Medical Xpress

Study shows higher rate of fractures in people with intellectual disability

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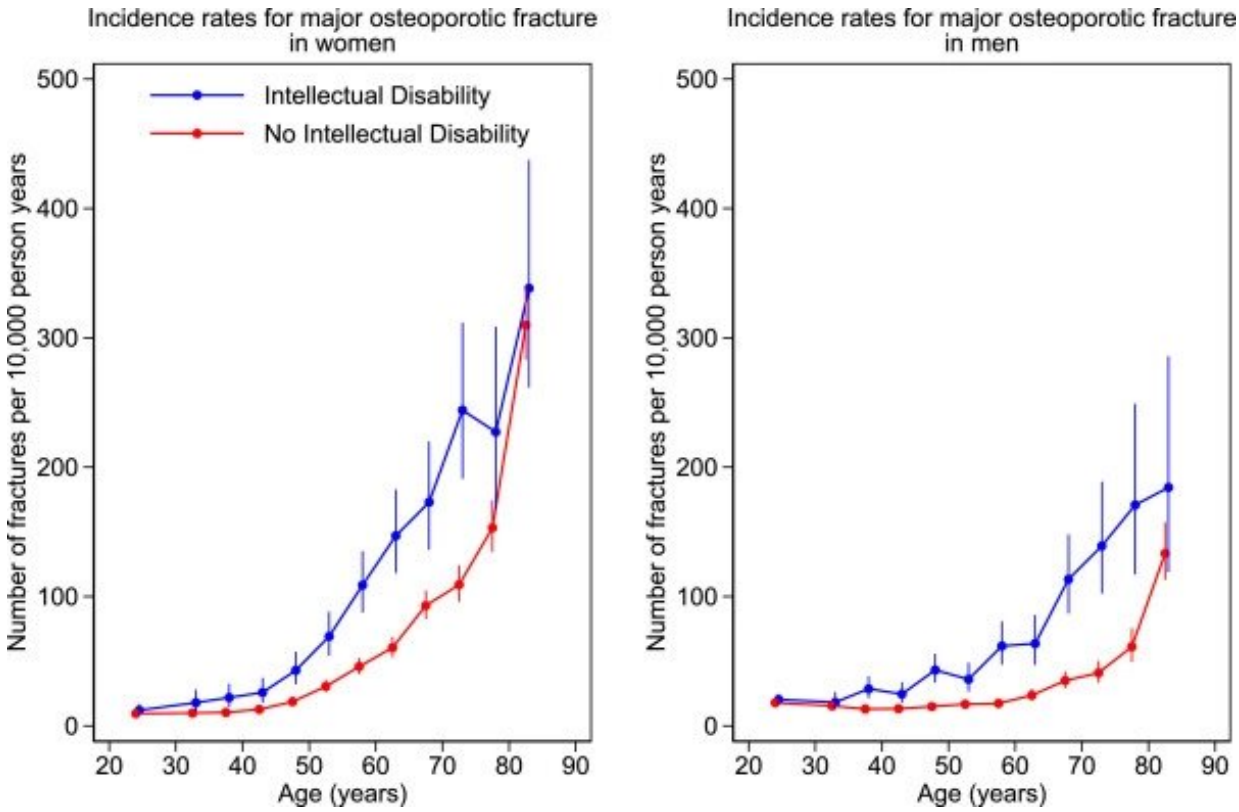

Incidence rates by age band for major osteoporotic fracture in women and men with and without intellectual disability. Number of fractures per 10,000 person years by age. Filled circles represent age band specific incidence rates. Age bands are 1-year in children and 5-year in adults. The bars represent 95% CI. Credit: *eClinicalMedicine* (2022). DOI: 10.1016/j.eclinm.2022.101656

In the most comprehensive study of its kind, researchers at the University of Oxford and Oxford Health NHS Foundation Trust found a substantially higher rate of fractures in people with intellectual disability compared with people of the same age and gender without an intellectual disability.

The researchers, led by Senior Clinical Researcher Valeria Frighi at the Department of Psychiatry, looked at rates of fracture recorded either in general practice or in hospital records, over a 20-year period, 1998–2017. They compared rates between 43,000 individuals with intellectual disability (also known as learning disability) and 215,000 without, throughout the life course.

The study, published open access in *eClinicalMedicine*, found that fracture rates are substantially higher in those with intellectual disability. Fracture incidence starts to rise as people get older, but in those with intellectual disability the rise begins many years earlier than expected.

The types of bones most affected by the fractures points to early onset osteoporosis as the underlying basis for the increased rates. Hip fracture rates are particularly raised. Comparable rates of hip fracture occur approximately 15 to 25 years earlier in people with intellectual disability. For example, at age 45, women with intellectual disability have a rate of hip fracture similar to 60-year-old women without intellectual disability. Forty-five-year-old men with intellectual disability have similar rates of hip fracture to 70-year-old men without intellectual disability.

Margaret Smith, senior statistician and epidemiologist from the Nuffield Department of Primary Care Health Sciences explains further: "We estimated that in 10,000 women over 50 years old with intellectual disability 53 would be expected to develop a hip fracture over one year compared to 23 in the general population. For men over 50 years old these numbers are 38 and 10 respectively."

Hip fractures are devastating for the individual, often lead to permanent physical disability, can lead to premature death, and are extremely costly for NHS and social care. To a large extent, they are also preventable if the risk is recognized and adequately managed.

Ongoing research by the same team is investigating the reasons for such high rate of fracture in people with intellectual disabilities. These could include impaired bone mass due to limitations in mobility and sedentary lifestyle, a tendency to fall, and accompanying medical conditions.

Active fracture prevention strategies should include promotion of safe physical exercise, reduction in the risk of falls, addressing co-existent medical disorders, and ensuring optimal vitamin D and calcium intake. There could also be opportunities to reduce fracture rates through the wider use of existing drug therapies for osteoporosis. Meanwhile, clinical guidelines should be updated to include people with intellectual disabilities in those at risk of osteoporotic fracture, particularly hip fracture.

Lead author Valeria Frighi, senior clinical research fellow at the Department of Psychiatry, said, "The study has identified an important and currently unmet health need in the population with intellectual disabilities. GPs should consider addressing the issue of bone health during the yearly statutory health check offered to people with intellectual disabilities."

More information: Valeria Frighi et al, Incidence of fractures in people with intellectual disabilities over the life course: a retrospective matched cohort study, *eClinicalMedicine* (2022). DOI: 10.1016/j.eclinm.2022.101656