



2020 - 2021 Motor Vehicle Injury Brief

County of San Diego, Health and Human Services Agency,
Public Health Services, Community Health Statistics Unit

Prepared August 2024



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LIVE WELL
SAN DIEGO

2020 – 2021 Motor Vehicle Injury Brief

August 2024

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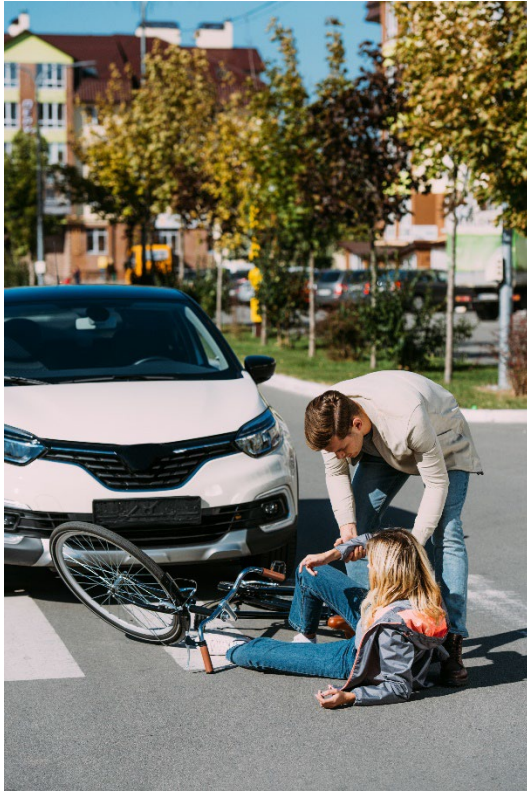
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INTRODUCTION

WHAT ARE MOTOR VEHICLE INJURIES?



Motor vehicle or road-traffic injuries are fatal or non-fatal injuries that occur when at least one vehicle in motion is involved in a collision on a public or private road.¹ Motor vehicle injuries are often a result of collisions involving cars, buses, motorcycles, bicycles, trucks, or pedestrians.² Injuries sustained in motor vehicle collisions vary in severity (e.g., fractures, organ damage) depending on the impact of the crash and can affect different bodily regions (e.g., head, neck, chest, abdomen, or spine).³

Anyone who uses the road and is involved in a collision, such as drivers or passengers in motor vehicles, pedestrians or cyclists, can sustain fatal or non-fatal injuries.⁴ Nationally among road users, motorcyclists, bicyclists, and pedestrians are the most vulnerable, constituting more than half of the deaths in motor vehicle collisions.²

Globally, nearly 1.3 million people die in motor vehicle collisions each year.⁵ In the United States, motor vehicle injury was the third leading cause of death due to unintentional injuries in 2022.⁶ Among workers, motor vehicle collisions were the leading cause of unintentional injury death among work-related collisions in the United States.⁷ Also, in 2022, motor vehicle collisions were the leading cause of death among unintentional injuries in children and young adults between 5-24 years of age in the United States and California.⁶ In California, among unintentional injuries, motor vehicle traffic injury was the second leading cause of death in 2022.⁶

In 2022, the combined medical costs of non-fatal hospitalizations and non-fatal emergency department discharges due to unintentional traffic injuries in the United States were over \$166 billion and \$270 billion, respectively.⁶ That same year, the combined medical costs of fatal unintentional traffic injuries in the United States were over \$471 billion.⁶

MOTOR VEHICLE INJURIES IN SAN DIEGO COUNTY

In San Diego County in 2022, accident/unintentional injury was the third leading cause of death.⁷ In 2020, San Diego County had the second highest total number of motor vehicle injuries and the fourth highest total number of motor vehicle fatalities compared to all other counties in California.⁸



This brief further presents key findings about motor vehicle injuries in San Diego County, the six Health and Human Services Agency (HHSA) regions, and the 41 subregional areas (SRAs) from 2020 to 2021. Key findings are presented by type of motor vehicle injury and collision. Motor vehicle injury collisions reported in this brief refer to collisions that occurred on any public road in San Diego County at the point of collision and not

the victims' place of residence. Indicators in this brief represent victims of total motor vehicle injuries, pedestrian injuries, pedalcycle/bicycle injuries, injuries from alcohol-involved collisions, as well as drinking drivers involved in motor vehicle injury collisions. When available, rates are provided by age group, sex, and year.

DATA GUIDE

DATA SOURCE

Motor vehicle collision and injury data reported in this brief come from the Transportation Injury Mapping System (TIMS), a product of the Safe Transportation Research and Education Center at the University of California, Berkeley (<https://tims.berkeley.edu/>). Data on injury collisions and victims are compiled annually by TIMS from the California Statewide Integrated Traffic Records System (SWITRS) maintained by the California Highway Patrol (<https://www.chp.ca.gov/Programs-Services/Services-Information/SWITRS-Internet-Statewide-Integrated-Traffic-Records-System>).

METHODS

The data reported are for injury collisions occurring on public roads in San Diego County. Rates include anyone traveling on San Diego County roads. Rates are not calculated for fewer than 5 events. The location of collisions is based on reports filed by law enforcement report and may not contain specific geographic coordinates. Locational data may be different when data are finalized by TIMS. All rates are calculated per

100,000 resident population. Age-adjusted rates are calculated per 100,000 2000 US standard population.

KEY DEFINITIONS

Injury Collision: Any motor vehicle collision where an injury or death has occurred. Property damage only collisions are not included in these data.

Total Injuries: Rates of all victims killed or injured in motor vehicle collisions in San Diego County.

Pedestrian Injuries: Rates of victims killed or injured in a motor vehicle collision who were not in or upon a vehicle, bicycle, or animal. Includes a person in or operating a pedestrian conveyance, such as a baby carriage, coaster wagon, skateboard, roller skates, skis, sled, non-motorized or motorized wheelchair.

Pedalcycle Injuries: Rates of victims killed or injured in a motor vehicle collision who were riding a bicycle or other cycle propelled by operating the pedals as opposed to a motorcycle.

Alcohol-Involved Injuries: Rates of victims killed or injured resulting from a motor vehicle traffic collision where a driver, pedestrian, or bicyclist had been drinking.

Drinking Drivers: Rate of drivers involved in injury collisions, where the driver had been drinking (HBD) and was under the influence; HBD but not under influence of alcohol; or HBD with level of impairment unknown.

HOW TO INTERPRET RATES:

A rate is the number of cases divided by the population, usually multiplied by a constant (100,000 in the example). For example, 987 cases, divided by population of 654,321, would be a rate of 150.8 per 100,000 population. This means for every 100,000 people; 150-151 cases would be expected.

MOTOR VEHICLE INJURY DASHBOARD

Data for this brief can also be viewed on the Motor Vehicle Injury Indicators in San Diego County, 2020-2021 Dashboard. This dashboard is an interactive tool that helps visualize motor vehicle injury indicator rates across years (annual trend), rates by age and sex, and rates by SRA and year (map). To access the Motor Vehicle Injury Indicators in San Diego County, 2020-2021 Dashboard, please click [here](#).

KEY FINDINGS

AGE

Motor vehicle injuries in San Diego County impact people of all ages. Although any age can be affected, certain age groups had higher rates of a specific motor vehicle collision injury from 2020-2021.

Total Injuries

The following section describes the rates of total victims injured due to motor vehicle collisions by age in San Diego County from 2020-2021 (Figure 1). Total injuries include all victims who were killed or injured in a motor vehicle collision and should not be interpreted as those who caused a motor vehicle collision.

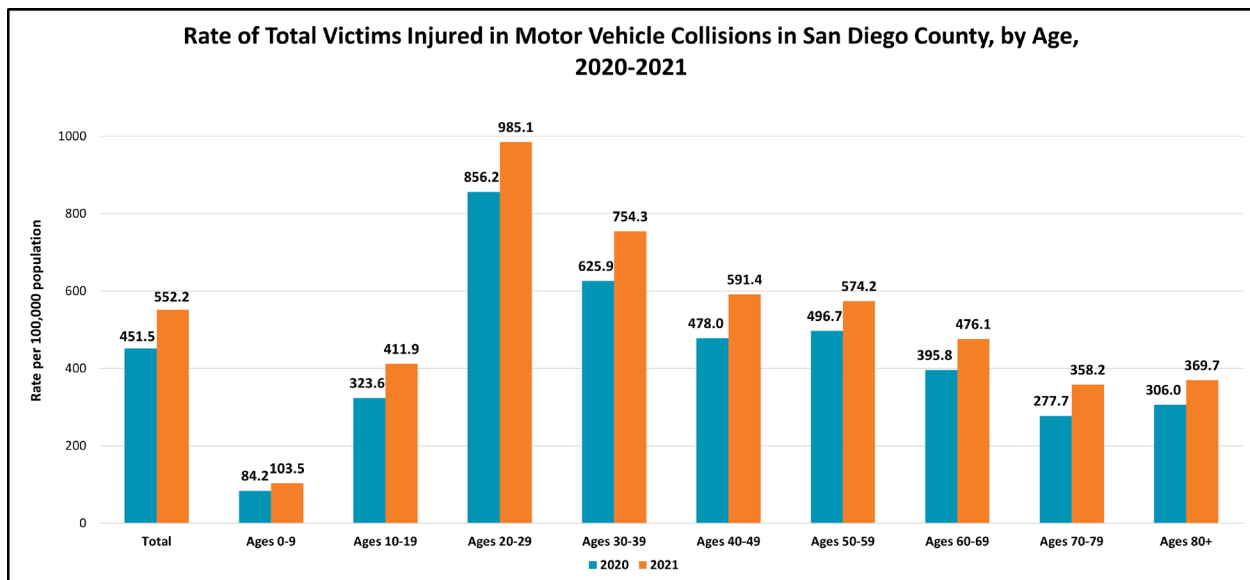


Figure 1. Rates of Total Injuries by Age, 2020-2021.

From 2020-2021, the rate of total victims injured in motor vehicle collisions in San Diego County increased among all age groups (Figure 1). Notably, the injury rate among victims aged 20-29 years, 30-39 years, and 40-49 years increased by more than 100 per 100,000 population. The rates of total injuries due to motor vehicle collisions among ages 20-29 years, 30-39 years, 40-49 years, 40-49 years, and 50-59 years were higher than the total crude rate in San Diego County overall. The greatest increase in the rate of total victims injured in motor vehicles collisions from 2020-2021 were among victims aged 70-79 (29.0%), followed by victims aged 10-19 (27.3%).

Pedestrian Injuries

The following section describes the rates of pedestrian injuries due to motor vehicle collisions by age in San Diego County from 2020-2021 (data not shown) and in 2021 (Figure 2). Pedestrian injuries include victims who were killed or injured in motor vehicle collisions involving anyone who was in or operating a pedestrian conveyance, such as a baby carriage, coaster wagon, skateboard, roller skates, skis, sled, non-motorized or motorized wheelchair.

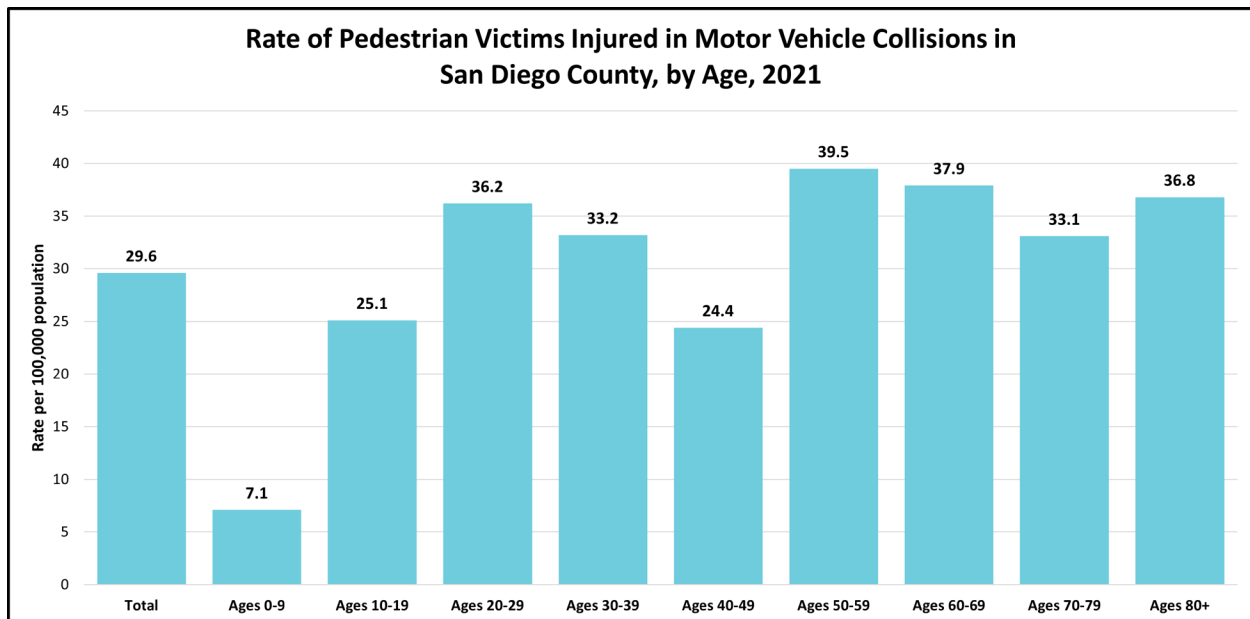


Figure 2. Rate of Pedestrian Injuries by Age, 2021

In 2021, the rate of pedestrian injuries due to motor vehicle collisions among victims aged 50-59 (39.5 per 100,000) was higher than all other age groups and the total crude rate in San Diego County (29.6 per 100,000) (Figure 2). In 2021, victims aged 0-9 years had the lowest pedestrian injury rate (7.1 per 100,000), approximately three times less than those aged 40-49 years, the age group with the next lowest pedestrian injury rate (24.4 per 100,000). From 2020 to 2021, victims aged 70-79 years had the highest increase in rate of pedestrian injuries due to motor vehicle collisions in San Diego County (54.0%).

Pedalcycle Injuries

The following section describes the rates of pedalcycle injuries due to motor vehicle collisions by age in San Diego County from 2020-2021 (data not shown) and in 2021 (Figure 3). Pedalcycle injuries include victims who were killed or injured from a motor vehicle collision while riding or operating a pedal propelled cycle, such as a bicycle.

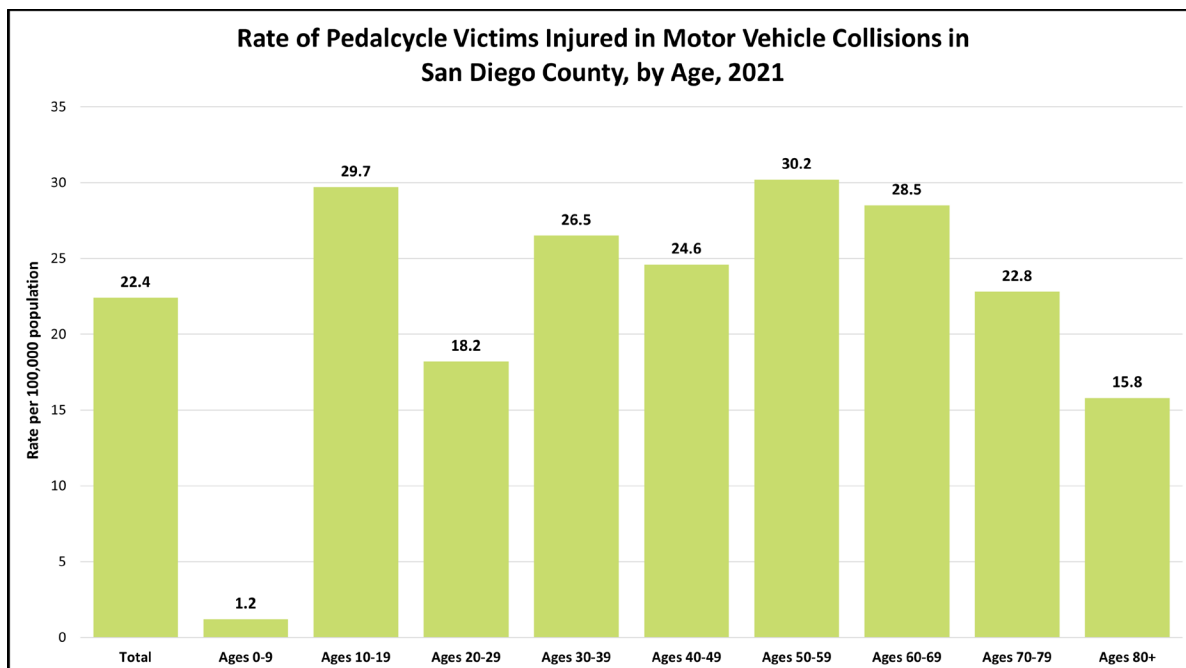


Figure 3. Rate of Pedalcycle Injuries by Age, 2021.

In San Diego County, the highest rate of pedalcycle injuries due to motor vehicle collisions was among those aged 50-59 years (30.2 per 100,000), followed by those aged 10-19 years (29.7 per 100,000) in 2021 (Figure 3). The lowest rate was among victims aged 0-9 years (1.2 per 100,000). In 2021, the pedalcycle injury rates among those aged 50-59 years and 10-19 years were approximately 25 times the pedalcycle injury rate among victims aged 0-9 years. Between 2020 and 2021, the rate of pedalcycle injuries: almost doubled among victims aged 10-19 (99.3% increase), more than doubled among victims aged 80 years and older (119.4% increase) and decreased by more than half among victims aged 0-9 years (60.0% decrease).

Drinking Drivers

The following section describes the rates of drinking drivers involved in motor vehicle injury collisions by age in San Diego County from 2020-2021 (data not shown) and in 2021 (Figure 4). Drinking drivers include anyone who had been drinking (HBD) and was under the influence, HBD but not under the influence of alcohol, or HBD with an unknown level of impairment, and were involved in a motor vehicle collision.

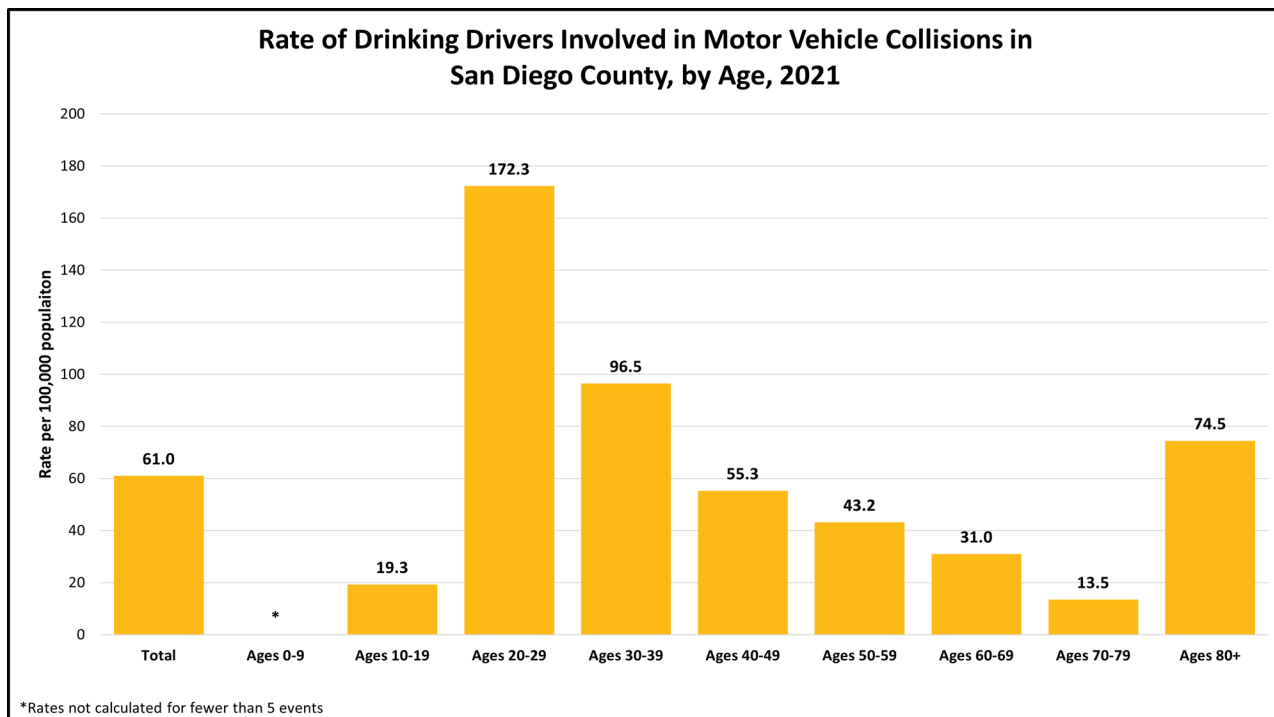


Figure 4. Rate of Drinking Drivers by Age, 2021.

In San Diego County, the injury rate of drinking drivers aged 20-29 years (172.3 per 100,000) was nearly 1.8 times the next highest rate of drinking drivers aged 30-39 years (96.5 per 100,000) (Figure 4). From 2020 to 2021, drinking drivers aged 60-69 years had the highest increase in injury rate due to motor vehicle collisions (59.8%), followed closely by drinking drivers aged 70-79 years (58.8% increase).

Alcohol-Involved Injuries

The following section describes the rates of alcohol-involved injuries due to motor vehicle collisions by age in San Diego County from 2020-2021 (data not shown) and in 2021 (Figure 5). Rates of alcohol-involved injuries include victims who were killed or injured because of a motor vehicle collision where a driver, pedestrian, or bicyclist was drinking.

In 2021, the rate of victims injured in alcohol-involved motor vehicle collisions aged 20-29 years (216.2 per 100,000) was 3.8 times the rate among ages 10-19 years (56.6 per 100,000), and more than 1.5 times the rate among ages 30-39 years (127.3 per 100,000) in San Diego County (Figure 5). From 2020 to 2021, all age groups had an increase in the rate of victims injured from alcohol-involved motor vehicle collisions in San Diego County, with the greatest increase among victims aged 20-29 years (42.1%).

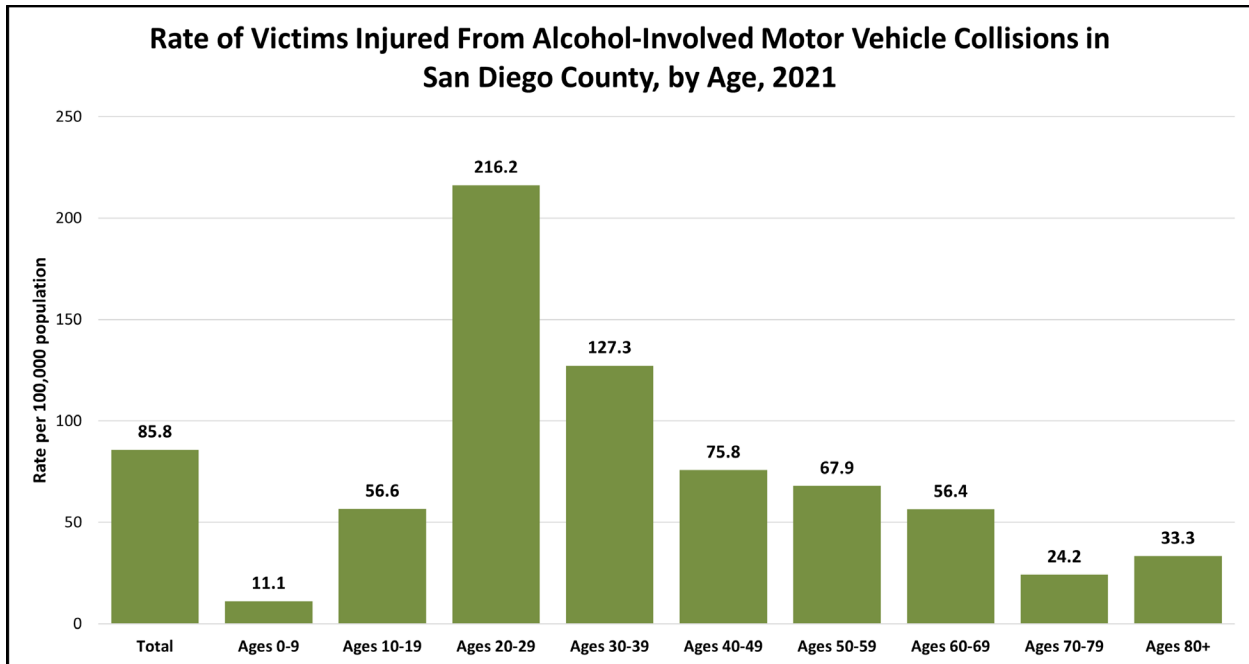


Figure 5. Rate of Alcohol-Involved Injuries by Age, 2021.

SEX

Motor vehicle injury rates by sex reflect a victim's sex and should therefore, not be interpreted as collisions caused by that sex.

Total Injuries

The following section describes the rates of total victims injured due to motor vehicle collisions by sex in San Diego County from 2020-2021 (Figure 6). The rates of total victims injured in motor vehicle collisions in San Diego County have increased from 2020-2021.

From 2020-2021, the increase in rate of total victims injured in motor vehicle collisions was comparable between males (21.3%) and females (23.5%) in San Diego County (Figure 6). Despite a smaller percent increase, male victims in San Diego County had a higher rate of total injuries due to motor vehicle collisions (590.1 per 100,000) compared to females (510.0 per 100,000) in 2021.

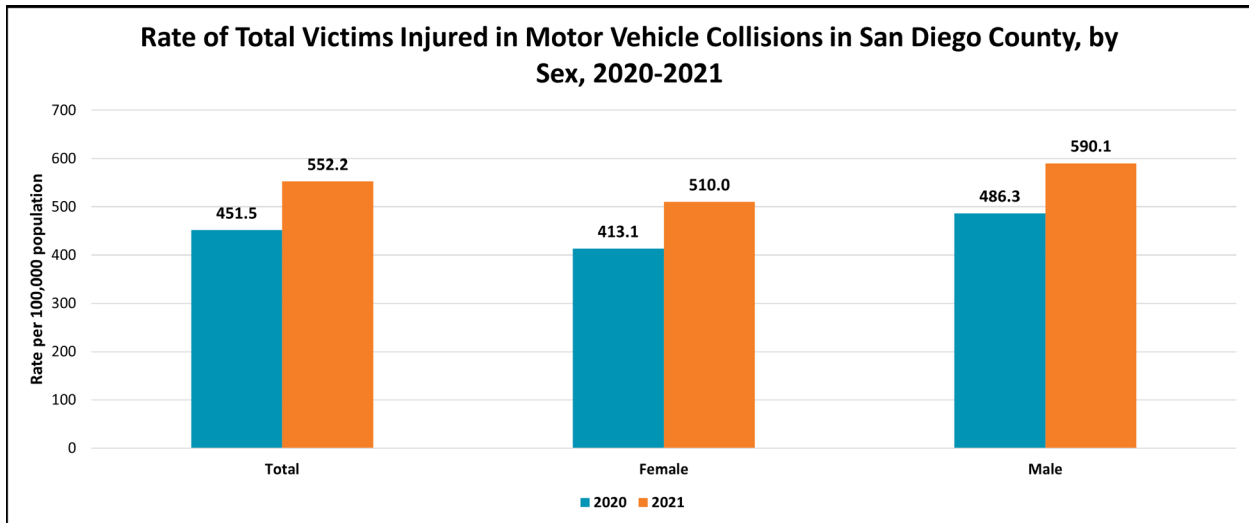


Figure 6. Rates of Total Injuries by Sex, 2020-2021.

Pedestrian Injuries

The following section describes the rates of pedestrian injuries due to motor vehicle collisions by sex in San Diego County from 2020-2021 (data not shown) and in 2021 (Figure 7).

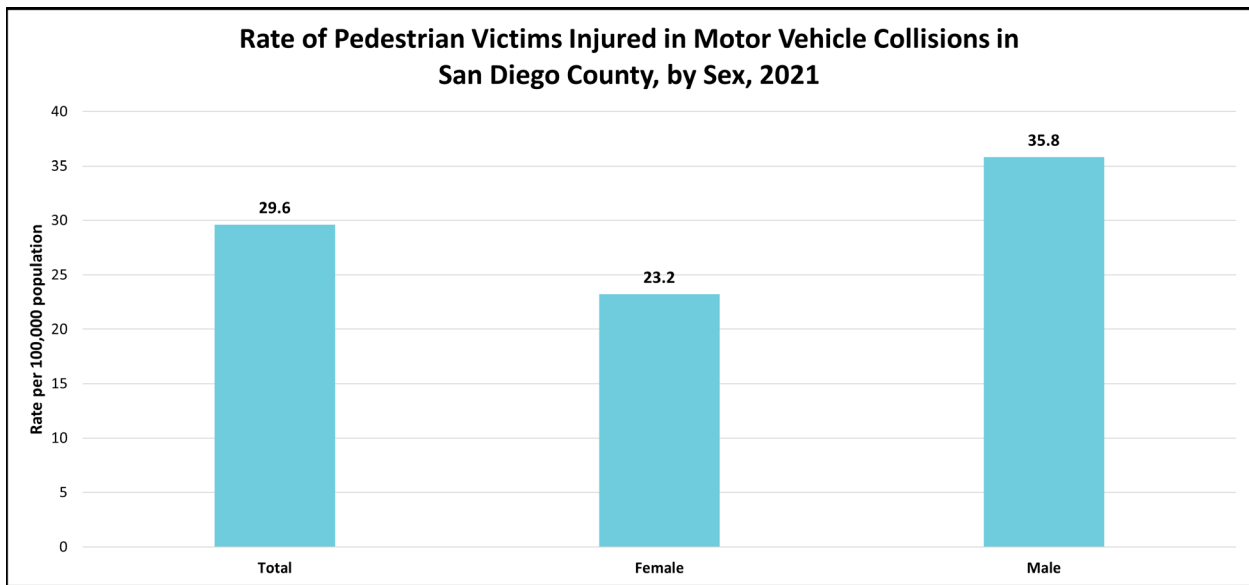


Figure 7. Rate of Pedestrian Injuries by Sex, 2021.

In 2021, the rate of pedestrian injuries due to motor vehicle collisions among male victims (35.8 per 100,000) in San Diego County was about 1.5 times the injury rate among females (23.2 per 100,000) (Figure 7). The percent increase in the injury rate of pedestrians in motor vehicle collisions in San Diego County from 2020 to 2021 among females (12.1%) was 2.6 times the percent increase among males (4.7%).

Pedalcycle Injuries

The following section describes the rates of pedalcycle injuries due to motor vehicle collisions by sex in San Diego County in 2021 (Figure 8).

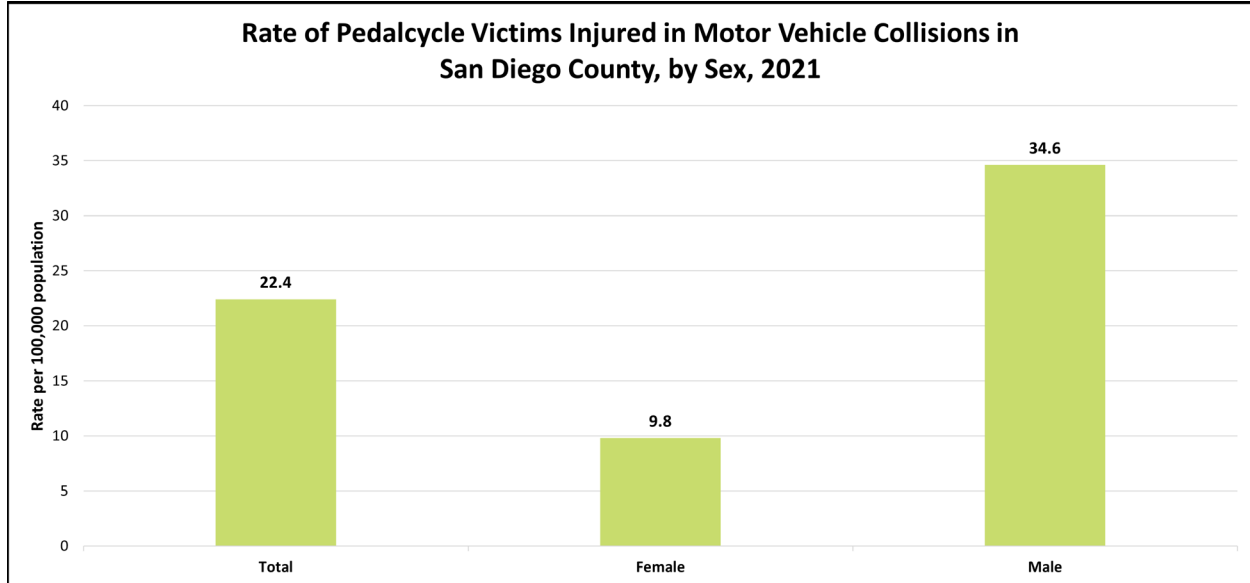


Figure 8. Rate of Pedalcycle Injuries by Sex, 2021.

In 2021, the rate of pedalcycle injuries due to motor vehicle collisions among male victims (34.6 per 100,000) was approximately 3.5 times the rate among female victims (9.8 per 100,000) in San Diego County (Figure 8).

Drinking Drivers

The following section describes the rates of drinking drivers involved in motor vehicle injury collisions by sex in San Diego County in 2021 (Figure 9).

In 2021, the rate of injury among male drinking drivers involved in motor vehicle collisions (85.5 per 100,000) was just over 2.5 times the rate of injury among female drinking drivers involved in motor vehicle collisions (33.4 per 100,000) in San Diego County (Figure 9).

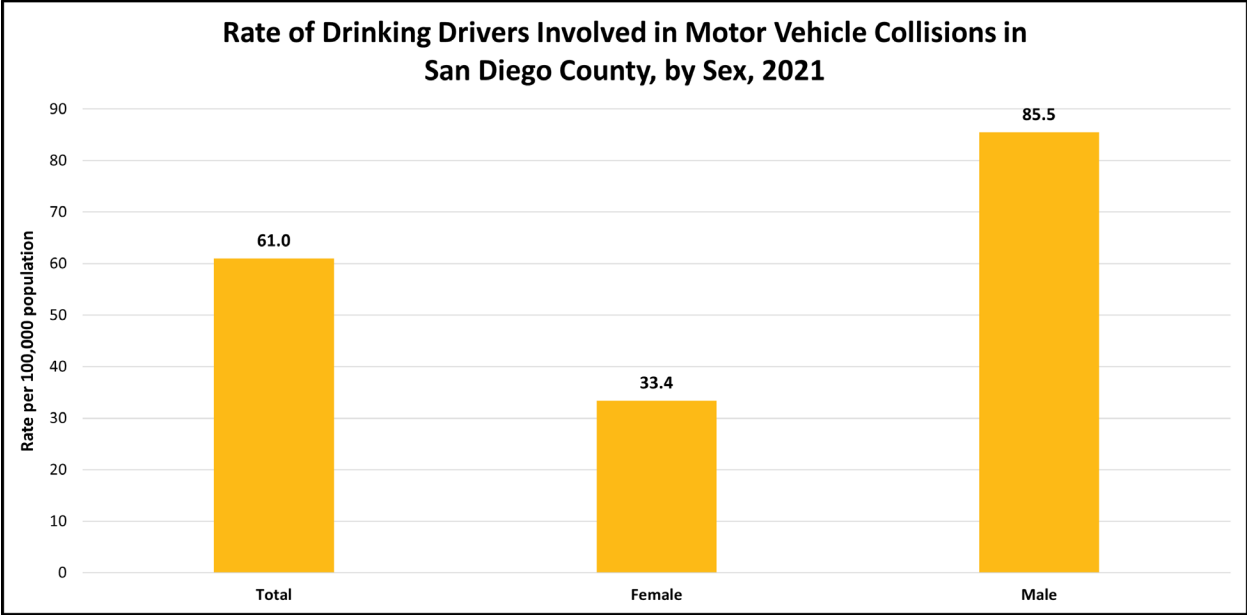


Figure 9. Rate of Drinking Drivers by Sex, 2021.

Alcohol-Involved Injuries

The following section describes the rates of victims injured in alcohol-involved motor vehicle collisions by sex in San Diego County in 2021 (Figure 10).

In 2021, the rate of male victims injured in alcohol involved motor vehicle collisions (106.1 per 100,000) was higher compared to San Diego County overall (85.8 per 100,000) (Figure 10).

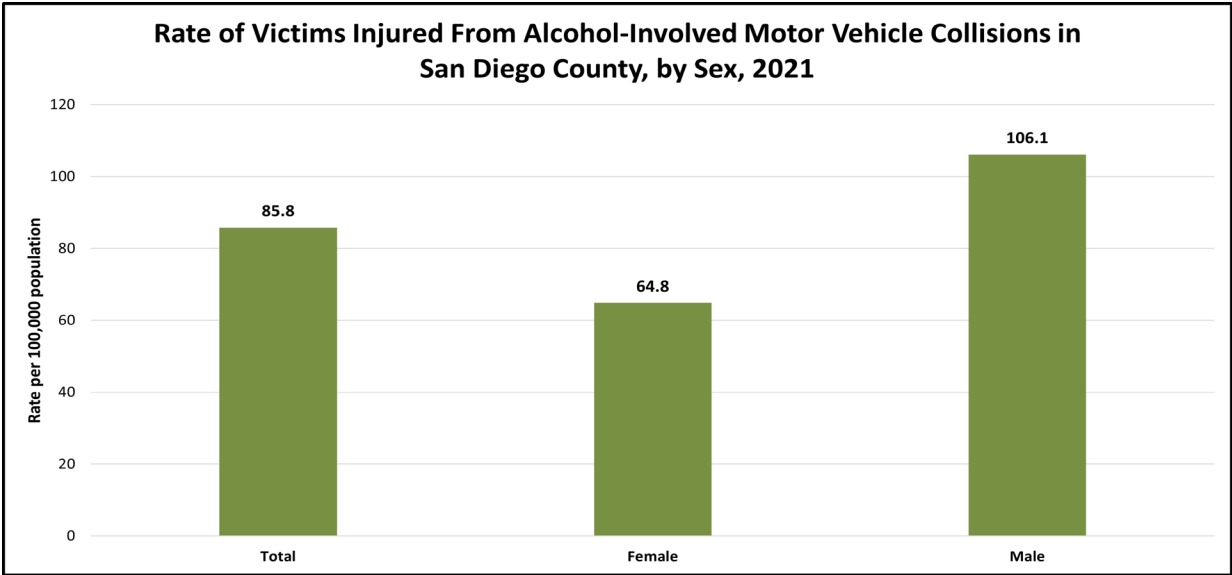


Figure 10. Rate of Alcohol-Involved Injuries by Sex, 2021.

GEOGRAPHY

Rates of motor vehicle injuries in San Diego County’s Regional and Subregional Areas (SRAs) have varied from 2020-2021.

Total Injuries

The following section describes the rates of total victims injured due to motor vehicle collisions by HHSA Regions and SRAs in San Diego County from 2020-2021 (Figures 11-12) and in 2021 (Figure 13).

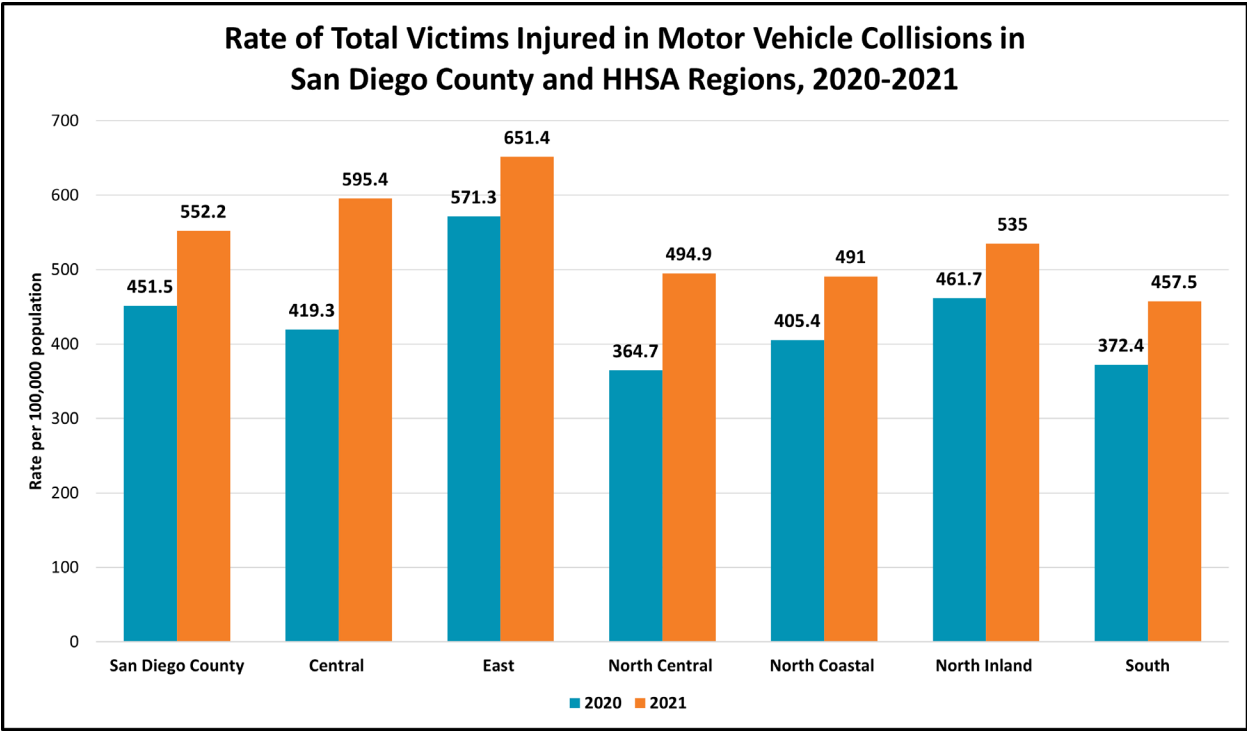


Figure 11. Rate of Total Injuries by HHSA Region, 2020-2021.

The rate of total victims injured in motor vehicle collisions from 2020 to 2021 increased across all HHSA regions and San Diego County (Figure 11). From 2020-2021, East Region had the highest rates of total victims injured due to motor vehicle collisions (571.3 per 100,000 and 651.4 per 100,000, respectively) compared to all other HHSA regions and San Diego County overall. The rates of total victims injured in motor vehicle collisions were the lowest in North Central Region in 2020 (364.7 per 100,000) and South Region in 2021 (457.5 per 100,000) compared to all other HHSA Regions.

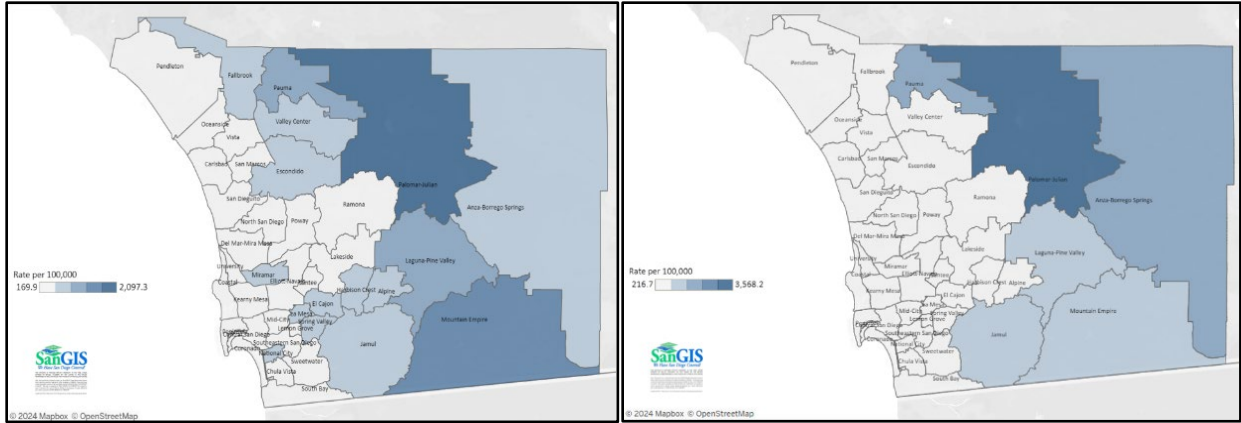


Figure 12. Trends in Motor Vehicle Injury Indicators in San Diego County: Rate of Total Injuries by SRA, 2020 and 2021.

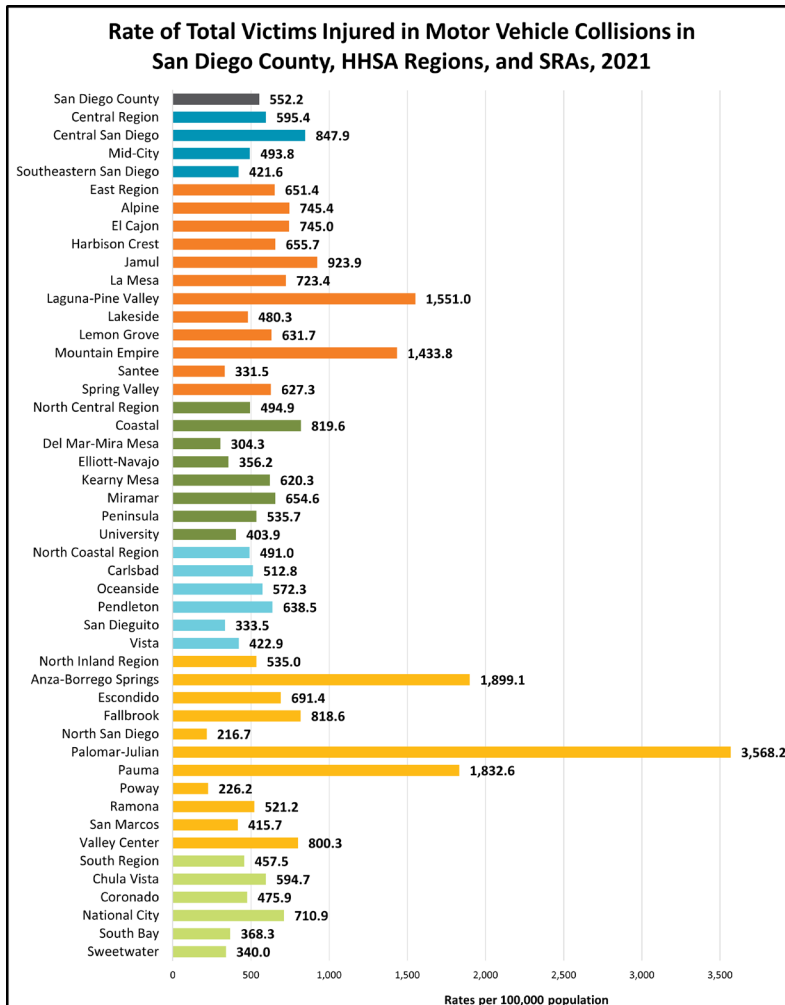


Figure 13. Rate of Total Victims Injured by SRA, 2021.

At the subregional level, Palomar-Julian and Anza-Borrego Springs had the highest rates of total victims injured in motor vehicle collisions (3,568.2 per 100,000 and 1,899.1

per 100,000, respectively), in 2021 (Figure 13). The SRAs with the highest rate of total victims in motor vehicle collisions for every HHSA region are: Central San Diego (847.9 per 100,000) in Central Region, Laguna-Pine Valley (1,551.0 per 100,000) in East Region, Coastal (819.6 per 100,000) in North Central Region, Pendleton (638.5 per 100,000) in North Coastal Region, Palomar-Julian (3,568.2 per 100,000) in North Inland Region, and National City (710.9 per 100,000) in South Region. The three SRAs with the highest total injury rate all belong in North Inland Region. Anza-Borrego Springs more than tripled its rate of total victims injured in motor vehicle collisions, from 595.0 per 100,000 in 2020 (data not shown) to 1,899.1 per 100,000 in 2021. Mountain Empire (12.4% decrease), from East Region, and Miramar (15.5% decrease), from North Central Region, were the only SRAs in their respective regions to have their rates of total injuries decrease from 2020 to 2021.

Pedestrian Injuries

The following section describes the rates of pedestrian injuries due to motor vehicle collisions by HHSA Regions and SRAs in San Diego County from 2020-2021 (Figures 14-15) and in 2021 (Figure 16).

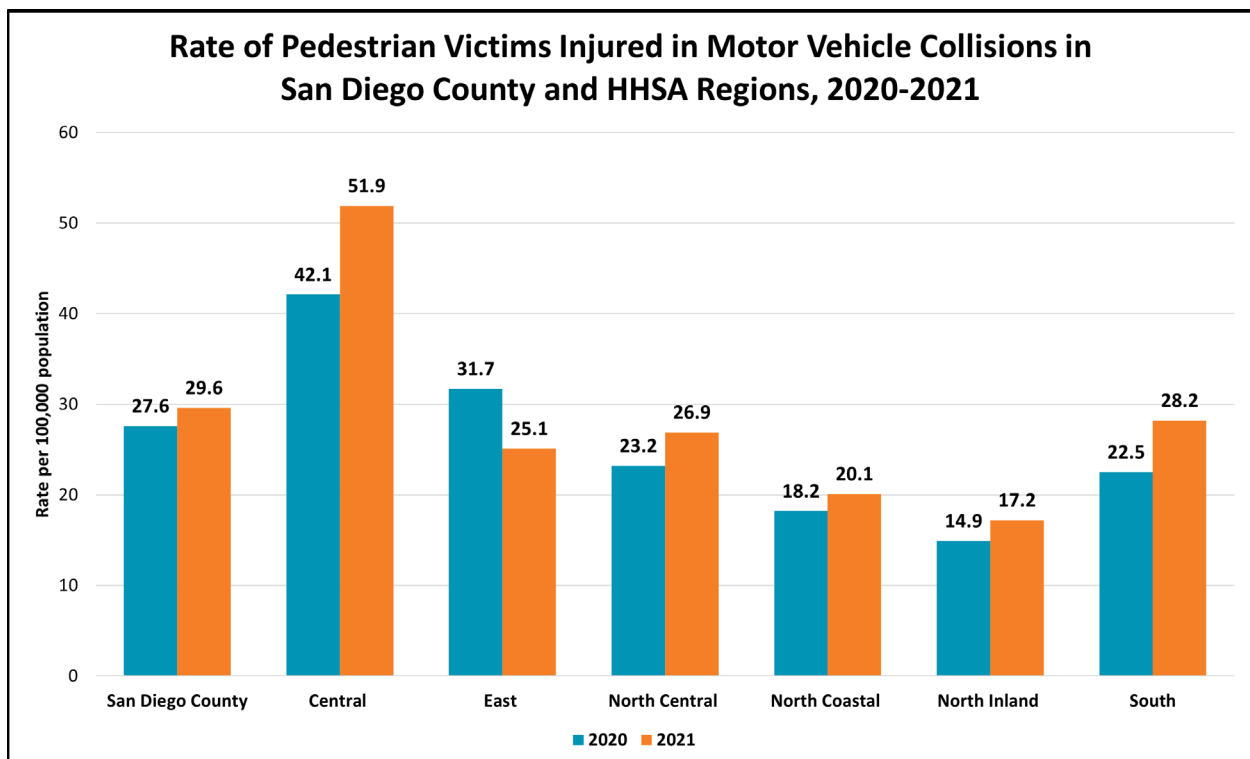


Figure 14. Rate of Pedestrian Injuries by HHSA Region, 2020-2021.

In San Diego County, the rate of pedestrian injuries due to motor vehicle collisions increased among all HHSA regions except East Region (20.8% decrease) (Figure 14).

South Region had the highest percent increase (25.3%) from 2020-2021. Despite a decrease in rate of pedestrian victims injured in motor vehicle collisions, East Region did not have the lowest rate (25.1 per 100,000) in 2021, it was North Inland Region (17.2 per 100,000) followed by North Coastal Region (20.1 per 100,000). In 2020 and 2021, among all HHS Regions, Central Region had the highest rate of pedestrian victims injured in motor vehicle collisions (51.9 per 100,000).

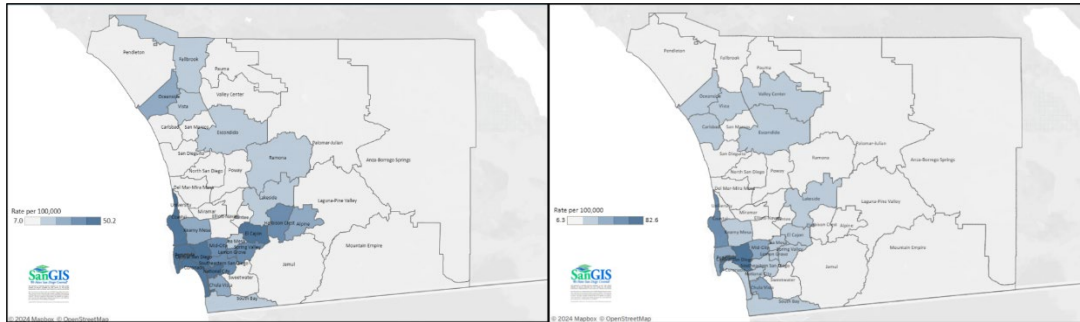


Figure 15. Trends in Motor Vehicle Injury Indicators in San Diego County: Rate of Total Injuries by SRA, 2020 and 2021.

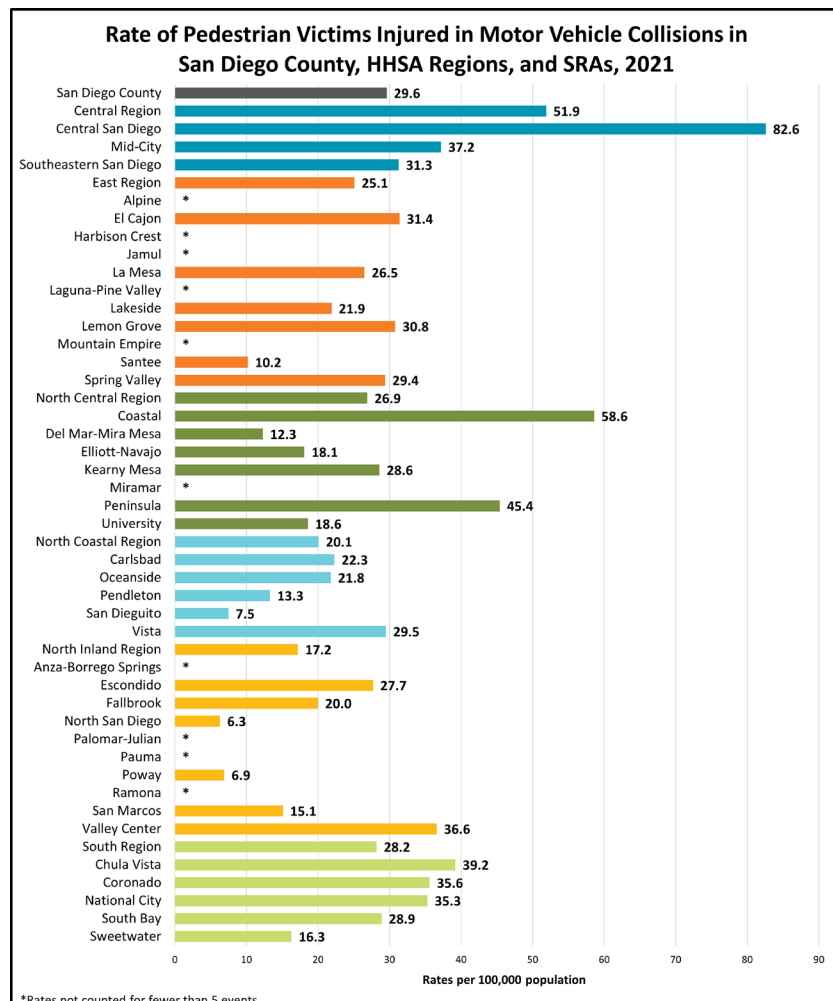


Figure 16. Rate of Pedestrian Injuries by SRA, 2021.

At the subregional level, Central San Diego (82.6 per 100,000) and Coastal (58.6 per 100,000) had the highest rates of pedestrian injuries due to motor vehicle collisions in 2021 (Figure 16). University and Carlsbad increased their rate of pedestrian victims injured in motor vehicle collisions by 113.8% and 112.4%, respectively, from 2020-2021.

Pedalcycle Injuries

The following section describes the rates of pedalcycle injuries due to motor vehicle collisions by HHSA Regions and SRAs in San Diego County from 2020-2021 (Figures 17-18) and in 2021 (Figure 19).

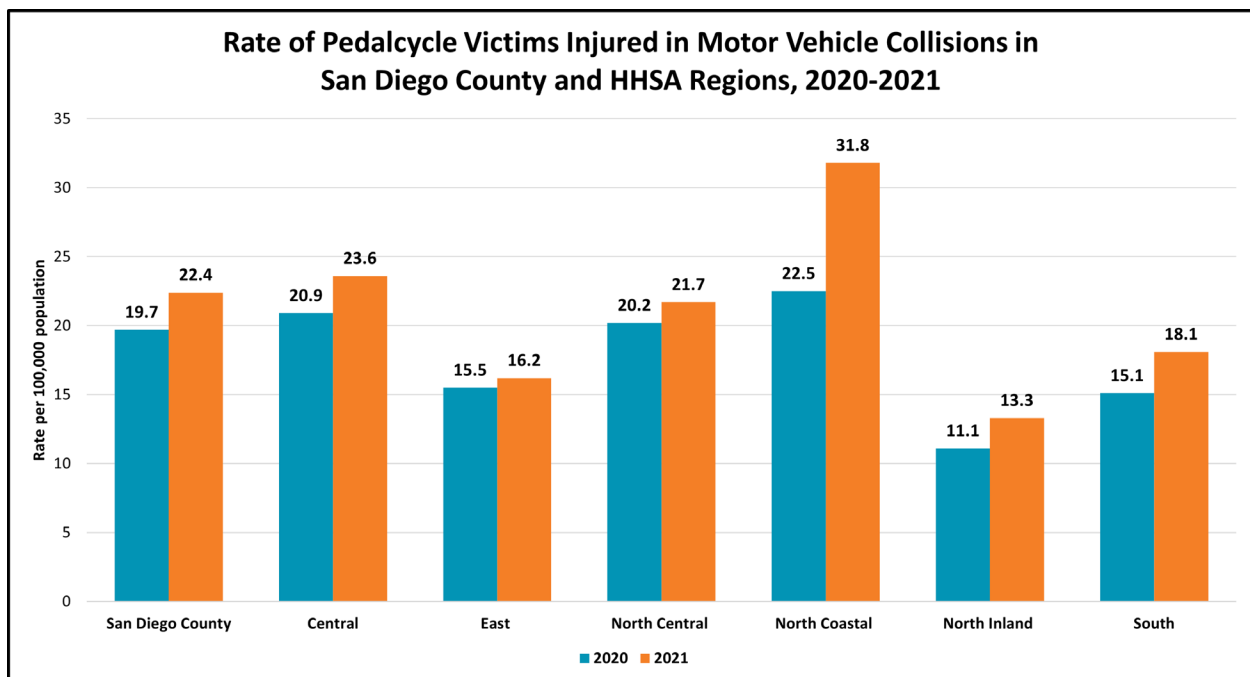


Figure 17. Rate of Pedalcycle Injuries by HHSA Region, 2020-2021.

In all HHSA regions, the rates of pedalcycle injuries due to motor vehicle collisions increased from 2020-2021 (Figure 17). In 2020 and 2021, North Coastal Region had the highest rate of pedalcycle injuries due to motor vehicle collisions (22.5 per 100,000 and 31.8 per 100,000, respectively) and the highest increase from 2020 to 2021 (41.3%). Among the HHSA regions, the greatest decrease in the rate of pedalcycle injuries due to motor vehicle collisions among male victims was in North Central Region (48.7%), followed by East Region (35.6%). Among female victims, the greatest decrease in the rate of pedalcycle injuries due to motor vehicle collisions was also in North Central Region (60.4%), followed by North Inland Region (50.9%).

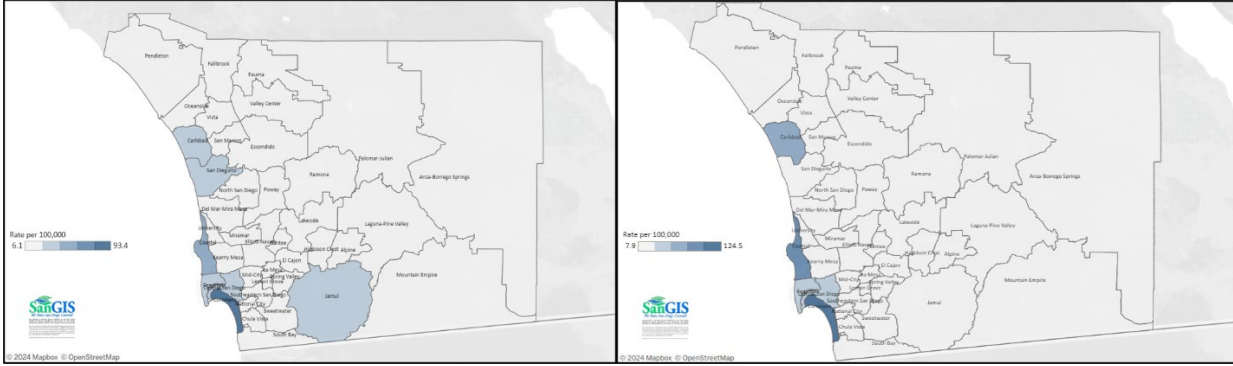


Figure 18. Trends in Motor Vehicle Injury Indicators in San Diego County: Rate of Pedalcycle Injuries by SRA, 2020 and 2021.

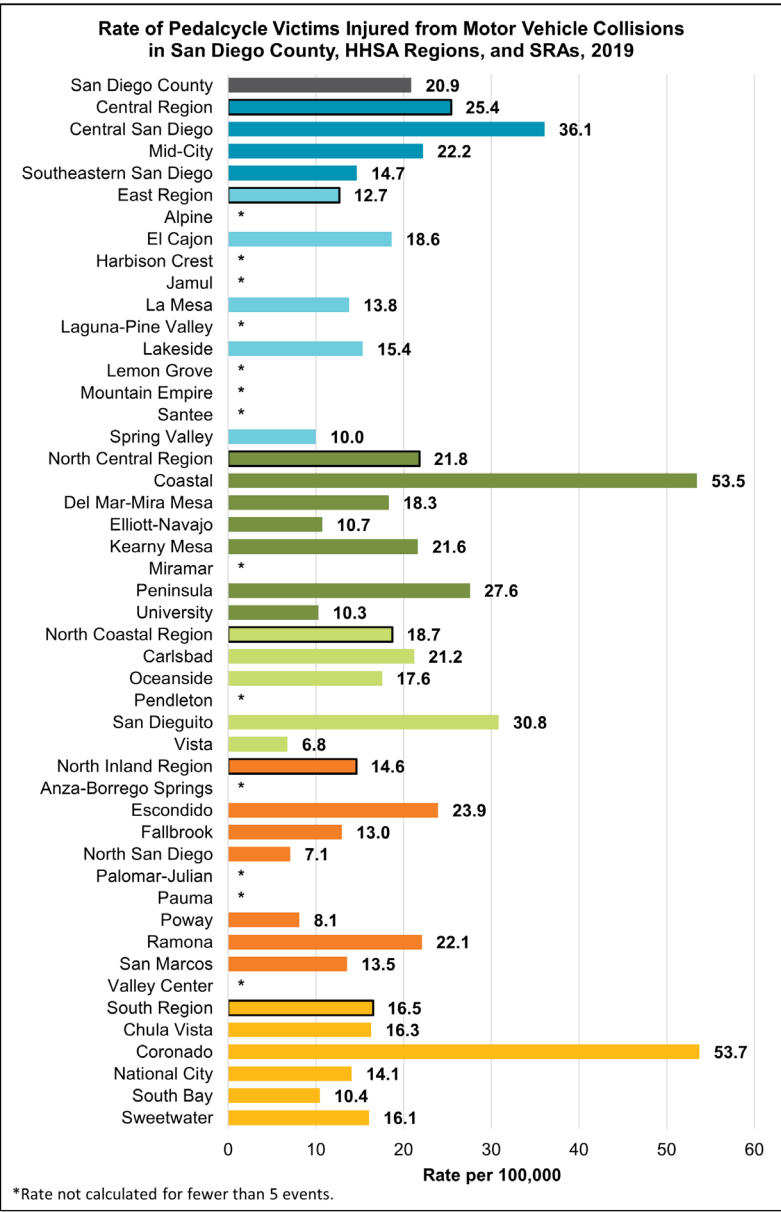


Figure 19. Rate of Pedalcycle Injuries by SRA, 2021.

Compared to other HHSA Regions, East Region and North Inland Region generally had the lowest rates of pedalcycle injuries due to motor vehicle collisions in 2021 (Figure 19). At the subregional level, Coronado and Coastal had the highest rates of pedalcycle injuries due to motor vehicle collisions in 2021. In 2021, the rate of pedalcycle injuries in Coronado was nearly 7 times the rate of South Region, and the rate of pedalcycle injuries in Coastal was about 3.7 times the rate of North Central Region. South Bay was the only SRA in South Region whose rate decreased by 17.5% from 2020 to 2021.

Drinking Drivers

The following section describes the rates of drinking drivers involved in motor vehicle injury collisions by HHSA Regions and SRAs in San Diego County from 2020-2021 (Figures 20-21) and in 2021 (Figure 22).

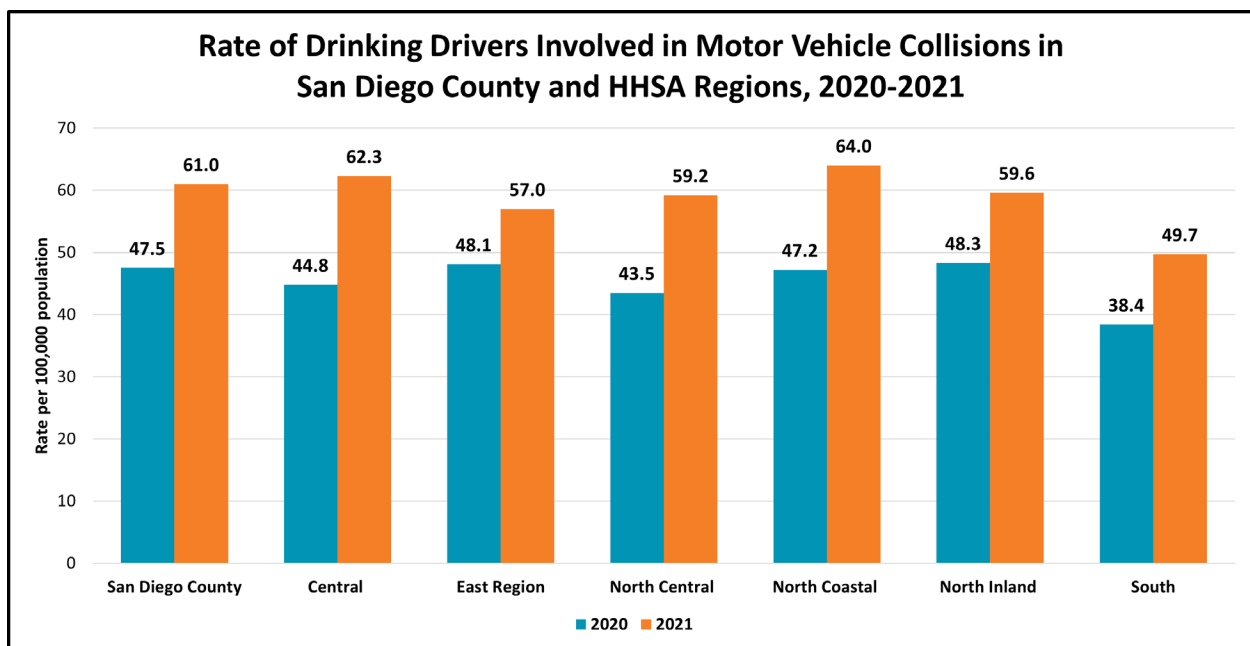


Figure 20. Rate of Drinking Drivers by HHSA Region, 2020-2021.

In San Diego County, the rate of drinking drivers involved in motor vehicle injury collisions increased across all HHSA regions from 2020-2021 (Figure 20). In 2021, North Coastal had the highest rates of drinking drivers involved in motor vehicle injury collisions (64.0 per 100,000), followed closely by Central Region (62.3 per 100,000). Central Region had the highest increase in rates of drinking drivers involved in motor vehicle injury collisions (39.1%) from 2020 to 2021.

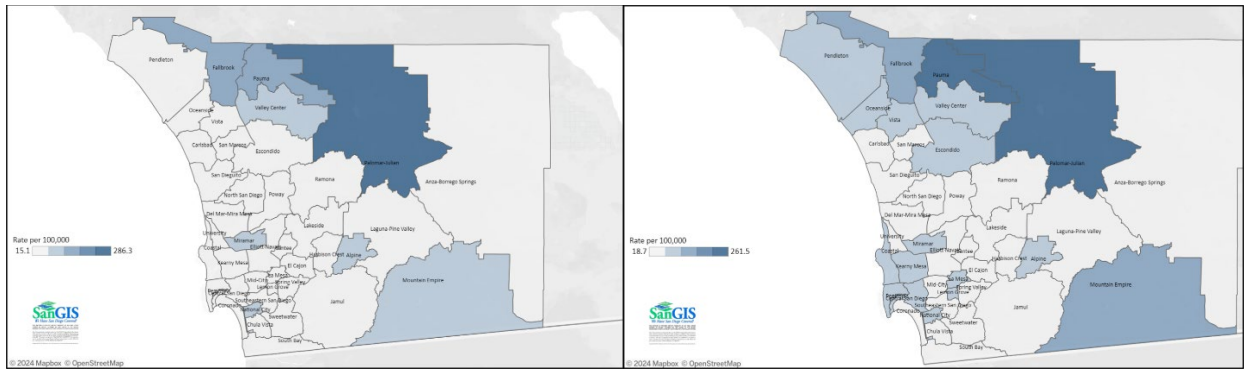


Figure 21. Trends in Motor Vehicle Injury Indicators in San Diego County: Rate of Drinking Drivers by SRA, 2020 and 2021.

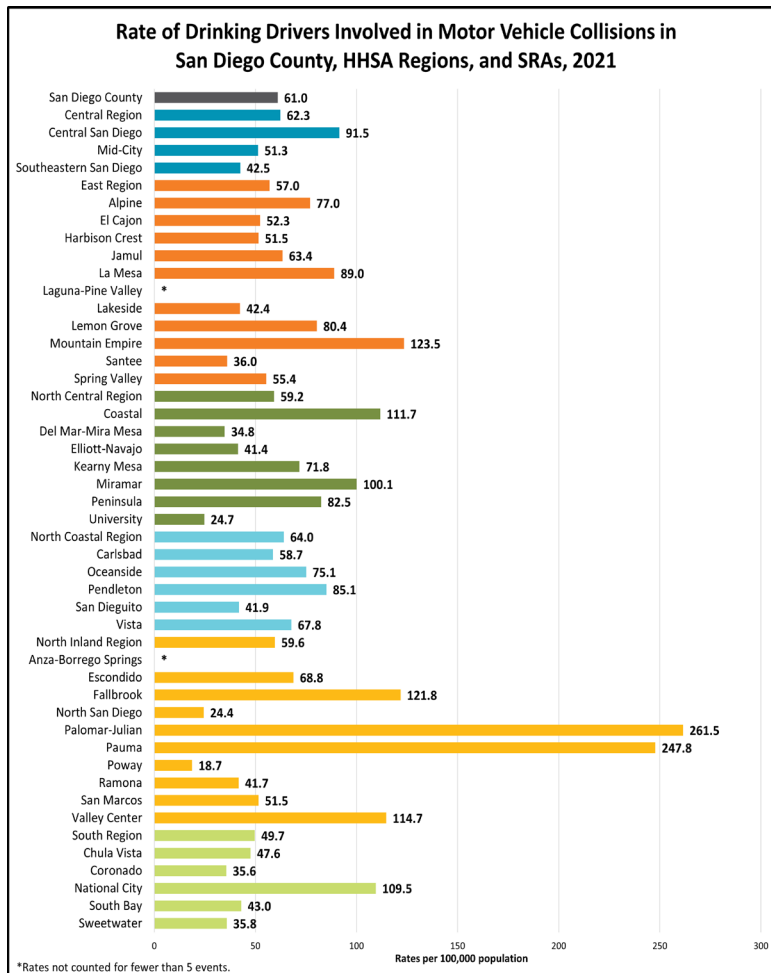


Figure 22. Rate of Drinking Drivers by SRA, 2021.

Overall, from 2020-2021, the rate of drinking drivers involved in motor vehicle collisions in San Diego County increased by 28.4% (Figure 22). Rates increased in all SRAs, with Pendleton in North Coastal Region with the greatest increase (165.9%). Among SRAs in San Diego County, Palomar-Julian and Pauma (261.5 per 100,000 and 247.8 per

100,00, respectively) had the highest rates of drinking drivers involved in motor vehicle collisions in 2021. In 2021, the rate of drinking drivers involved in motor vehicle injury collisions in Palomar-Julian and Pauma was more than 4 times the rate of North Inland Region. In 2021, Poway had the lowest rate of drinking drivers involved in motor vehicle collisions (18.7 per 100,000) among all SRAs.

Alcohol-Involved Injuries

The following section describes the rates of victims injured in alcohol-involved motor vehicle collisions by HHSA Regions and SRAs in San Diego County from 2020-2021 (Figures 23-24) and in 2021 (Figure 25).

In San Diego County, the rate of victims injured from alcohol-involved motor vehicle collisions increased across all HHSA regions, with the highest increase from 2020 to 2021 in Central Region (39%) (Figure 23). In 2020 and 2021, North Coastal Region (72.8 per 100,000 and 91.1 per 100,000, respectively) had the highest rate of victims injured from alcohol-involved motor vehicle collisions among all HHSA regions.

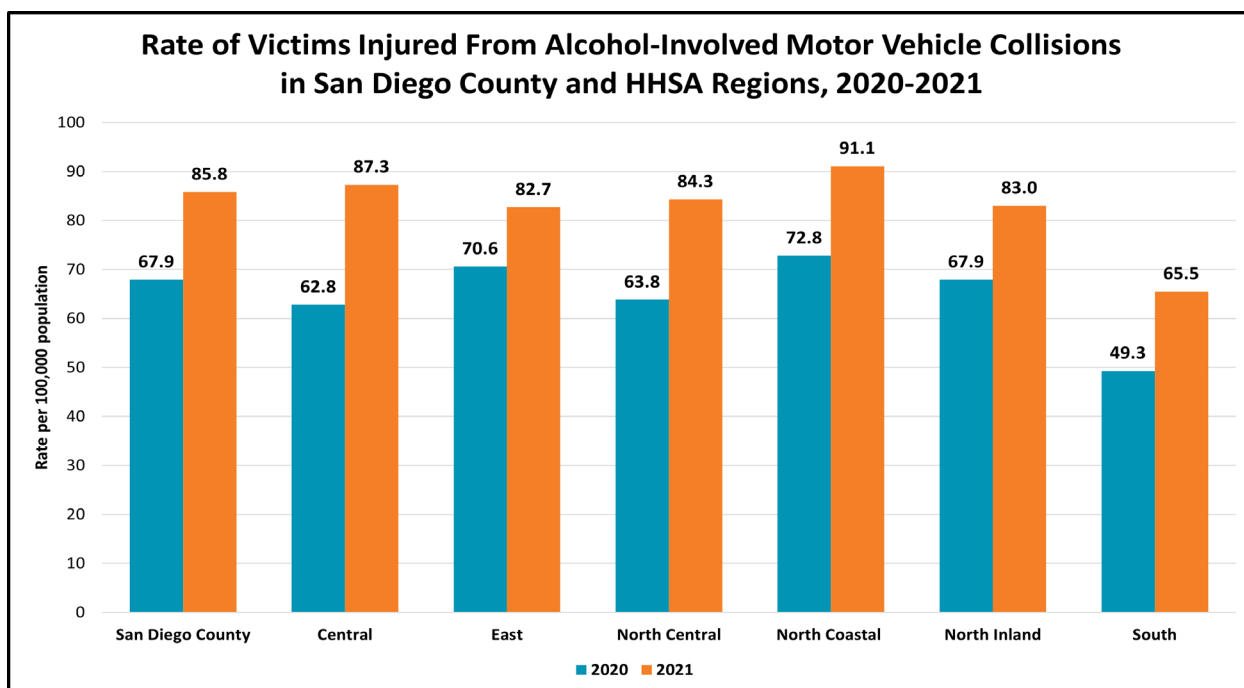


Figure 23. Rate of Alcohol-Involved Injuries by HHSA Region, 2020-2021.

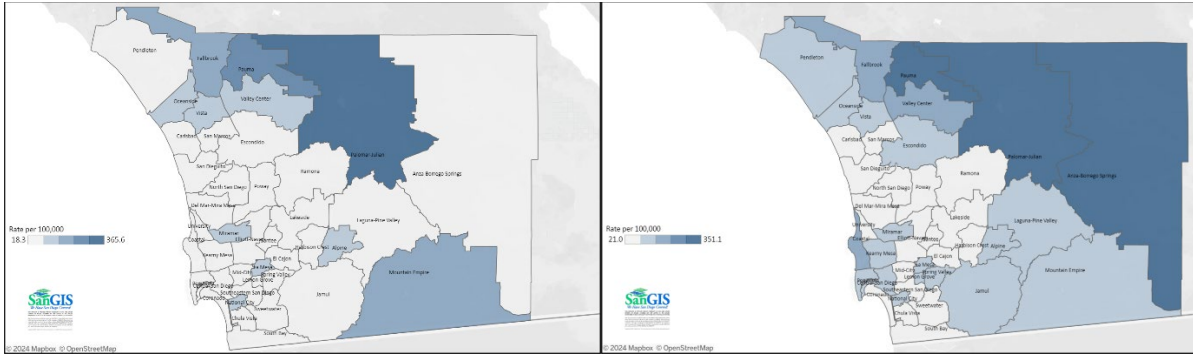


Figure 24. Trends in Motor Vehicle Injury Indicators in San Diego County: Rate of Alcohol-Involved Injuries by SRA, 2020 and 2021.

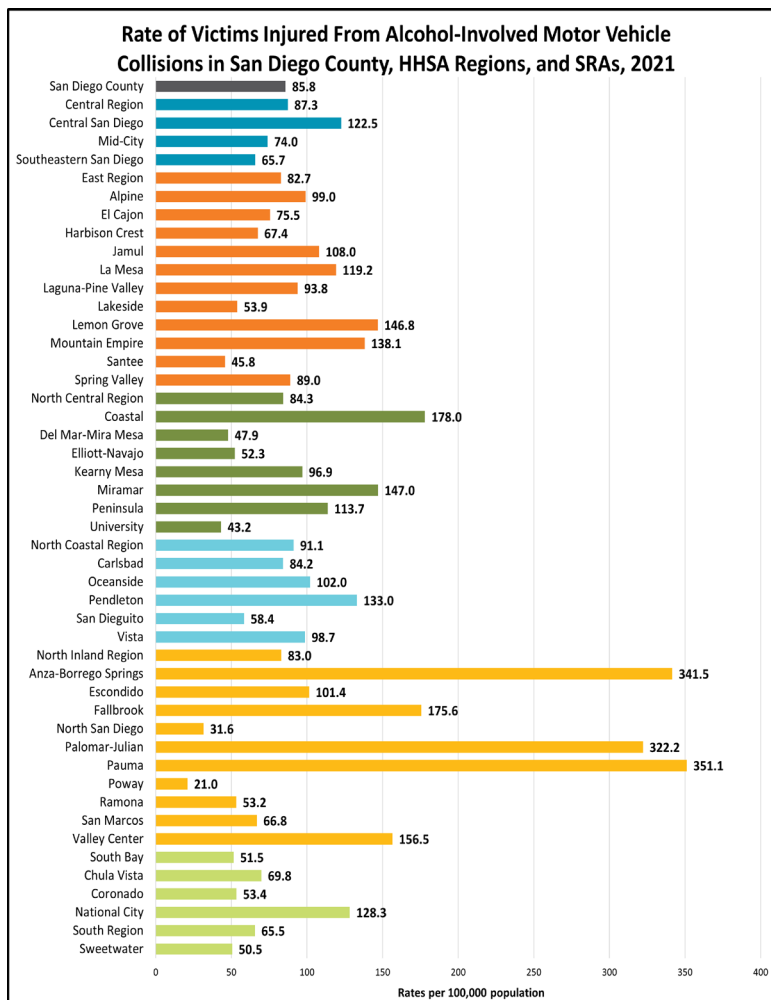


Figure 25. Rate of Drinking Drivers by SRA, 2021.

In 2021, the highest rates of victims injured from alcohol-involved motor vehicle collisions among SRAs were in North Inland Region (Figure 25). Anza-Borrego Springs (341.5 per 100,000), Palomar-Julian (322.2 per 100,000), and Pauma (351.1 per 100,000) were the three SRAs with the highest rates of victims injured from alcohol-

involved motor vehicle collisions among subregional areas. North San Diego (31.6 per 100,000) and Poway (21.0 per 100,000) had the lowest rates of victims injured from alcohol-involved motor vehicle collisions among subregional areas. These SRAs all fall under North Inland Region. Among all SRAs, Pendleton saw the highest increase in rate of victims injured in alcohol-involved motor vehicle collisions from 2020 to 2021 (153.3%).

CONCLUSION

In San Diego County and all its geographic areas, the rates of motor vehicle injuries due to motor vehicle collisions varied by age, sex, and geography from 2020-2021. Rates of victims and drinking drivers involved in motor vehicle injury collisions were higher among age groups 20-29 years and 30-39 years in 2021. In San Diego County, the rates of victims and drinking drivers involved in motor vehicle injury collisions were higher among males compared to females in 2021. Among motor vehicle collisions in HHSA regions, East Region had the highest rates of total injuries and alcohol-involved injuries, while Central Region had the highest rates of pedestrian injuries in 2021. North Coastal Region had the highest rates of pedalcycle victims and drinking drivers involved in motor vehicle injury collisions in 2021. Among SRAs in San Diego County, Anza-Borrego Springs, Pauma and Palomar-Julian had the highest rates of total injuries and alcohol-involved injuries due to motor vehicle collisions in 2021. Palomar-Julian and Pauma had the highest rates of drinking drivers involved in motor vehicle collisions in 2021. Moreover, among SRAs in San Diego County, the highest rates of pedestrian injuries were in Central San Diego and Coastal, while the highest rates of pedalcycle injuries were in Coastal and Coronado in 2021. Further research is needed to understand why injury rates due to motor vehicle collisions vary by age, sex, and geography. However, there are steps that can be taken to prevent motor vehicle injuries.

PREVENTION

Roads throughout San Diego County are shared by cars/trucks, buses, motorcycles, bicyclists, pedestrians, and other travelers for transportation. Motor vehicle collisions can occur at any moment, and the injuries from these accidents can affect all people involved. Prevention strategies can help reduce the number or severity of motor vehicle injuries. The prevention methods presented below offer general transportation safety strategies and strategies for motor vehicle users at higher risk of motor vehicle injuries.

Transportation Safety

Wear seat belts and restraints

- In the event of a collision, wearing a seat belt reduces the risk of serious crash-related injuries and death by about half.⁹
- In 2018, over half of adults aged 25 to 34 who died from a collision were not wearing a seat belt at the time of the crash.¹⁰
- Buckle children into age- and size- appropriate seating:
 - Compared to seat belt use alone, car seats reduce the risk of motor vehicle injury among children by 71.0%-82.0%.^{11,12}
 - Compared to seat belt use alone, booster seats reduce the risk of motor vehicle injury among children 4-8 years old by 45%.¹²
 - Among children 7-8 years old, booster seats can help prevent moderate and serious crash injuries.¹³

Refrain from driving while impaired

- Impaired driving refers to the use of a motor vehicle by someone who is under the influence of alcohol, marijuana and other illicit drugs, or prescription and over-the-counter medications.^{14,15}
- Alcohol-impaired driving is measured as having a Blood Alcohol Concentration (BAC) at or above 0.08%.¹⁵ Although a BAC below 0.08% is not illegal, alcohol-impairment can begin before the legal limit.
 - At a BAC of 0.02%, drivers can experience some loss of judgment and overall relaxation which can result in a decline in visual functions (e.g., rapid tracking of moving targets) and ability to perform two tasks at the same time.¹⁶
 - At a BAC of 0.05%, drivers can experience impaired judgment, loss of small-muscle movements (e.g., focusing eyes), release of inhibition, and lowered alertness which can result in difficulty steering and reduced coordination, ability to track moving objects, and response to emergency situations.¹⁶
- In 2022, over 13,000 people in the United States died during a crash involving an alcohol-impaired driver, accounting for 32% of all deaths due to a motor vehicle collision.¹⁷
- Every 79 seconds, an individual is fatally wounded in an alcohol-impaired motor vehicle collision.¹⁸

Avoid distracted driving

- Distracted driving includes anything that takes the attention away from driving such as sending a text, talking on the phone, using a navigation system, or eating.¹⁹
- In the United States, from 2019-2022, distracted driving resulted in over 3,000 deaths every year.²⁰
- In 2022, about 1 in 5 deaths from crashes involving distracted drivers were victims who were walking or riding their bikes.²⁰

Motor Vehicle Users at Risk

Teenage Drivers

- In the United States, motor vehicle crashes are the leading cause of death among teens.⁶
- Several factors place teens at risk of motor vehicle crashes such as inexperience, nighttime and weekend driving, lack of seat belt use, distracted driving, speeding, and drug/substance use (e.g., alcohol, illicit drugs, medications).²¹⁻²⁵
- Teen drivers between 16-19 years old have the highest risk of motor vehicle crashes and a fatal crash rate more than three times higher than drivers 30-59 years old per mile driven.²³

Older Adult Drivers

- The risk of injury or death from a motor vehicle crash increases with age due to changes in vision, physical functioning, cognition (e.g., reasoning, memory), and physical health (e.g., disease, medication).²⁶
- Per mile traveled, death rates due to motor vehicle collisions begin to noticeably increase among 70-74 year olds, and peak among drivers 85 years and older.²⁷
- Deaths due to crashes are higher among older adults due to their increased vulnerability to injury in the event of a motor vehicle crash.²⁸

Vulnerable Users

Pedestrians

- Urban roads with opportunity for vehicle-pedestrian interaction, nighttime, and impaired driving are settings where most pedestrian deaths occur.²⁹⁻³²
- Pedestrians can take the following actions to increase their safety:³²
 - Make sure to walk across designated crosswalks or intersection.
 - Wear reflective clothing or carry a flashlight when walking at night.

- Walk on sidewalks and path instead of the road.
- Be cautious, predictable, and avoid being under the influence of alcohol or drugs as these may impair judgment and coordination.

Bicyclists

- In the United States in 2022, over 46,000 pedalcyclists were injured and more than 1,000 died from crashes, with most having occurred in urban areas and roadway locations away from intersection.³³
 - About 1 in 3 pedalcycle fatalities occurred at intersections.³³
- About one in three bicyclist deaths occurred from an alcohol-involved crash in 2022.³³
- Bicyclists can take the following actions to increase their safety:³³
 - Always wear a bike helmet that fits.
 - Obey the rules of the road, follow traffic signals, and ride in the designated bike lanes.
 - Wear fluorescent or retro-reflective clothing for better visibility.

Motorcyclists

- In the United States, more than 6,000 motorcyclists in 2022 were killed in a motor vehicle collision, with 5% of those victims being passengers.³⁴
 - Motorcyclists made up 15% of all traffic fatalities.³⁴
- In the event of a motor vehicle crash, wearing a helmet reduces the risk of death by 42% and head injury among motorcyclists by 69.0%.³⁵
- In addition to wearing a helmet, motorcyclists can take the following actions to increase their safety or reduce the severity of injuries from a motor vehicle crash.³⁴
 - Wear protective gear that completely covers arms and legs, ideally from a thick material such as leather, heavy denim, and gloves and ankle-high boots or shoes to protect hands and feet.
 - Wear items with reflective material to increase visibility to other motor vehicle drivers.

RESOURCES

<p>Additional Information</p>	<p>Centers for Disease Control and Prevention (CDC) Transportation Safety</p> <ul style="list-style-type: none"> • Parents Are the Key helps parents guide their teens to become safe drivers. • MyMobility Plan helps older adult drivers assess their mobility. <p>California Highway Patrol (CHP)</p> <ul style="list-style-type: none"> • Programs and Services
<p>Data Sources</p>	<p>Transportation Injury Mapping System (TIMS), Statewide Integrated Traffic Records System (SWITRS)</p>

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