



## **Bone fractures can double or triple mortality for up to 10 years**

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A new study shows that osteoporotic fractures increase a person's risk of dying, even after relatively minor fractures if that person is elderly. With hip fractures, there is double the risk of death for women, three times the risk for men.

The premature mortality lasts for about 5 years post-fracture, except for hip fractures when it lasts for around 10 years. It then declines towards the background population level. If there's a subsequent fracture, mortality risk will rise again for the next 5 years.

These facts underline the importance of preventing and treating osteoporosis, a potentially devastating condition that affects roughly 2 million Australians. Someone is admitted to hospital with an osteoporotic fracture every 5-6 minutes, averaging 262 hospitalisations each day.

Dr Dana Bliuc, and A/Prof Jackie Center, head of the Bone Clinical and Epidemiology Research Group at Sydney's Garvan Institute of Medical Research, published their findings today in the prestigious international journal, *JAMA*.

Data supporting the study was obtained from the internationally recognised Dubbo Osteoporosis Epidemiology Study, a longitudinal, population-based study, started in 1989, of men and women over the age of 60 living in Dubbo, 400 km North West of Sydney. There were 952 women and 343 men with fracture who were followed for up to 18 years.

A/Prof Center first looked at mortality and fracture in 1999, when her 5-year data was published in *The Lancet*. "The current study is the first time we've looked at long term data, the first time we've looked at different age groups and shown the effects of minor fractures, and the first time we've looked at subsequent fracture in relation to mortality," she said.

"We measured mortality rates compared to the age matched population. They varied depending on severity of fracture, age and sex. In women over the age of 75, there's about a 40% increased mortality after a minor fracture, such as a wrist fracture. That risk increases up to twofold for vertebral fractures, and two and a half fold for hip fractures."

"For men increased mortality is a little bit higher. It's about 80% higher than the general population for minor fractures in men over the age of 75, about twofold higher for vertebral fractures, and approaching threefold for hip fractures."

Importantly, in the younger old people there was also premature mortality following all but the most minor fragility fractures.

“Our study also looked at factors that drive the premature mortality after a fracture. Thigh muscle weakness and having a subsequent fracture were important factors in both sexes and low bone density was an additional factor in women.”

“The interesting thing is that the increased mortality post fracture does not seem to relate to any other illnesses a person might have.”

“Although for most fractures the actual cause of death does not appear to be directly related to the fracture, it appears in time close to the fracture.”

“We have no proof as yet, but it seems as though the increased mortality could relate to something surrounding the fracture – if you survive beyond 5 years, or 10 years for a hip fracture, you’re OK. If you have another fracture, your risk of dying increases again. We are now trying to identify what specifically causes this premature mortality.”

“The facts speak for themselves. They tell us how important it is to take all fractures very seriously, particularly in the elderly.”

“We don’t know yet if treatment reduces mortality, but we do know it decreases the risk of a second fracture.”

## **ABOUT GARVAN**

The Garvan Institute of Medical Research was founded in 1963. Initially a research department of St Vincent's Hospital in Sydney, it is now one of Australia's largest medical research institutions with nearly 500 scientists, students and support staff. Garvan’s main research programs are: Cancer, Diabetes & Obesity, Immunology and Inflammation, Osteoporosis and Bone Biology, and Neuroscience. The Garvan’s mission is to make significant contributions to medical science that will change the directions of science and medicine and have major impacts on human health. The outcome of Garvan’s discoveries is the development of better methods of diagnosis, treatment, and ultimately, prevention of disease.

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