Electric scooter and bike accidents are soaring across the US, researchers report

July 23 2024

Credit: CC0 Public Domain

In the crowded urban landscape, where small electric vehicles—primarily scooters and bicycles—have transformed short distance travel, UC San Francisco researchers are reporting a major national surge in accidents tied to "micromobility."

The researchers analyzed injuries and hospitalizations from electric bicycles, electric scooters, conventional bicycles and conventional scooters. The study, which appears July 23 in *JAMA Network Open*, is believed to be the first investigation into recent injury patterns in the U.S.

E-bicycle injuries doubled every year from 2017 to 2022, while e-scooter injuries rose by 45%. Injured e-riders tended to be slightly older and wore helmets less often than conventional riders. And e-scooter riders were more likely to sustain internal injuries than conventional scooter riders, while upper extremity injuries were more common among non-EV riders.

"The U.S. had a remarkable increase in micromobility injuries during the study period," said co-lead author Adrian Fernandez, MD, chief resident with the UCSF Department of Urology.

"This increase in accidents not only introduced a demographic shift, but also underscores an urgent need for added safety measures. There are undeniable health and environmental benefits to micromobility vehicle use, but structural changes must be taken to promote safe riding."

Reshaping urban transportation

Micromobility, the use of small vehicles for one or two passengers, has surged 50-fold over the last decade, especially in dense areas with the introduction of electric-powered motors and ride-sharing platforms. The low-cost, low-emission scooters and bicycles can travel up to 28 miles an hour, are convenient, affordable, reduce congestion and allow riders to cover more distance with less effort.

But increasingly, vehicles are proving to be dangerous, especially in the hands of novices.

The researchers analyzed data from the U.S. Consumer Product Safety Commission's National Electronic Injury Surveillance System, which has collected statistics from emergency departments on consumer product-related injuries since 1978. They looked at such factors as injury type (blunt, orthopedic, neurological, dental), injury region (head, neck, trunk, extremities) and helmet use.

They found that e-bicycle injuries dramatically increased from 751 in 2017 to 23,493 in 2022, and e-scooter injuries rose from 8,566 to 56,847 over that timeframe. Altogether, there were nearly 2.5 million bicycle injuries, more than 304,000 scooter injuries, 45,586 e-bicycle injuries, and some 189,517 e-scooter injuries in the U.S.

Both conventional and electric bike and scooter injuries were more common in urban settings. Electric bike and scooter riders were older and more likely to participate in risky behaviors, such as riding while intoxicated and without a helmet, than conventional vehicle riders. The median age was 39 years old for injured e-bicyclists, compared to 30 for injured conventional bikers. The median age for e-scooter riders was 30 compared to 11 for conventional scooter riders.

"Our findings stress a concerning trend: helmet usage is noticeably lower among electric vehicle users, and risky behaviors, such as riding under the influence, are more prevalent," said co-first author Kevin D. Li, a 2025 dual candidate pursuing medical and master's degrees at UCSF.

The authors urged a multifaceted response, including better infrastructure in urban areas to accommodate the small vehicles, and education campaigns that promote helmet use and sober riding.

"As micromobility vehicles become more embedded in our daily lives, understanding and addressing the safety challenges they pose is critical," said senior and corresponding author Benjamin N. Breyer, MD, MAS,

the Taube Family Distinguished Professor and chair of the UCSF Department of Urology, and a member of the UCSF Department of Epidemiology and Biostatistics.

"This not only involves adapting our urban landscapes but also fostering a culture of safety among riders," Breyer said. "By doing so, we can harness the full potential of micromobility to create more sustainable, healthy, and safe urban environments."

More information: *JAMA Network Open* (2024). jamanetwork.com/journals/jaman … tworkopen.2024.24131

Provided by University of California, San Francisco