# Bike, Skate and Skateboard Safety Fact Sheet

LAST UPDATED DECEMBER 2021

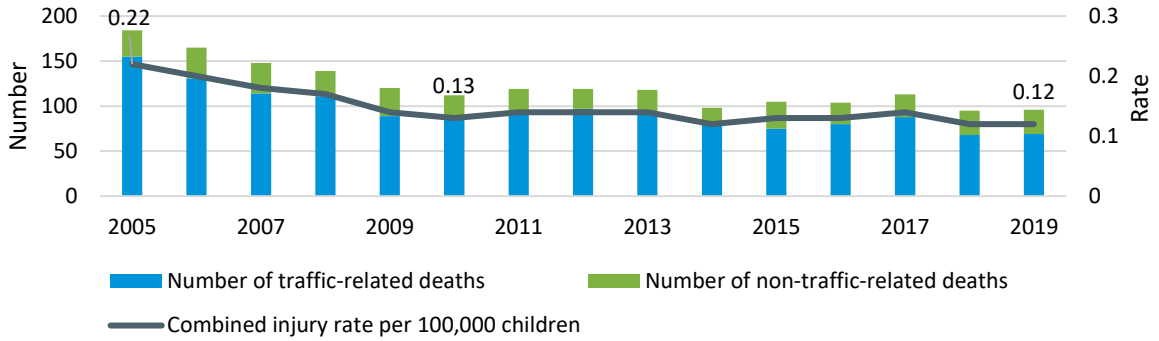
## Nearly 100 children died of injuries while riding a bike in the U.S. in 2019.[1]

This fact sheet focuses on children between the ages of 0 and 19 years in the U.S. who suffered fatal or nonfatal bicycling injuries and nonfatal skate- and skateboard-related* injuries between 2005 and 2019.

## Fatal Injuries

- Ninety-six children were fatally injured while riding a bike in 2019, for a rate of 0.12 per 100,000 children.[1] Sixty-nine (72 percent) of these injuries were traffic-related, while 27 (28 percent) were non-traffic-related fatal injuries. [1]
- Although the rate of fatal bicycling injuries among children decreased by 41 percent between 2005 and 2010, it has remained relatively unchanged since then (Figure 1).[1]
    - The annual number of fatal traffic-related bicycling injuries among children declined by 55 percent between 2005 and 2019 (N=155 and N=69, respectively), while the annual number of non-traffic-related fatal injuries remained relatively unchanged from during that period (N=29 and N=27, respectively).[1]

**Figure 1. Number and Rate of Fatal Bicycle Injuries by Year and Cause, Ages 0-19 Years, 2005–2019**




- The rate of fatal bicycling injury among children ages 5 to 10 decreased by 70 percent from 2005 to 2019 (0.20 and 0.06 per 100,000 children, respectively), while the rate among children ages

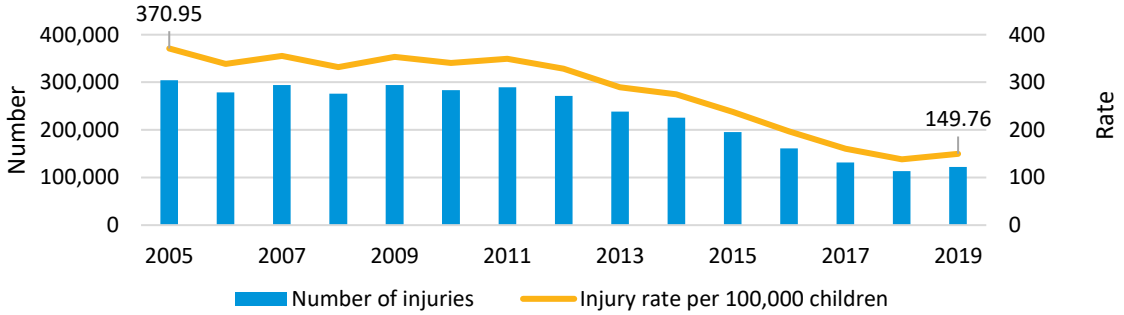
* For the purposes of this fact sheet, skateboard/roller skate-related injuries include injuries related to skateboards (product code 1333), in-line skates (product code 3297) and roller skates (product code 3216). Ice skates (product code 3255) are not included.

10 to 14 declined by 44 percent (0.36 and 0.13 per 100,000 children, respectively). The rates among children ages 0 to 4 years and 15 to 19 years remained relatively unchanged (about 0.02 and 0.25 per 100,000, respectively).

## Nonfatal Injuries

- **Bicycling:** In 2019, it is estimated that more than 122,000 children visited an emergency room (ER) for a nonfatal bicycling injury, for a rate of 149.76 per 100,000. Of those, 93 percent of children were treated and released.[2]
    - The rate of ER visits for nonfatal bicycling injuries among children decreased by 60 percent between 2005 and 2019 (Figure 2).[2]

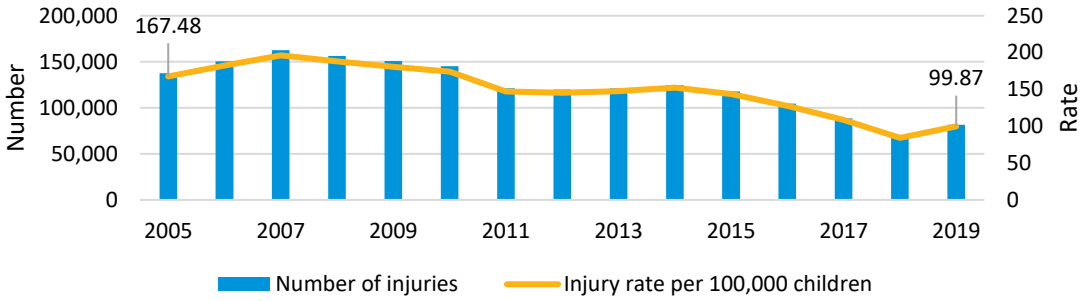
**Figure 2. Number and Rate of Nonfatal Bicycling Injuries by Year Ages 0-19 Years, 2005–2019**




- **Skateboard/Roller Skate-Related:** In 2019, it is estimated that there were more than 54,500 nonfatal skateboard-related injuries and more than 26,500 nonfatal roller skate-related injuries among children that required an ER visit.[3] This corresponds to estimated rates of 67.25 and 32.62 per 100,000 for skateboard- and roller skate-related injuries, respectively.
    - The majority of children who visited the ER for skateboard-related and roller skate-related injuries in 2019 were treated and released (94 percent and 96 percent, respectively).[3]
    - Thirty-six percent of children who visited the ER for a nonfatal skateboard/roller skate-related injury in 2019 were diagnosed with a fracture and 24 percent suffered a concussion.[3] The most common body parts injured were the upper extremities (53 percent), lower extremities (28 percent) and the head/neck (19 percent).[3]

- The estimated rate of ER visits for nonfatal skateboard/roller skate-related injuries among children declined by 40 percent between 2005 and 2019 (Figure 2).

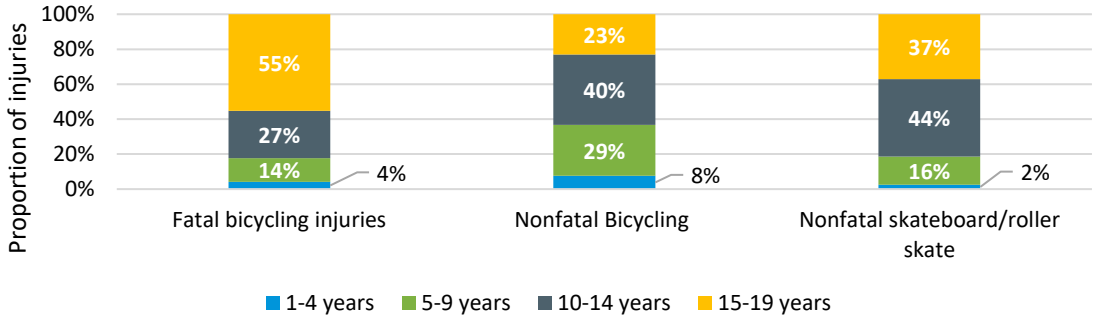
**Figure 3. Number and Rate of Nonfatal Stakeboard/Roller Skate-Related Injuries by Year, Ages 0-19 Years, 2005–2019**




## Risk Factors

- **Age:** Fatal bicycling injuries among children in 2019 varied with age, with the largest proportion (55 percent) occurring among children ages 15 to 19 years (Figure 3).[1] When nonfatal bike and skate/skateboarding injuries are considered, the highest proportions occurred among children ages 10 to 14 (40 percent and 44 percent, respectively).[3]

**Figure 4. Fatal and Nonfatal Bicycling Injuries and Nonfatal Skateboard/Roller Skate-Related Injuries by Age Group, 2019**




- **Sex:** Male children are more likely than female children to suffer both fatal and nonfatal bicycling injuries and nonfatal injuries related to skateboarding or roller skating; in 2019, they accounted for 82 percent of fatal bicycling injuries,[1] 75 percent of nonfatal bicycling injuries[2] and 62 percent of nonfatal skateboard/roller skate-related injuries.[3]

- **Race:** Between 2018 and 2019, the rates of fatal bicycling-related injuries were nearly equal for White and Black/African American children (0.12 and 0.11 per 100,000 children) (rates for other races are unstable due to having 20 or fewer deaths each and are therefore suppressed).[1]
- **Month and Day:** More than 40 percent of fatal bicycling injuries in 2019 occurred between the months of May and July.[3] Sunday had a slightly higher proportion of fatal bicycling injuries (17 percent) compared to the other days of the week.[1]

## Cost of Fatal and Nonfatal Bicycling Injuries †,‡,§

- It is estimated that in 2019 the combined cost of fatal and nonfatal bicycling injuries among children ages 0-19 years in the U.S. in 2019 totaled at least $10.69 billion.[4]
- Fatal bicycling injuries in this age group in 2019 totaled at least $1.52 billion, the vast majority of which (>99 percent) is attributed to the value of statistical life. [4]
- Nonfatal bicycling injuries in 2019 totaled at least $9.17 billion. The majority of these costs (84 percent) were incurred for nonfatal injuries that resulted in emergency department (ED) treatment and release ($7.73 billion) and the remainder of costs were incurred for hospital admissions ($1.44 billion). [4] The 2019 cost estimate for nonfatal injuries made up by combined medical care and work loss cost of $1.40 billion and life quality loss cost of $7.77 billion.[4]

**Table 1. Costs associated with bicycling injuries among children ages 0 to 19 years in 2019**

| Cost | Fatal | Nonfatal | | Combined (row) |
|---|---|---|---|---|
| | | ER Treated and Released | Hospitalization | |
| Medical | $1.67 million | $783.32 million | $377.61 million | **$1.16 billion** |
| Work Loss | -- | $141.50 million | $98.19 million | **$239.69 million** |
| Quality of Life Loss | -- | $6.8 billion | $966.57 million | **$7.77 billion** |
| Value of Statistical Life | $1.52 billion | -- | -- | **$1.52 billion** |
| **Combined (column)** | **$1.52 billion** | **$7.73 billion** | **$1.44 billion** | **$10.69 billion** |

† Cost of injury data unavailable for skateboard and roller skate-related injuries.
‡ Cost of injury data calculated using most recent year of data available within the CDC's Web-based Injury Statistics Query and Reporting System (WISQARS) Cost of Injury Reports application, which includes both traffic-related and non-traffic-related pedal cyclist incidents that were serious enough to require an ED visit. Total combined medical and work loss costs are likely underestimated, as WISQARS cost estimates do not include ED treatment costs for injured children who were hospitalized.
§ The 2019 cost of injuries is more than 6 times as high as comparable estimate in 2013 because of the including the cost of diminished quality of life and mortality cost based on value of statistical life, which represents a value that is approximately 10 times as high as the value attributed to mortality based on foregone employment compensation, which was used in the previous estimate. Accessed December 16, 2021. https://www.cdc.gov/mmwr/volumes/70/wr/mm7048a1.htm

For more information or questions on the information contained in this factsheet, please contact the SKW Research Department via email at: **mchandler@safekids.org**

## References


1. CDC, National Center for Injury Prevention and Control. WISQARS Fatal Injury Reports, National, Regional and State, 1981–2019. https://webappa.cdc.gov/sasweb/ncipc/mortrate.html.
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5. Centers for Disease Control and Prevention. Cost estimates calculated using CDC WISQARS fatal and nonfatal injury reports and cost of injury reports tools, pedal cyclist injuries, children ages 0-19, year 2017. https://wisqars.cdc.gov:8443/costT/ and https://webappa.cdc.gov/sasweb/ncipc/mortrate.html and https://webappa.cdc.gov/sasweb/ncipc/nfirates.html. Accessed March 26, 2020.