



osteoporosis

Preventing osteoporosis-related fractures from happening again

Why is this important?

Osteoporosis is a disease where bone density and structural quality deteriorate. This leads to fragile or 'brittle' bones that have an increased risk of fracture. Even minor falls can lead to serious fractures. Fractures most often occur in the wrist, hip, spine, pelvis and upper arm but the increased risk applies to almost any and every bone [1, 2]. These minimal trauma (fragility) fractures are ones that would not normally cause a bone to break in a healthy young adult. Typically they are considered to result from a fall from a standing height, or a lesser impact.

In 2001, there were approximately 176,800 fractures in Australians aged 55 and over [3]. Among those aged over 60, osteoporosis and fractures are common and are causes of long-term disability. In this age group, one in two women and one in three men will have a fracture due to osteoporosis [4].

One of the most important, yet commonly overlooked, risk factors for osteoporotic fracture is a history of prior fracture. For example, women with pre-existing spinal fractures have approximately four to ten times greater risk of subsequent spinal fractures than those without prior fractures. This risk increases with the number of prior spinal fractures [1, 5]. A previous history of any minimal trauma fracture approximately doubles the risk of having a further fracture at any site [6]. This increased risk is additional to the heightened risk associated with documented low bone-mineral density.

There is no doubt that even a single low trauma fracture indicates a sufficiently high risk of future fractures to justify investigation with a bone density test and the subsequent use of effective pharmacological agents. However, numerous studies have found that a majority of patients with osteoporosis-related fractures do not receive the evaluation and/or treatment for osteoporosis called for by clinical guidelines [7–10].

All fractures are associated with at least some loss of function and self-confidence that can be long-lasting. Hip fractures, in particular, are often followed by a decline in physical functioning and many survivors are admitted to nursing homes [11–13]. Moreover, all major osteoporotic fractures are associated with increased risk of death [14].

Best available evidence

Effective and well-tolerated therapies are available, and can be strongly recommended in appropriate individuals at higher risk of osteoporotic fracture [15].

For women with osteoporosis and one or more spinal fractures, treatment with bisphosphonates such as alendronate and risedronate, and Selective Estrogen Receptor Modulators (SERMs) such as raloxifene, in combination with calcium and vitamin D supplementation, has been found to reduce the relative risk of subsequent spinal fractures by around 50 per

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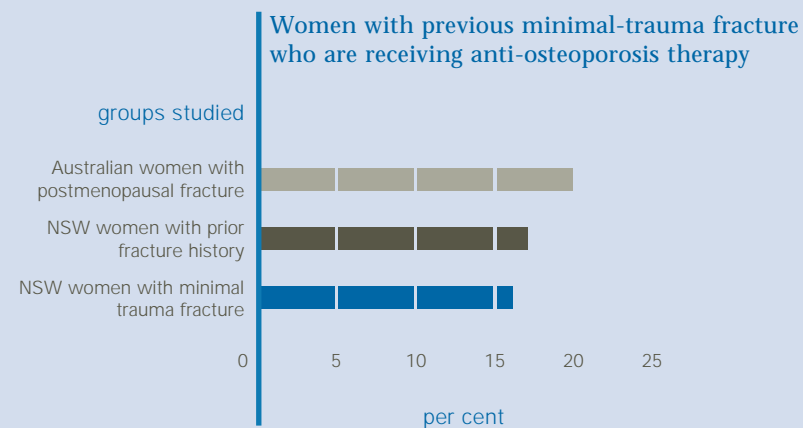
cent [16–19]. Bisphosphonates also reduce the risk of non-spine fractures, including hip fractures [1].

In the aged care setting there is substantial evidence that vitamin D deficiency is common, even in sunny Australia. Calcium and vitamin D supplementation are fully justified in these groups [20]. Hip protectors are also justified in 'fallers', especially in institutionalised elderly, [21] as are efforts to reduce risk factors relating to falls in the home environment.

Current practice

An Australian survey of 88,000 women found that of those who reported a postmenopausal fracture, less than 20 per cent were on specific anti-osteoporotic therapy [22, 23]. A New South Wales study on hip fracture admissions found that of the 142 patients who had a prior fracture, only 18 per cent of women and seven per cent of men were on any specific anti-

osteoporosis therapy [24]. Another New South Wales study that followed up 63 patients after a minimal trauma fracture found that only 16 per cent had an effective anti-osteoporotic medication prescribed following the fracture [12].



Sources: Eisman et al (2004); Port et al (2003); Wong et al (2003)

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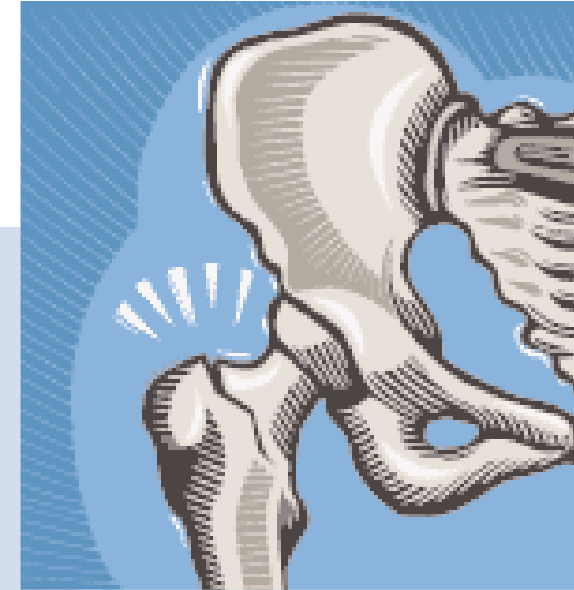
Implications

- People with a previous fracture caused by minimal trauma are likely to have osteoporosis and are at high risk of future fracture. All clinicians potentially involved in the care of a person with a minimal trauma fracture (e.g. emergency physicians, orthopaedic surgeons and general practitioners) need to be aware of the risk of subsequent fractures and support steps to have the underlying osteoporosis investigated and managed.
- There is wide scope for improving therapeutic intervention to reduce the incidence of fracture and the associated morbidity, mortality and costs. In the aged care environment, for example, the implementation of simple, safe and effective measures such as vitamin D and calcium supplements could prevent many fractures. This treatment gap is particularly significant given that almost 40 per cent of hip fracture

cases in Australia are admitted to hospital from this setting.

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