UNDERSTANDING OSTEOPOROSIS

MANAGING YOUR BONE HEALTH
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A commitment to our members

We’re part of a global family, who reinvests our profits to provide better services for our members. We proudly offer affordable, high-quality health cover to more than three million Australians.
ABOUT THIS GUIDE

This guide offers practical advice, current research and information to help people affected by osteoporosis. It may also be a useful resource for family and friends who want to know more about osteoporosis. Inside this guide, you’ll find the following:

- information about osteoporosis and how to help reduce its impact on your health and everyday life.
- an Osteoporosis Action Plan that you can prepare together with your doctor.
- a personal Medication Record to help you keep track of your medications.

Take this guide with you when you next visit your doctor so you can get started on making your Osteoporosis Action Plan together.
WHAT IS OSTEOPOROSIS?

Osteoporosis means porous bones (from the Greek words *poros* meaning pore or passage and *osteon* meaning bone). It’s a condition where bones lose mass and become brittle, increasing their risk of breaking or cracking.

Bone is a living tissue that is constantly being renewed by a process called bone turnover. Old, worn out bone is broken down and absorbed by the body while, at the same time, new bone tissue is created from fresh protein and minerals. In children and young people, more new bone is created than is broken down. This makes bones bigger and denser. Your bones are at their strongest when ‘peak bone mass’ is reached, usually around a person’s mid-twenties. Peak bone mass is then maintained for about ten years, with roughly equal amounts of bone creation and breakdown. After the age of about 35, bone loss begins to overtake creation as part of the normal ageing process.

With osteoporosis, the process of bone loss happens much more quickly, leading to premature bone weakness. Any one of your body’s 206 bones can be affected by osteoporosis, but the most common sites are the hip, spine, wrist, pelvis and upper arm. The bones most likely to break as a result of osteoporosis are your hip, wrist and the vertebrae of your spine.
Osteoporosis is a major public health problem. Around 60 percent of women and 30 percent of men over the age of 60 will experience an osteoporotic fracture at some stage. Once an individual has sustained an osteoporotic fracture, the risk of further fracture is greatly increased. Many people who have a hip fracture don’t get back to their previous state, with 65 percent likely to require long-term help with daily living activities.

Osteoporosis is one of the more common conditions in ageing populations and has serious consequences in terms of mortality and loss of function. Fractures, especially hip and vertebral fractures, can increase the risk of premature death. However, some simple lifestyle measures can help decrease the risk of developing osteoporosis as well as helping to prevent a fracture, which can greatly reduce the long-term burden of osteoporosis. These preventative measures include diet changes and increasing physical activity, and are discussed in more detail later in this guide.
SIGNS AND SYMPTOMS

Bones affected by osteoporosis are less dense than normal bones. This makes them more likely to break, even as a result of a minor bump or fall. Osteoporosis has been called the ‘silent disease’ as most people affected by the condition are unaware that their bones are thinning until they experience a break or notice more gradual signs such as height loss or curvature of the spine (sometimes known as ‘dowager’s hump’) due to small recurrent and often painless fractures of the bones in the spine. By detecting osteoporotic fractures and treating them as soon and as quickly as possible, further fractures may be prevented and damage to the bone may be slowed.

Testing for osteoporosis

Doctors define osteoporosis by the T-score, the result from a bone density test. The T-score is a measure of bone mineral density (BMD) determined by using a DEXA (dual-energy X-ray absorptiometry) scan. The scan measures the density or the strength of your bones at key locations such as your hip and spine.

If you have a T-score:

- greater than −1 then your BMD is normal
- between −1 and −2.5 then you have osteopenia (low bone density)
- less than −2.5 then you have osteoporosis and your bones are at risk of fracture.
WHY DO I NEED AN OSTEOPOROSIS ACTION PLAN?

Good control of osteoporosis reduces the risk of complications such as fractures or reduced mobility and independence. Whether you’re experiencing symptoms or not, there’s plenty of positive action you can take now to minimise the way osteoporosis affects you. A combination of medical advice, medication, a healthy diet and physical exercise are all vital. Learning appropriate osteoporosis self-management and visiting your doctor on a regular basis can help you decrease the risk of short and long term complications.

An Osteoporosis Action Plan, developed with your doctor, will help you stay up-to-date with health checks and maintain your health and independence for as long as possible. Having a written Action Plan, like the one at the back of this guide can help you and your doctor to clarify medication and other treatments to help manage your osteoporosis.

Your Osteoporosis Action Plan helps you recognise when your condition is changing so you and your doctor can adjust your management and Action Plan over time as needed.
RISK FACTORS FOR DEVELOPING OSTEOPOROSIS

Common risk factors for osteoporosis include:

- **Gender.** Osteoporosis is around two times more common in women than men, and most common in women who have been through menopause. This is mainly because oestrogen levels drop after menopause, which means you lose calcium from your bones at a much faster rate.

- **Age.** As you get older, the risk of having osteoporosis increases. It’s estimated that with each decade, your fracture risk doubles.

- **Family history.** Various studies have found that having a family member with osteoporosis places you at greater risk of developing osteoporosis yourself.

- **Diet and nutrition.** Nutrition can affect your bones — having enough calcium in your diet may translate into a reduced risk of osteoporosis. And if you have low BMI or levels of body fat you may be at higher risk of low bone density, increasing your risk of osteoporosis.

- **Lifestyle.** Smoking is associated with lower bone density and increased fracture risk in both postmenopausal women and in men. Drinking too much alcohol can also increase your risk of fracture. Adequate physical activity may reduce your risk of osteoporosis while leading an inactive lifestyle over many years can increase your risk of osteoporosis.

- **Medications.** Some medications may increase osteoporosis risk, such as some antiepileptic medications and some diabetic medications. Too much thyroxine replacement therapy or oral corticosteroid use can also increase your risk. It’s important to discuss your medications with your doctor or pharmacist to assess whether they may be contributing to your risk of osteoporosis.
Illness. Some conditions that can increase your risk of osteoporosis include rheumatoid arthritis, an overactive thyroid, chronic liver or kidney disease, coeliac disease and other chronic gut conditions that can affect absorption of nutrients.

Falls and previous fractures. People with a history of fracture have a greatly increased risk of subsequent fracture. For instance, women who have had a vertebral fracture have a four-fold risk of more vertebral fractures compared to those without prior fractures.

Hormonal and reproductive factors are also a big influence on osteoporosis risk. The female hormone oestrogen reduces the amount of bone that is broken down and so helps you maintain bone health and protect against developing osteoporosis. Any condition that reduces the number of years that a woman produces oestrogen tends to increase the risk of osteoporosis. These risks include:

- experiencing early menopause (before the age of 45)
- having your ovaries removed
- missing periods for six months or more consecutively as a result of over-exercising or over-dieting (and excluding pregnancy or having a hysterectomy).

Men who have low levels of the male hormone, testosterone, are also at a higher risk of osteoporosis. Symptoms of low testosterone include impotence and low libido.
HOW CAN I PROTECT MY BONES?

If you reach a high peak bone density when you are young you will be less likely to develop osteoporosis. You can boost your bone density by eating a healthy diet rich in calcium and by doing regular exercise, particularly when you’re under 35. Protecting your bones to prevent osteoporosis should begin at a young age. But even if you have already been diagnosed with osteoporosis, it’s never too late to change certain habits to help slow the progression of your osteoporosis and decrease the impact it has on your life in the long run.

Diet

A varied, well-balanced diet is important to build and maintain healthy bones. A combination of bread and cereals, fruit and vegetables, milk and dairy products, and protein (from meat, fish, eggs, pulses, nuts and seeds) should provide the nutrients that your body needs.

Foods rich in calcium are especially valuable for healthy bones. Calcium is important in maintaining optimal bone mass. Most Australians consume less than the recommended dietary intake (RDI) of calcium. In addition, as you get older your body can’t absorb calcium as well.

Good sources include milk and dairy products such as cheese and yogurt. For most adults, the RDI for calcium is 1000mg each day, which can be found in 3 serves of dairy. Women over the age of 50 and men over the age of 70 should aim for 1300mg of calcium daily, which is approximately 4 serves of dairy.
Calcium supplements are only required when dietary intake of calcium is very low. There has been some research published which raises concerns about calcium supplements and heart problems. If you are thinking of taking any medication it’s important to discuss it with your doctor first to make sure it’s the right choice for you.

The body also needs vitamin D to absorb calcium properly. Australians get their vitamin D mainly from exposure to sunlight as vitamin D3 is produced by the action of UV light on the skin. Australian guidelines recommend you expose about 15% of your body (face, arms and hands) to the sunlight for 6–8 minutes, 4–6 times each week before 10am or after 2pm.

Vitamin D is also available in foods such as margarine and oily fish but these amounts are too small to provide adequate vitamin D through diet alone.

**Exercise**

Regular exercise helps preserve strong bones and protects against osteoporosis.

- Weight-bearing exercise (physical activity where your body has to carry its own weight) helps to promote bone formation and bone health. Good exercises include running, skipping, aerobics, tennis and brisk walking.
- Resistance training (such as weight training) helps to make muscles stronger, encouraging your bones to become stronger too.
If you don’t have osteoporosis, you should ideally try to do this type of activity three times a week. Most people should aim to exercise for 30–40 minutes, four to six times each week. It’s believed you’ll need to do this for at least one year to have an effect on your bone density. If you are not used to exercising, build up your exercise routine gradually, increasing frequency before intensity.

If you already have osteoporosis, exercise is still important but there may be some activities you need to avoid. Check with your doctor, physiotherapist or exercise physiologist before beginning an exercise program to check which types of exercise are right for you. You should also talk to your doctor before you start if you have any concerns or health problems that affect your heart or breathing.

**Tobacco and alcohol**

Smoking can have a harmful effect on bones, affect your ability to absorb calcium from your diet and it can also contribute to an early menopause in women. Smoking affects young people’s ability to achieve high peak bone mass. Giving up smoking is an important factor in helping to prevent you from developing or slow the progress of osteoporosis.

You should also be careful not to drink too much alcohol as alcohol affects the bone-building process. Heavy drinkers are at greater risk of developing osteoporosis than people who don’t drink or who drink no more than two standard drinks on any drinking occasion, as recommended by the National Health and Medical Research Council guidelines to reduce harm.
HOW IS OSTEOPOROSIS MANAGED?

There are now a number of effective treatments for osteoporosis that can help prevent fractures and increase bone density. Some trial and error may be required before you find the treatment that works best for you.

The medication information outlined over the next few pages is for general explanatory purposes only and is not medical advice. You should always check with your pharmacist or doctor prior to taking any medications as they may cause side effects. If you’re experiencing side effects or symptoms from your medication, contact your pharmacist or doctor as soon as possible. You may also have to be careful about mixing the medication/s you are on with other medications and/or alcohol.

Bisphosphonates

Bisphosphonates (eg alendronate and risedronate) are non-hormonal medicines, which work by increasing bone density and reducing the breakdown of bone. These medications can be taken daily, once weekly or even once a month. Some formulations are combined with or provide additional calcium and vitamin D supplements to help you build and maintain stronger bones. It’s important to remember that bisphosphonates should be taken first thing in the morning on an empty stomach with a full glass of water, away from any other medications. In particular, if you take calcium it should be taken for at least 60 minutes after you take your bisphosphonate.
Hormone Replacement Therapy (HRT)
Hormone Replacement Therapy can reduce the risk of osteoporosis. Traditionally oestrogen therapy has been used to prevent bone loss and reduce fracture risk in post-menopausal women. However, it’s now reserved predominantly for short-term use (up to five years) in women under the age of 60 who suffer from menopausal symptoms. This is due to recent studies relating oestrogen use to a modest relative increase in the risk of breast cancer, heart disease and stroke.

Testosterone can be used to treat men who are deficient in this hormone and can increase their bone density. It’s available in injection or implant form.

Selective oestrogen-receptor modulators (SERMs)
SERMs (eg raloxifene) are a form of hormone replacement, which works by copying the effects of oestrogen on the bones to reduce bone loss. This type of drug reduces the risk of spinal fractures and heart disease, but appears to not increase the risk of breast or endometrial cancers. There is an associated increased risk in blood clots.
Other medications

**Strontium ranelate** works by increasing bone formation and decreasing bone breakdown and is used to prevent fractures in post-menopausal women with osteoporosis.

**Calcitonin** is a hormone made by the thyroid gland (a hormone-producing gland in the neck), which blocks the action of the cells that are responsible for breaking down bone. It is only available in injection form.

**Parathyroid hormone**, which stimulates bone formation, has also been shown to increase bone density and decrease the risk of fractures.

**Vitamin D** and calcium supplementation can be an effective treatment to reduce bone loss in the elderly. Vitamin D treatment should be considered for housebound elderly people as they don’t get as much exposure to sunlight and so are commonly deficient in vitamin D.

**Calcitriol** is an active form of vitamin D given to post-menopausal women who have osteoporosis in the spine. Calcitriol helps improve absorption of calcium from the gut.
Non-drug treatment

Hip protectors are plastic, silicone or foam pads that sit around the hips in the pockets of specially designed underwear. They can be worn by people with osteoporosis to try and reduce hip fractures from a fall by helping to absorb impact and disperse any force acting on the hipbone.

However, hip protectors are unpopular as they can be uncomfortable to use and research has yet to conclusively prove their effectiveness in preventing fractures.
UNDER-DIAGNOSIS AND UNDER-TREATMENT

All people with low bone density should be considered for treatment, particularly those with a history of fracture.

However, recent studies have shown that these high-risk individuals are not being diagnosed or treated. A recent Australian survey of more than 8,800 women found that although 29% of women reported a fracture after menopause, less than one third of these women were on any specific anti-osteoporosis therapy and only 40% were aware they had osteoporosis.

It’s not clear why so many people with osteoporosis are not investigated and treated with specific, proven effective therapies.

If you’ve had a fracture, you should be assessed for your risk of having unrecognised osteoporosis. If your risk is high based on your family, personal, lifestyle or medication history, then you should have tests to confirm whether or not you have osteoporosis, including a bone density measurement.
List all the medications you take in your Medication Record, including over-the-counter medicines, vitamin supplements and natural remedies. Take note of any instructions — for example, whether to take before or after food. Include medications, food and activities to avoid when taking certain medications as well as recording any side effects you experience.

Take your Medication Record with you when you visit your doctor and your pharmacist, so that you can monitor your progress together and keep track of your medication.

Remember to always have an adequate supply of your medication on hand. Review your supply on the same day each month to make sure you have enough or can arrange for a new prescription in time.
YOUR OSTEOPOROSIS ACTION PLAN

Name __________________________  Date __________________________

Take this Action Plan with you when you visit your doctor. Together, you can fill in due dates, actions required and any goals discussed. Use it to help you track your progress when you go for your check-ups.

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For medical emergencies, call 000 or go to the nearest hospital. Or if you aren't sure call your doctor or local hospital.
WHERE CAN I GET FURTHER INFORMATION?

For more information and support, contact:

- Your local doctor
- Osteoporosis Australia at osteoporosis.org.au
- Quitline on 13 QUIT (7848) to give up smoking (local call cost)

Sources
NPS. Osteoporosis: reducing osteoporosis fracture risk and building healthy bones. NPS Prescribing Practice Review. 2011; PPR 54.

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