



CIGNA

CIGNA's guide to osteoporosis



What is osteoporosis?

Osteoporosis, literally meaning 'porous bones', is a condition in which the bones lose substance, gradually becoming weak and fragile and more likely to break.

While some loss of bone substance occurs naturally with ageing in everyone, this loss reaches significant proportions with osteoporosis - and if not treated can progress painlessly until a bone breaks.

Although most commonly a condition of older age, anybody can be affected by osteoporosis. Fractures of the spine, hip and wrist are most typical and the cause of most concern.

In terms of symptoms, the thinning of the bones in itself does not have a great deal of effect. However, it does lead to an increased risk of easily broken bones. In fact the bones of the spine can collapse without any obvious cause. In general terms, all bones are more at risk in people with osteoporosis and falls as well as coughs and sneezes can lead to fractures.



Quick fact

Around 3 million people in the UK have osteoporosis. ¹

What causes osteoporosis?

There are two types of cells that are constantly at work in our bones, ones that build up new bone and others which break down old bone.

Old bone is reabsorbed and new bone laid down all the time, resulting in about 10% of the bone in our bodies being replaced every year. However, when more bone is reabsorbed than is laid down thinning of the bones (loss of bone mass) occurs.

The substance of the bones (bone mass) builds up to a peak at about 30 years of age as the construction cells work harder building strength into our skeleton. After that the demolition cells take over and we gradually lose bone mass by about 1% each year.

While this is a natural part of aging, in some cases this loss reaches such significant proportions that osteoporosis develops. The first sign is commonly when a minor bump or fall causes a bone fracture.

Who is at risk?

Osteoporosis mostly occurs in women over the age of 50. This is because bone loss speeds up after the menopause.

In women the risk is increased if they:

- have early menopause
- have their ovaries removed before menopause
- have abnormal menstrual periods
- over-exercise or diet.

For men, low levels of testosterone increase the risk.

Other factors that are associated with osteoporosis include:

- hormonal problems
- digestive or gastrointestinal problems
- arthritis and joint disease
- cancer and malignant diseases
- certain medications
- smoking
- alcoholism
- family history.

There are also times when osteoporosis occurs in both older and younger people where no specific cause is identified.



Quick fact

One in two women and one in five men in the UK will suffer a fracture after the age of 50 - mainly because of osteoporosis. ²

The consequences of osteoporosis

Osteoporosis can affect people in a number of ways:

- **Pain** - the broken bones, which can happen without any obvious cause, can lead to severe pain and can last for several weeks and even months.
- **Dependency** – people, in particular the elderly, who develop a fracture become more dependent on others to look after them. This may result in an independent person needing long term support at home, or even having to go into a nursing home.
- **Mortality** - with a 20% increase in mortality in the first year after a broken hip, the mortality is greater than that of cervical cancer.
- **Knock-on effects** - the gradual collapse of vertebrae leads to increased curvature of the spine and loss of height. If the spine becomes deformed, other body parts may then also be affected. For example, the ribs can be pushed against the pelvis or the stomach can be pushed into the pelvis.

How do I know if I have osteoporosis?

Due to the nature of the condition it is difficult to diagnose as you cannot see or feel your bones getting thinner. As such, people are often unaware of any problems until they break a bone or start to lose height.

If you think that you are at risk then you should talk to your GP. You may then be sent for a specialist assessment.

As well as an examination and blood checks there are tests that can give you a more definite bone density assessment.

The most common test used to measure bone density is called a DEXA (dual energy x-ray absorptiometry) scan. It is a painless procedure, involving a low dose of x-rays which measures how dense bones are. The specialist will then be able to tell you whether you have, or are at risk from, osteoporosis. There are a variety of treatment options if osteoporosis is diagnosed.

It is worth noting that even if the condition is diagnosed on a bone scan this does not always mean that you are at a high risk of breaking a bone at that time.

Quick fact

Each year in the UK over 120,000 vertebral fractures, 60,000 hip fractures and 50,000 wrist fractures occur because of osteoporosis. ³

Treatment

Once the diagnosis of osteoporosis has been made, there are various forms of treatment that can help with the condition.

Treatment will depend on the extent of bone loss, the individual's age, and whether or not fractures have occurred. Generally treatment is aimed at preventing further bone loss and replacing lost bone, if possible.

The following treatments may be recommended to lower the risk of further bone loss and fractures:

- In women who are at the menopause, or experience it early, the use of **hormone replacement therapy (HRT)** can help protect against bone loss.
- For men **testosterone therapy** can help strengthen bones.
- **Biphosphonates** – a class of drugs used to stop the progress of osteoporosis and even reverse it. They encourage the laying down of calcium in the bones and can be very effective in the treatment of osteoporosis.
- **Calcitonin** – a hormone available as a nasal spray, used as a long term, ongoing therapy.
- **Calcium and vitamin D** supplements.
- **Selective oestrogen receptor modulator** (raloxifene). This is prescribed for spinal fractures if bisphosphonates are not suitable.
- **Pain relief.** Strong pain killers (analgesics) may be required for quite some time in the event of an osteoporotic fracture.

Other, drug-free, ways to manage pain include **physiotherapy** and **hydrotherapy** (exercise in water) or using a **TENS** (transcutaneous electrical nerve stimulation) machine. Alternative therapies, like **acupuncture**, **homoeopathy**, the **Alexander Technique** and **aromatherapy**, can also be of some benefit.

It is likely that you will require follow-up tests of bone density to monitor progress of your treatment.



Quick fact

The body contains 1kg of calcium, 99% of which is stored in our bones. ²

Prevention

Your genes determine the potential height and strength of your skeleton. However, lifestyle factors such as diet and exercise can influence how healthy your bones are and the rate at which they repair themselves. Following a healthy lifestyle throughout life is the best way to delay the onset of osteoporosis, and slow the rate at which your bones become fragile.

The two most important preventative measures that should be taken are regular exercise and adequate intake of vitamin D and calcium in your diet.

Regular exercise

Like muscles, bones stay stronger the more they are used so regular exercise is essential. Try to do at least 30 minutes of exercise, a minimum of 3-4 times a week. Two types of exercise are particularly important in improving bone density and helping prevent osteoporosis - weight-bearing exercise and resistance exercise.

Weight-bearing exercises

Weight-bearing exercises are those where your feet and legs are supporting your own weight. High-impact weight-bearing exercises, such as running, skipping, dancing, aerobics and even simply jumping up and down on the spot, are all useful ways of strengthening your muscles, ligaments and joints. When exercising,

make sure that you wear footwear that provides your ankles and feet with adequate support, such as trainers or walking boots.

People over the age of 60 can also benefit from doing regular weight-bearing exercise. This can include brisk walking, keep fit classes, or a game of tennis. Swimming and cycling are not weight-bearing exercises.

Resistance exercises

Resistance exercises are those that use muscle strength, where the action of the tendons pulling on the bones boosts bone strength. Examples include press ups, weight lifting, or using weight training equipment at a gym.

Diet





Increase calcium in your diet

The bones in our body act as a storehouse for calcium. This calcium is essential for a number of bodily functions, including the process that maintains the hardness of bone. The bones use calcium and they also store reserves for when the body does not receive an adequate amount of dietary calcium or when the body needs additional calcium, as with pregnancy and breastfeeding.

Vitamin D

Vitamin D is needed for the body to absorb calcium. Without enough vitamin D, you will be unable to absorb calcium from the foods you eat and your body will have to take calcium from your bones.

Vitamin D comes from two sources - through your skin following direct exposure to sunlight and from your diet. Vitamin D3 is the form of vitamin D that best supports bone health. It is also called cholecalciferol. Vitamin D can also be obtained from fortified milk, egg yolks, saltwater fish, liver and supplements.

Some other measures that you can take to help prevent osteoporosis:

- maintain a healthy alcohol intake
- stop smoking
- if you are a woman around the time of menopause, discuss HRT with your doctor
- if you are on long term steroids, check that your doctor has considered taking action to prevent osteoporosis.

Useful Links

www.nos.org.uk

www.bbc.co.uk

www.medinfo.co.uk

References

- ¹ <http://www.servier.co.uk/diseaseinformation/osteoporosis/osteoporosis.asp>
- ² <http://www.nos.org.uk/NetCommunity/>
- ³ http://www.abpi.org.uk/publications/publication_details/azResearch/o3.asp

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