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Most e-scooter rider injuries happen on sidewalk, study finds

ARLINGTON, Va. — City planners and many pedestrians have wondered how to get electric scooters off the sidewalk, but two new studies from the Insurance Institute for Highway Safety raise a different question: Just where *should* e-scooters be ridden?

“We didn’t see many e-scooter crashes with motor vehicles, and that may be a result of riders sticking mostly to the sidewalk,” says Jessica Cicchino, IIHS vice president for research and the lead author of the studies. “On the other hand, there are legitimate concerns that sidewalk riders could crash into pedestrians.”

Already, many cities have enacted restrictions limiting e-scooter use on sidewalks or ordinances barring them from pedestrian areas altogether. Neighborhood associations and advocacy groups like the National Disability Rights Network have also pushed for more stringent regulations.

To explore how e-scooters are affecting road safety, IIHS researchers interviewed more than 100 e-scooter riders whose injuries brought them to the emergency room at George Washington University Hospital in Washington, D.C., between March and November 2019. One study examined how the severity of their injuries varied according to where and how they were injured. A second one compared the rider demographics, usage patterns and injuries to those of 377 bicyclists who were interviewed as part of an earlier study.

Broadly speaking, the researchers found that e-scooter riders suffered injuries more frequently per mile traveled than bicyclists, but bicyclists were 3 times as likely as scooter riders to be hit by motor vehicles. In contrast, e-scooter riders were twice as likely as bicyclists to get injured because of a pothole or crack in the pavement or other infrastructure like a signpost or curb.

“When you’re riding a bicycle, because you’re sitting down, you can do a lot with your legs,” says 45-year-old Eze Amos of Charlottesville, Va., who recently switched from an e-scooter to an electric bike. “If you break suddenly with a scooter, you will fly off it. If there’s a little hole in the road, you will fly off it.”

Nearly 3 out of 5 e-scooter riders were injured riding on the sidewalk — and about a third of these riders got those injuries in places where sidewalk riding is prohibited. Only about 1 out of 5 was injured riding in the bike lane, multiuse trail or other off-road location.

Only about a quarter of the injured scooter riders were commuting to work. The rest were running errands or riding for fun or a social trip, like 23-year-old Kavita Kothari, who used shared e-scooters on trips to D.C. while she was a student at the University of Maryland. She and her friends typically rode on the sidewalk.

“We used the bike lane when one was available,” she says. “But I personally don’t feel safe riding a scooter in the middle of traffic.”



Past research has shown that most e-scooter riders prefer the bike lane overall, and the Institute found that one was rarely available in the instances in which riders were injured in the road or sidewalk. Moreover, riding alongside pedestrians may not be sustainable as usage continues to expand.

E-scooter companies like Bird, Lime, Lyft and Uber have seen ridership soar over the past several years, as urban planners and environmentalists seek to encourage micromobility and eliminate short car trips that contribute to greenhouse gas emissions. Shared e-scooters logged 86 million trips in the U.S. in 2019. Though e-scooter programs stalled as COVID-19 began, that number may grow as the pandemic grinds on and commuters look for socially distanced alternatives to the bus and subway.

At the same time, e-scooter riders may find they aren't entirely welcome on any part of their city's transportation network. Posters in bike forums sometimes complain about slow scooters in the bike lane, while some city administrators are struggling to get e-scooter riders off the sidewalk or force them to go even slower.

Operators were required to cap the top speed of e-scooters at 10 mph in D.C. beginning in January 2019, and sidewalk riding is prohibited in certain areas downtown. Cities like Denver and San Antonio have banned e-scooters from the sidewalks altogether, and other administrators have contracted with e-scooter companies to keep them off the sidewalk or control their speeds. But that could be a trade-off where safety is concerned.

"The picture is still not clear when it comes to where scooters should be ridden," says Cicchino. "Our results suggest that moving scooters off the sidewalk could put riders at risk of more severe injuries, but as things stand they might be suffering these lesser injuries more often."

The e-scooter riders who were hurt riding in motor vehicle travel lanes were more likely to sustain moderately severe injuries than those hurt riding on sidewalks, bike lanes or multiuse trails. Moving vehicles accounted for only 13 percent of the injuries to e-scooter riders, compared with 40 percent for bicycles.

Despite the prevalence of sidewalk riding, only six nonriders came to the emergency room with injuries caused by e-scooters during the study period. Four of them were pedestrians or bicyclists who fell tripping over, hitting or trying to avoid an e-scooter that wasn't in use.

Bicyclists and e-scooter riders sustained different kinds of injuries, but they were mostly of similar severity.

About 60 percent of both groups sustained minor injuries and 9 percent in each group were admitted to the hospital. E-scooter riders treated in the emergency room suffered concussions with loss of consciousness and skull fractures more often than bicyclists. Only 2 percent of the injured e-scooter riders reported wearing a helmet, compared with 66 percent of bicyclists treated in the emergency room. One likely explanation is that most e-scooters are shared, and using one is often a spontaneous decision.

"I would probably never carry a helmet, because I don't ride (e-scooters) that often," explains D.C. resident Jessica Ruf, 24. "If they provided one, I probably wouldn't use it because of hygiene."

Scooter usage may continue to grow rapidly for quite some time, but some of the minor injuries suffered by riders may also disappear as the market matures. Nearly 40 percent of the interview subjects were injured on their very first ride. In contrast, among the bicyclists interviewed in the emergency room, 80 percent said they cycle most days of the week during their main riding season.

"Inexperience increases crash risk for virtually every form of transportation," says Cicchino.

For more information, go to [iihs.org](https://www.iihs.org)

The Insurance Institute for Highway Safety (IIHS) is an independent, nonprofit scientific and educational organization dedicated to reducing the losses — deaths, injuries and property damage — from motor vehicle crashes. IIHS is wholly supported by auto insurers.

