safety Association. (2017) A Right to the Road: Understanding & Addressing Bicyclist Safety. <https://www.ghsa.org/sites/default/files/2017-09/2017BicyclistSafetyReport-FINAL.pdf>

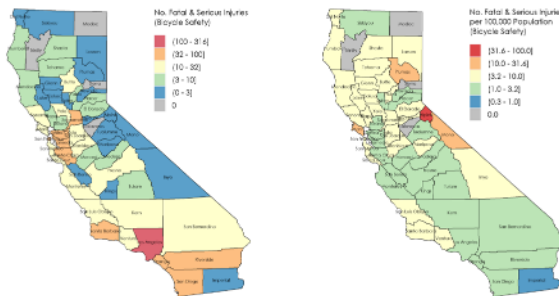
**Bicycling Fatal and Serious Injury Victim Demographics**

- More male (82.8 percent) than female (17.2 percent) bicyclists sustained fatal and serious injuries in 2018.
- The bicyclists most likely to be fatally or seriously injured were middle aged, especially those aged 45 to 54 (18.2 percent) and those aged 55 to 64 (19.9 percent). Younger adults, aged 25 to 34 and 35 to 44, also experienced higher levels of injury at over 15 percent for both age groups.
- Race was unknown in FARS for 68.4 percent, or 85 of the pedestrian fatalities. Of the 39 fatalities with a known race, about 73.4 percent (or 29) were white.

**Crash Location for Bicycling Victims**

- Over four in five bicycle fatalities (82.6 percent) occurred in urban areas compared to 17.4 percent in rural areas.
- Nearly half (43.2 percent) of all bicycle fatalities occurred on principal arterials, followed by minor arterials and collectors at 28.4 percent.

**Bicycling Fatal and Serious Injury Number and Rate per 100K Population by County, California, 2018**



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

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

**Time of Day and Day of Week for Bicycling Fatal and Serious Injury Victims, California, 2018**

	MON	TUE	WED	THU	FRI	SAT	SUN	TOTAL
Midnight-3AM	5	3	5	1	6	6	7	33 [2.7%]
3-6AM	4	8	6	6	8	7	4	43 [3.6%]
6-9AM	22	17	27	25	22	18	16	147 [12.2%]
9AM-Noon	30	20	22	15	21	40	37	185 [15.4%]
Noon-3PM	33	27	21	25	19	32	43	200 [20.8%]
3-6PM	30	33	44	58	36	24	25	250 [20.8%]
6-9PM	38	42	25	40	25	30	25	225 [18.7%]
9PM-Midnight	18	15	14	19	20	15	15	116 [9.7%]
Unknown	0	0	0	2	0	1	0	3 [0.2%]
<b>TOTAL</b>	<b>180</b> [15.0%]	<b>165</b> [13.7%]	<b>164</b> [13.6%]	<b>191</b> [15.9%]	<b>157</b> [13.1%]	<b>173</b> [14.4%]	<b>172</b> [14.3%]	<b>1,202</b> [100.0%]

FSI Num+ 0 1-5 6-15 16-22 23-30 31-58

Source: FARS ARF 2018, Provisional SWITRS 2018