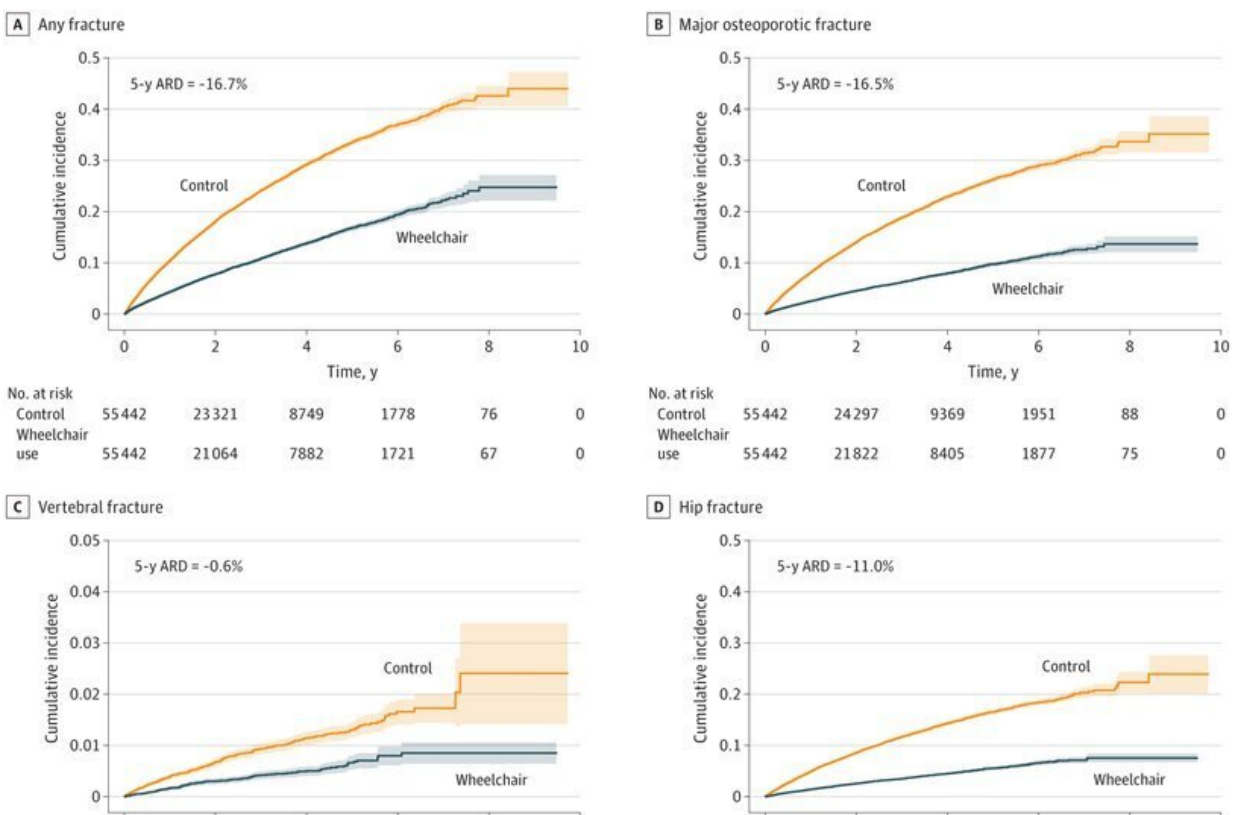


# Using a wheelchair offers a substantially reduced risk of fractures for the frail and elderly

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Cumulative Incidences for Patients Who Used Wheelchairs vs Matched Ambulatory Controls The cumulative incidence of events was estimated using 1 minus the Kaplan-Meier estimate of the corresponding survival function and presented with 95% CIs. Fall injury indicated all fall-related injuries not resulting in a fracture. The 5-year absolute risk difference (ARD) noted in the graph derives from the curve. Credit: *JAMA Network Open* (2023). DOI:

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Being a frail elderly person and using a wheelchair involves a substantially reduced risk of fractures, a University of Gothenburg study shows. More prescriptions for wheelchairs may result.

Wheelchair use often means spending many hours in the same, seated position with no load on the legs, which can cause functional deterioration and loss of bone mass. This in turn makes the skeleton more brittle and thus subject to higher risk of fracture. Wheelchair use has therefore been considered a risk factor for fractures.

The current study—published in the journal *JAMA Network Open*—shows, however, that wheelchair use should not be seen as a risk factor for fracture in the group of elderly frail people. It was in fact the study's [wheelchair users](#) who suffered fractures least often.

Comprising 55,442 wheelchair users in Sweden with an average age of 83 years, this is the largest study in the research area to date. Six of ten participants were women. People in the matched control group were ambulatory (able to walk about), with or without technical aids. The median follow-up period was approximately two years.

## **Significantly lower fracture risk**

The wheelchair users suffered 4,148 fractures, fewer than half of the control group's 10,344. More precisely, the controls' risk was equivalent to 2.3 times the wheelchair users. This was for fractures in general.

For osteoporotic and hip fractures, the intergroup differences were even more marked: There were less than a third as many fractures in the

wheelchair users, and their risk of injurious falls was less than half as high, as among the ambulatory controls.

A wheelchair is usually prescribed by a physical or [occupational therapist](#) in Sweden, while in other countries it may be prescribed by a doctor. The patient's needs determine whether a wheelchair is recommended. Factors taken into account include immobility, weakness, poor balance, and frequent falling.

## Important consideration

Mattias Lorentzon, Professor of Geriatrics at the University's Sahlgrenska Academy and chief physician at Sahlgrenska University Hospital, is the study's senior and corresponding author.

"What we've shown is the link between wheelchair use and a massively reduced risk of fractures in frail elderly people, irrespective of potential reasons for using the wheelchairs. Since [fractures](#)—especially of the hip—cause enormous suffering and call for huge health care resources, these findings are important," he notes.

The study's first author is Kristian Axelsson, [resident physician](#) at the Närhälsan health center in Skövde and researcher at Sahlgrenska Academy, University of Gothenburg.

"The findings are of particular interest to anyone thinking of prescribing a wheelchair for a patient and performing a risk–benefit analysis. Being sedentary in a [wheelchair](#) is negative in many ways, so it's good to see that fall and fracture risks are reduced," Axelsson says.

**More information:** Kristian F. Axelsson et al, Comparison of Fractures Among Older Adults Who Are Ambulatory vs Those Who Use Wheelchairs in Sweden, *JAMA Network Open* (2023). [DOI:](#)

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