INJURY DATA BRIEF

# Speeding-Related Fatalities in California, 2010-2020

## Introduction

Speeding is a risky but commonplace behavior. More than two thirds of California drivers reported driving 10 miles per hour over the speed limit on freeways.[1] Speeding is risky because it reduces the amount of time the driver has to react in a dangerous situation to avoid a crash and it increases vehicle stopping distance.[2] Speeding increases the risk of a crash, and the risk of a fatality when a crash occurs. Nationally, speeding-related fatalities accounted for 29 percent of traffic fatalities in 2020, and increased by 13 percent from 2011 to 2020.[3]

California aims to have a transportation system on which no street or road user is fatally injured. This data brief describes speeding-related fatalities that occurred in California from 2010-2020. The goal of this brief is to share information that may be used to better understand disparities in the distribution of speeding-related fatalities and to help spur meaningful and equitable public health transportation injury prevention to ensure the health and safety of all residents and visitors as they travel on California roadways. This paper describes fatality rates based on county, year, sex, and age, as well as race and Hispanic origin groups for 15 to 34-year-olds, who are most at risk for speeding-related fatalities. This brief also provides evidence-based strategies that can be used to prevent speeding-related fatalities.

## Methods

The California Highway Patrol reports fatal Motor Vehicle Collisions (MVCs) to the National Highway Traffic Safety Administration's (NHTSA's) Fatality Analysis Reporting System (FARS). To qualify as a FARS case, the following two criteria must be met according to the FARS Analytical User's Manual: (1) the crash involved a motor vehicle traveling on a trafficway customarily open to the public and (2) the crash must have resulted in the death of a motorist or non-motorist (e.g., passenger, pedestrian, bicyclist, motorcyclist, etc.) within 30 days of the crash.[4] Utilizing 2010-2020 FARS data, this data brief examines speeding-related fatalities in California. A crash is determined to be speeding-related if any driver in the crash was charged with a speeding-related offense or if a police officer indicated that racing, driving too fast for conditions, or exceeding the posted speed limit was a contributing factor in the crash. A speeding-related fatality is any fatality that occurs in a speeding-related crash.[3]

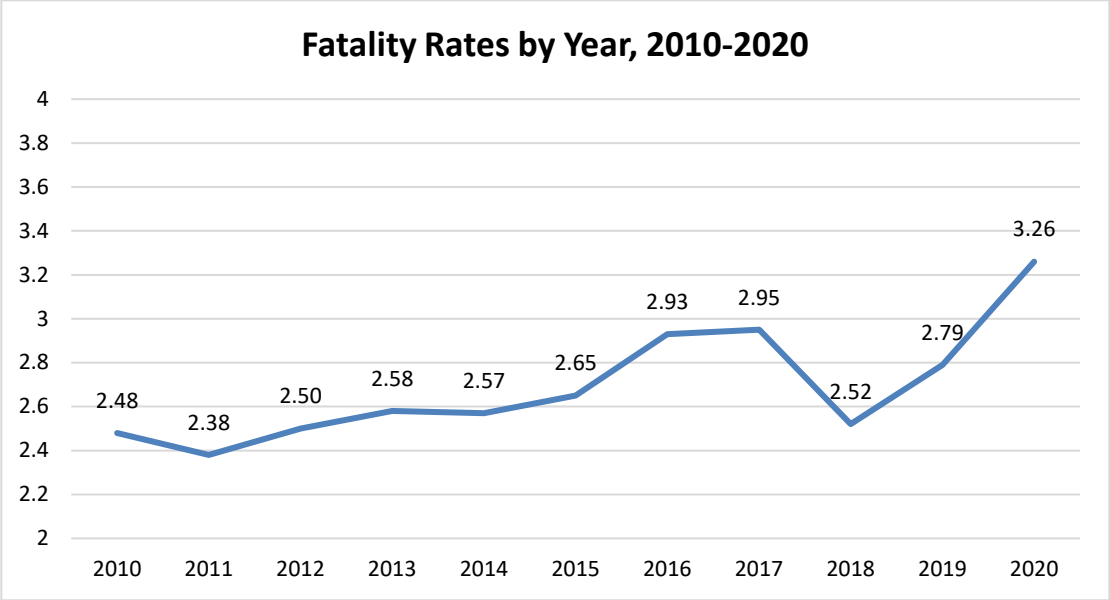
To calculate incidence rates for speeding-related fatalities, the frequency of speeding-related fatalities that occurred on roadways in the county or among members of a demographic group (the numerator) was divided by the sum of the annual population estimate for 2010-2020 (the denominator). For incidence rates by year, the annual state population estimate served as the denominator. Population estimates were obtained from the California Department of Finance (DOF) P-2A Total Population for California and Counties and P-3 Race/Ethnicity and Sex by Age for California Counties files. This result was multiplied by 100,000 to generate the incidence rates per 100,000 person-years. These incidence rates approximate risk for fatal MVCs, but are limited because the population denominator is not the exact group at risk for a speeding-related fatal

collision: road users in a geographic area are not limited to the same people who live there, and not all members of a population use the road equally – some individuals travel more than others; as such, rates described herein only approximate the level of risk.

## Results

- From 2010 to 2020 there were 11,514 speeding-related fatalities in California.
- The Statewide rate of speeding-related fatalities from 2010-2020 was 2.70 per 100,000. Figure 1 displays that the Statewide rate of speeding-related fatalities fluctuated between 2010-2019 and peaked in 2020 with a rate of 3.26, but overall, speeding related fatalities increased during the decade.

**Figure 1. California Speeding-Related Fatality Rates by Year, 2010-2020.**



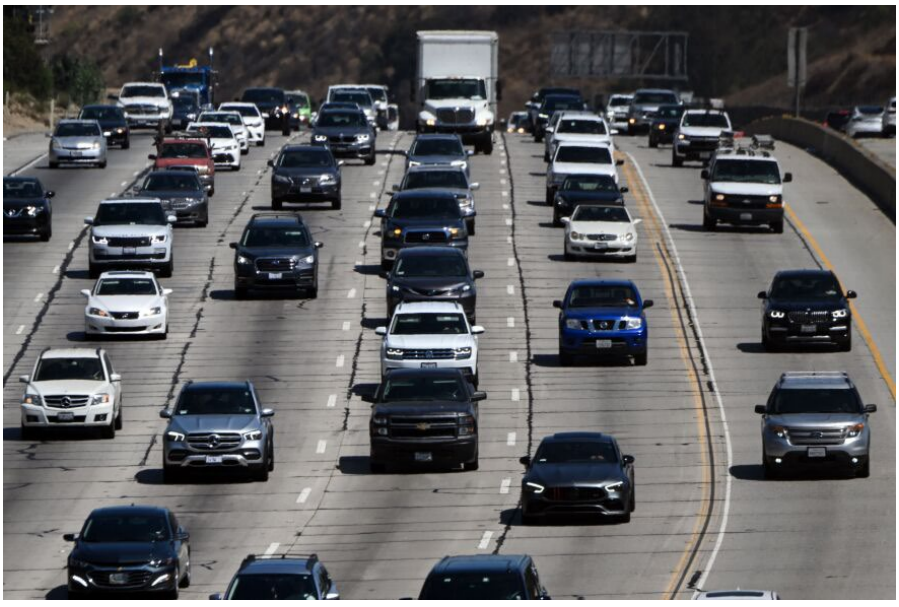



**Table 1. Frequency of Speeding-Related Fatalities and Fatality Rates by County, 2010-2020**.

| COUNTY | 2010-2020 FATALITIES | FATALITY RATE | COUNTY | 2010-2020 FATALITIES | FATALITY RATE |
|---|---|---|---|---|---|
| Trinity | 21 | 14.08 | Tulare | 169 | 3.32 |
| Plumas | 24 | 11.63 | Yolo | 76 | 3.25 |
| Del Norte | 33 | 10.98 | Kings | 52 | 3.13 |
| Siskiyou | 39 | 7.97 | Solano | 144 | 3.06 |
| Lassen | 25 | 7.30 | Sacramento | 446 | 2.72 |
| Mendocino | 63 | 6.50 | Los Angeles | 2,694 | 2.42 |
| Tehama | 43 | 6.13 | Napa | 36 | 2.34 |
| Calaveras | 30 | 6.07 | San Diego | 838 | 2.34 |
| Yuba | 48 | 5.81 | Santa Barbara | 112 | 2.31 |
| Lake | 38 | 5.34 | Monterey | 103 | 2.17 |
| Amador | 21 | 5.16 | Placer | 88 | 2.14 |
| Butte | 115 | 4.73 | Sonoma | 111 | 2.04 |
| Humboldt | 69 | 4.66 | Ventura | 189 | 2.04 |
| San Joaquin | 370 | 4.61 | Santa Cruz | 60 | 2.01 |
| El Dorado | 93 | 4.59 | Contra Costa | 233 | 1.91 |
| Shasta | 89 | 4.54 | Alameda | 331 | 1.87 |
| Merced | 132 | 4.44 | Santa Clara | 375 | 1.79 |
| Kern | 414 | 4.28 | Orange | 602 | 1.75 |
| San Bernardino | 993 | 4.26 | San Mateo | 123 | 1.48 |
| Tuolumne | 25 | 4.24 | Marin | 35 | 1.23 |
| San Benito | 27 | 4.18 | San Francisco | 115 | 1.21 |
| Nevada | 44 | 4.08 | Colusa | 16 | * |
| Madera | 69 | 4.07 | Glenn | 15 | * |
| Imperial | 76 | 3.77 | Alpine | 12 | * |
| Fresno | 375 | 3.48 | Sierra | 12 | * |
| Riverside | 883 | 3.45 | Mono | 12 | * |
| Sutter | 37 | 3.44 | Mariposa | 9 | * |
| Stanislaus | 198 | 3.35 | Inyo | 7 | * |
| San Luis Obispo | 101 | 3.34 | Modoc | 4 | * |

* Rates based on a frequency that is less than 20 are unstable; thus, they are suppressed.

- The map (Figure 2) below displays the rates listed in Table 1. From 2010-2020, Trinity County had the highest rate of speeding-related fatalities (14.08). During the same timeframe, San Francisco County had the lowest rate of speeding-related fatalities (1.21).

- From 2010-2020, coastal counties, starting from the Bay Area, going southward through Los Angeles and San Diego Counties, had lower fatality rates compared to other geographic areas. Higher speeding-related fatality rates tended to occur in rural Northern California counties.

**Figure 2. County Speeding-Related Fatality Rates Per 100,000 (2010-2020).**

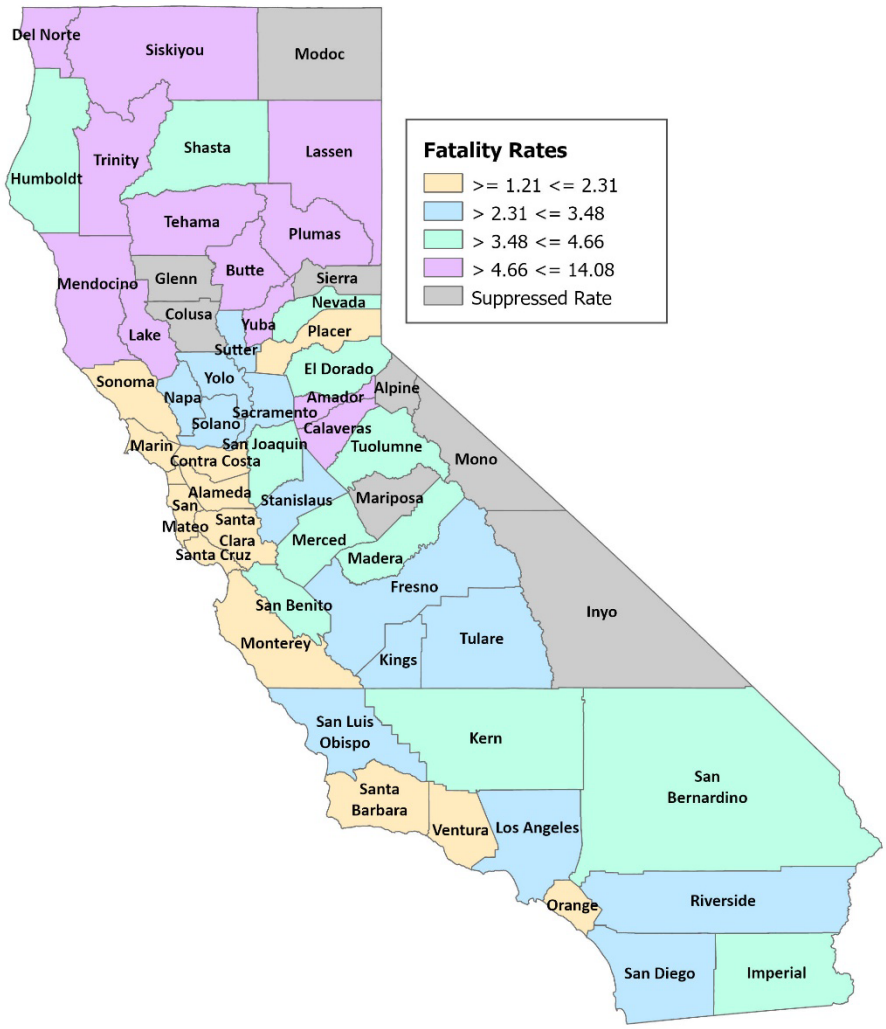



**Table 2. Male and Female Speeding-Related Fatality Frequencies and Rates by Age Group, 2010-2020.**

| AGE GROUP | MALE FATALITIES | MALE FATALITY RATE | FEMALE FATALITIES | FEMALE FATALITY RATE |
|---|---|---|---|---|
| 0-14 | 189 | 0.44 | 144 | 0.35 |
| 15-20 | 1,018 | 5.25 | 402 | 2.21 |
| 21-24 | 1,351 | 10.16 | 340 | 2.79 |
| 25-34 | 2,211 | 7.39 | 454 | 1.62 |
| 35-44 | 1,253 | 4.34 | 346 | 1.23 |
| 45-54 | 1,079 | 3.77 | 348 | 1.21 |
| 55-64 | 878 | 3.57 | 320 | 1.23 |
| 65+ | 778 | 3.04 | 382 | 1.19 |

In Table 2, the 21-24 age group for both males and females is the most at risk age group for speeding-related fatalities. In the 21-24 age group, males and females had respective fatality rates of 10.16 and 2.79. Males in the 25-34 age group had the second highest fatality rate of 7.39. Male fatality rates are higher than those of females for every age group. Fatalities of those whose age was unknown or not reported are excluded from the frequencies and rates presented in Table 2.

**Table 3. Males and Females (Aged 15-34) Speeding-Related Fatality Frequencies and Rates by Race and Hispanic Origin, 2010-2020**.

| RACE AND HISPANIC ORIGIN | MALE FATALITIES | MALE FATALITY RATE | FEMALE FATALITIES | FEMALE FATALITY RATE |
|---|---|---|---|---|
| American Indian or Alaska Native Non-Hispanic | 39 | 14.49 | 16 | * |
| Asian Non-Hispanic | 170 | 2.29 | 52 | 0.71 |
| Black Non-Hispanic | 428 | 11.10 | 117 | 3.27 |
| Hispanic | 2,071 | 7.21 | 533 | 2.01 |
| Multiple Races Non-Hispanic | 40 | 2.10 | 11 | * |
| Pacific Islander Non-Hispanic | 16 | * | 4 | * |
| White Non-Hispanic | 1,635 | 8.11 | 412 | 2.21 |
| All Other Non-Hispanic or Race | 107 | — | 33 | — |
| Unknown Race and Unknown Hispanic | 74 | — | 18 | — |

* Rate in which frequency is less than 20 is unstable; thus, it is suppressed.

— Not possible to determine fatality rate for this category.

Table 3 reveals that the American Indian/Alaska Native Non-Hispanic and Black Non-Hispanic racial groups for males aged 15-34 had the two highest fatality rates of 14.49 and 11.10, respectively. Additionally, White Non-Hispanic and Hispanic males respectively had high fatality rates of 8.11 and 7.21. For males, the Asian Non-Hispanic and Multiple Races Non-Hispanic racial groups had the second lowest and the lowest fatality rates of 2.29 and 2.10, respectively. The Black Non-Hispanic and White Non-Hispanic racial groups for females aged 15-34 had the two highest fatality rates of 3.27 and 2.21, respectively. For females, the Hispanic and the Asian Non-Hispanic racial groups had the two lowest fatality rates of 2.01 and 0.71, respectively. In order to have a sufficient number of fatalities to display fatality rates, Table 3 aggregates the 15-20, 21-24, and 25-34 age groups found in Table 2. The aforementioned age groups had the three highest fatality rates for both men and women, as seen in Table 2. Meanwhile, Table 3 excludes other age groups to focus on one specific at-risk age group for both males and females.

## Discussion

The Statewide rate of speeding-related fatalities from 2010-2020 was 2.70 per 100,000. The Statewide rate of speeding-related fatalities peaked in 2020 with a rate of 3.26. For 2020, the increase in the Statewide speeding-related fatality rate may be attributed in part to the first year of the COVID-19 pandemic. Fewer people drove on roadways during that time due to stay-at-home orders, resulting in an increase of risky driving, including speeding.[5] Increased education or encouragement efforts may now be necessary to ensure these pandemic-related behavior changes do not become a new norm.

More densely populated urban and coastal counties tended to have lower speeding-related fatality rates than rural counties. San Francisco County had the lowest speeding-related fatality rate from 2010 through 2020 (1.21 per 100,000 person-years), and other counties with rates lower than the statewide rate of 2.70 included other Bay Area counties, Los Angeles, Orange, and San Diego counties. Younger males aged 21-34 are at risk for speeding-related fatalities. Among young males, American Indian/Alaska Native Non-Hispanic and Black Non-Hispanic racial groups have the highest rates of speeding fatalities. Rural and historically marginalized communities may benefit most from efforts to reduce speeding-related fatalities, so long as those efforts are trauma-informed, culturally and linguistically relevant, sensitive to the unique environments of these communities, and do not unintentionally exacerbate existing challenges related to race, ethnicity and poverty.[6]

## California's efforts to reduce speeding-related fatalities

California's Strategic Highway Safety Plan takes a Safe System Approach, which aims to eliminate fatal and serious injuries for all road users through a holistic view of the roadway system.[7] The Safe System Approach acknowledges that humans make mistakes and crashes will inevitably occur, but aims to ensure that when mistakes occur, they are not deadly. Safe speeds is one of the elements used to achieve a safe system.[8]

There are multiple well-established methods that can be used to reduce vehicle speeds and prevent speeding-related fatalities. Reducing speed limits on freeways and roadways is the first tool that can be used to encourage drivers to drive at safer speeds. Engineering solutions, such as narrowing the width of lanes, is a key method to reduce driving speed because it forces drivers to move their vehicles at slower and safer speeds. From a design standpoint, roads can be built to calm traffic (using speed bumps and tables) while also encouraging and supporting mixed modes of transportation for people of all ages and different levels of physical mobility. Complete streets and roadway networks that include protected bikeways and intersections, ample sidewalk space, and safer crossing enhancements such as ADA ramps, curb bulb-outs, pedestrian refuge islands, pedestrian lighting and pedestrian signalized timing, promote physical activity, alternatives to driving, and the safety of people who are walking, rolling, and using public transportation as their primary mean of transportation.[9] Designing roads where drivers, cyclists, pedestrians, people in wheelchairs and on scooters, and people using public transportation co-exist promotes inclusivity and results in drivers moving at safer speeds.

Strategic speed enforcement can also help reduce vehicle speeds, especially when coupled with public engagement and well-designed education campaigns that reinforce positive traffic safety culture and norms.[10] Some enforcement activities, such as digital speed signs and on-site enforcement, can reduce speeds for limited durations. However, drivers eventually become desensitized. Decoy cars are more effective at reducing speeds over longer time periods.[11]

Reducing speed limits, engineering roadway environments to moderate speeds, and enforcing speed limits are all well-established tools for achieving safe speeds. There are various barriers to using these tools in California, however, recent legislative changes in California have helped to make progress to reduce some of the barriers for safer speeds. Regulations dictate how speed limits must be set and often prevent traffic engineers from lowering the speed limit, engineering improvements are costly and time consuming to implement, and enforcement can be racially biased. The Zero Traffic Fatalities Task Force studied these barriers and published a summary of findings and recommendations to help the state achieve safe speeds.[12] Recommendations included developing a

new approach for traffic engineers to establish speed limits to prioritize safety, streamlining the permitting process for engineering improvements, and using automated speed enforcement to supplement existing law enforcement activities, among others. New California laws resulting from such bills as AB 43 and AB 1938 (which clarify context-sensitive speed setting engineering flexibility that would allow for lower speeds, in areas including high injury networks) and AB 645 (which allow for the pilot testing of speed enforcement cameras in six California cities) can help to expand the tools that local jurisdictions can use to prevent vehicle crash speeding-related serious injuries and fatalities.

**What drivers can do now to reduce speeding-related fatalities**

The Safe System Approach stresses that all transportation stakeholders – including drivers – share the responsibility for ensuring that crashes don't lead to fatalities. NHTSA's Research and Program Development offers the following safety reminders for drivers[3]:

- Every time your speed doubles, the stopping distance quadruples because of the laws of physics.
- Move your foot to the brake when you see the brake lights of the car in front of you.
- Pay close attention to your speedometer, especially before entering a curve when your vehicle is more likely to leave the road. Apply your breaks before the curve.
- Keep pace with cars traveling within the speed limit because vehicles moving at similar speeds are less likely to come into conflict.
- Drive the speed limit to be a good role model to others, especially children.
- Allow more time for your trips so you are not in a hurry to reach your destination.

**Endnotes**

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Fatality Analysis Reporting System (FARS) 2010-2020 Final Files. Data retrieved September 2023 from https://www.nhtsa.gov/node/97996/251.