

Electric scooter–related injuries are becoming more frequent and costly

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The introduction of publicly shared electric scooters ("e-scooters") in Denver, Colorado has resulted in a steady increase in injuries and hospital admissions, according to research led by Alexander Lauder, MD, an orthopedic surgeon at Denver Health Medical Center. The [findings](#) are presented in *Clinical Orthopaedics and Related Research (CORR)*.

"International reports corroborate similar trends with increased scooter use and rates of associated injury," Dr. Lauder's team writes. "This may result from amplified availability of e-scooter use without thorough or comprehensive legislative regulation."

Most injuries related to e-scooters occur late at night and on the weekends

In July 2018, Denver launched a Dockless Mobility Program, which provides [e-scooters](#) for public use. A study at Denver Health Medical Center, published in 2022 in the *Journal of the American Academy of Orthopaedic Surgeons*, determined that in the first 18 months after the introduction of publicly shared scooters, 197 patients came to Denver Health with associated injuries, compared with 23 patients who came there with e-scooter injuries between August 1, 2016 and February 1, 2018. The need for [hospital admissions](#) increased from 11% of [injured patients](#) to 62%.

In the new study in *CORR*, the same research team looked back to see

how many people of any age came to Denver Health with e-scooter injuries between January 1, 2020, and November 1, 2023. They identified 2,424 patients: 273 injured in 2020, 736 in 2021, 758 in 2022, and 657 in 2023 (only 10 months studied). The average number of patients injured each year was 131 in the older study and 619 in the new study, about a 4.75-fold increase.

The median patient age was 30 and 58% were men. Among these patients, 30% percent of all injuries were orthopedic, such as fractures. 44% of injuries occurred on Saturday or Sunday, and 45% occurred during nighttime hours (7 PM to 3 AM). In total, 12% of all patients and 16% of patients with orthopedic injuries had to be admitted to the hospital.

Hospital charges for e-scooter injuries varied with type, timing

From 2020 to 2023, total hospital charges for e-scooter injuries averaged \$10.4 million per year. The median hospital charge per patient was:

- Patients with an orthopedic injury—\$8,077 vs. \$7,075 for patients overall
- Patients injured during nighttime hours—\$10,459 vs. \$4,973 for patients injured in the morning and \$4,871 for patients injured in the middle of the day (these differences were statistically significant)
- Patients injured while intoxicated—\$13,404 vs. \$6,132 for patients injured when not intoxicated (this difference was statistically significant)

Strategies are needed to reduce injuries related to e-scooters

Dr. Lauder and his co-authors note that in Denver, e-scooter riders "are permitted to operate e-scooters without specific licensing, share roads with [motor vehicles](#) using the bike lane, proceed through [stop signs](#) without stopping, and continue through red lights after a brief stop once the user assesses it to be 'safe' to do so."

"Additionally, some states have eliminated the need for [safety precautions](#) such as helmet use," the group continues. "According to e-scooter riders, the road traffic legislature currently guiding e-scooter operation is inadequate and often misunderstood. These reports demonstrate the need for increased public awareness, clarification of current traffic laws, and public safety initiatives that address the dangers of e-scooter use."

One potential approach, the authors note, would be to restrict e-scooter use at night and on weekends, the periods of peak injury.

More information: Riley Kahan et al, Electric Scooter–related Injuries Are Becoming More Frequent and Costly in Denver, CO, *Clinical Orthopaedics & Related Research* (2024). [DOI: 10.1097/CORR.0000000000003212](#)

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