

# Osteoporosis

## What is Osteoporosis?

Osteoporosis is a common condition among older adults – it currently affects 1.2 million Australians, with a further 6.3 million people affected by low bone density (Osteopenia). Osteoporosis is characterised by a decrease in bone mass becoming both fragile and brittle in nature, and low bone density which can lead to higher risk of fracture - however, the disease can often present with no obvious symptoms until a break or fracture occurs.

## Risk Factors

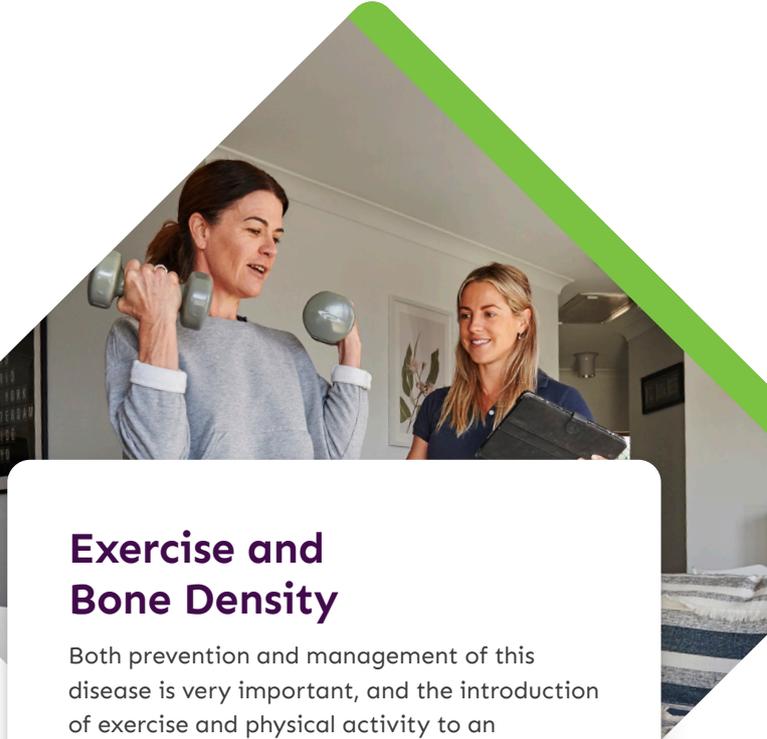
While a loss of bone mass and density is an obvious precursor to Osteoporosis, there are many other risk factors to be mindful of when diagnosing the disease. Women represent a higher prevalence of osteoporotic fractures than men, and an increase in age is a common contributing factor. Other risk factors include family history and medical history comprising of medicines, other chronic conditions (such as arthritis or kidney disease), low hormone levels, and/or thyroid conditions. In addition, there are varying lifestyle factors that can impact bone health such as smoking, sedentary lifestyle, increased alcohol intake and most importantly, calcium and vitamin D levels.

## Fractures and Falls

Osteoporosis can lead to a high risk of fractures, also known as fragility fractures. Due to bone health, an individual with Osteoporosis fracture can have a 2-4 fold increased risk of a secondary fracture within 12 months – it also often goes undiagnosed. The most common areas of fracture are the hip, spine and upper arm/wrist, and fractures are most likely to occur due to falls or minor trauma. While there are many factors that can impact bone health and the severity of Osteoporosis, the risk of falls and fractures plays a large role in the prevalence and diagnosis of Osteoporosis.

### References:

Howe, T., Shea, B., Dawson, L., Downie, F., Murray, A., & Ross, C. et al. (2011). Exercise for preventing and treating osteoporosis in postmenopausal women. *Cochrane Database of Systematic Reviews*, (7).  
Varahra, A., Rodrigues, I., MacDermid, J., Bryant, D., & Birmingham, T. (2018). Exercise to improve functional outcomes in persons with osteoporosis: a systematic review and meta-analysis. *Osteoporosis International*, 29(2), 265-286.



## Exercise and Bone Density

Both prevention and management of this disease is very important, and the introduction of exercise and physical activity to an individual's lifestyle can improve bone health and reduce the risk of falls long term. Research suggests a combination of physical activities can benefit not only our elderly population in improving bone health and muscular strength but children and adolescents as well, thus playing an important role in our lifestyle from an early stage. Resistance and strength exercise have a small but significantly positive impact on bone mass density for varying populations, and can also promote greater balance and proprioception in reducing the risk of falls and trauma to the body.

### More information;

Osteoporosis Australia website:  
[www.osteoporosis.org.au](http://www.osteoporosis.org.au)

Know Your Bones website:  
[www.knowyourbones.org.au](http://www.knowyourbones.org.au)

Nikander, R., Sievänen, H., Heinonen, A., Daly, R., Uusi-Rasi, K., & Kannus, P. (2010). Targeted exercise against osteoporosis: A systematic review and meta-analysis for optimising bone strength throughout life. *BMC Medicine*, 8(1).

Wilhelm, M., Roskovensky, G., Emery, K., Manno, C., Valek, K., & Cook, C. (2012). Effect of Resistance Exercises on Function in Older Adults with Osteoporosis or Osteopenia: A Systematic Review. *Physiotherapy Canada*, 64(4), 386-394.