



Osteoporosis

What is osteoporosis?

Osteoporosis is a disease of the skeleton usually affecting older men and women. In osteoporosis, the bones become fragile and there is increased risk of bone fracture.

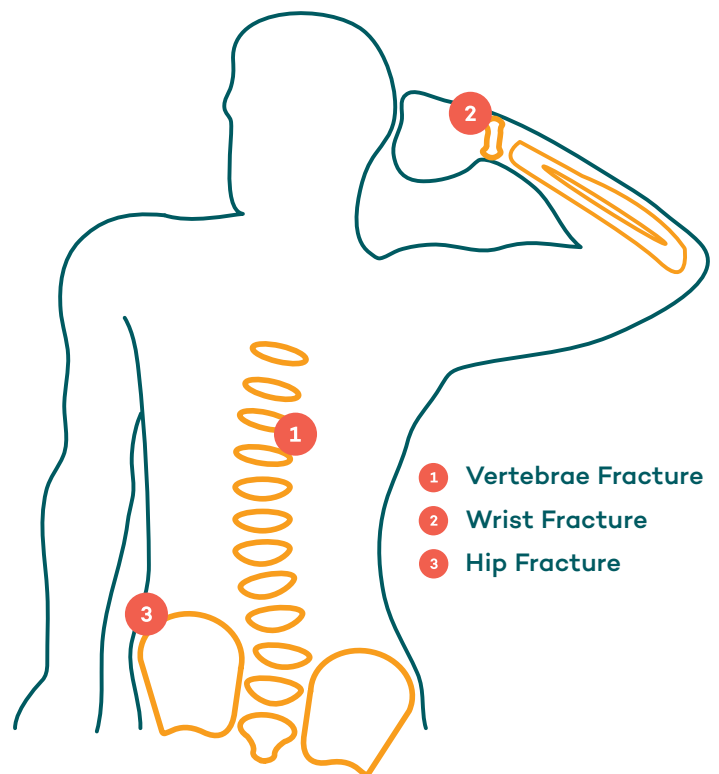
Most bones, except those of the face and head, can be affected by osteoporosis; however, the most common sites of fractures are the hip, spine, wrist and ribs. Osteoporosis is an important health issue; clinical management is geared towards the prevention of fractures.

How common is osteoporosis?

In Australia, one in three men over 60 years old will fracture a bone. The disease affects more women than men; however, when fractures happen in men it is more likely to shorten their life and has a greater impact on their quality of life. Men are also more likely to refracture the same bone than women.

How does osteoporosis happen?

The body continually 'turns over' bone so that old bone is replaced with new bone. Osteoporosis happens when there is increased rate of bone turnover and the bones lose minerals, such as calcium, more quickly than the body can replace them. This causes a loss of bone thickness (density) and strength. With thinner and less solid bones, even a minor accident can cause serious fractures.



At what age in men does bone mass begin to fall?

In men, peak bone thickness or density (when bones are at their strongest) usually occurs in their early 20s. Bone thickness falls gradually, with up to 25 per cent of peak bone thickness being lost in men by the age of 50.

BONE MINERAL DENSITY AND OSTEOPOROSIS	
CLASSIFICATION	T SCORE
Normal bone density	Greater than -1.0
Osteopenia (low bone density)	Between -1.0 and -2.5
Osteoporosis	-2.5 or lower
Severe osteoporosis	-2.5 or lower with a fragility fracture (fracture that happens as a result of minor trauma)

Do all men get osteoporosis as they age?

Not all men will develop osteoporosis as they age and there is no sudden increase in the rate of osteoporosis in men. However, the ongoing gradual loss of bone thickness significantly reduces bone strength and increases the chance of fracture in older men.

What causes osteoporosis in men?

Testosterone, the male sex hormone, is important for a range of body functions including the growth and maintenance of bone strength. Testosterone is converted to oestrogen in men, and oestrogen is important for regulating the rate of bone turnover.

In some men, low testosterone levels may decrease muscle mass, cause bone thinning, and increase the rate of bone turnover so bones become more fragile. Men with confirmed androgen deficiency (low testosterone levels) are therefore more likely to have bone fractures compared to men with normal testosterone levels.

Low testosterone levels are not the only cause of osteoporosis in men. A range of factors, including genetic factors, can have a strong influence on bone density.

What other hormones can cause osteoporosis?

Very high levels of the stress hormone cortisol lead to rapid bone loss and is an important cause of osteoporosis in men. The most common cause of high cortisol levels is corticosteroid medicines such as prednisolone (often used for asthma, arthritis and kidney disease). For men taking a corticosteroid medicine, it is important to closely monitor bone density, and osteoporosis treatment is often started earlier to prevent bone loss.

High levels of thyroid hormone and parathyroid hormone may also cause osteoporosis in men.

Can trauma or too much exercise cause osteoporosis in men?

Some osteoporosis in men is caused by trauma linked to excessive exercise and poor nutrition.

Too much exercise can put bones under a high level of stress, causing bones to fracture easily. However, for most men regular physical activity can lower the risk of fractures by improving muscle mass, balance and bone strength.

Men who do little exercise should speak to their doctor first about an exercise plan that will help to avoid injury.

What are the risk factors for osteoporosis in men?

Lifestyle factors including low levels of physical activity, smoking, excessive alcohol intake, and low calcium or vitamin D levels may increase the rate of bone loss.

Other factors linked to osteoporosis include a previous fall or fracture, family history of osteoporosis and being underweight.

Some medicines, such as corticosteroids and anticonvulsants (commonly used for epilepsy and some psychiatric problems), can also speed up bone loss.

Androgen deprivation therapy (ADT), used in the treatment of some prostate cancers, acts by turning off the body's testosterone production and is an important cause of osteoporosis. Men receiving ADT should have their bone health monitored.

Can I do anything to prevent osteoporosis?

If osteoporosis is diagnosed early and treated, bone loss may be slowed down. Having a healthy lifestyle by not smoking, limiting alcohol intake and being active may lower your risk of osteoporosis.

Weight-bearing and resistance exercises, such as walking, jogging and lifting weights will help improve muscle tone and help maintain bone mass.

Getting enough calcium and vitamin D each day is also important to keep bones healthy. You can get enough calcium by eating three to four serves of dairy foods such as milk, yoghurt and cheese daily. Calcium tablets can be used if there is not enough calcium in your diet. Vitamin D tablets and/or exposure to sunlight can increase your vitamin D levels.

How does osteoporosis affect a man's life?

Osteoporosis can have a major effect on quality of life. It can cause pain, disability and depression, and a loss of independence and social isolation can follow.

Men with hip fractures and other illnesses may die at a younger age than other men.

Bone fractures can cause a loss of height or curving of the spine that can make it hard to breathe normally.

How is osteoporosis diagnosed?

A doctor can assess fracture risk and diagnose osteoporosis by taking a medical history, measuring height, and other tests such as a DXA (dual-energy X-ray absorptiometry) scan. A history of previous fracture, especially within the previous five years, is strongly suggestive of bone fragility and therefore increased risk of fracture.

The DXA scan (bone density test) uses a small amount of radiation to measure the density of the bones in the spine and hip. This is compared with the bone density of an average young adult of the same sex and ethnicity. The test gives a 'T score', which tells the doctor whether or not bone loss has happened.

The T score is classified as normal, low bone density, or osteoporosis. A man who has a T score of -2.5 or lower has osteoporosis and is at high risk of getting a bone fracture; he should talk to the doctor about treatment. A man with osteopenia (low bone density) may be able to lower his risk of further bone loss and/or fracture with lifestyle changes.

Who should have a bone density test?

A bone density test is useful in men with the following:

- A previous diagnosis of osteoporosis
- Symptoms such as loss of height or past fractures
- Rheumatoid and other inflammatory forms of arthritis
- Chronic kidney or liver disease
- An overactive thyroid
- Using corticosteroids for more than 3 months
- Taking certain anti-convulsive medicines
- Androgen (testosterone) deficiency, including ADT for prostate cancer
- A family history of osteoporosis
- Aged 70 years or older
- Smoke or consume excessive amounts of alcohol
- A low body mass index (less than 20)
- malabsorption from the intestines
- High urine calcium levels.

How is osteoporosis treated?

There are medicines that may stop further bone loss or even improve bone mass, and also prevent spinal fractures. All available osteoporosis medications are effective, with a very small likelihood of side-effects. Calcium and vitamin D should be combined with these medications to maximise the benefit.

The most common medications used to treat osteoporosis aim to reduce further bone loss. This includes bisphosphonate therapy, which may be taken as a weekly or monthly tablet, or a yearly intravenous (into the vein) infusion. Denosumab is another option for treatment and is given with a small injection every six months.

Teriparatide (parathyroid hormone) is an anabolic medication that helps new bone to grow and increases bone mass. It is self-administered as a daily injection and its cost is subsidised in cases of severe osteoporosis.

Can testosterone replacement therapy lower the risk of osteoporosis?

Returning testosterone levels to normal in men who have confirmed androgen deficiency (low testosterone levels) can improve bone density. There is no evidence that testosterone therapy improves bone density in men with normal levels of testosterone and is only recommended as replacement in men with androgen deficiency.

Why is it important for men to maintain good bone health?

Often the only time a man realises he has osteoporosis is when he breaks a bone. Many men do not realise that osteoporosis is not a disease that only affects women or older people.

Having a healthy lifestyle including enough calcium in the diet and normal vitamin D levels and increasing weight-bearing exercise, and paying attention to bone health from childhood throughout life, are the best ways for men to lower their risk of osteoporosis.

Visit healthymale.org.au or speak to your doctor for more info.



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DATE REVIEWED: JUNE 2018

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