

# Walking a leashed dog associated with risk of traumatic brain injury among adults

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Johns Hopkins University researchers have found that traumatic brain injuries (TBIs) were the second most common injury among adults treated in U.S. emergency rooms for injuries related to walking a leashed

dog from 2001 to 2020. The researchers also found that women, and all adults age 65 and older, were more likely to sustain serious injuries, such as fractures and TBIs, than people in other demographic groups. The study was published in *Medicine & Science in Sports & Exercise*.

"According to a 2021–2022 national pet ownership survey, nearly 53% of U.S. households own at least one dog," says Ridge Maxson, the study's first author and a third-year [medical student](#) at The Johns Hopkins University. "Dog ownership also increased significantly in recent years during the COVID-19 pandemic. Although dog walking is a common daily activity for many adults, few studies have characterized its injury burden. We saw a need for more comprehensive information about these kinds of incidents."

The researchers were from the Johns Hopkins University School of Medicine and the Johns Hopkins Bloomberg School of Public Health. Using the National Electronic Injury Surveillance System database, which is operated by the U.S. Consumer Product Safety Commission, the researchers found that an estimated 422,659 adults sought treatment in U.S. emergency rooms for injuries resulting from leash-dependent dog walking from 2001 to 2020.

Nearly half of all patients were adults age 40 to 64, and 75% of patients were women. Most injuries occurred due to falling after being pulled by, tangled in or tripped by the leash connected to a dog they were walking.

The three most common injuries among all adults were, in order, finger fracture, TBI, and shoulder sprain or strain. TBI and hip fracture were the two most common injuries among adults age 65 and older. TBIs identified in this study consisted of both concussions and nonconcussive internal head injuries, which can include brain contusion (a bruise of the brain tissue), [epidural hematoma](#) (bleeding in above the brain's outer membrane) or subdural hematoma (bleeding beneath the brain's outer

membrane).

Notably, women with injuries related to dog walking were 50% more likely than men to sustain a fracture. Older dog walkers were more than three times as likely to experience a fall, more than twice as likely to have a fracture and 60% more likely to sustain a TBI than younger dog walkers.

Across the 20-year study period, the estimated annual incidence of injuries due to leash-dependent dog walking more than quadrupled. The researchers posit that this trend may be due to concurrent rising [dog ownership](#) rates and promotion of dog walking to improve fitness.

The team hopes its findings will promote awareness among dog owners and encourage clinicians to discuss the injury potential of leash-dependent dog walking with their patients.

"Clinicians should be aware of these risks and convey them to patients, especially women and [older adults](#)," says Edward McFarland, M.D., the study's senior author and director of the Division of Shoulder and Elbow Surgery at Johns Hopkins Medicine.

"We encourage clinicians to screen for pet ownership, assess fracture and fall risk, and discuss safe dog walking practices at regular health maintenance visits for these vulnerable groups. Despite our findings, we also strongly encourage people to leash their dogs wherever it is legally required."

The team also analyzed cases of leash-dependent dog walking injuries among children under age 18. Those findings will be released in the near future.

**More information:** Ridge Maxson et al, *Epidemiology of Dog*

Walking-Related Injuries Among Adults Presenting to U.S. Emergency Departments, 2001-2020, *Medicine & Science in Sports & Exercise* (2023). [DOI: 10.1249/MSS.0000000000003184](https://doi.org/10.1249/MSS.0000000000003184)

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