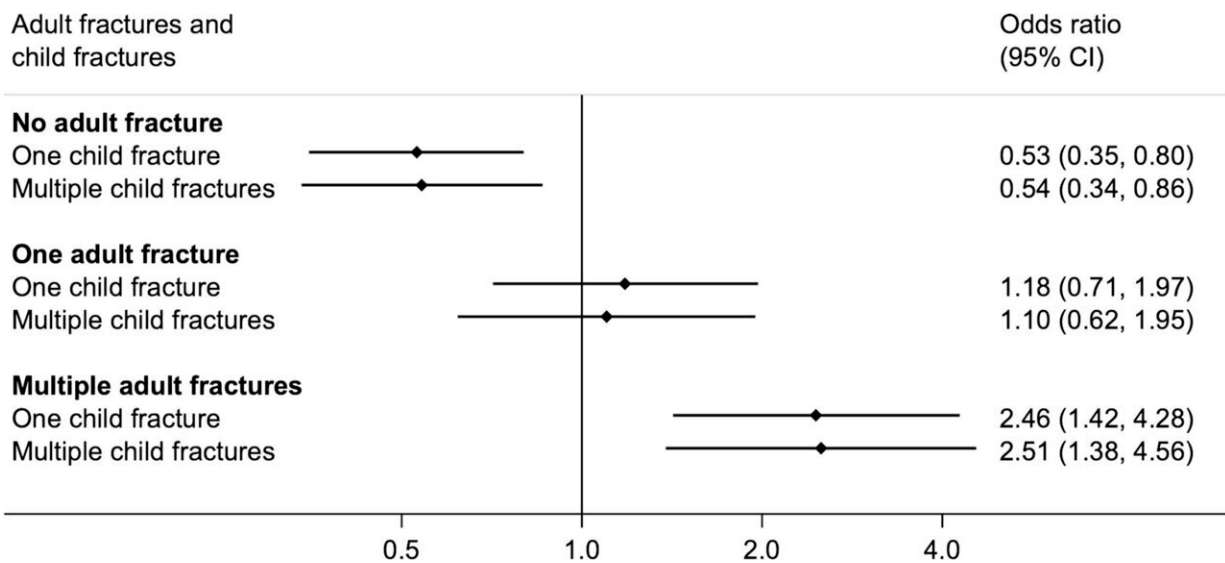


# Repeated childhood fractures could lead to repeated fractures in adulthood

November 8 2022



Odds ratios (95% CI) of adult fractures by childhood fracture groups compared to those with no childhood fractures (n = 555). Adjusted for child abuse, low self-control, sports participation, total hip T-score, and sex. Credit: *Osteoporosis International* (2022). DOI: 10.1007/s00198-022-06500-0

If you were prone to breaking bones as a child, research out of the University of Otago should come as a warning—that painful tendency may well will carry on into adulthood.

Using data from the Dunedin Multidisciplinary Health and Development—a [longitudinal study](#) that has followed the health and

behavior of more than 1,000 people born between 1972 and 1973—the research set out to establish if repeated childhood fractures related to future risk of fracture and [bone density](#) in adulthood.

Lead author Dr. Kim Meredith-Jones says the study confirmed that children who experience more than one fracture in childhood are at increased risk of breaking a bone, or multiple bones, in adulthood—in fact twice as many girls and boys who repeatedly fractured in childhood sustained multiple fractures as adults.

"A quarter of boys and 15% of girls will suffer multiple (two or more) fractures and our results suggests that persistent skeletal fragility can track into early middle age," she says.

"Both boys and girls who were fracture-free in childhood, tended to stay fracture-free in adulthood."

While many other studies have sought to determine whether children who sustain a single fracture during childhood have skeletal fragility that persists into [adulthood](#), this is the first study to demonstrate an increased risk of adult fracture in both males and females who repeatedly fracture in childhood. The research is now published in *Osteoporosis International*.

Exactly why this is the case is not clear. The study, which looked at the lifelong data of 555 45-year-olds, also showed the persistent risk is not associated with other [behavioral factors](#) that can explain the risk of fracture, such as risky behavior, demographics, obesity, [childhood abuse](#) or sports participation.

Furthermore, among females, childhood fractures were related to lower area bone mineral density at the hip, but that difference was not present among males.

"There was also a lower childhood fracture rate in females (42%) than in males (54%), which suggests that the determinants of fractures might differ between sexes," Dr. Meredith-Jones says.

The results should be used to help inform those most at risk, she says.

"Now that we know this, we can inform parents of children who repeatedly fracture in childhood of various ways to prevent persistent skeletal fragility with age.

"Behavioral changes such as increased weight bearing activity, optimal intake of calcium and vitamin D, and increased protein and dairy intake are all beneficial interventions that can be initiated early and maintained throughout the lifespan."

**More information:** Meredith-Jones Kim et al, Is repeated childhood fracture related to areal bone density or body composition in middle age?, *Osteoporosis International* (2022). [DOI: 10.1007/s00198-022-06500-0](https://doi.org/10.1007/s00198-022-06500-0)

Provided by University of Otago

Citation: Repeated childhood fractures could lead to repeated fractures in adulthood (2022, November 8) retrieved 3 May 2024 from <https://medicalxpress.com/news/2022-11-childhood-fractures-adulthood.html>

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