

# **Pedestrian injuries from falls versus motor vehicle collisions: Are we lacking critical policy and interventions?**

January 31 2024

---



Credit: Pixabay/CC0 Public Domain

Using Emergency Medical Services (EMS) data, researchers at Columbia University Mailman School of Public Health have compared the national burden of pedestrian injuries from motor vehicles to that of pedestrian falls occurring on streets and sidewalks, and found that the probability of a pedestrian suffering a severe injury is higher for motor vehicle collisions as compared to falls. Yet, the public health burden of the number of pedestrians injured from a fall—severe or otherwise—is significantly higher compared to the number of pedestrians injured by a motor vehicle collision. This is particularly true for individuals 50 years of age or older.

The results of this work are [published](#) in the *Journal of Urban Health*.

"There has been substantial and appropriate policy attention given to preventing [pedestrian](#) injuries from motor vehicles. But the population burden of injurious pedestrian falls is greater than that from pedestrians injured by motor vehicles and justifies an increased focus on outdoor falls prevention," said Andrew Rundle, DrPH, professor of epidemiology, Columbia Mailman School. "With the vast majority of injury occurring in urban spaces, this suggests that [urban design](#), policy, and built environment interventions are important tools for reducing pedestrian fall related morbidity and are much needed compared to what currently exists in the U.S."

Thirty-two percent of pedestrians struck by motor vehicles were classified as having an Emergent or Critical condition by the EMS clinician, while 19% of pedestrians injured by falls were similarly recorded. However, the number of pedestrian fall-patients who were classified as having an Emergent or Critical condition was twice as high as the number of pedestrians injured by motor vehicles who had an Emergent or Critical injuries. Among pedestrians age 50 years or older, the number of pedestrians whose condition was coded as Emergent or Critical was 3.9 times as high for injurious falls as compared with

pedestrians-motor vehicle collisions.

"The overall number of older pedestrians who fell and required EMS responses is alarming, especially the proportion determined to have critical and life-threatening injuries on scene by EMS," noted co-author Alexander Lo, MD, associate professor of Emergency Medicine, at the Feinberg School of Medicine, Northwestern University.

Until now, pedestrian injuries from falls have been an understudied cause of morbidity with little focus on interventions to prevent injurious pedestrian falls that occur on streets and sidewalks. Classical falls prevention guidelines from organizations such as the American Geriatric Society and the Society of Orthopedic Surgeons among other agencies, have focused on in-home falls and person-level factors, and omitted the environment beyond the individual's home.

The researchers analyzed data from Emergency Medical Services response records with pedestrian and incident characteristics, identified in the 2019 National Emergency Medical Services Information System database, the most recent NEMSIS dataset available prior to the COVID-19 pandemic. The largest repository of EMS records in the U.S., it contains data for more than 34 million events from over 10,000 EMS agencies, including data on injurious falls, and includes information on the severity of the injuries, the medical disposition of these patients, and sociodemographic characteristics of the patients.

"Our objective was to use a single national data collection system, NEMSIS, to compare the burden of pedestrian injuries from motor vehicles to that of pedestrian falls occurring on streets and sidewalks that resulted in an EMS encounter," noted Rundle. Among the EMS encounters, 118,520 pedestrian falls and 33,915 pedestrian-[motor vehicle collisions](#) were identified within the dataset.

Whether falls are associated with a previous disease or injury, they are nonetheless associated with significant numbers of ED visits and hospitalizations and subsequent decline in functional status—all strong predictors for future falls and consequently, future hospitalizations, both of which hasten the decline in mobility or function, according to Lo.

"There has been much less policy attention given to the public health issue of pedestrian falls than to preventing pedestrian injuries from [motor vehicles](#)," observed Rundle. "We argue that this likely arises from differences in who is responsible for—and who pays for—sidewalk (property owners) and road (local government) maintenance. We also note a lack of robust surveillance systems for monitoring pedestrian falls occurring on sidewalks. And without such systems, it is difficult to understand the burden of falls and motivate the development of prevention programs or prioritize interventions programs to high-risk areas."

"Creating urban environments that support the health and engagement of older persons is becoming increasingly important as populations age," remarked Lo, who suggests that new approaches are required that span all aspects of age-friendly design. "Future studies should examine the health outcomes of these patients, including the extent of their injuries, rate of hospital admissions from the ED, and the expected health care needs. Without this information, we are at a loss to clarify the public health, clinical, and social impacts of pedestrian falls in these environments."

Co-authors are Remie P. Crowe, ESO Solutions; Henry E. Wang, Ohio State University Wexner Medical Center; and John R. Beard, Butler Columbia Aging Center, Columbia Mailman School of Public Health.

**More information:** Andrew G. Rundle et al, A National Study on the Comparative Burden of Pedestrian Injuries from Falls Relative to

Pedestrian Injuries from Motor Vehicle Collisions, *Journal of Urban Health* (2024). [DOI: 10.1007/s11524-023-00815-x](https://doi.org/10.1007/s11524-023-00815-x)

Provided by Columbia University's Mailman School of Public Health

Citation: Pedestrian injuries from falls versus motor vehicle collisions: Are we lacking critical policy and interventions? (2024, January 31) retrieved 28 April 2024 from <https://medicalxpress.com/news/2024-01-pedestrian-injuries-falls-motor-vehicle.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.