

Watch your step: Elevator-related injuries and older adults

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In the first large-scale epidemiological study of elevator-related injuries in older adults in the United States, researchers from the Indiana University School of Medicine and an Ohio State University colleague report in the January 2010 issue of *The Journal of Trauma Injury, Infection, and Critical Care* on the frequency, nature and opportunities for prevention of these injuries.

Nearly 120 billion riders enter an estimated 750,000 elevators annually in the U.S. Older adults are more likely to use elevators than stairs or escalators. While elevators are one of the safest forms of transportation, they can pose a real danger for the aging population.

According to U.S. Consumer Product Safety Commission data, approximately 44,870 (about 2,640 annually) elevator-related injuries, severe enough to require a visit to a hospital emergency department, occurred in individuals 65 years and older from 1990 to 2006. Hip fracture was the most common diagnosis for the 14 percent admitted to the hospital.

Three-fourths of these injuries involved older women. More than half of the elevator-related injuries to older adults were the result of a slip, trip or fall and about one-third were the result of the elevator door closing on the individual. Injuries related to wedging a walker in the elevator door opening was the third most frequent category. The overall injury rate from 1990 to 2006 was seven times greater in the 85and older group than in the 65-69 age group.

Of all injuries among older adults, almost half were soft tissue injuries such as a sprain or bruise. The next most frequently recorded types of injury were fractures and lacerations, including finger or toe amputation.

"Elevator-related injuries are not accidental they are easily preventable. Individuals of any age, but especially older adults, who often have vision or balance issues, should not stick an arm or leg or walker into the path of a closing elevator door. Elevator open buttons should be made twice the size of the other elevator buttons so they are not hard to find by passengers who want to stop the door from closing on an approaching individual. This would be very inexpensive to change because electronics don't have to be altered, just the button. Certainly all newly installed or updated elevators should have such buttons," said Greg Steele, Dr.P.H., M.P.H., associate professor of epidemiology in the Department of Public Health at the IU School of Medicine.

Misalignment, when the floor of the room and the floor of the elevator compartment are not perfectly even, is difficult for older adults with vision problems to see and a frequent cause of slips, trips and falls. Dr. Steele recommends that bright paint be applied to the edge of the room floor and the edge of elevator compartment to make it easier to observe, even when rushing into or out of an elevator. "The cost would be pennies but the saving astronomical. Slips, trips and falls often start a downward decline in an older individual's health and quality of life," said Dr. Steele.

"Older adults should be informed of the hazards associated with elevators and should use caution when entering or exiting an elevator. Elevators should be monitored to ensure that they are in good working condition to minimize hazards that could lead to elevator-related injuries," said co-author Joseph O'Neil, M.D., M.P.H, associate professor of pediatrics and a Riley Hospital for Children developmental pediatrician who studies preventable injuries.

He and Dr. Steele have previously published studies on elevator-related injuries in children. They have also studied escalator-related injuries in children and in older adults. They found the rate of elevator-related injuries among older adults to be similar to the rate of escalator-related injuries for this age group.

The bottom line, according to Dr. Steele and Dr. O'Neil, is that rates of elevator-related injuries increase with age, declining mobility and dimming vision, but that these injuries can be prevented. They urge [older adults](#), and all [elevator](#) riders, to slow down and wait for the next car rather than risking injury.

Provided by Indiana University School of Medicine

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