East Gosford Physiotherapy & Exercise Physiology

UNDERSTANDING OSTEOPOROSIS

Management and Exercise Advice- How to exercise safely and live with Osteoporosis.

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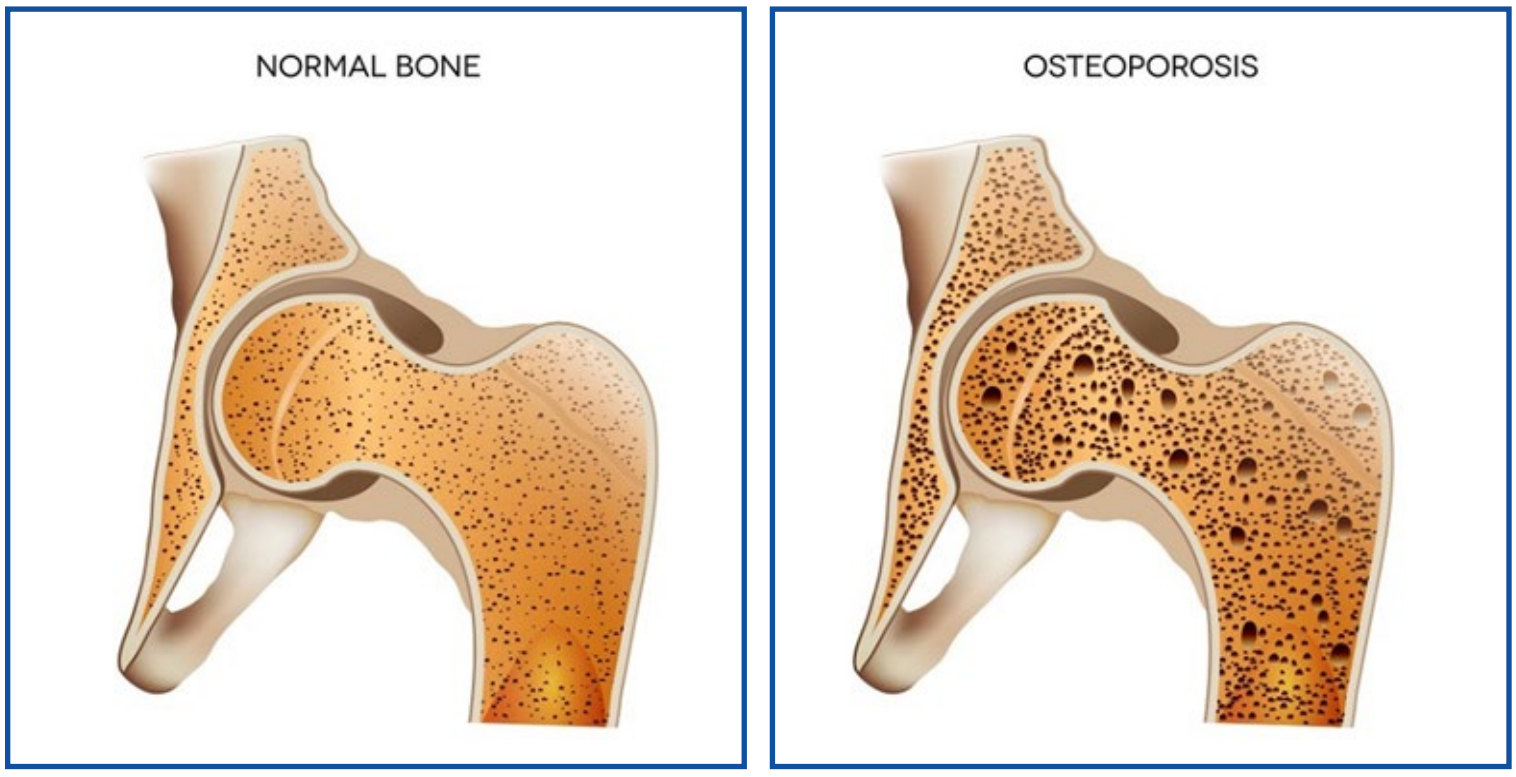
What is Osteoporosis

Osteoporosis is a serious condition in which the bones in your body have become thin, weak, and fragile. This is a process that usually happens slowly over several years and because there are no warning signs, it is sometimes only found out after someone has had a fracture with only very minor trauma. For those with Osteoporosis, a simple cough or sneeze can be enough to fracture a rib or a vertebra in the spine!

Though this is a serious condition, fear not- with the right program you can improve the quality of your bones and get moving again safely without fear of landing in hospital.



How do you know if you have Osteoporosis?

Your GP will arrange for a high-tech procedure called a duel energy X-ray absorptiometry (DXA). This completely painless test that will calculate your bone mineral density (BMD) in your hips, spine and forearm which will be compared to healthy, young adults. This information is presented in the form of a ‘t-score’ which tells us how close or how far you are away from ‘normal’. For the statisticians out there, this is how many standard deviations from the norm. A t-score of <-2.5 is the cut off for osteoporosis, and anything in between that and normal is classified as osteopenia.

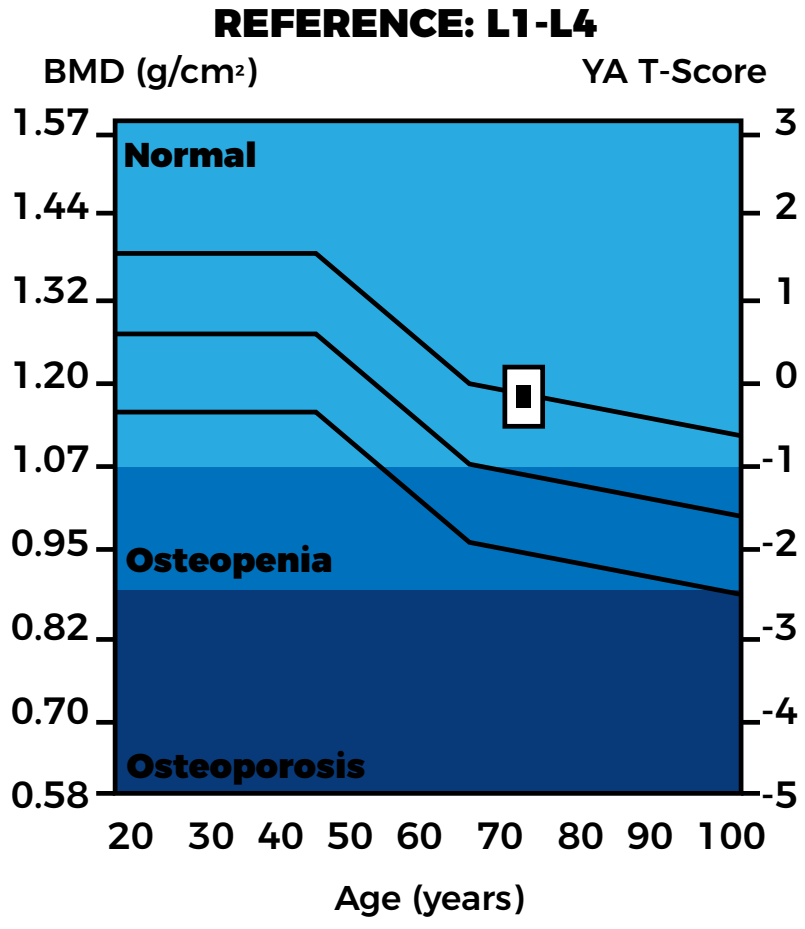


Table 1: Diagnosing osteoporosis using bone density testing

	Normal	Osteopenia	Osteoporosis
T-Score	1 to –1	–1 to –2.5	–2.5 or lower

Source: WHO Study Group 1994 [1].

What causes Osteoporosis?

Bones are living tissue that are constantly growing, rebuilding, replacing, and repairing. When you are younger (<25), your body is in the process of building more bone than you lose. Through your 30's and 40's this tends to equalize resulting in a pretty static bone density. Around 50, you generally begin to start breaking down more bone than your body can rebuild which can result in a low bone density. This loss is a normal part of life, however, the amount that occurs is variable and there are things you can do to change this. Osteoporosis results from an excessively abnormal loss of bone density that affects approximately 1 in 10 Australians aged 50+ (about 625 000 people).

What are the risk factors for Osteoporsosis?

There are many factors that can cause you to lose bone density earlier than normal, and at a faster rate leading to the development of osteopenia or osteoporosis.

The good news is that some of these factors can be modified and you can see a change in your bone density reading with advice and management of risk factors.

Risk Factors include -

Gender

Women are 5 times more likely to develop osteoporosis then men. One reason for this is that women see a rapid loss of bone after onset of menopause. Another reason is that women, on average, have less muscle mass than males which results in less good mechanical stress on bones that can stimulate bone growth.

Family History

Osteoporosis can run in families and research is currently being undertaken looking at the specific genetic factors that play a role in regulating bone mineral density. If you know of family members with osteoporosis, it is a good idea to get tested earlier and then put in an early, preventative action plan to help address some of the factors that you can control.

Certain medications

Some medications can contribute to loss of bone density and osteoporosis.
These include - long term corticosteroids (both oral and inhaled), women on aromatase inhibitors for breast cancer and men on anti-androgen therapy. All these medications have the potential to negatively affect bone density, and if you are in this category we strongly advise to discuss your bone density with you GP. (This can mean that you are placed on some preventative medication).

Especially if you are on these for long periods (>3months) and have other risk factors. We also strongly advise you get involved in a good exercise program to help manage this (more information about exercise will follow.)

Very low body weight / low muscle mass

Although being overweight/obese is a risk factors for many other conditions and diseases, being on the other side of the spectrum is a risk factor for low bone density.

The reason for this is with lower weight and low muscle mass there is not enough stress on the bones to stimulate growth and repair. As a result, this worsens the rate of bone loss. What we need to aim for is a healthy weight range (BMI 18.5-24.9) with a healthy amount of muscle mass.

Inadequate calcium and Vitamin D levels

Calcium is a building block of bone and Vitamin D allows your body to absorb the calcium. Your bones require both to be at appropriate levels you should be able to achieve enough calcium from your diet, but supplementation is available. Vitamin D primarily comes from the sun exposure, however is also in many foods and can also be supplemented.
For more information about how your diet can modify your osteoporosis and bone density, we advise you to discuss this with a dietitian or your GP.

Smoking and excessive alcohol intake (>2standard drinks/day)

Both have a negative impact on bone growth and should be avoided for bone health.

Amenorrhea (loss of menstruation)

If this occurs due to reduced production of oestrogen as caused by excessive dieting or exercise, it can impair the health and density of bones. It can occur in young, active females and forms part of the female athlete triad (low energy availability which can be caused from disordered eating, loss of menstruation and associated low bone density) – if you think this is a possibility, please talk to your GP or physio who can assist you with this.

How can you manage / reverse Osteoporosis?

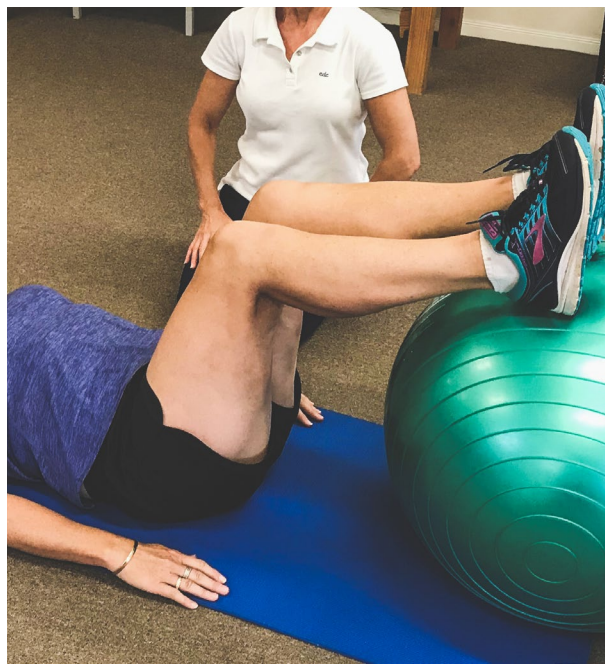
The good news is there are many treatments available to preserve bone mineral density and even increase your bone density to the degree where you may not be classed as osteoporotic!

If you recognize risk factors, but have not progressed to the Osteoporotic stage, you can commence a management plan including exercise to prevent its development.

If you have already been diagnosed with osteoporosis it is likely that your GP has already discussed and started you on some of the treatment strategies below:

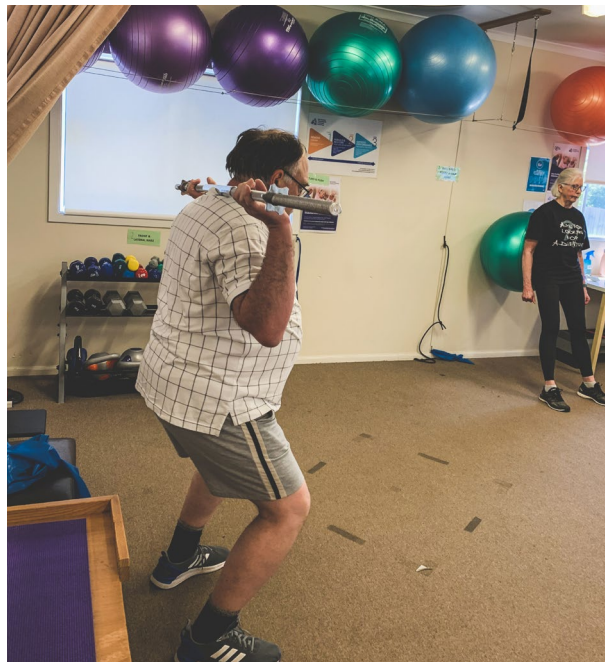
Medications:

• Drugs that reduce bone breakdown are commonly used for treating osteoporosis. These drugs are called bisphosphonates and work by slowing down the breakdown of bone.
• These are usually taken weekly or monthly in a tablet form (alendronate or risedronate) or alternatively an injection every 6 months (Prolia).



Improving Lifestyle Factors:

• Reduce or cease smoking
• Reduce alcohol intake (<2/day)
• Achieve a healthy weight (too much weight and too little weight BOTH have a negative impact on your bone health)
• Increase intake of calcium and vitamin D (through foods, sun and/or medications) – your GP will be able to guide you on this.
• Commence resistance training see below.



Resistance Training

• High quality clinical research has found consistently that exercise training, in particular resistance training, is a key strategy to counter the loss of bone and muscle mass associated with aging.
• Low intensity walking , generally does not provide enough load to stimulate bone growth and make your bones stronger (But walking gives you other benefits, so don’t stop walking).
• We know that to stimulate new bone growth, bone tissue must be exposed to mechanical loading exceeding those experienced during daily living activities. In other words, we need to stress bones in the same way that we do to build muscle – following the principle of progressive overload.

The kinds of exercise that stimulate bone growth are typically those that involve some sort of external resistance (like weights or resistance bands), and are typically big, compound movements. They are also weight bearing exercises like hiking, jogging, playing tennis, dancing, skipping and hopping etc.

East Gosford Physio and Exercise Physiology can help you understand how to do this safely.

How can East Gosford Physiotherapy and Exercise Physiology help?

East Gosford Physiotherapy and Sports Injury Centre has highly trained physiotherapists and exercise physiologists to help you manage your Osteoporosis and give you advice on how to exercise safely.

We thoroughly assess your condition and develop a treatment plan.

We can offer hands on treatment to remove pain and improve muscle and joint tightness, so we can remove any barriers to using exercise in your Osteoporosis management.

The above diagram shows you our philosophy and how we aim to take you through the stages of managing your osteoporosis and to help you achieve your goals. Remember Osteoporosis can often be pain free, so with many of our Osteoporosis clients, once we know you are safe to exercise, we can progress you fairly quickly and get you exercising independently.

Our first and main focus is always to remove your pain, wherever that is, as pain is a barrier to exercise. We then move on to removing the factors that contribute to your problem. From this foundation we can focus on helping you improve your performance in simple activities in your life like house work and gardening , or in your ability to resume sporting pursuits like golf and bowls - so we can help you achieve your goals.

Individualised Physiotherapy

Our Physiotherapists can help you and set you up with an individualised program that is not only safe for you, but one that you can enjoy. They will take time to thoroughly assess you so any treatment or exercise advice is specific to your level of fitness, pain from osteoarthritis and bone density.

We know that many people find activities such as squats or those with weights quite daunting or even impossible due to old injuries. We take many things into consideration when creating your program and rest assure that all exercises can be modified to suit you.

OUR CONSIDERATIONS WITH EXERCISE-

- Your medical conditions, injuries or niggles.
- Your interests and hobbies
- Ensuring your core stability, posture and technique is appropriate for all exercises
- Ensuring your pelvic floor function is acceptable (this is important to consider when introducing any activity with external resistance, especially high impact activities like jumping)
- Balance – not only is it important to improve bone density, it is equally important to improve balance so to prevent falling in the first place. There are many types of balance training that we introduce you to throughout your osteoporosis management program.

Individualised Exercise Physiology

Our exercises physiologists can help you progress to the next level with your exercise while taking your bone density and pain into consideration. Our physios get you started, and our exercise physiologists moves you on with progressive bone loading and strengthening exercise.

Group exercise

If group style training is more your style, we have a safe and effective class called **Keep Moving.**

Keep Moving is designed to work on three main things – brain, strength, and balance – the perfect recipe for bigger and stronger bones.

Watch this video for more info about Keep Moving
https://youtu.be/UxVnHkFA7ZM

Our Physios and Exercise Physiologists have developed a unique exercise class which will help you learn how to exercise again in a fun and social way. If you have been diagnosed with osteopenia or osteoporosis and you know you need to exercise but not sure how to do it, start with Keep Moving.

We find many people in this situation used to exercise when they when younger, but have just lost the “habit of exercise” as a busy life and family somehow got in the way!

We also find these people aren’t suited to a boot camp or gym BUT aren’t ready for the senior citizens exercise class!
If this is you enquire about our cost effective Keep Moving class, and our physios we will assess you to ensure you are safe and know what to do.

(Please Note: If you also have Type 2 Diabetes you are entitled to 8 classes covered entirely by Medicare- so this means no cost or gap to pay – and we will help you manage your diabetes and osteoporosis at the same time)

Your Physio will discuss this with you as part of their management plan.

Contact us -
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References

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2. Ebeling PR, Daly RM, Kerr DA et al. 2013. Building healthy bones throughout life: an evidence-informed strategy to prevent osteoporosis in Australia. Medical Journal of Australia Open 2 (Supplement 1):1–46.
3. RACGP (The Royal Australian College of General Practitioners) 2010. Clinical guideline for the prevention and treatment of osteoporosis in postmenopausal women and older men. Melbourne: RACGP.
4. Hong A & Kim S. Effects of Resistance Exercise on Bone Health. Endocrinol Metab. 2018;33(4):435-444.