

Osteoporosis Explained

Bones do more than stop us from wriggling around like jellyfish on land. Bones help produce blood, create disease-fighting cells and store the body's minerals. On top of that, bones are constantly getting built-up and broken down to absorb and release calcium—bones are not as unchanging as they seem. When a person has weak bones due to a disturbance between building and breaking down bones, we call this disease osteoporosis.

Bones with osteoporosis have larger pores. In fact, “osteoporosis” translates from the Greek language to “porous bone”.

In Greek, “osteo” means “bone” and “poros” means “hole”.

How does it affect people?

Osteoporosis does not hurt, and many people live their lives without knowing that their bones are weak.

A fracture is more likely to occur in osteoporosis because the structure of the bone is weakened. Due to this, osteoporosis is often diagnosed after a fracture. Osteoporosis fractures often result from falls, and in severe conditions, a gentle bump or no injury at all could cause a fracture. Ideally, doctors want to prevent fractures, so they often assess

people likely to develop osteoporosis.

Who is affected?

We all build our bones from our birth to around age 25 when we reach our peak bone strength. Anything interfering with getting to this maximum bone strength or making bones weaker later in life, can cause osteoporosis.

Osteoporosis is more common as we get older, especially after the age of 50. More precisely for women, it is most common after menopause.

Osteoporosis can still occur in men and women of all ages, and in very rare cases, in children born with diseases that affect the bone.

Who is at risk?

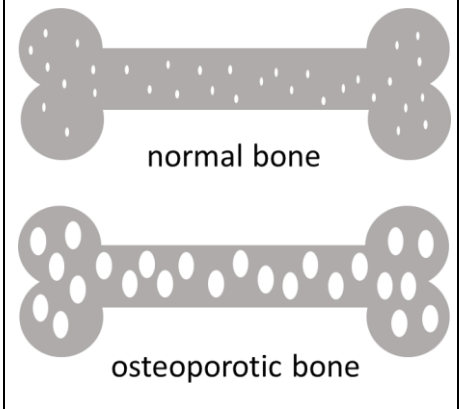
In addition to ageing, other risk factors for developing osteoporosis are:

- Smoking
- Heavy alcohol use
- Very thin individuals
- Long term corticosteroid (steroid) medication use
- Low calcium in the diet

And some connected medical conditions:

- Arthritis
- Overactive thyroid
- Overactive parathyroid
- Kidney or liver failure
- Low testosterone
- Early menopause

Osteoporotic bones have larger pores than a healthy bone.



How is it diagnosed?

The DEXA scan is a common tool used to check for porous bones. DEXA is a shortened way of saying “dual- energy X-ray absorptiometry” and as the name suggests, it uses X-rays. DEXA scans can visualize bone pore sizes better than the average X-ray. The scan is simple and quick. It is important for those receiving the scan to inform their doctor if they:

- recently had any other type of medical imaging
- are pregnant

For the scan, it may be useful to wear loose clothing, avoid jewelry, and be prepared to wear a gown. In addition to the DEXA scan, doctors may request other tests, such as blood tests or urine samples.

What is the treatment?

If diagnosed with osteoporosis, individuals may be asked to take certain medications. Some of the most common medications are known as:

- bisphosphonates
- selective oestrogen receptor modulators
- teriparatide
- denosumab
- vitamin D
- calcium

Bisphosphonates simply help reduce the breaking down of bone. This medication is similar to substances that naturally occur in our body. As with any medication, bisphosphonates may have side effects. They are rare and include inflammation of the oesophagus (food pipe), and in extremely rare cases damage in the jaw bone. Doctors may not prescribe this if individuals have severe kidney problems, low calcium levels or digestive system conditions. Also, smoking or poor dental care may play a role in whether a doctor prescribes bisphosphonates.

Selective oestrogen receptor modulators, such as a drug called raloxifene, increases oestrogen activity in the bone. Oestrogen is normally used to prevent bone loss.

Teriparatide works in a way that the parathyroid hormone in our body works to prevent the

breaking down of bones. Teriparatide is very useful for patients who continue to get fractures despite taking other medications. A potential side effect for this drug is an increased risk of kidney injury.

Denosumab stops the growth of cells that are responsible for breaking down bones. Often, denosumab is given by injection only twice a year.

Vitamin D, along with calcium helps build bones and the supplements help ensure there is enough calcium in the body.

Lifestyle advice

Since the major problem in osteoporosis is weak bones, it can be helpful to do things that strengthen bones and prevent fractures. This includes:

- Healthy eating
- Stop smoking
- Limit alcohol intake
- Prevent falls, such as installing railings at home
- Weight-bearing exercise (eg. walking, hiking, jogging, climbing stairs, dancing, playing tennis etc.)
- If you have osteoporosis, avoid high

contact sports such as skydiving

Exercise should begin in childhood and continue throughout life. The maximal skeleton strength occurs around the age of 25.

Therefore, the right exercise up to this age is important for building strong bones. Even so, exercise is still important after a diagnosis at any age to help continually build bone strength and increase balance.

The next steps

According to the International Osteoporosis Foundation (IOF), 1 in 3 women and 1 in 5 men over 50 years old will have a fracture due to osteoporosis. Remember to speak to your doctor about your own risks and, if needed, how best to manage your treatment and lifestyle. Bones carry our weight throughout our life, it is important to maintain their health and strength.

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Frequently Asked Questions About Osteoporosis

Does everyone get osteoporosis with age?

Everyone's bone mass decreases as they age. Although, not everyone has

Why are women at risk of developing osteoporosis after menopause?

Oestrogen levels drop after menopause. Oestrogen is one

Why are thin people at risk of developing osteoporosis?

There is less weight for bones to carry in thin individuals. Therefore, these bones do less work compared to a person who is overweight. Less

decreased levels so low as to become “osteoporosis”.

Is osteoporosis life-threatening?

By itself, a porous bone is not the most concerning factor. Fractures are the most worrisome, such as hip fractures that could potentially become life-threatening.

Does osteoporosis make you shorter?

Vertebral fractures that can result from osteoporosis may decrease height and lead to a slouched posture.

of the many things that helps prevent bones from unnecessarily breaking down.

Is osteoporosis genetic?

Family history makes it more likely for an individual to develop osteoporosis, but it doesn't mean it will happen.

Can osteoporosis be cured?

Osteoporosis is managed through life-style advice and medications. Once diagnosed, consistent follow-ups may take place. It is possible to lead a normal healthy life. (as tai chi)

work means that they have less strength. For this reason, overweight individuals are often protected from developing osteoporosis.

Fun Fact:

Astronauts can experience bone loss like osteoporosis after spending time in space. This is because there is a lack of gravity applying a constant pressure on their bones. So, in space, their bones can waste away.